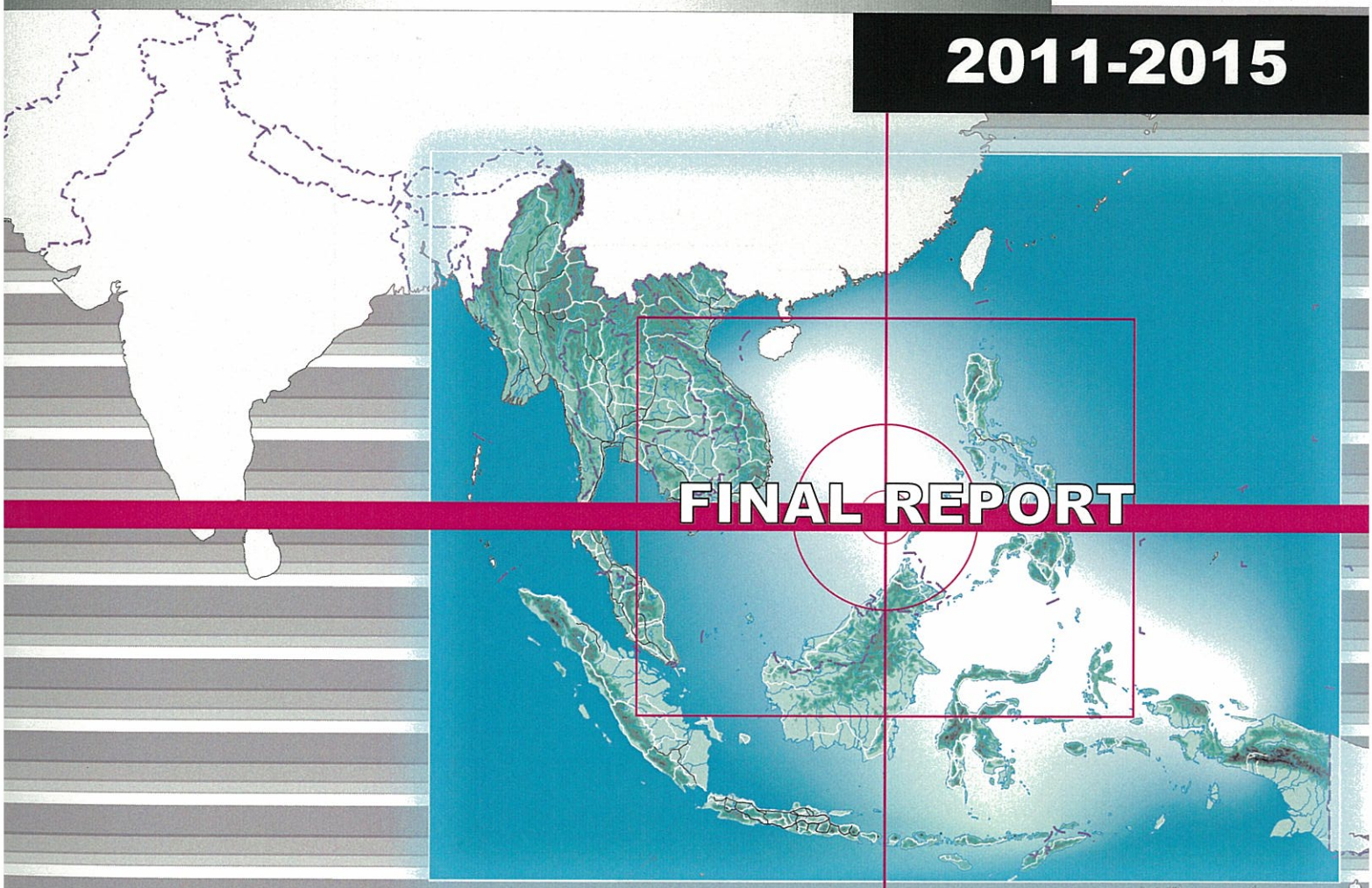
ASEAN
Strategic Transport Plan

2011-2015



FINAL REPORT

ERIA Study Team

October 2010

The ASEAN Strategic Transport Plan (ASTP) 2011-2015
Final Report

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3PL	Third Party Logistics
A-JTLCB	ASEAN-Japan Logistics Capacity Building Program
A-JTLIP	ASEAN-Japan Transport Logistics Improvement Plan
AADCP	ASEAN-Australia Development Cooperation Program
AATIP	ASEAN Air Transport Integration Project
AC-ATA	ASEAN-China Air Transport Agreement
ACC	ASEAN Coordinating Council
ACMCM	ASEAN-China Maritime Consultation Mechanism
ACMTA	ASEAN-China Maritime Transport Agreement
ADB	Asian Development Bank
AEC	ASEAN Economic Community
AEM	ASEAN Economic Ministers Meeting
AEO	Authorized Economic Operator
AFAFGIT	ASEAN Framework Agreement on the Facilitation of Good in Transit
AFAFIST	ASEAN Framework Agreement on the Facilitation of Inter-State Transport
AFAMT	ASEAN Framework Agreement on Multimodal Transport
AFAS	ASEAN Framework Agreement on Services
AFFA	ASEAN Federation of Forwarders Association
AFTA	ASEAN Free Trade Agreement
AHLTF	ASEAN High Level Task Force
AH N	ASEAN Highway Network
AIF	ASEAN Infrastructure Fund
AIS	Automatic Identification System
AJ-APEIT	ASEAN-Japan Action Plan on Environment Improvement in the Transport Sector
AJTP	ASEAN-Japan Transport Partnership
AMRDPE	ASEAN Ministers Meeting on Rural Development and Poverty Eradication
AMSs	ASEAN Member States
APA	ASEAN Ports Association
APAEC	ASEAN Plan of Action for Energy Cooperation
APRIS II	ASEAN-EU Programme for Regional Integration Support (APRIS) – Phase II
APSC	ASEAN Political-Security Community
APU	Auxiliary Power Unit
ASAM	ASEAN Single Aviation Market
ASCC	ASEAN Socio-Cultural Community
ASEON	ASEAN Senior Officials on the Environment
ASTP	ASEAN Strategic Transport Plan
ASW	ASEAN Single Window
ASYCUDA	Automated System for Customs Data
ASec	ASEAN Secretariat
ATAP	ASEAN Transport Action Plan
ATM	ASEAN Transport Ministers Meeting

ATWG	Air Transport Working Group
AWB	Air Way Bill
AWGCC	ASEAN Working Group in Climate Change
AWGCME	ASEAN Working Group on Coastal and Marine Environment
B/L	Bill of Lading
BEBC	BIMP-EAGA Business Council
BIMP-EAGA	Brunei Darussalam-Indonesia-Malaysia-Philippines-East ASEAN Growth Area
BOT	Build-Operate-Transfer
BTO	Build-Transfer-Operate
CADP	Comprehensive Asia Development Plan
CBI	Cross-Border Infrastructure
CBTA	Cross-Border Transport Agreement
CCC	Coordinating Committee on Customs
CCI	Coordinating Committee on Investment
CCS	Coordinating Committee on Services
CFS	Container Freight Station
CIQS	Customs, Immigration, Quarantine and Security
CLMV	Cambodia, Lao PDR, Myanmar and Vietnam
CNG	Compressed Natural Gas
CNS/ ATM	Communication, Navigation, Surveillance/ Air Traffic Management
CPTFWG	Customs Procedures and Trade Facilitation Working Group
CRP	Committee of Permanent Representatives
CWG	ASEAN Cruise Working Group
CY	Container Yard
D/O	Delivery Order
EAS	East Asia Summit
EDI	Electronic Data Interchange
EG	STOM Expert Group
EIA	Environmental Impact Assessment and East Asia
EPA	Economic Partnership Agreement
ERIA	Economic Research Institute for ASEAN
ESCAP	Economic and Social Commission for Asia and the Pacific
ETS	Emission Trading System
EU	European Union
EV	Electrical Vehicle
FAL (IMO)	Facilitation Committee
FASA	Federation of ASEAN Ship-owners Association
FASC	Federation of ASEAN Shippers Council
FCL	Full Container Load
FDI	Foreign Direct Investment
FOB	Free On Board
FTA	Free Trade Agreement
GDP	Gross Domestic Products

GHG	Greenhouse Gas
GIS	Geographic Information System
GMS	Greater Mekong Sub-region
GNI	Gross National Income
GPS	Global Positioning System
GPU	Ground Power Unit
GSM	Geographical Simulation Model
GTZ	German Technical Cooperation
HDI	Human Development Index
HLTF	High Level Task Force
HNS	Hazardous, Noxious and Substances
HPA	Hanoi Plan of Action
HRD	Human Resource Development
HS	Harmonized Commodity Description and Coding System
IAI	Initiative for ASEAN Integration
IC	Integrated circuit card
ICAO	International Civil Aviation Organization
ICT	Information and Communication Technology
ILO	International Labour Organization
IMF	International Monetary Fund
IMO	International Maritime Organization
IMS-GT	Indonesia-Malaysia-Singapore Growth Triangle
IPCC	Intergovernmental Panel on Climate Change
ISPS	International Ships and Port facilities Security
IT	Intelligent Transport
ITF	International Transport Workers' Federation
ITS	Intelligent Transport System
IWT	Inland Waterways Transport
JAIF	Japan ASEAN Integration Fund
JBIC	Japan Bank for International Cooperation
LCC	Low Cost Carrier
LPI	Logistics Performance Index
LRIT	Long-Range Identification and Tracking System
LSPs	Logistics Service Providers
LTWG	Land Transport Working Group
Lao PDR	Lao People’s Democratic Republic
MAFLAFS	Multilateral Agreement on the Full Liberalization of Air Freight Services
MAFLPAS	Multilateral Agreement on the Full Liberalization of Passenger Air Services
MDGs	Millennium Development Goals
MIEC	Mekong India Economic Corridor
MLIT	Ministry of Land Infrastructure, Transport and Tourism, Japan
MNCs	Multinational Companies
MOU	Memorandum of Understanding

MPAC	Master Plan on ASEAN Connectivity
MRSSWG	Multi-sectoral Road Safety Special Working Group
MSC (IMO)	Maritime Safety Committee
MTOs	Multimodal Transport Operators
MTR	Midterm Review
MTWG	Maritime Transport Working Group
NCV	Near Coastal Voyage
NSW	National Single Window
NTO	National Tourism Organizations
NTTCCs	National Transit Transport Co-ordinating Committees
ODA	Official Development Assistance
OSRAP	ASEAN Oil Spill Response Action Plan
PBN	Performance Based Navigation
PFI	Private Finance Initiative
POA	Plan of Action
PPP	Public-Private Partnership
PRC	People's Republic of China
PSHE-MS	Port Safety, Health and Environment Protection Management System
RDA	Regional Development Advisor
RFID	Radio Frequency Identification
RIATS	Roadmap for Integration of Air Transport Services
RILS	Roadmap for Integration of Logistics Services
RORO	Roll on/Roll off
ReCAAP	Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia
SAFE	Framework of Standards to Secure and Facilitate global trade
SAR	ASEAN Search and Rescue
SAREX	ASEAN Search and Rescue Exercise
SCM	Supply Chain Management
SKRL	Singapore Kunming Rail Link
SME	Small and Medium Enterprise
SOLAS	The International Convention for the Safety of Life at Sea
SSI	Single Stop Inspection
STCW	Standard of Training, Certification and Watch-Keeping
STOM	ASEAN Senior Transport Officials Meeting
STP	Secure Trade Partnership
SWG	Sub/Special Working Group
SWI	Single Window Inspection
SWOT	Strengths, Weaknesses, Opportunities and Threats
TA	Technical Assistance
TELSOM	Telecommunications & IT Senior Officials Meeting
TEU	Twenty Feet Container Equivalent Unit
TF	Transport Facilitation

TFWG	Transport Facilitation Working Group
TOR	Terms of Reference
TTCB	Transit Transport Coordinating Board
TTR	Transit Transport Routes
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNFCCC	United Nations Framework Convention on Climate Change
VAP	Vientiane Action Program
WB	World Bank
WCO	World Customs Organization
WG	STOM Working Group
WIMS	Warehouse Management System

EXECUTIVE SUMMARY

The remarkable economic growth in many of ASEAN Member States (AMSs) has been a success story of economic development in the world. In achieving this growth, AMSs have successfully been attracting foreign direct investment (FDI), upgrading industrial structure, and integrating themselves more into the world economy through participation in the regional production and distribution networks. All these developments have been supported by continuous improvement of the transport network in the region. However the challenge is still ongoing. Indeed, an efficient, secure and integrated transport network in ASEAN is still vital for realizing the full potential of the regional economic integration as well as in further enhancing the attractiveness of the region as a single production, tourism and investment destination. An integrated transport network is also vital for narrowing of development gaps in the region. In fulfilling this role, the ASEAN transport sector is currently guided by the ASEAN Transport Action Plan (ATAP) 2005-2010 that covers maritime, land and air transport, and transport facilitation.

As ATAP will soon expire in 2010, a successor plan needs to be prepared as the ASEAN Strategic Transport Plan (ASTP) 2011-2015, which will also be known as Brunei Action Plan (BAP). The ASTP would act as the main reference for ASEAN transport cooperation to support the establishment of the ASEAN Economic Community (AEC) by 2015. Towards this end, ASTP should be designed in consistence with other overarching ASEAN initiatives such as the AEC Blueprint and the Master Plan on ASEAN Connectivity. As the transport sector is one of the key components in ASEAN Community building and the concept of the ASEAN Connectivity, the role of ASTP cannot be overemphasized. In addition to these ASEAN specific contexts, ASTP would also reflect other ongoing developments in the world such as changing economic landscape, mainly due to emergence of new economic powers like China and India, and growing global concerns over environment, climate change, safety and security.

Based on these premises, the ASTP would be formulated (1) to identify strategic actions to support the establishment of the AEC by 2015, that will also compliment existing transport undertaking; (2) to identify long-term vision of ASEAN transport cooperation beyond 2015; and (3) to undertake a comprehensive assessment of the current transport situation in ASEAN and of the implementation of the current action plan with a view to identify the gaps and priorities for the period 2011-2015 and beyond. In order to achieve these objectives, specific actions would be identified with reference to the following six policy directions; (1) maintain the continuity of actions for the implementation of the AEC Blueprint; (2) enhance connectivity of intra-ASEAN transport networks; (3) strengthen transport network links with Dialogue Partners and other partners; (4) upgrade selected transport infrastructure components and services to serve as vital links to international supply routes; (5) incorporate environmental and climate change considerations in planning, development, operations and management of ASEAN transport networks; and (6) enhance regional capability to further improve the level of safety and security in the provision of transport services. These are the guiding principles to identify more specific goals and actions, while maintaining the logical consistency to achieve the objectives of ASTP and thereby, the goals and objectives envisaged in the AEC Blueprint.

As overviewed in Chapter 2, there still remains significant disparity across AMSs in terms of geographical, economic and social conditions, including quality of transport networks, logistic performance, and business environments. Since a supply chain network is only as strong as the weakest link, ASEAN needs to pay explicit attention to eliminate remaining missing links and to improve the quality of weak links. Once regional connectivity is enhanced through the improvement of transport network, the development gaps in ASEAN can be turned into a source of economic dynamism by opening new opportunities for less

developed regions to participate in international production and distribution networks. This is another important consideration in formulating the ASTP.

Chapter 3 reviews the current status and performance of transport sector in ASEAN. In land transport, the number of vehicles and freight volumes has increased rapidly, and the trend is likely to continue in the forthcoming years. As road transportation is expected to continue its dominance, it is vital to improve the quality of road infrastructure. However, given the climatic and environmental advantages of inland waterways and railways, efforts are required to improve their share in the transport network in ASEAN countries. In air transport, rapidly increasing traffic demand, which has been supported mainly by emerging low cost carriers (LCCs), has urged some AMSs to invest more in developing or expanding airport infrastructures. In maritime transport, cargo throughput of AMSs has steadily increased, and is expected to further increase in the years to come. In order to address this, it is necessary to develop/expand port facilities, to improve port efficiency through privatization and liberalization, and to open new shipping route, among other initiatives. Although maritime transport is more environment-friendly than others, there still remains a scope to make it more energy efficient. In order to make a more efficient use of transport networks in ASEAN, three framework agreements on transport facilitation were agreed. Despite the accelerated efforts, these agreements have not been operationalised due to the delays in finalization and ratification of protocols under the agreements.

Chapter 4 takes a stock of transport-related initiatives in ASEAN, including sub-regional initiatives such as GMS, IMT-GT, and BIMP-EAGA, and cooperation projects with dialogues partners such as Australia, China, Japan, Korea, and the European Union. The latter half of Chapter 5 reviews the progress of implementation of the 48 actions proposed in the ASEAN Transport Action Plan (ATAP), as well as the specific measures defined in the Roadmap for Integration of Air Travel Sector (RIATS) and the Roadmap towards an Integrated and Competitive Maritime Transport in ASEAN. The reviews show that out of the 48 actions only 3 actions have been completed, 42 are ongoing and 3 still remain under preparation. Considering the importance of the ongoing actions, it is recommended to carry most of these over to the next phase, with necessary modification and rescheduling to fit well into the new context of ASTP.

Chapter 5 discusses the emerging development trends and challenges surrounding ASEAN transport cooperation from various perspectives, such as intra-ASEAN development trends, a regional perspective, a global perspective, an environmental perspective, and a safety and security perspective, which will be a basis to consider additional goals and actions for ASTP.

Based on the studies in earlier chapters and the feedbacks from ASEAN Member States during STOM Expert Group Meetings, STOM Working Group Meetings, a series of national workshops, Chapter 6 proposes a list of specific goals and actions, together with detailed milestones, for ASTP.

Specific goals for land transport are; (1) accomplish the implementation of Singapore Kunming Rail Link (SKRL) project, (2) complete the ASEAN Highway network, (3) reduce road fatalities by 50% in ASEAN Member States by 2020, (4) establish efficient and integrated inland waterways network; (5) develop 'Intelligent Transport System', (6) enhance human, technical and institutional capacity in ASEAN Member States, and (7) establish a sustainable, energy efficient and environmentally-friendly transport system. In order to pursue these land transport goals, ten actions are proposed.

Specific goals for air transport are; (1) establish an ASEAN Single Aviation Market (ASAM), (2) promote environmentally-friendly aviation, and (3) enhance engagement with Dialogue Partners to promote greater connectivity. One of the most important actions is the formulation of an ASAM Roadmap by 2011, where a number of details initiatives, such as

airline industry liberalisation, aviation safety, aviation security, civil aviation technology, air transport regulatory framework and human resource development (HRD), will be defined. Including this, a total of six actions are proposed for air transport.

Specific goals for maritime transport are; (1) accomplish an integrated, efficient, and competitive maritime transport system, (2) develop safety navigation system and establish advanced maritime security system in line with international standards, and (3) accomplish the Eco-Port and environmentally-friendly shipping. In order to pursue these goals, six actions are proposed including those to realize an ASEAN Single Shipping Market and to establish shipping routes connecting mainland and archipelagic ASEAN.

Specific goals for transport facilitation are; (1) establish integrated and seamless multimodal transport system to make ASEAN the transport hub in East Asia region and beyond, (2) enhance the competitiveness of ASEAN logistics industry, (3) establish safe and secure inter-state transport system, and (4) develop environmentally-friendly logistics. For these goals, thirteen actions are proposed including the action to fully operationalise the three framework agreements on transport facilitation and to promote the initiatives to facilitate Inter-State Passenger Land Transportation, which will have significant impacts on regional trade and tourism as envisaged in the Master Plan ion ASEAN Connectivity. Also highlighted is an action to conduct a study on potential multimodal transport corridors, which will have a strong implication for ASEAN to increase its role as a transport hub in the region and the world.

Chapter 7 highlights tentative proposals to facilitate the implementation of actions proposed in ASTP, based on an assessment on the current institutional arrangements in ASEAN with an explicit focus on the monitoring and implementation mechanisms. Chapter 8 discusses the future direction of the transport sector cooperation in ASEAN beyond 2015.

October 2010

ERIA Study Team

CHAPTER 1 INTRODUCTION

1.1 BACKGROUND OF ASTP 2011-2015

In designing the ASEAN Strategic Transport Plan (ASTP) 2011-2015, it is necessary to take due account of historical and cross-sectional backgrounds in ASEAN and other ongoing development in the world.

From a historical perspective, the ASTP is regarded as the successor of the ASEAN Transport Action Plan (ATAP) 2005-2010. Although the ATAP itself will expire soon, a number of actions and measures stipulated in the ATAP and other related agreements are still ongoing and will continue to be relevant for the ASTP. In order to maintain the historical consistency, the ASTP would be designed over a comprehensive review of ongoing initiatives in the ASEAN transport cooperation. In addition, the ASTP is expected to envisage a longer term vision on ASEAN transport cooperation beyond 2015, as it would help specifying the goals and actions for the next five years.

From a cross-sectional perspective, the ASTP should be designed in consistence with other overarching initiatives such as the ASEAN Economic Community (AEC) Blueprint and the Master Plan on ASEAN Connectivity (MPAC). The year of 2015 will be monumental for ASEAN as it would usher in the ASEAN Community in accordance with the AEC Blueprint and also the Blueprints for the ASEAN Political-Security Community (APSC) and the ASEAN Socio-Cultural Community (ASCC). The MPAC, which is scheduled to be adopted in the 17th ASEAN Summit in October 2010, is expected to facilitate the establishment of the ASEAN Community. As the transport sector is one of the key components in ASEAN Community building, the role of the ASTP cannot be overemphasized. In addition, the Comprehensive Asia Development Plan (CADP), formulated under the purview of the East Asia Summit (EAS), has strong relevance to the ASTP as it will investigate the impacts of logistic (transport) infrastructure development on industrial placement and economic development with a strong emphasis on ASEAN.

In addition to these ASEAN specific contexts, the ASTP would reflect other ongoing developments in the world. The changing economic landscape, mainly due to emergence of new economic powers such as China and India, has been urging ASEAN to augment its regional competitiveness by further deepening economic integration as well as enhancing regional connectivity. At the same time, this development has opened a new opportunity for ASEAN to physically anchor itself as the transportation, information and communication technology, and tourism hub of this economically vibrant and growing region. Growing global concerns on environments, climate changes, safety and security have emerged as additional challenges for transport cooperation in ASEAN.

The rest of this sub-section will provide more details on the first two of the above mentioned backgrounds of the ASTP. The third issue of growing global concerns will be briefly discussed in the latter half of Chapter 6.

1.1.1 HISTORY OF TRANSPORT COOPERATION IN ASEAN

The remarkable economic growth in many of the ASEAN Member States (AMSs) has been a success story of economic development in the world. During this growth, AMSs have successfully been attracting Foreign Direct Investment (FDI), upgrading industrial structure, and exposing themselves more into the world economy through participation in the regional production and distribution networks. All these developments have been supported by continuous improvement of the transport network in the region. However the challenge is still ongoing. Indeed, an efficient, secure and integrated transport network in ASEAN is still vital for realizing the full potential of the ASEAN Free Trade Area (AFTA) as well as in

further enhancing the attractiveness of the region as a single production, tourism and investment destination. An integrated transport network is also vital for narrowing of development gaps in the region.

In the early days, transport cooperation in ASEAN was conducted as a part of five-year integrated framework plans for the periods of 1982-1986, 1987-1991, and 1992-1996. Reflecting the growing importance of transport sector, ASEAN established the ASEAN Transport Ministers Meeting (ATM) in 1996. At the 1st ATM in Bali, Indonesia, ASEAN Transport Ministers adopted a ***Ministerial Understanding on ASEAN Cooperation in Transportation*** and revised the implementation timeframe of ***the Plan of Action in Transport and Communications*** from 1994-1996 to 1996-1998. The subsequent plan, ***the ASEAN Transport Cooperation Framework Plan*** for 1999-2004, marked a significant step in ASEAN transport cooperation in the sense that it was the first dedicated plan for the transport sector.

In fulfilling its role, the ASEAN transport sector is currently guided by ***the ASEAN Transport Action Plan (ATAP) 2005-2010*** that covers maritime, land and air transport, and transport facilitation. As ATAP will soon expire in 2010, a successor plan will need to be prepared as ***the ASEAN Strategic Transport Plan (ASTP) 2011-2015***. The ASTP 2011-15 will be the final stage of five-year plans and will act as the main reference for ASEAN transport cooperation to support the establishment of the AEC by 2015.

1.1.2 ASEAN ECONOMIC COMMUNITY BLUEPRINT

At the 9th ASEAN Summit in October 2003, ASEAN Leaders declared that the AEC shall be the goal of regional economic integration by the year 2020 (Declaration of ASEAN Concord II). In addition to the AEC, the ASEAN Political-Security Community (APSC) and the ASEAN Socio-Cultural Community (ASCC) were defined as the other two integral pillars of the envisaged ASEAN Community.

At the 12th ASEAN Summit in January 2007, in Cebu, the Philippines, ASEAN Leaders agreed to accelerate the establishment of ASEAN Community from 2020 to 2015. The AEC Blueprint was adopted at the 13th ASEAN Summit in November 2007, in Singapore. The AEC Blueprint is a very significant development in ASEAN's efforts toward deepening regional economic integration in the sense that it defined clearly the end goals and timelines as a binding document for the AMSs.

The AEC Blueprint envisages four characteristics of the AEC: (i) single market and production base, (ii) competitive economic region, (iii) equitable economic development, and (iv) integration into the global economy. For all these characteristics, the expected role of transport sector is substantial. In order to transform ASEAN as a single market and production base and to be a more competitive economic region, all countries and regions in ASEAN need to be connected with a secure and integrated transport network as well as additional measures for trade and transport facilitation. By improving regional transport networks, less developed regions in ASEAN, such as Cambodia, Lao PDR, Myanmar, Vietnam and remote islands are expected to have more opportunities to participate in the regional production and distribution networks which would accelerate their economic development. Improvement in transport linkages with economies outside ASEAN is vital for further enhancing ASEAN's participation in global supply networks.

Table 1-1-1 Transport Undertakings in the AEC Blueprint (Excerpt)

Strategic Approach	Priority Actions			
	2008-2009	2010-2011	2012-2013	2014-2015
A. Towards a Single Market and Production Base				
A2. Free Flow of Services *ASEAN Framework Agreement on Services (AFAS)*	At least 51% foreign equity participation for the 4 priority services sectors, including air transport and tourism (2008). At least 49% foreign equity participation for logistics services (2008).	At least 70% foreign equity participation for the 4 priority services sectors, including air transport and tourism (2010). At last 51% foreign equity participation for logistics services (2010).	At least 70% foreign equity participation for logistics services (2013).	
B. Towards a Highly Competitive Economic Region				
B4. Infrastructure Development *ASEAN Transport Action Plan (ATAP)* - Singapore-Kunming Rail Link (SKRL) - Road Safety Requirements	Completion of Poipet-Sisophon Rail Link (2009).	Implementation of the ASEAN five-year Regional Road Safety Action Plan.	AMSs to develop ASEAN standard measures for road safety.	
- ASEAN Framework Agreement on Multimodal Transport (AFAMT)	AMSs have enacted necessary domestic legislations to put into effect the AFAMT (i.e. to allow multimodal transport operators from other AMSs to operate in their respective territory).	At least two AMSs implementing AFAMT.	ASEAN-wide implementation of AFAMT.	
- ASEAN Framework Agreement on the Facilitation of Goods in Transit (AFAFGIT)	Implement AFAFGIT for road transport operations contingent on the speedy conclusion of Protocol 2 (Frontier Ports) and Protocol 7 (Customs Transit). Completion of road construction /improvement of below Class III road sections of the designated Transit Transport Routes (TTR) of Protocol 1 of the ASEAN Highway Network, i.e., Poipet-Sisophone (48km) and Kratie Stung Trend (198km).	Conclude and sign Protocol 6 (Railway Borders and Interchange Stations) of AFAFGIT. Installation of the harmonized Route Numbering signs in the designated TTR under Protocol 1 of AFAFGIT.		Full implementation of the AFAFGIT (for road and rail transport operations)
- ASEAN Framework Agreement on the Facilitation of Inter-State Transport (AFAFAIST)	Conclude and adopt final text of AFAFAIST.	Start implementation of AFAFAIST (2010).		Full implementation of AFAFAIST.
Roadmap for Integration of Air Travel Sector (RIATS) - Multilateral Agreement on the Full Liberalization of Air Freight Services (MAFLAFS) - Multilateral Agreement on the Full Liberalization of Passenger Air Service (MAFLPAS)	Conclude and sign MAFLAFS (2008). Conclude and sign MAFLPAS (2008). Adopt concept and enabling framework for ASEAN Single Market (ASAM) (2008). Develop the implementation arrangement / agreement on ASAM (which will be implemented by 2015).	Implementation of MAFLAFS (in accordance with RIATS) Implementation of MAFLPAS (in accordance with RIATS) Finalize the implementation arrangement / agreement on ASAM.	ASEAN-wide implementation of MAFLPAS (in accordance with RIATS) Implement arrangement / agreement on ASAM.	ASEAN-wide implementation of arrangement / agreement on ASAM.
Roadmap towards and Integrated and Competitive Maritime Transport in ASEAN.	Develop strategies for an ASEAN Single Shipping Market	Implement the Maritime Transport Roadmap.	Implement the Maritime Transport Roadmap.	Review the Maritime Transport Roadmap for the next 3-5 years.

Source: ASEAN Economic Community (AEC) Blueprint in 2007

Key transport undertakings are well positioned in the AEC Blueprint and the attached strategic schedule (Table 1-1-1). As will be reviewed in Chapter 5, some of the scheduled actions are being done in time, while others are delayed. In designing the ASTP, the above schedule needs to be revised with reference to the progress made so far.

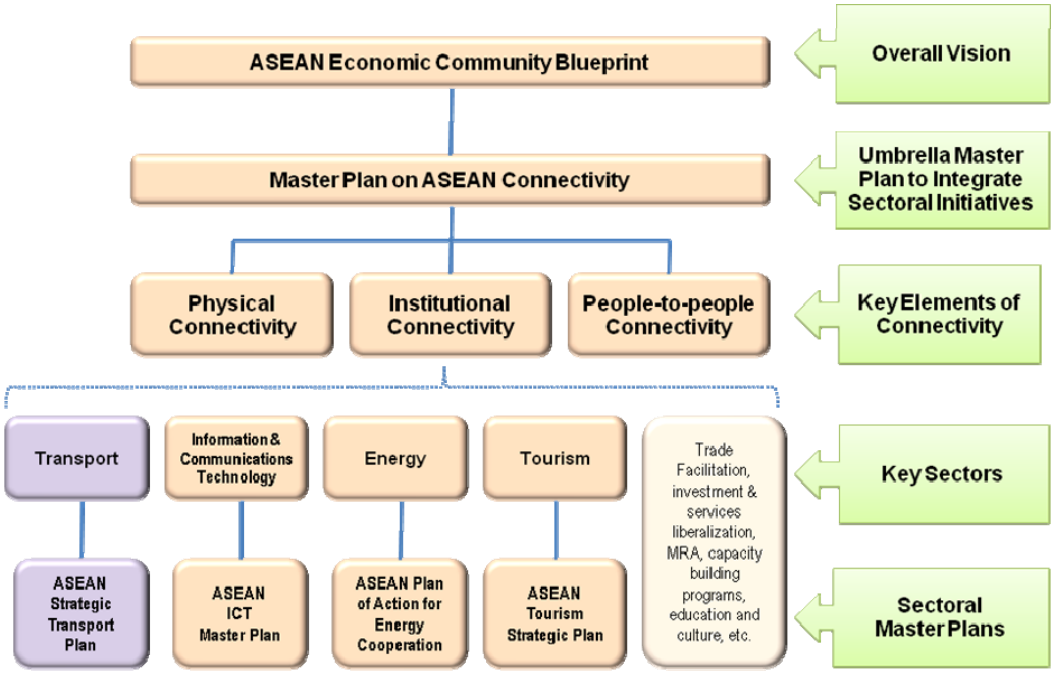
The AEC Blueprint is comprehensive and ambitious enough to identify 17 core elements of the AEC and delineate 176 priority actions. The wide scope of the AEC Blueprint, though a

desirable feature in itself, makes it difficult to trace the progress of implementation. Indeed, in order to ensure the on-schedule implementation of the AEC Blueprint, it is important to take a stock of all ongoing initiatives in the AEC Blueprint and under the purview of various line Ministerial Meetings. The MPAC is expected to contribute to this purpose.

1.1.3 MASTER PLAN ON ASEAN CONNECTIVITY

At the 15th ASEAN Summit in Cha-am Hua Hin, Thailand, in October 2009, ASEAN Leaders issued a statement on ASEAN Connectivity, with the expectation that the concept would (1) intensify and strengthen ASEAN Community building efforts, not only in terms of enhanced regional cooperation and integration, but also through people-to-people contacts; and (2) complement the ongoing regional efforts to realize a people-oriented ASEAN Community by 2015 with a focus on fostering a sense of shared cultural and historical linkages. From a wider perspective, the concept of ASEAN Connectivity is expected to contribute to (i) promote ASEAN centrality in regional architecture; (ii) facilitate the establishment of the ASEAN Community which is competitive and increasingly interlinked with the wider Asia-Pacific region and the world; and (iii) serve as a foundation for a more enhanced East Asian connectivity.

In response to the Leaders' statement, an ASEAN High Level Task Force (HLTF) was established to draft the MPAC, which would address the regional issues of infrastructure development, trade facilitation, and people's mobility as key elements, taking into account the work done and planned to ensure optimum synergy rather than duplication of work. In short, the MPAC is expected to serve as the umbrella master plan to integrate existing initiatives, including both those ongoing and currently under development, in order to facilitate the on-time establishment of the ASEAN Community as shown in Figure 1-1-1. The MPAC is to be submitted to the 17th ASEAN Summit in October 2010 for adoption through the ASEAN Coordinating Council (ACC), after consultation with the APSC Council, the AEC Council and the ASCC Council.

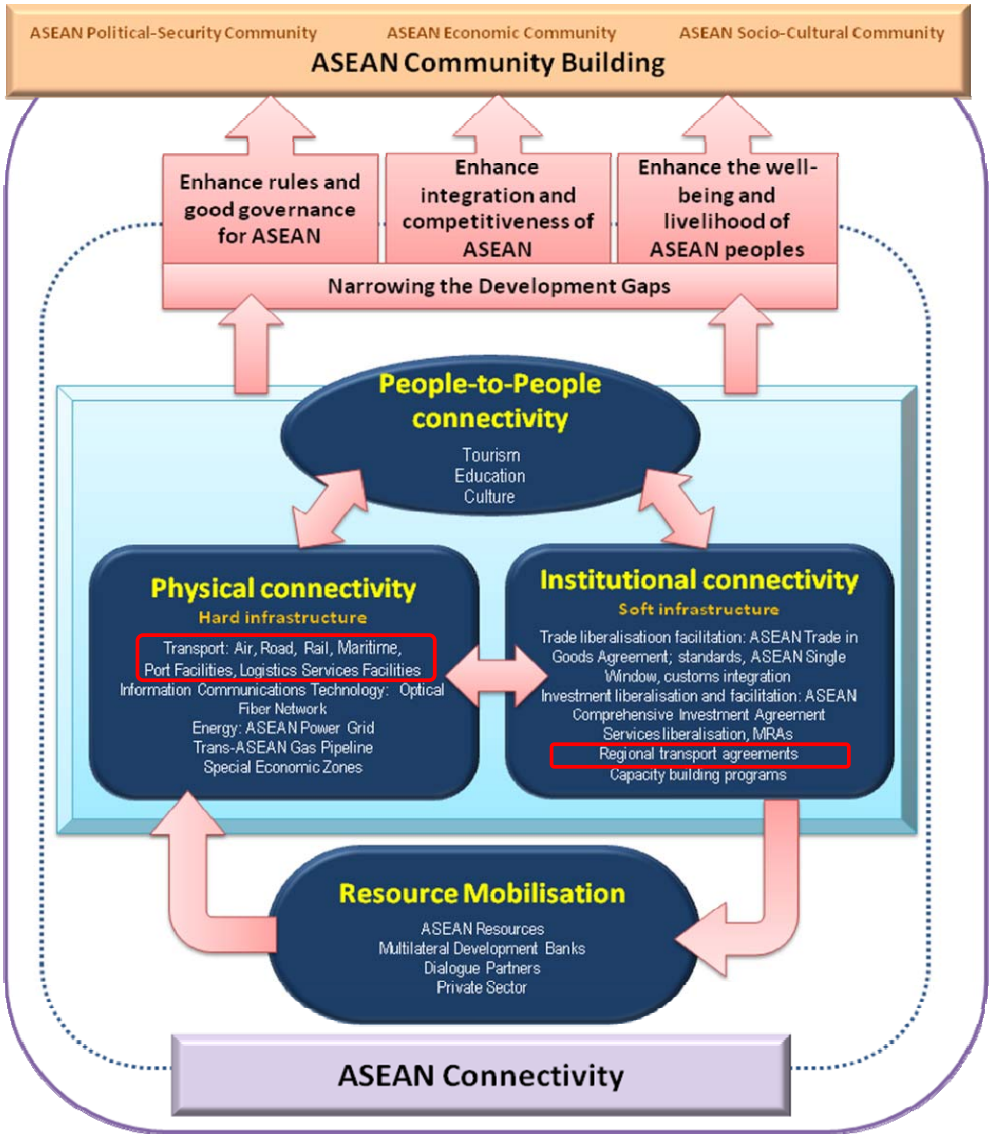


Source: ERIA Study Team.

Figure 1-1-1 ASTP in ASEAN Community Building

According to the outline of the MPAC, ASEAN put a significant emphasis on infrastructure development in the sectors of transport, Information and Communication Technology (ICT) and energy, among others. Except for the ASEAN Plan of Action for Energy Cooperation (APAEC), three sectoral master plans for transport, ICT, and tourism are currently under development. In view of the MPAC as the umbrella master plan, these sectoral master plans, including the ASTP, should be designed in consistence with the visions and strategies of the MPAC and the AEC Blueprint.

Although the concept of ASEAN Connectivity is promising to integrate the various initiatives towards the ASEAN Community building, it requires some deliberation to translate the concept into a practical definition in order to establish an effective linkage between sectoral master plans and the MPAC. Figure 1-1-2 below is an illustration to highlight the role of the ASEAN transport cooperation in enhancing the ASEAN Connectivity to contribute to the establishment of the AEC.



Source: *The Master Plan on ASEAN Connectivity*, draft as of 24 September 2010.

Figure 1-1-2 Interaction between ASEAN Connectivity and ASEN Community

As illustrated in Figure 1-1-2, the ASEAN Connectivity is expected to contribute to the ASEAN Community building by (1) enhancing rules and good governance for ASEAN, (2) enhancing integration and competitiveness of ASEAN, (3) enhancing the well-being and livelihood of ASEAN people, and (4) narrowing the development gaps in ASEAN. The key elements of ASEAN Connectivity are identified as physical connectivity, institutional connectivity, and people-to-people connectivity.

Physical connectivity is observed as physical (hard) infrastructures. In transport sector, physical connectivity can be enhanced by eliminating missing links in transport networks and/or by improving the quality of transport infrastructure, such as roads, railways, ports, and airports. From the perspective of ASEAN as a whole, the initiatives for the ASEAN Highway Network (AHN) and Singapore Kunming Rail Link (SKRL) need to be highlighted as priority.

Institutional connectivity refers to soft infrastructures, i.e. various international/regional agreements to liberalize and facilitate international transaction of goods and services as well as people's mobility across national borders. Specific examples from transport sector include various agreements and initiatives under the ATAP and the ASTP, such as the Roadmap for Integration of Air Travel Sector (RIATS), the Multilateral Agreement on the Full Liberalization of Air Freight Services (MAFLAFS), the Multilateral Agreement on the Full Liberalization of Passenger Air Services (MAFLPAS), the ASEAN Framework Agreement on the Facilitation of Goods in Transit (AFAFGIT), the ASEAN Framework Agreement on Multimodal Transport (AFAMT), the ASEAN Framework Agreement on the Facilitation of Inter-State Transport (AFAFIST), and other initiatives to liberalize logistics services and tourism.

Physical and institutional connectivity are closely interrelated. Without physical connectivity, there is no room to expect the effective role of institutional connectivity. On the other hand, institutional connectivity can also be a prerequisite to enhance physical connectivity as the former often require relevant international/regional agreements. Physical connectivity and institutional connectivity are key policy elements in determining the quality of broadly-defined infrastructure, on which all economic activities take place. Based on this infrastructure, people-to-people connectivity can be enhanced through education, cultural exchanges and tourism.

In order for all these take place, resource mobilization is of crucial importance. In addition to ASEAN's own resources, a new regional financial design such as the ASEAN Infrastructure Fund (AIF) will need to be established. Considering the huge demand for infrastructure development in ASEAN, however, it is inevitable and realistic to take an account of Official Development Assistance (ODA) dialogues and to introduce a new design for private participation into the scope of resource mobilization.

The enhancement of ASEAN Connectivity is a necessary step for ASEAN to deepen economic integration, as it would reduce the costs of international trade in goods and services such as services link costs and network set-up costs. And the resulting deeper economic integration can contribute to narrow development gaps by expanding the frontiers of production and distribution networks, through the fragmentation of production activities. At the same time, the deeper economic integration will increase the chance of people-to-people contacts, further nurturing a sense of community in ASEAN. All in all, the ASEAN transport undertakings are expected primarily to enhance physical and institutional connectivity, thereby to deepen economic integration, and then to contribute to the ASEAN Community building.

1.1.4 COMPREHENSIVE ASIA DEVELOPMENT PLAN

The Comprehensive Asia Development Plan (CADP) was drafted by Economic research Institute for ASEAN and East Asia (ERIA), in response to the request from Leaders of East Asia Summit (EAS)[1]. The CADP provides a grand spatial design of economic infrastructure and industrial placement, applying a novel analytical approach based on the fragmentation theory and new economic geography, in order to pursue both 'deepening economic integration' and 'narrowing development gaps' at the same time, with a strong emphasis on ASEAN. In this sense, the CADP shares a common goal with the AEC Blueprint and the MPAC.

In particular, the key analytical devise in the CADP, Geographical Simulation Model (GSM), can be a powerful tool in designing logistics infrastructure from a region-wide perspective by quantifying the economic impacts of the development of both hard and soft infrastructure. Figures 1-1-3 and 1-1-4 are the examples of simulation analyses using GSM.

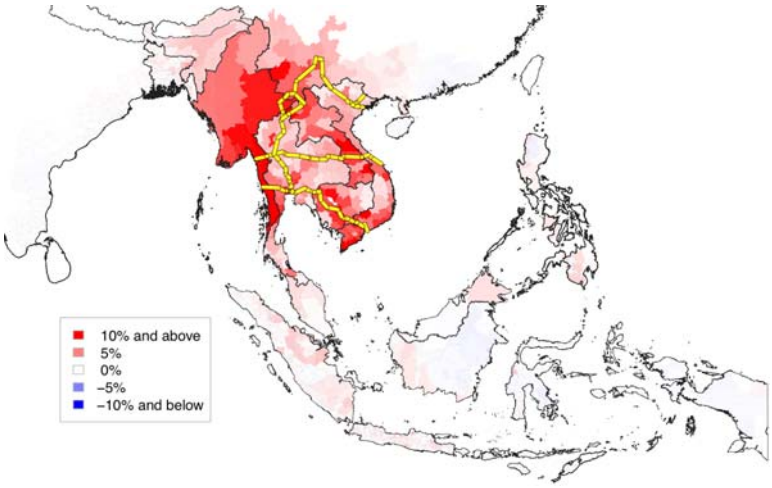
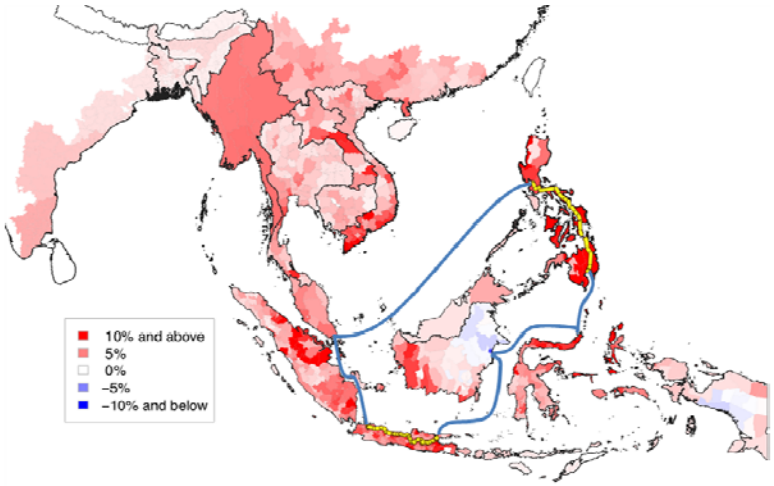


Figure 1-1-3 Gains in Regional GDP as Compared to Baseline Forecast: 10 Years after the Improvement of Three Economic Corridors in the Indochina Peninsular



Source: ERIA (2010). *Comprehensive Asia Development Plan*, ERIA Research Project Report FY2010, No.7-1.

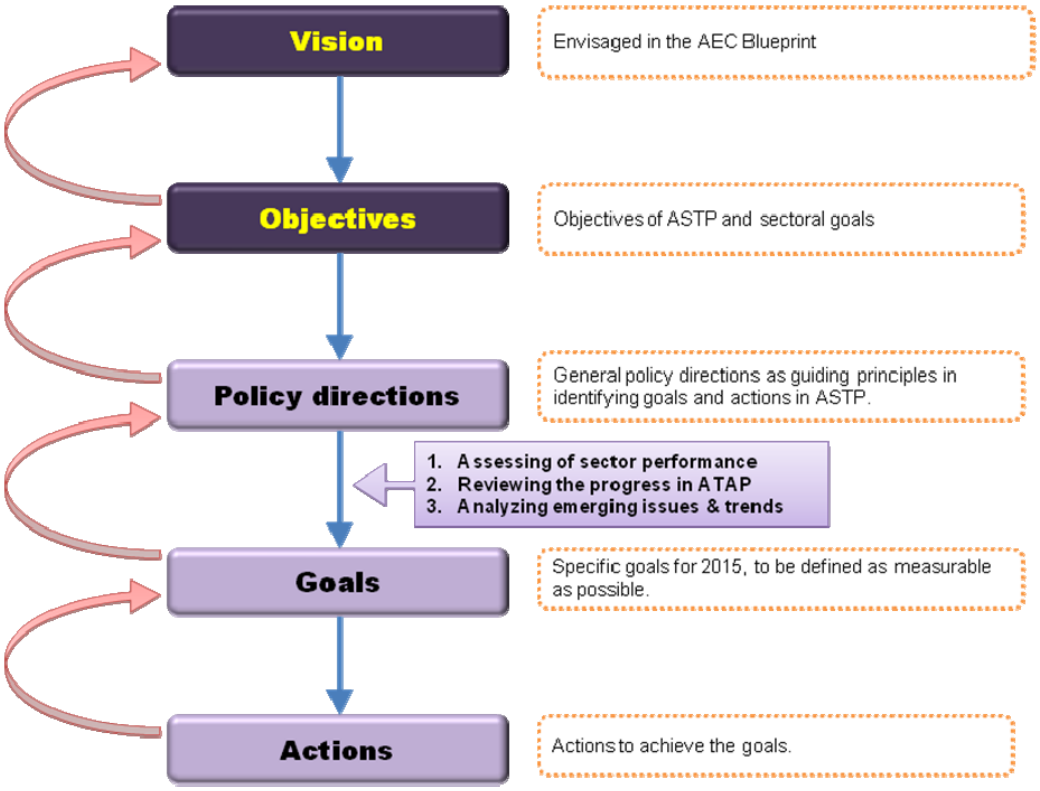
Figure 1-1-4 Gains in Regional GDP as Compared to Baseline Forecast: 10 Years after the Improvement of "Ring" Corridors

[1] Joint Press Statement of the EAS on the Global Economic and Financial Crisis, 3 June 2009.

1.2 OUTLINE OF ASTP 2011-2015

1.2.1 OVERRIDING VISIONS AND LOGICAL STRUCTURE

As described in the previous section, the fundamental role of the ASTP 2011-2015 would be to support the on-time establishment of the ASEAN Community, the AEC in particular, by enhancing the ASEAN Connectivity. Therefore, the specific objectives of ASTP should be defined with reference to the overriding visions envisaged in the AEC Blueprint; (i) single market and production base; (ii) competitive economic region; (iii) equitable economic development; and (iv) integration into the global economy.



Source: ERIA Study Team.

Figure 1-2-1 Logical Structure of ASTP

In addition, ASEAN Leaders clearly defined the ultimate objective of the ASEAN transport cooperation, in the ASEAN Leaders' Statement on ASEAN Connectivity issued in October 2009, viz. to develop an efficient and integrated transport system which will support the realization of the AEC and will help ASEAN to integrate with the global economy, improve its competitiveness and enhance the inflow of foreign direct investment.

All elements in Figure 1-2-1, starting from visions, objectives, policy directions, goals and actions, should maintain logical consistency. While the basic strategy of the ERIA Study Team is a top-down approach as indicated in blue arrows in Figure 1-2-1, the reverse causality should also be paid adequate attention as indicated in pink arrows. Specific actions needs to be designed to achieve specific goals, the goals should be defined to be as measurable as possible and in accordance with the policy directions. The policy directions should be in line with the objectives of the ASTP and ensure that the ASTP should contribute in ASEAN Community building.

1.2.2 OBJECTIVES OF ASTP AND SECTORAL GOALS

Based on these premises, the specific objectives of the ASTP 2011-2015 have been defined as follows.

(1) To identify strategic actions to support the establishment of the AEC by 2015, that will also compliment existing transport undertaking.

(2) To identify long-term vision of the ASEAN transport cooperation beyond 2015.

(3) To undertake a comprehensive assessment of the current transport situation in ASEAN and of the implementation of the current action plan with a view to identifying the gaps and priorities for the period 2011-2015 and beyond.

Based on "Overview on ASEAN Connectivity in ASEAN Secretariat Information Paper", which was authorized at the 1st meeting of the high level task force on ASEAN Connectivity on 10-11 March 2010, sectoral goals are proposed below.

(1) Land Transportation

- Establishment of safe, efficient, intelligent and environmentally-friendly integrated sustainable regional land transport network and corridors for the promotion of trade and tourism within ASEAN and with other countries.
- Implementation/establishment of the Singapore-Kunming Rail Link and the ASEAN Highway Network.

(2) Air Transportation

- ASEAN integration in air transport through establishing regional open sky agreements and achieving globally-acceptable standards in aviation security and safety

(3) Maritime Transport

- Establishment of integrated, competitive and seamless maritime transport network.
- Realizing the environment/user-friendly port, and safety navigation.

(4) Transport Facilitation

- Establishment of integrated, efficient and globally competitive logistics and seamless multimodal transport system to enhance the intra ASEAN Connectivity.
- Implementation of green logistics for global environment preservation.

1.2.3 TASKS AND STUDY PLAN

In order to achieve these objectives, the Terms of Reference (TOR) for the ASTP mandated the ERIA Study Team to fulfill the following tasks.

(1) Comprehensively take stock of the progress achieved, results realized and the challenges and issues facing the implementation of the ATAP 2005-2010, RIATS and the Roadmap towards an Integrated and Competitive Maritime Transport in ASEAN as well as other relevant ASEAN agreements.

(2) Identify and analyze emerging social, environmental and economic developments at the national, sub-regional, regional and global levels that may impact on the economies of the region and transport requirement.

(3) Evaluate the relevance of the transport development-related measures under the AEC Blueprint including transport related studies, considering the progress made and the emerging challenges in the internal and external economic environments.

(4) Determine if the current institutional structures and mechanisms are appropriate and facilitating or otherwise constraining the accelerated implementation of the ASEAN transport initiatives.

(5) Recommend policy directions for intensified cooperation in the ASEAN transport sector for 2011-2015 and its actions for a regulatory framework and planning strategies including the institutional structures and implementation arrangements, if necessary, as well as measures to enhance its effectiveness for submission to the ASEAN Senior Transport Officials Meeting (STOM) or ASEAN Transport Ministers Meeting (ATM).

(6) Indicate priorities that ASEAN might have to pursue in the next five years (2011-2015) to achieve accelerated increase in trade, tourism and investments.

Translating these tasks into a practical study plan, the ERIA Study Team has been working for the followings.

(1) Reviewing the implementation of following ongoing initiatives and maintaining continuity of the actions undertaken in these initiatives:

a) AEC Blueprint

b) ATAP

c) RIATS

- Multilateral Agreement on the Full Liberalization of Air Freight Services (MAFLAFS)
- Multilateral Agreement on the Full Liberalization of Passenger Air Services (MAFLPAS)

d) Roadmap towards an Integrated and Competitive Maritime Transport in ASEAN

e) Transport Facilitation Agreements

- AFAFGIT
- AFAMT
- AFAFIST

f) Transport sector cooperation with the Dialogue Partners

(2) Maintaining consistency with other development agenda:

a) MPAC

b) CADP

(3) Reviewing economic and social circumstances of ASEAN:

a) Poverty

b) Accessibility

c) Urbanization

(4) Reviewing current status of the transport sector and identifying overall issues

a) Current status of the ASEAN transport sector performance

b) On-going initiatives under the ASEAN and sub-regional cooperation

(5) Evaluating and analyzing the following:

a) Trend of the ATAP 2005-2010

b) Impact of transport infrastructure to regional economy

(6) Identifying additional action items and recommending adjustments to on-going action items in response to the emerging developments and issues in the following perspectives:

a) Intra-ASEAN development trends

b) Regional perspective

c) Global perspective

d) Environmental perspective

e) Safety and Security perspective

1.2.4 PROPOSED POLICY DIRECTIONS

The ERIA Study Team proposes the following six policy directions, as guiding principles to translate the visions and objectives into practical and implementable goals and actions.

(1) Maintain **the continuity of actions** for the implementation of the AEC Blueprint to develop an integrated and harmonized trans-ASEAN transportation network.

(2) Enhance connectivity of **intra-ASEAN transport networks to support** the MPAC.

(3) Leverage on the strong Asian economic growth and increased cooperation of ASEAN with regional partners, strengthen **transport network links with regional partners**, in line with the objectives of the MPAC.

(4) Capitalize on the **strategic geographical location** of ASEAN and accelerated pace of globalization, upgrade selected transport infrastructure components and services to serve as vital links to international supply routes.

(5) Incorporate **environmental and climate change** considerations in planning, development, operations and management of ASEAN transport networks in line with relevant global initiatives.

(6) Enhance regional capability to further improve the level of **safety and security** in the provision of transport services.

1.2.5 SPECIFIC GOALS AND ACTIONS

Based on the studies and policy directions identified in the previous two sub-sections, the ERIA Study Team has been working to extract specific goals and actions to be listed in the ASTP. The tentative list of goals and actions, mainly based on the review of existing transport undertakings, is proposed in Chapter 6 of this Final Report.

1.3 STRUCTURE THE FINAL REPORT

The remainder of the Final Report is organized as follows. Chapter 2 overviews economic, social and environmental backgrounds of ASEAN region before discussing transport specific issues related directly to the ASTP. Chapter 3 reviews the current status and performance of the transport sectors such as road, rail, inland waterways, air and maritime transport in ASEAN. In addition, the chapter also discusses the current status of transport facilitation initiatives that is vital for improving the performance, efficiency and effectiveness of the other three major transport sectors especially at the intra-ASEAN level. Chapter 4 takes stock of previous and ongoing transport undertakings in ASEAN, and reviews the progress of implementation of the 48 actions proposed in the ATAP, as well as the specific measures defined in the RIATS and the Roadmap towards an Integrated and Competitive Maritime Transport in ASEAN. Chapter 5 discusses the emerging development trends and challenges surrounding the ASEAN transport cooperation. Based on the assessment in Chapters 4 and 5, Chapter 6 presents a list of specific goals, actions, and milestones for the ASTP. Chapter 7 highlights tentative proposals to facilitate the implementation of actions proposed in the ASTP, based on an assessment on the current institutional arrangements in ASEAN with an explicit focus on the monitoring and implementation mechanisms. Chapter 8 discusses the future direction of the transport sector cooperation in ASEAN beyond 2015.

CHAPTER 2 ECONOMIC AND SOCIAL CONTEXT OF ASEAN

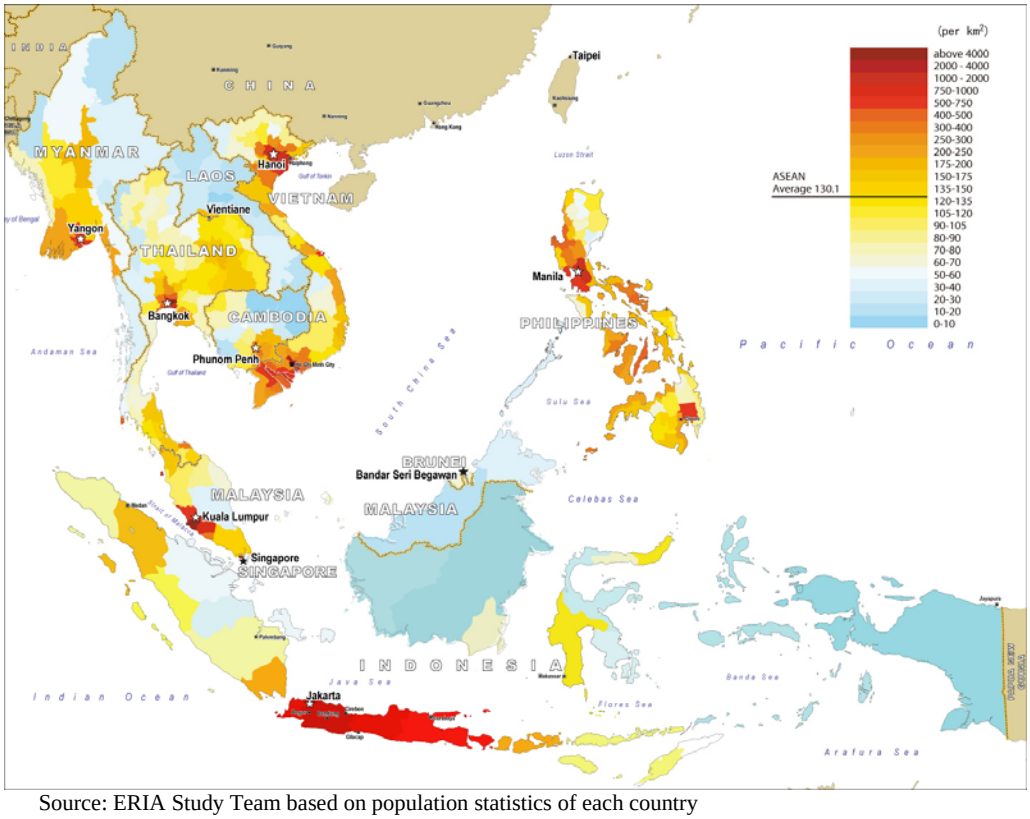
2.1 INTRODUCTION

In this chapter, economic, social and environmental circumstances of the ASEAN region are overviewed prior to transport specific issues related to the ASEAN Strategic Transport Plan (ASTP). Starting from the economic issues, the major six aspects are briefly illustrated such as; land area and population, economy and industrial structure, trade, business environment, tourism and investment. Secondly, social and environmental issues are addressed with regard to poverty, accessibility, urbanization and the carbon emissions. Finally, logistics environment of ASEAN Member States (AMSs) are reviewed utilizing Logistics Performance Index (LPI) and the World Bank's Doing Business.

2.2 ECONOMIC ISSUES

2.2.1 LAND AREA AND POPULATION

AMSs span over an area of 4.46 million km^2 with a population of approximately 584 million people (8.7% of the world population) in 2008[1]. The most populous country in ASEAN is Indonesia, where 232 million people or about 40% of the total ASEAN population are living followed by Philippines (88 million) and Viet Nam (87 million). The country with the smallest population in ASEAN is Brunei Darussalam (0.4 million).



Source: ERIA Study Team based on population statistics of each country

Figure 2-2-1 Population Density of AMSs

There is also variation across the region in terms of land area. Land area ranges from under 704 km^2 in the case of Singapore to over 1,860,380 km^2 for Indonesia. Population density

[1] Source: ASEAN Statistical Yearbook 2008 and IMF World Economic Outlook Database, April 2009

ranges from 24 people per km^2 in Lao PDR to nearly 300 times this density in Singapore, at 6,844 people per km^2. Figure 2-2-1 illustrates the population density of AMSs. In Indochina peninsula, the population density is particularly high at flood plains of major rivers downstream, such as the Ayeyarwady River in Myanmar, the Chao Phraya River in Thailand, the Mekong River and the Hong River in Viet Nam. Java and Bali Islands in Indonesia as well as Luzon, Negros and Cebu Islands in Philippines are also densely populated.

2.2.2 LABOUR FORCE

(1) Employment

Table 2-2-1 summarizes major labour force related indicators of AMSs. Total labour force in the region was 290.3 million in 2007. The agriculture sector still plays a vital roll in absorbing labour force of region. The agricultural sector absorbed 44.5% of the labour force in the study area. Particularly, in four countries in Indochina, share of agricultural labour force accounted for more than half of their total labour force (82.2% in Lao PDR, 62.7% in Myanmar, 59.1% in Cambodia, and 54.7% in Viet Nam). Compared with other countries, industry (including manufacturing) plays an important role in Malaysia (28.5%), Brunei Darussalam (21.4%), Singapore (22.6%) and Thailand (20.7%).

Except for Lao PDR, the service sector absorbing large amount of labour force. The shares of service sector labour force vis a vis total labour force are especially high in Brunei Darussalam (77.2%), Singapore (76.2%), and Malaysia (54.1%).

Noteworthy, the country rely its labour force absorption on agriculture tends to achieve high labour force participation rate and low unemployment rate. This is particularly true for Lao PDR and Cambodia. In these areas, most people earned their living from self-employed agricultural activities, which is quite labour intensive. Thailand successfully achieved low unemployment rate concurrently with industrialization. On the other hand, unemployment rate in Indonesia (8.4%) and Philippines (6.3%) are quite high.

Table 2-2-1 Employment Statistics of AMSs in 2007

	Labour Force (thousand)	Sector-wise Share			Labour Force Participation Rate (age 15-64)	Unemployment Rate
		Agriculture	Industry	Service		
Brunei Darussalam	191	1.4%	21.4%	77.2%	70.1%	3.7%
Cambodia	7,680	59.1%	13.4%	27.5%	82.4%	2.3%
Indonesia	115,443	41.2%	18.8%	40.0%	70.3%	8.4%
Lao PDR	2,964	82.2%	9.3%	8.6%	81.9%	1.4%
Malaysia	11,867	14.8%	28.5%	54.1%	65.5%	3.6%
Myanmar	28,361	62.7%	12.2%	25.1%	79.3%	4.0%
Philippines	37,862	36.1%	15.1%	48.8%	66.8%	6.3%
Singapore	2,411	-	22.6%	76.2%	71.2%	3.2%
Thailand	36,937	41.7%	20.7%	37.4%	77.3%	1.4%
Viet Nam	46,602	54.7%	18.3%	27.0%	77.6%	4.7%
ASEAN	290,317	44.5%	19.0%	36.5%	72.7%	

Source: ILO Key Indicators of the Labour Market, and other various sources
Note: Sector wise share: Brunei Darussalam: 2001 data, Cambodia: 2005, Indonesia, Malaysia, Philippines, Singapore and Thailand: 2007, Lao PDR: 2003, Myanmar 1998, and Viet Nam 2006
Unemployment Rate= Cambodia: 2004 data, and Lao PDR: 2005 data

(2) Labour Migration

Labour migration has contributed to the dynamism of the regional economies. The availability of large supplies of workers from neighbouring countries has made possible the rapid development of the migrant receiving countries. Also, labour migrants are enabled to reduce the cost of services. According to the International Labour Organization (ILO) expert[2], migrant workers comprise about 30% of Singapore's labour force and 20% in the case of Malaysia. Brunei Darussalam probably rely a higher percentage on migrant workers. Remittances sent by migrants from AMSs living in other countries already have exceeded US$ 10 billion in 2005[3]. These remittances have enabled migrants' families to have higher standards of living, and contribute for supporting the stability of national currencies. The investments by migrants in housing and other goods and service have significant impact on local economies because of their multiplier effects.

According to "Labour and Social Trends in ASEAN 2008" published by ILO, 13.5 million migrants in the world were originated from AMSs of which, 5.3 million of migrants were migrated within ASEAN region. The ILO expert [4] pointed out, about 40% of Singapore's emigrants are in Malaysia occupying high-skilled positions, while 73% of Malaysia's overseas workers are working in Singapore. Also, Thailand is a major absorber of workers from Myanmar, Lao PDR and Cambodia. As the same time, large numbers of Thai workers are working in these neighbouring countries. Indonesia, Viet Nam and Philippines remain the largest labour-sending countries. These countries are also receiving middle management personnel, supervisory and skilled personnel from other AMSs and outside ASEAN.

While most governments of AMSs recognize these beneficial impacts and their important role in the economic growth of the region, there are significant problems associated with it. The population of migrants in an irregular situation has grown significantly raising a variety of issues.

2.2.3 ECONOMY AND INDUSTRIAL STRUCTURE

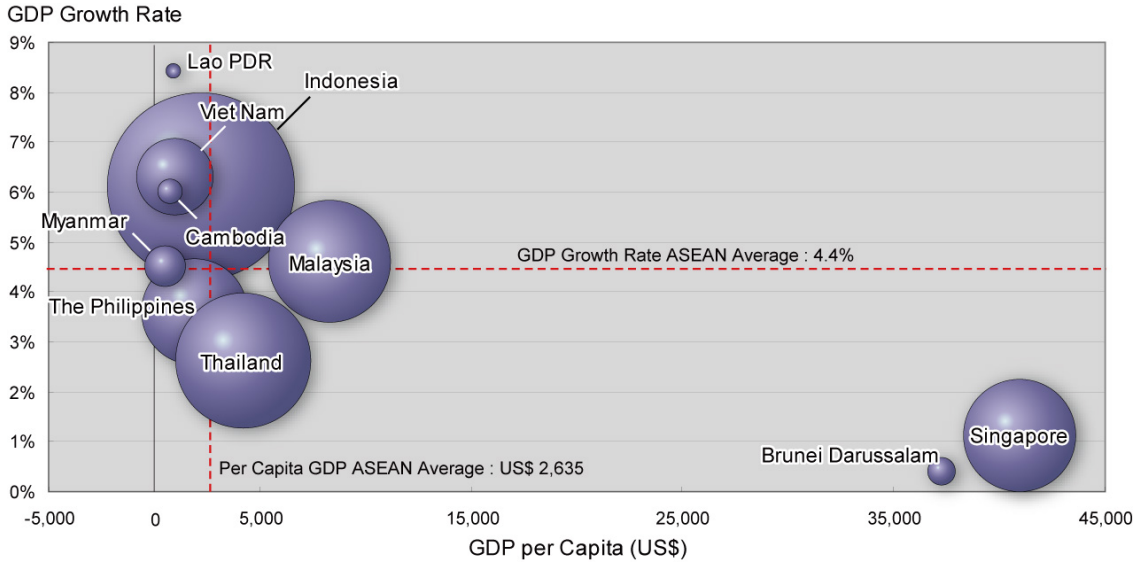
(1) Gross Domestic Products (GDP) and Gross National Income (GNI) per Capita

In 2008, the aggregated GDP of AMSs was US$1,506 billion at nominal price (share in the world: 2.47%) growing at an average rate of around 4.4% per annum. Indonesia is the largest economy in the ASEAN region (US$ 511 billion, share: 39.4%), followed by Thailand (US$274 billion, 18.2%) and Malaysia (US$223 billion, 14.8%).

The GDP of Lao PDR is the smallest and its per capita GDP is the third lowest in ASEAN. In the case of Brunei Darussalam, although its GDP is the third smallest, its GDP per capita is the second highest due to rich oil and gas resources.

The GDPs per capita of Singapore and Brunei Darussalam are far higher than other countries. Since their economies are rather matured, their GDP growth rates are lower than others. In contrast, while economic scales and per capita GDP of Cambodia, Lao PDR, and Viet Nam are lower, they have been achieving rapid economic development. The East-West Economic Corridor and the Second East-West Economic Corridor are expected to contribute further dynamic economic development in these countries.

[2] Manolo Abella, 2008
[3] ASEAN Forum on Labor Migration, the ASEAN Secretariat
[4] Manolo Abella, 2008



Note: Size of circle indicates relative scale of GDP
Source: ASEAN Statistical Yearbook 2008 and IMF World Economic Outlook Database, April 2009

Figure 2-2-2 Major Economic Indicators of AMSs

Indonesia also shows steady economic growth supported by strong demand for their mineral resources (such as natural gas, copper, nickel and tin) and agricultural products (such as coconuts, palm oil, rubber, coffee and sugar) from abroad.

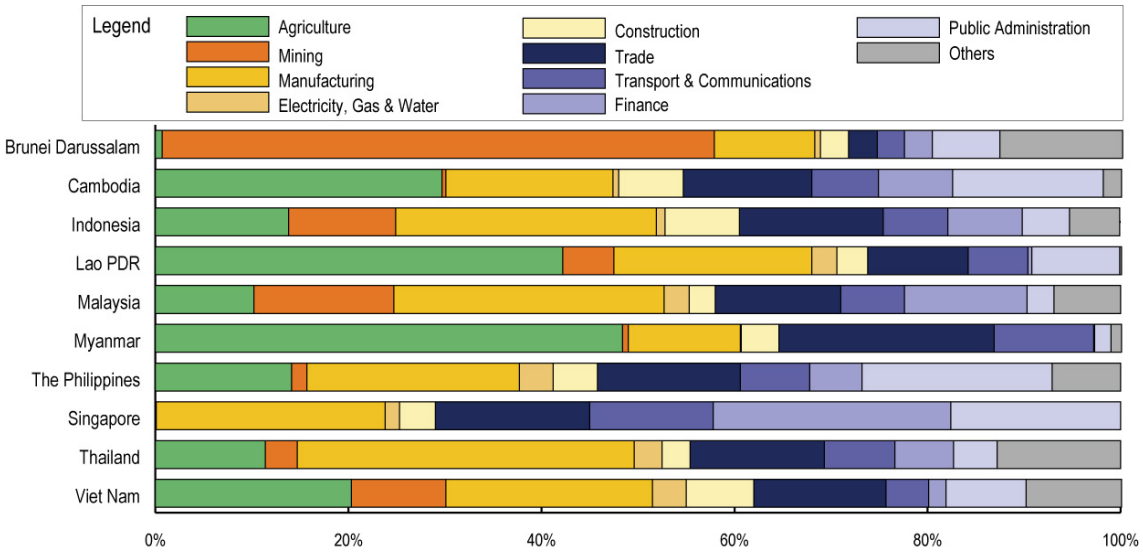
(2) Major Industries and GDP Share by Industrial Sector

Figure 2-2-3 shows the industrial sector-wise GDP share in AMSs in 2008. Each country has its distinguished and unique character.

As mentioned in "2.2.2 Labour Force", agriculture plays vital role in absorbing labour force in ASEAN. However, its contribution to GDP is not so significant due to agricultural sector's low labour productivity compared to the other sectors. However, Myanmar and Lao PDR rely more than 40% of GDP on agriculture. On the other hand, Singapore and Brunei's small land area leaves quite little rooms for agricultural activities, and thus, the agricultural sector's contribution to GDP is limited.

Transport and communication sector plays relatively important roll in Singapore (12.8%) and Myanmar (10.3%). Brunei Darussalam is endowed with oil and gas resources. Thus, the mining sector occupied more than 50% of GDP in the country.

The manufacturing sector plays important role in ASEAN. The sector accounted for more than 20% of GDP of each country, except for Brunei Darussalam, Cambodia and Myanmar. Notably, in Thailand, manufacturing occupied more than one third of GDP (34.9%). Major products of manufacturing industries in Thailand are food products, construction materials, iron and steel products, transport equipment, electrical and electronics products.



Source: Key Indicators of Developing Asian and Pacific Countries 2008 (Website of Asian Development Bank)
Note: Lao PDR: Data of 2006, Myanmar: Data of 2004/05

Figure 2-2-3 Percentage Composition of GDP of AMSs by Industrial Sectors

Table 2-2-2 Major Industries of AMSs

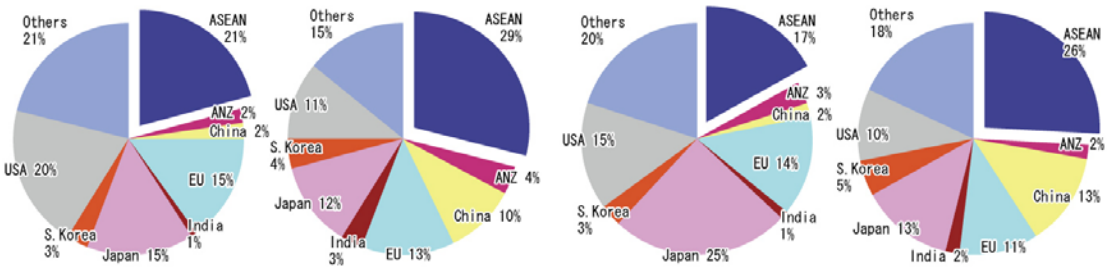
Brunei Darussalam	Oil and Gas
Cambodia	Textiles and Garments, Tourism-related, Agro, Wood-based
Indonesia	Food, Paper and Printing, Textiles, Chemicals and Pharmaceuticals, Metal, Machinery, Electronics
Lao PDR	Garments, Electricity, Wood-Based, Light Industries
Malaysia	Electrical and Electronics, Transport Equipment, Petroleum Products and Petrochemicals, Food, Chemicals and Chemical Products, Basic Meta Products, Fabricated Metal Products
Myanmar	Energy, Mining, Processing and Manufacturing, Power, Construction
Philippines	Electronics Components Manufacturing, Apparel and Clothing Accessories, IT-Enabled Services, Food Processing, Woodcraft and Furniture, Financial Services
Singapore	Oil and Gas, IT, Food Products, Textiles and Apparels, Mining, Electrical Products, Fishery, Forestry
Thailand	Food, Construction Materials, Iron and Steel Products, Transport Equipment, Petroleum Products, Electrical and Electronics Products
Viet Nam	Oil and Gas, IT, Food Products, Textiles and Apparels, Mining, Electrical Products, Fishery, Forestry

Source: ASEAN Secretariat

2.2.4 TRADE

(1) Change in Export Destination/Import Origin of AMSs

Figure 2-2-4 illustrates the import origin and export destination of AMSs in 1998 and 2008. Japan and United States accounted for more than 10% of import and export amounts in 2008, both far smaller shares than a decade ago. On the other hand, the presence of China as both export and import partners has significantly increased. It is more noteworthy that the importance of intra-ASEAN trade has been progressively increasing during the past decade (e.g.: import has increased from 21% in 1998 to 29% in 2008 while export increased from 17% in 1998 to 26% in 2008).



Source: ASEAN Trade Database

Figure 2-2-4 Export Destination/ Import Origin of AMSs in 1998 and 2008

(2) Intra-ASEAN Trade

Table 2-2-3 shows the intra-ASEAN trade matrix in 2008. Also, Figure 2-2-5 schematically illustrates a bilateral trade value among AMSs.

Singapore play important role as regional transport hub of ASEAN, and solely accounted for 42% of import values and 28% of export values in intra-ASEAN trade. Taking the countries advanced transport infrastructure, well organized trade procedure, and its strategic location at the crossroads of the region into consideration, the country will play a central role in logistics in the region.

Malaysia also plays a supporting role as a regional hub. In addition to the country's strategic location on international sea lane, the country has made huge investments in developing several container ports. Import and export amounts of Malaysia, both in ASEAN and in the world, were the second largest among AMSs, next to Singapore.

The most significant linkages are those between Thailand, Indonesia, Singapore and Malaysia. On the other hand, there are the very small flows between non-contiguous less developed countries within ASEAN.

Source: ERIA Study Team based on the data from Direction of Trade, IMF, 2009

Note: trade volume less than US$ 100 million are not shown in the figure

Figure 2-2-5 Trade Volume among AMSs

Table 2-2-3 Trade Matrix Among AMSs in 2008

(Unit: US $100 million)

From \ To	BRU	CAM	IND	LAO	MAL	MYA	PHI	SIN	THA	VIE	ASEAN	World
Brunei D.	-	0	2,141	0	103	0	0	174	80	0	2,498	9,433
Cambodia	0	-	1	0	22	0	1	105	81	210	420	4,290
Indonesia	57	160	-	5	6,813	345	2,437	15,993	4,895	1,781	32,486	155,060
Lao PDR	0	1	3	-	39	0	0	1	569	216	829	1,639
Malaysia	459	154	6,420	11	-	261	2,940	34,247	9,050	2,765	56,307	217,448
Myanmar	0	0	35	0	156	-	3	80	3,447	78	3,799	6,566
Philippines	7	10	663	1	2,864	9	-	4,471	2,024	498	10,547	64,572
Singapore	864	519	35,747	26	40,912	1,286	7,297	-	13,193	8,744	108,588	339,414
Thailand	119	2,019	6,138	1,757	9,717	1,317	3,288	9,844	-	4,962	39,161	173,235
Viet Nam	0	1,131	1,396	119	1,606	25	1,102	2,166	1,244	-	8,789	60,816
ASEAN	1,506	3,994	52,544	1,919	62,232	3,243	17,068	67,081	34,583	19,254	263,424	1,032472
World	2,408	7,362	131,711	2,522	165,801	6,362	75,850	285,578	162,012	75,083	914,689	

Source: Direction of Trade, IMF, June 2009

When paying attention on the bilateral trade values, the following 8 routes are dominant from other routes, and were exceeding US$10 billion in 2008. Of which, particularly, the dominance of trade to and from Singapore – Malaysia, and Singapore – Indonesia is clearly observed.

Singapore-Malaysia trade does not all move by maritime transport, substantial amount of cargos are transported by trucks. The same is true for trade between Thailand and Malaysia. Other than these two routes, most of the cargos are moved through marine time transport.

Table 2-2-4 Major Trade Routes in ASEAN Region and Their Lead Time

	Route	Trade Value (US$ Million)	Major Transportation Routes and Lead Time
Route I	Singapore – Malaysia	75,159	Marine: Singapore Port – Port Klang or Tanjung Pelepas (1 day) Land: ASEAN Highway No. 2 (1 day)
Route II	Singapore – Indonesia	51,740	Marine: Singapore Port – Tanjung Priok or Tanjung Perak (2~4 day)
Route III	Singapore – Thailand	23,037	Marine: Singapore Port – Laem Chabang (2 days)
Route IV	Thailand – Malaysia	18,767	Marine: Laem Chabang – Tanjung Pelepas or Port Klang (3~5 days) Land: ASEAN Highway No. 2 (3 days), Railway (60 hours)
Route V	Indonesia – Malaysia	13,233	Marine: Tanjung Priok or Tanjung Perak – Port Klang or Tanjung Pelepas (3 – 5 days)
Route VI	Philippines – Singapore	11,768	Marine: Manila Port – Singapore Port (4~5 days)
Route VII	Thailand – Indonesia	11,033	Marine: Laem Chabang – Tanjung Priok (5~8 days)
Route VIII	Viet Nam – Singapore	10,910	Marine: Hai Phone or Saigon Port – Singapore Port (2~7 days)

Source: ERIA Study Team, ASEAN Logistics Network Map 2009, and various sources

(3) Trade Dependency

Table 2-2-5 shows trade dependency rate of AMSs in 2008. There is also variation across the region in terms of intra-ASEAN trade dependence and the degree to which a certain country plays a role in that dependence. The high trade dependency rate is found in Lao PDR and Myanmar where over 50% of their imports and exports are sourced within ASEAN. Brunei Darussalam and Cambodia are also heavily depended on their import from other AMSs for their imports (62.5% and 54.3%, respectively).

In the case of Lao PDR and Myanmar, Thailand plays significant role as trade partner. Lao PDR and Myanmar appear to be overly dependent on the Thailand both import and export. In the case of Lao PDR, import value from Thailand accounted for nearly 70% of total import value. Also the country exports 34.7% of its total export value to Thailand. Myanmar is heavily dependent on gas exports to Thailand and the revenues from these exports. Timber is also a major export commodity to Thailand. Myanmar's export to Thailand occupied 52.5% of its total export value. Also, the country's import from Thailand occupied 21% of its total import value. Cambodia's import value from Thailand also occupied 27.4% of countries total import vale.

Taking mentioned tight linkage among these GMS countries into consideration, further infrastructure development as well as various measures to facilitation cross border trade along the east-west economic corridor and the southern economic corridor (2nd east-west economic corridor) are expected to promote economic growth of the region.

Table 2-2-5 Trade Dependency Rate of AMSs in 2008

From \ To	BRU	CAM	IND	LAO	MAL	MYA	PHI	SIN	THA	VIE	ASEAN
Brunei Darussalam	-	0.0%	22.7%	0.0%	1.1%	0.0%	0.0%	1.8%	0.8%	0.0%	26.5%
Cambodia	0.0%	-	0.0%	0.0%	0.5%	0.0%	0.0%	2.4%	1.9%	4.9%	9.8%
Indonesia	2.4%	2.2%	-	0.0%	4.4%	0.2%	1.6%	10.3%	3.2%	1.1%	21.0%
Lao PDR	0.0%	0.0%	0.0%	-	2.4%	0.0%	0.0%	0.1%	34.7%	13.2%	**50.6%**
Malaysia	19.1%	2.1%	4.9%	0.4%	-	0.1%	1.4%	15.7%	4.2%	1.3%	25.9%
Myanmar	0.0%	0.0%	0.0%	0.0%	0.1%	-	0.0%	1.2%	**52.5%**	1.2%	**57.9%**
Philippines	0.3%	0.1%	0.5%	0.0%	1.7%	0.1%	-	6.9%	3.1%	0.8%	16.3%
Singapore	35.9%	7.0%	27.1%	1.0%	24.7%	20.2%	9.6%	-	3.9%	2.6%	32.0%
Thailand	4.9%	27.4%	4.7%	**69.7%**	5.9%	20.7%	4.3%	3.4%	-	2.9%	22.6%
Viet Nam	0.0%	15.4%	1.1%	4.7%	1.0%	0.4%	1.5%	0.8%	0.8%	-	14.5%
ASEAN	**62.5%**	**54.3%**	39.9%	**76.1%**	37.5%	**51.0%**	22.5%	23.5%	21.3%	25.6%	

Note: Trade Dependency (import/export value with a country or region ÷ total import/export value)
Source: ERIA Study Team

2.2.5 TOURISM

Tourism is one of the main priority sectors for ASEAN economic integration as envisaged in the Vientiane Action Programme (VAP) 2004-2010. Tourism has become a key industry and an important generator of income and employment for countries in the region. The ASEAN tourism performance in 2008 continued with positive growth (5.1% per annum), despite of challenges posed by the global financial crisis in 2008 and political situations in some AMSs.

ASEAN attracted more than 65 million tourists in 2008 and received more than US$59 billion[5].

Table 2-2-6 Tourist Arrival in ASEAN in 2008

	Intra-ASEAN		Extra-ASEAN		No. of Tourists Total (thousand)
	No. of Tourists (thousand)	Share to Total	No. of Tourists (thousand)	Share to Total	
Brunei Darussalam	98.0	43.4%	127.7	56.6%	225.8
Cambodia	552.5	26.0%	1,573.0	74.0%	2,125.5
Indonesia	2,774.7	44.5%	3,459.8	55.5%	6,234.5
Lao PDR	1,285.5	64.1%	719.3	35.9%	2,004.8
Malaysia	16,637.0	75.4%	5,415.5	24.6%	22,052.5
Myanmar	462.5	70.0%	198.3	30.0%	660.8
Philippines	254.1	8.1%	2,885.3	91.9%	3,139.4
Singapore	3,571.4	35.3%	6,545.1	64.7%	10,116.5
Thailand	4,125.2	28.3%	10,459.0	71.7%	14,584.2
Viet Nam	515.6	12.1%	3,738.2	87.9%	4,253.7
ASEAN	**30,276.4**	46.3%	**35,121.3**	53.7%	**65,397.7**

Source: ASEAN Tourism Statistics Database

Philippines, Viet Nam, Cambodia, Thailand and Singapore attract international tourists mainly from ex-ASEAN countries. These countries have internationally well known tourists attractions. Intra-ASEAN tourists occupied substantial share in Lao PDR, Malaysia and Myanmar.

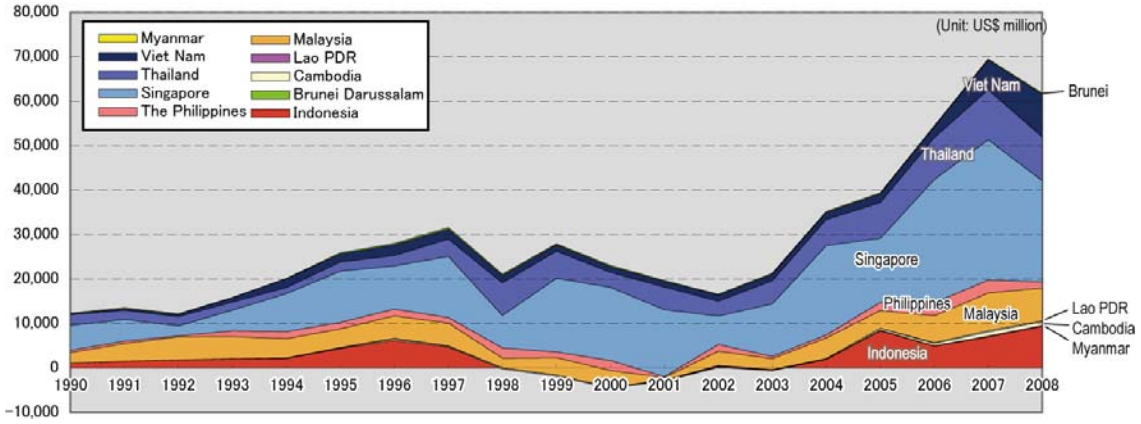
2.2.6 INVESTMENT ACTIVITIES

Foreign direct investments (FDI) play an important role in the rapid economic development of the newly industrializing and developing economies of AMSs. The ASEAN region is a leading recipient of FDI flows in the developing world.

Figure 2-2-6 illustrates historical change in net FDI inflow to AMSs. Foreign direct investment inflow to AMSs had been steadily increased before Asian financial crisis in 1997-98. However, FDI to ASEAN significantly dropped during the crisis. Also, during the first 5 years after the Asian financial crisis, ASEAN's FDI inflow was fluctuated as a result of the economic slowdown in US and Europe and the recession in Japan. ASEAN's FDI inflow has, however, rapidly recovered in 2003 and 2004. Then, FDI inflow has been rapidly increased from 2003-2007 with annual average increase rate of 23.7%. In 2008, FDI inflow to ASEAN was decreased due to world economic crisis.

Indonesia experienced negative net FDI from 1998-2001 and 2003 (FDI inflow is net direct investment by foreigners in Indonesia was smaller than FDI outflow being net direct investment by Indonesians in the rest of the world). FDI net inflows of other nine AMSs were constantly positive during 1990-2008.

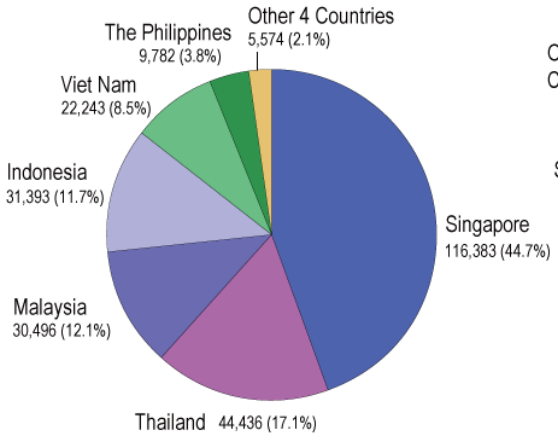
[5] ASEAN Secretariat, 2009

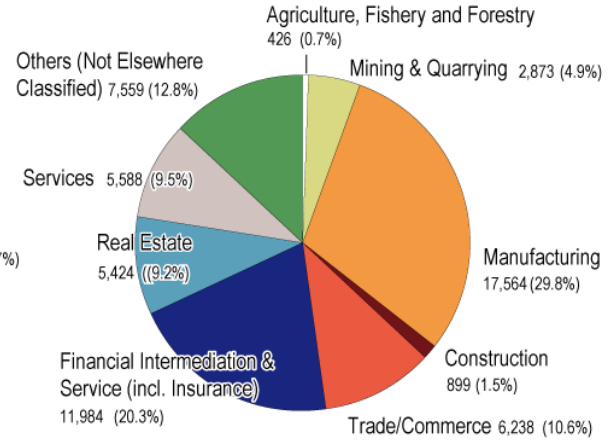


Source: World Bank Development Indicator Database

Figure 2-2-6 Foreign Direct Investment Net Inflow (Current Price)

As shown in Figure 2-2-7 obviously, Singapore attracted the largest FDI. FDI net inflow to Singapore during past five years accounted for 44.1% among AMSs during the same period followed by Thailand (17.1%), Malaysia (12.1%), Indonesia (11.7%), Viet Nam (8.5%) and Philippines (3.8%). These top six countries occupied 97.9% of total FDI to AMSs. Other four countries occupied only 2.1% of total FDI in ASEAN. There were higher FDI inflows in oil and gas sector in Brunei Darussalam, in extractive industries in Myanmar, in telecommunications and textiles and garments manufacture in Cambodia, and in agriculture, finance and manufacturing in the Lao PDR.





Source: UNCTAD World Trade Database

Figure 2-2-7 Share of FDI Inflow by Country from 2002-2008

Figure 2-2-8 Share of Sector-wise FDI Inflow to ASEAN in 2008

The largest FDI sources were, in order, EU, Intra-ASEAN Japan and United States. During 2006-2007, the share of ASEAN's FDI inflow of these four sources vis-à-vis total FDI inflow was as follows: 22.9% (EU), 6.9% (US), 15.1% (Intra-ASEAN) and 14.0% (Japan)[6]. China and India are recently increasing their presence in ASEAN. Chinese and Indian firms were particularly active investors in extractive industries, both within and outside the ASEAN.

Figure 2-2-8 shows the share of ASEAN's FDI inflow by industrial sector vis-à-vis total FDI inflow Sector-wise distribution of FDI inflow was 29.8% for manufacturing sector, 20.3% for financial intermediation and service sector, 10.6% for trade commerce sector, 9.5% for

[6] ASEAN Foreign Direct Investment Statistics Database

service sector, 4.9% for mining and quarrying sector 9.2% for real estate sector, 0.7% for agriculture, fishery and forestry sector and construction sector, and 12.8% for other sectors. In 2008, the top five approvals of FDI in the manufacturing sector was, in order, communication equipment and apparatus, chemicals products, petroleum products, rubber and plastics products, and paper products.

2.3 SOCIAL AND ENVIRONMENTAL ISSUES

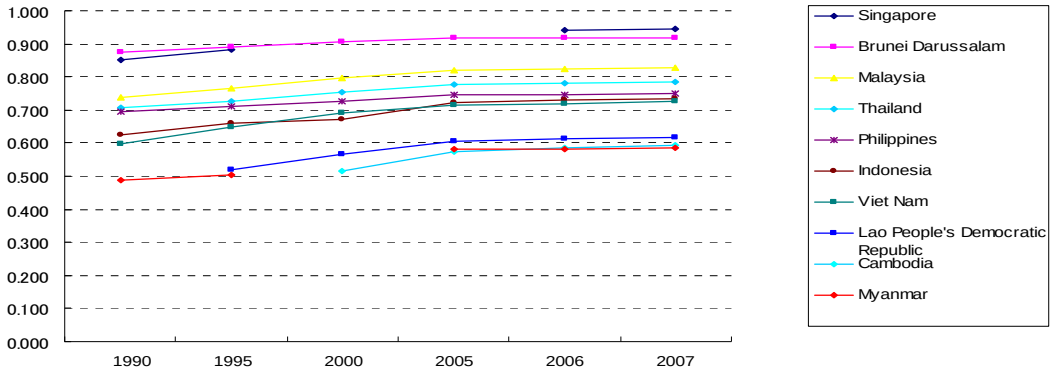
2.3.1 SOCIAL ISSUES

(1) Poverty

Poverty alleviation is one of the targets in terms of social welfare and protection by the ASEAN Socio-Cultural Community (ASCC). In the ASCC Blueprint, the strategic objective is stated as to fully address socio-economic disparities and poverty in AMSs including achieving the Millennium Development Goals (MDGs) of eradicating poverty and hunger.

Among AMSs, Singapore and Brunei Darussalam are situated within the very high human development countries and Malaysia is categorized as the high human development county by Human Development Index (HDI)[7]. Remaining seven countries in the ASEAN are classified as the medium human development countries.

The following Figure 2-3-1 shows trend of HDI in AMSs from 1990-2007. It is indicated that every member states tend to improve their HDI within this two decades. It is, however, the gap among the member states remains wide. In 2007, Singapore reaches 0.944 HDI and it rank is 23th in the world, on other hand, Myanmar is the lowest among ASEAN with 0.586 HDI and 136th in the world.



Remarks: No data available for year 2000 and 2005 for Singapore, year 2000 for Myanmar, year 1990 for Lao PDR, and year 1990 and 1995 for Cambodia
Source: Human Development Report 2009 (UNDP)

Figure 2-3-1 HDI Trend in AMSs

The Table 2-3-1 shows situation of poverty in AMSs excluding Singapore, Brunei Darussalam and Malaysia. People in Cambodia and Lao PDR are living in extreme poverty, such as over 30% of them stay below national poverty line and over 40% of them remains under USD 1.25 per day. Viet Nam and Philippines are also suffering poverty in significant percentage with national poverty line.

[7] According to the UNDP, the HDI is a measurement of development by combining indicators of life expectancy, educational attainment and income. Totally 182 countries are ranked and categorized into four division, such as very high HD, high HD, medium HD and low HD.

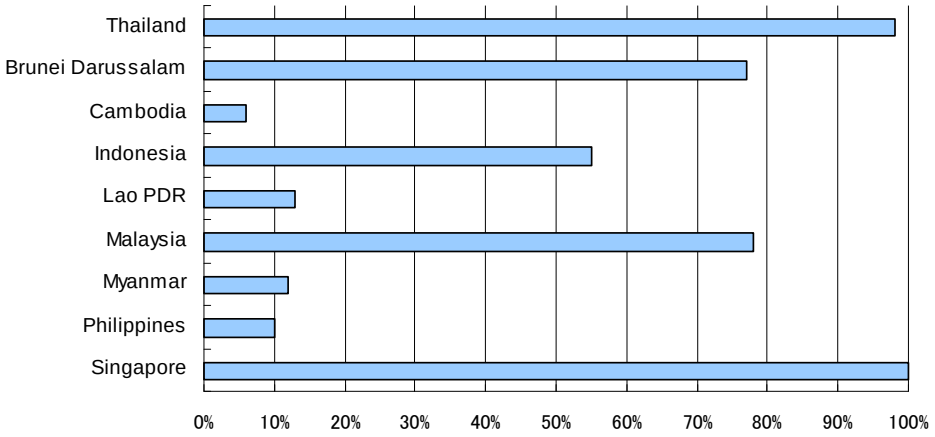
Table 2-3-1 Human and Income Poverty

Country	Population below income poverty line (%)		
	$1.25 a day	$2 a day	National poverty line
	2000-2007	2000-2007	2000-2006
Cambodia	40.2	68.2	35.0
Indonesia	n.a	n.a	16.7
Lao PDR	44.0	76.8	33.0
Myanmar	n.a	n.a	n.a
Philippines	22.6	45.0	25.1
Thailand	<2	11.5	13.6
Viet Nam	21.5	48.4	28.9

Source: Human Development Report 2009 (UNDP)

(2) Accessibility to Road

It is illustrated in detail in Chapter 3, comparing accessibility to paved road among AMSs except Viet Nam with data limitation, Singapore has achieved full pavement network and Thailand has reached 98% of it. Malaysia and Brunei Darussalam have developed paved road over 77% in their counties and Indonesia is following them with 55% of it. On the contrary, four countries, Lao PDR (13%), Myanmar (12%), Philippines (10%) and Cambodia (6%) have been remained to quite low share of paved road. It is, therefore, considered that there is a huge disparity among the member states in road construction.



Remarks: Data for Cambodia is represented by year 2004, for Philippines is represented by year 2003, for Thailand is represented by year 2000 because of data availability. Data for Viet Nam are not available.
Source: World Development Indicators, World Bank

Figure 2-3-2 Percentage of Paved Road in 2005

In conjunction with the HDI and poverty explained above, it could be drawn out a common feature that Especially Cambodia, Lao PDR, Myanmar and Philippines suffer significant disparity among AMSs.

(3) Urbanization

Outside of Singapore, the highest urbanization occurs at Brunei Darussalam and Malaysia and over 70% of population lives in urban areas in their countries. Philippines reaches nearly 50% and Indonesia follows by 44% in urbanization. Additionally, comparing year 1990 with 2010, Malaysia has been rapidly urbanized with over 22% increase. Besides that, three countries, such as Lao PDR, Indonesia and Viet Nam mark over 10% urbanization growth since 1990.

Table 2-3-3 shows current situation of mega-cities in AMSs. Looking at population and rank in mega-cities, Philippines and Indonesia reach higher place with 19.6 million (rank 9) and 15.4 million (rank 15) respectively. From the point of view on share in national population, Philippines also show high concentration to Manila with 21%. Kuala Lumpur (Malaysia) and Bangkok (Thailand) also mark higher concentration such as 17.56% and 13.27% respectively.

Table 2-3-2 Population Residing in Urban Areas by Country (%)

Country	1990	2000	2010	Change in 1990-2010
Brunei Darussalam	65.83	71.15	75.65	9.821
Cambodia	12.60	16.91	20.11	7.508
Indonesia	30.58	42.00	44.28	13.697
Lao PDR	15.44	21.98	33.18	17.747
Malaysia	49.79	61.98	72.17	22.377
Myanmar	24.71	27.80	33.65	8.938
Philippines	48.59	47.99	48.90	0.313
Singapore	100.00	100.00	100.00	0.000
Thailand	29.42	31.14	33.96	4.539
Viet Nam	20.26	24.49	30.38	10.124

Source: World Urbanization Prospects: The 2009 Revision

Table 2-3-3 Population of Mega-Cities in AMSs in 2009

Country	Population (Country)	Mega City	Rank in Mega Cities	Population (Mega City)	Share in National Population
Indonesia	231,547,000	Jakarta	15	15,400,000	6.65%
Malaysia	27,761,000	Kuala Lumpur	66	4,875,000	17.56%
Myanmar	59,981,000	Rangoon	70	4,725,000	7.88%
Philippines	92,227,000	Manila	9	19,600,000	21.25%
Thailand	67,061,000	Bangkok	31	8,900,000	13.27%
Viet Nam	87,211,000	Saigon	50	6,100,000	6.99%

Source: Thomas Brinkhoff: The Principal Agglomerations of the World, http://www.citypopulation.de

Trend of urbanization and over-concentration to mega-cities are concerned in terms of environment aspects therefore at the ASEAN Joint Statement on COP15[8] emphasize the importance of immediate response.

(4) Cooperation among AMSs

Under ASEAN Socio-cultural Community, the ASEAN Ministers Meeting on Rural Development and Poverty Eradication (AMRDPE) works to improve the situation. In the Framework Action Plan on Rural Development and Poverty Eradication 2004-2010, it is set out to tackle employment and income generation, and narrowing the development gap among AMSs. Likewise it is targeted to reduce the large disparities not only in economic indicators but also in human development aspects in the Vientiane Action Programme (VAP) 2004-2010.

Additionally, the ASEAN-6 States have supported CLMV counties (Cambodia, Lao PDR, Myanmar and Viet Nam) based on bilateral cooperation. The following Table 2-3-4 indicated

[8] ASEAN Joint Statement on Climate Change to the 15th Session of the Conference of the Parties to the United Nations Framework Convention on Climate Change and the 5th Session of the Conference of Parties serving as the Meeting of Parties to the Kyoto Proto

that ASEAN-6 contribution for CLMV countries in the Initiative for ASEAN Integration (IAI) Work Plan I for 2002-2008. From 1992-2008, totally 221 projects have been implemented with more than USD 159 million.

Table 2-3-4 ASEAN-6 Contribution to CLMV on a Bilateral Basis (as of October 2009)

Country	No. of Projects	Cost of Project (USD)
Brunei Darussalam	4	358,605
Indonesia	29	1,661,588
Malaysia	62	5,874,249
Philippines	31	261,833
Singapore	56	53,054,729
Thailand	97	100,358,255
Total	279	161,569,259

Source: Status Update of the IAI Work Plan I (2002-2008)

Furthermore, ATM emphasized that transport development is highly important to create linkages in the sub-region and also accessibility to transport is a driving force of socio-economic development and employment creation in ASEAN at the eleventh ATM on November 2005.

2.3.2 ENVIRONMENTAL ISSUE

(1) Situation of Environment in ASEAN

To achieve the Millennium Development Goals (MDGs), the United Nations (UN) gives warning on the continued rise of carbon emissions, which is related to the climate change problem. The Goal 7 in the MDGs is "ensure environmental sustainability" targeted to "integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources". The UN calls for immediate action to contain the rising carbon (greenhouse gas) emissions for all countries.

Table 2-3-5 Carbon (CO_2) Emission in AMSs (1000 ton)

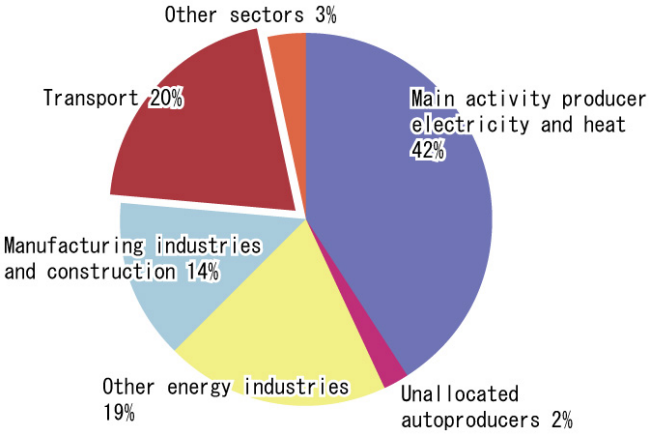
Country	1996	2006	Share in ASEAN (2006)	Rate of increase (2006/1996)	Per GDP (PPP) in kg (2006)
Brunei Darussalam	5,595	5,911	0.57%	106%	0.3223
Cambodia	1,628	4,074	0.39%	250%	0.1826
Indonesia	246,477	333,483	31.88%	135%	0.4482
Lao PDR	535	1,426	0.14%	267%	0.1284
Malaysia	125,363	187,865	17.96%	150%	0.5895
Myanmar	7,256	10,025	0.96%	138%	n.a.
Philippines	65,637	68,328	6.53%	104%	0.2591
Singapore	55,301	56,217	5.37%	102%	0.2811
Thailand	202,701	272,521	26.05%	134%	0.5822
Viet Nam	35,288	106,132	10.15%	301%	0.5507
ASEAN	745,781	1,045,982	100.00%	140%	-

Source: Millennium Development Goals Indicators, Data of Population: World Economic Outlook (IMF)

Carbon (CO_2) emission by AMSs has been rising over the decades and its total amount is beyond 1 billion ton in 2006. It has been found that Indonesia is the country with the highest emission, which reaches nearly 32%, followed by Thailand with 26% and Malaysia with around 18%. The total amount by these three countries accounts for around 76% of ASEAN. Meanwhile, looking at the increasing rate of carbon (CO_2) emission, Viet Nam has a 300% increased over a decade from 1996. Lao PDR and Cambodia also experienced a large rise of over 250% even though their emission amounts are low in ASEAN.

The Figure 2-3-3 illustrates the per capita carbon (CO_2) emissions by sector in ASEAN. The total carbon (CO_2) emission per capita from fuel combustion in 2007 is 39,139 and 20% of it comes from the transport sector.

The breakdown of per capita carbon (CO_2) emission of AMSs, except Lao PDR, is shown in the Table 2-3-6. The transport sectors in Philippines and Myanmar have higher shares in the total carbon (CO_2) emissions of over 30% of fuel combustion. carbon (CO_2) emission in the transport sector almost comes from road especially in Brunei Darussalam and Singapore, which reaches 100%, while Indonesia has a 91.5% statistics.



Remarks: ASEAN-9 consists of Brunei Darussalam, Cambodia, Indonesia, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Viet Nam.
Source: CO_2 Emissions from Fuel Combustion (2009 Edition), IEA, Paris.

Figure 2-3-3 Per Capita Emission by Sector in ASEAN-9 in 2007

In many countries not only ASEAN, it is considered that road construction has been prioritized to strengthen connectivity in each country instead of public transport or other transport modes. Therefore, the transport sector is almost represented by road and this situation severely affects the carbon (CO_2) emission in the sector.

Table 2-3-6 Per Capita Carbon (CO_2) Emission by Transport Sector in 2007 in AMSs

Region/Country	Total carbon (CO_2) emissions from fuel combustion	Transport	*of which: road*	Ratio (Transport/ Total CO_2)	*Ratio* (Road/ Transport)
Brunei Darussalam	14,973	2,866	2,866	19.1%	100.0%
Cambodia	307	81	80	26.4%	98.8%
Indonesia	1,672	318	291	19.0%	91.5%
Malaysia	6,681	1,507	1,487	22.6%	98.7%
Myanmar	254	80	78	31.5%	97.5%
Philippines	817	295	272	36.1%	92.2%
Singapore	9,799	1,581	1,581	16.1%	100.0%
Thailand	3,537	844	837	23.9%	99.2%
Viet Nam	1,099	274	255	24.9%	93.1%
ASEAN-9	39,139	7,846	7,747	20.0%	98.7%

Source: CO_2 Emissions from Fuel Combustion (2009 Edition), IEA, Paris.

(2) Recent cooperation among AMSs

In September 2009, the Special ASEAN Ministerial Meeting on the Environment was held in Thailand. In the meeting, on-going programmes on environment, especially those related to trans-boundary haze pollution and climate change issues, are reviewed and further regional cooperation on environment was discussed. An ASEAN Working Group in Climate Change (AWGCC) was proposed to be established during the meeting which was thereafter endorsed at the 11th ASEAN Ministerial Meeting on the Environment in Singapore in October 2009. According to the Joint Media Statement of the 11th ASEAN Ministerial Meeting on the Environment, the AWGCC targets "to promote closer and deeper regional cooperation on climate change and to respond effectively to global efforts in addressing climate change issues".

In the ASEAN Leaders' Statement on Joint Response to Climate Change released on April 2010, the ASEAN's commitment for the COP15 was renewed and its further cooperation for the COP16 was declared. It was emphasized to strengthen the ASEAN collaboration and cooperation in enhancing regional and domestic awareness on climate change to become a low emissions society.

2.4 ASSESSMENT OF LOGISTICS PERFORMANCE OF AMSS

2.4.1 LOGISTICS PERFORMANCE INDEX (LPI)

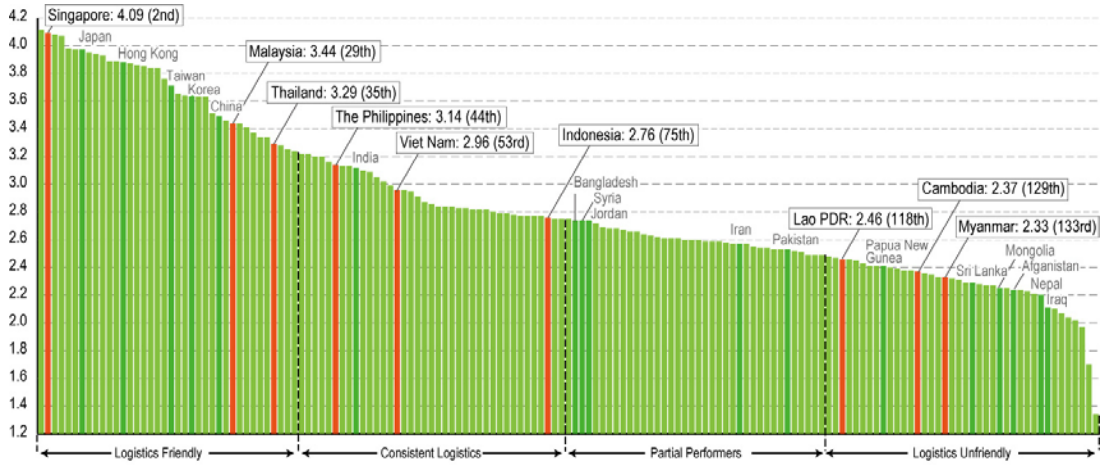
LPI is a multi-dimensional assessment of logistics performance made by the World Bank, and rates on a scale from one (worst) to five (best). It uses numbers of assessments made by nearly 1,000 international freight forwarders to compare the trade logistics profiles of 155 countries in the world. LPI provides selected performance indicators, including expanded information on the time, cost, and reliability of import and export supply chains, infrastructure quality, performance of core services, and the friendliness of trade clearance procedures.

The importance of efficient logistics for trade and growth is now widely acknowledged. Better logistics performance is strongly associated with trade expansion, export diversification, ability to attract FDI, and economic growth.

International goods movement largely depends on country-specific factors such as trade procedures, transport and telecommunications infrastructure, and the domestic market for support services. LPI and its component indicators provide a unique global point of reference to better understand these key dimensions of logistics performance.

(1) LPI Scores of AMSs

Among the ten AMSs, logistic performance of nine countries were assessed under LPI 2007 and 2010 (Brunei Darussalam was not included in the survey). The following figure indicates LPI ranking and scores of AMSs as well as major Asian countries. As shown in the figure, there are large logistics gap among AMSs. In the LPI 2010, Singapore received the highest ratings with score of 4.09 (ranked 2nd among 155 surveyed countries in the world), while Myanmar ranks last with a score of 2.33 (ranked 133rd).



Source: Connecting to compete 2010, Trade Logistics in the Global Economy

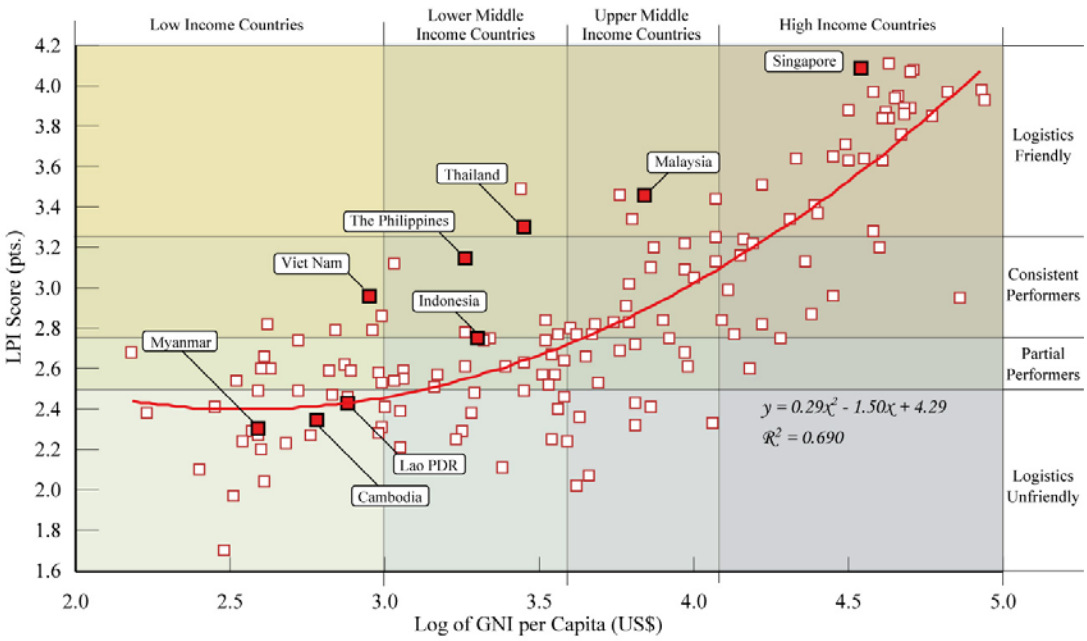
Figure 2-4-1 LPI Ranking and Scores 2010

LPI 2010 divides surveyed countries into four groups based on their LPI scores. Singapore (LPI: 4.09), Malaysia (LPI: 3.44) and Thailand (LPI: 3.29) are categorized into logistic friendly countries (first group). Meanwhile, Philippines (LPI: 3.14), Viet Nam (LPI: 2.96), and Indonesia (LPI: 2.76) are categorized into consistent logistics countries (second group). On the other hand, Lao PDR (LPI: 2.46), Cambodia (LPI: 2.37) and Myanmar (LPI: 2.33) are categorized as logistics unfriendly countries (bottom or fourth group).

(2) Features of Logistics Performances in AMSs

Figure 2-4-2 illustrates the relation between LPI and Gross National Income (GNI) per capita. As shown in the figure, there is an obvious correlation between these indicators (correlation coefficient: 0.83 and determinant coefficient: 0.69). The countries with higher GNI per capita tend to achieve better LPI score, and vice-versa.

It is to be noted in the Figure 2-4-2 that the points representing the six AMSs (Singapore, Malaysia, Philippines, Thailand, Indonesia and Viet Nam) are far above the approximate curve. This indicates that the group achieved better logistics performance than their income groups.



Note: Income groups are divided according to 2008 GNI per capita. Based on the World Banks definition, the groups are: low income ($975 or less); lower middle income ($976 - $3,855); upper middle income ($3,856 - $11,905); and high income ($11,906 or more).

Figure 2-4-2 Correlation between LPI and Income per Capita

All the mentioned six countries achieved high LPIs within their respective income groups. Singapore and Malaysia achieved the second highest LPI in the high income countries, and in upper middle-income countries, respectively. Thailand, Philippines and Indonesia are ranked 2nd, 3rd and 8th highest LPIs, respectively, among the lower middle income countries. Meanwhile, Viet Nam achieved the highest LPI among the low income countries. Export oriented industries are indispensable engine for economic development in these countries. In order to facilitate material procurement from overseas and export of processed products abroad, further improvement in logistics infrastructure as well as trade procedure system will be increasingly important even in the future.

On the other hand, LPIs of the remaining three AMSs with lower GNI per capita (Lao PDR, Cambodia, and Myanmar) are located below the curve. These countries have achieved lower logistics performance than their income group. The key issue is that the trade supply chain is only as strong as its weakest link. Thus, a major challenge for AMSs is how to support these low performing countries benefit from a global trading system. These countries need to make substantial improvements in logistics competence, processes, and business practices.

(3) International LPI Scores of AMSs

The World Bank's LPI survey consists of two major parts offering two different perspectives: international and domestic. In the first (international) part respondents the following six key dimensions of logistics performance;

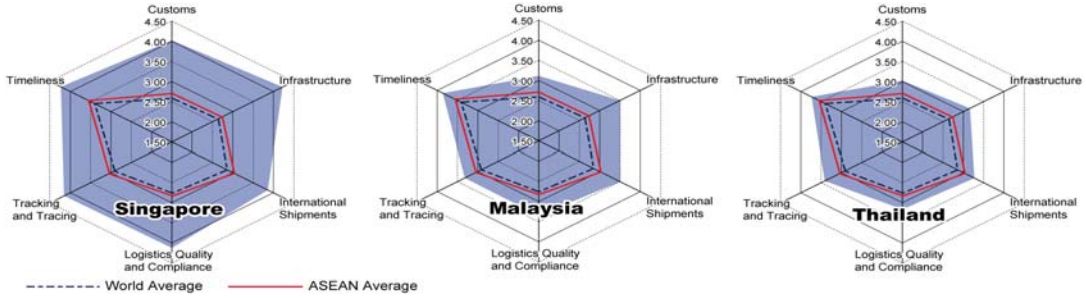
- Efficiency of the customs clearance process.
- Quality of trade and transport-related infrastructure.
- Ease of arranging competitively priced shipments.
- Competence and quality of logistics services.

- Ability to track and trace consignments.
- Frequency which shipments reach the consignee within the scheduled or expected time.

These six key performance indicators covered from the conventional issues (customs procedures and infrastructure quality) to new issues (tracking and tracing shipments, timeliness in reaching a destination, and the competence of the domestic logistics industry). Scores of key performance indicators are made based on the latest theoretical and empirical research and on extensive interviews with professionals involved in international freight logistics.

Figure 2-4-3 to 2-4-5 shows scores of said key performance indicators for AMSs. The average of AMSs (indicated as red line) is slightly higher than the world average (blue line).

The LPI scores of advanced countries and some newly developed countries, such as Singapore, Thailand, and Malaysia, are relatively high due to their well-developed transport infrastructure and trade facilitation systems. Scores given to Singapore is the highest among others for all the six indicators. Particularly scores of infrastructure, tracking and tracing, customs, and logistics quality and competence are significantly higher than average. Scores of Malaysia and Thailand are also higher than average in all the six indicators. Similar to Singapore, Malaysia's score for infrastructure is far better than that of other countries.



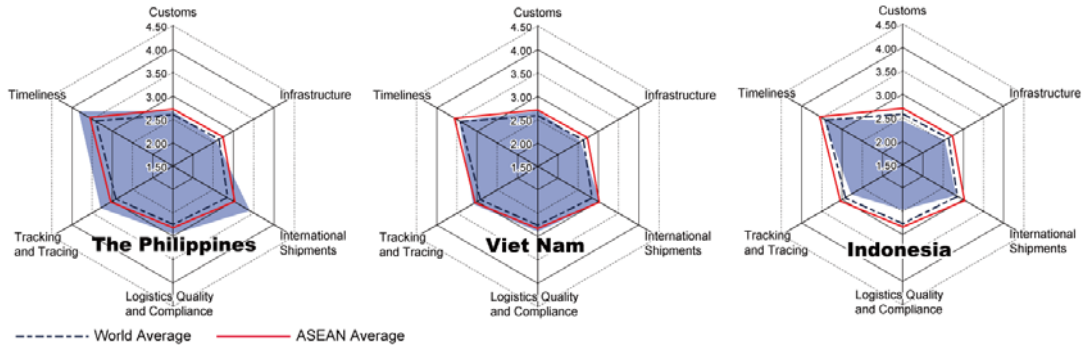
Source: ERIA Study Team illustrated based on the data quoted from "Logistics Performance Index 2010"
Note: World average and ASEAN average were calculated by simple arithmetic average.

Figure 2-4-3 ASEAN Country's International LPI Scores (1 of 3)

Both countries have internationally well known large-scale hub airport (Singapore: Changi International Airport, Malaysia: Kuala Lumpur International Airport) and large-scale container ports (Singapore: Singapore Port, Malaysia: Port Klang and Tanjung Pelepas). Ports in Singapore and Malaysia are located along the main international shipping route, and their container throughputs ranked high in the world (Singapore Port: 29.9 million TEUs, ranked 1st in the world, Port Klang: 7.9 million TEUs ranked 15th, and Tanjung Pelepas: 5.6 million TEUs, ranked 18th)[9]. Railway and road are also well developed in these countries.

Scores of key performance indicators of Philippines, Viet Nam and Indonesia are more or less same level as that of ASEAN and the world average.

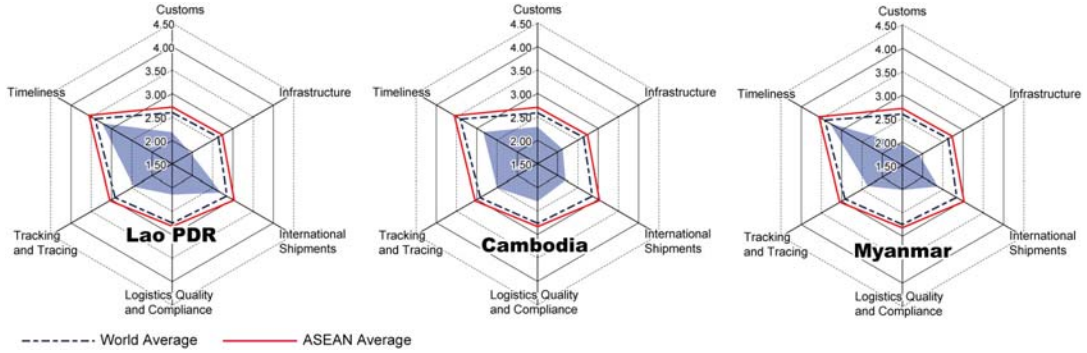
[9] Top 120 Container Port, Container Management 2009



Source: ERIA Study Team, illustrated based on the data quoted from "Logistics Performance Index 2010"
Note: World average and ASEAN average were calculated by simple arithmetic average.

Figure 2-4-4 ASEAN Country's International LPI Scores (2 of 3)

However, Lao PDR, Cambodia and Myanmar are still in the process of addressing their performance bottlenecks. Logistics related performances of these countries are far below the ASEAN and the world averages. Weak logistics competence, poor logistics quality and undeveloped infrastructure are major constraints in these countries. The availability and quality of trade-related infrastructure seems a major constraint to the performance of Lao PDR, Cambodia and Myanmar.



Source: ERIA Study Team, illustrated based on the data quoted from "Logistics Performance Index 2010"
Note: World average and ASEAN average were calculated by simple arithmetic average.

Figure 2-4-5 ASEAN Country's International LPI Scores (3 of 3)

Table 2-4-1 summarized the assessment of LPI of nine AMSs.

Table 2-4-1 Summary of Assessment of LPI of AMSs

Group	Countries	Income Group	GNP per capita and LPI Score	Characteristics
Logistics Friendly	Singapore, Malaysia, Thailand	High Income - Lower Middle Income Countries	These groups achieved better logistics performance than their income groups.	Scores are relatively high due to their well developed transport infrastructure and trade facilitation systems. Scores given to Singapore shows highest among others for all the six indicators. Particularly scores on infrastructure, tracking and tracing, customs, and logistics quality & competence are significantly higher than the averages.
Logistics Consistent	Philippines, Indonesia, Viet Nam	Lower Middle Income - Low Income Countries		Scores of key performance indicators are more or less same level as that of ASEAN and the world average.
Logistics Unfriendly	Lao PDR, Cambodia, Myanmar	Low Income Countries	These groups achieved lower logistics performance than their income groups.	Logistics related performances are far below the ASEAN and world averages. The availability and quality of trade-related infrastructure is a major constraint to performance.

Source: ERIA Study Team

2.4.2 EASE OF TRADING ACROSS BORDERS (DOING BUSINESS)

(1) Overview

The World Bank's "Doing Business" report provides a quantitative measure of regulations for i) starting a business, ii) dealing with construction permits, iii) employing workers, iv) registering property, v) getting credit, vi) protecting investors, vii) paying taxes, viii) trading across borders, ix) enforcing contracts and x) closing a business as they apply to domestic small and medium-size enterprises.

Among these ten indicators, the report focuses only on "viii) trading across borders", which looks at the procedural requirements for exporting and importing a standardized cargo of goods. Every official procedure is counted from the contractual agreement between the two parties to the delivery of goods along with the time necessary for completion. These include:

- number of documents required to export/import goods,
- time necessary for complying with all procedures required to export/import goods, and
- cost associated with all the procedures required to export/import goods

These indicators cover documentation requirements, cost and time required at customs and the port as well as inland transport to the largest business city.

(2) Performance of AMSs in 2010

The table below shows the six performance indicators and rankings related to the ease of trading across borders of nine AMSs (Myanmar was not assessed in the survey).

Table 2-4-2 Performance Indicators in AMSs

	Ranking	Performance Indicators					
		Documents to export (number)	Time to export (days)	Cost to export (US$ per TEU*)	Documents to import (number)	Time to import (days)	Cost to import (US$ per TEU*)
Brunei D.	48	6	28	630	6	19	708
Cambodia	127	11	22	732	11	30	872
Indonesia	45	5	21	704	6	27	660
Lao PDR	168	9	50	1,860	10	50	2,040
Malaysia	35	7	18	450	7	14	450
Philippines	68	8	16	816	8	16	819
Singapore	1	4	5	456	4	3	439
Thailand	12	4	14	625	3	13	795
Viet Nam	74	6	22	756	8	21	940
ASEAN Ave.	-	6.7	21.8	781	7.0	21.4	858
World Ave.	-	6.7	24.0	1,386	7.4	26.7	1,602

Note: World average and ASEAN average were calculated by simple arithmetic average
* TEU= Twenty feet container equivalent unit
Source: Doing Business 2010, World Bank/ IFC

To facilitate comparison of the above mentioned indicators among AMSs, the ERIA Study Team standardized the six indicators using following formula;

$$U=\frac{(x-m)}{s},\ s=\sqrt{\sum\left\{(x-m)^2/(n-1)\right\}}$$

Here
u= standardized score of index
s= standard deviation
x= original score of index
n= number of samples (183 countries)
m= average of scores

The following Figure 2-4-6 illustrates the standardized score of six indicators of nine AMSs and the ASEAN/world average. High score indicates better performance. ASEAN's average scores of each index are higher than the world average. While documents to import/export and time to export are more or less same as the world average, costs to export/import and time to import are obviously better than the world average.

Source: ERIA Study Team based on Doing Business 2010, World Bank/IFC

Figure 2-4-6 AMSs Standardized Scores of Six Indicators on Ease of Trading Across Border

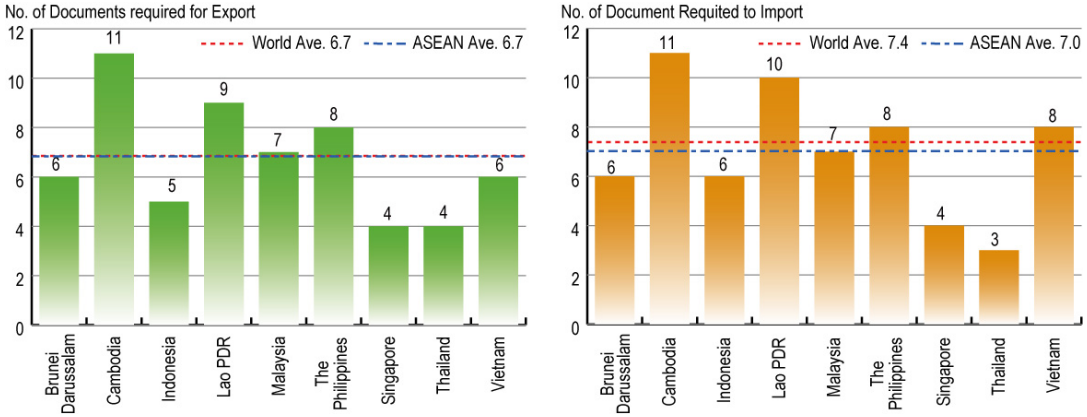
Among the 183 surveyed countries in the world, Singapore was judged to be best performers on the ease of trading across border. Its time to import/export is significantly shorter than the other AMSs. In addition, despite higher labour cost than other countries, Singapore's cost to export and cost to import is the cheapest and the second cheapest in ASEAN, respectively.

In the case of Thailand, costs of export/import are the same level as the ASEAN average. However, Thailand is ranked 12th in the world on the ease of trading across border, and is characterized by efficient trade procedures and shorter lead time for import/export. Similar to its LPI results, Lao PDR (127th) and Cambodia (168th) were ranked low. Lao PDR is a landlocked country in the Indochina peninsula. High trading cost, cumbersome trade procedure and long lead time for export/import are considered to hinder trade potential in the country.

1) Number of Documents Required to Export/Import

As shown in Figure 2-4-7, there are remarkable gaps in the number of documents required to export/import between the high ranked countries (such as Singapore and Thailand) and low ranked countries (Cambodia and Lao PDR). Countries ranked high on the lists have made lot of efforts to make import and export procedure as efficient as possible. They require fewer documents, so that traders spend less time on bureaucratic approval. In Singapore and Thailand, traders need to submit 3 to 4 documents prior to import/export. On the other hand, cumbersome procedures are required in Cambodia and Lao PDR, where traders are required to prepare 9 to 11 documents.

For example, traders in Singapore need to submit only the export/import permit, the invoice, bill of lading, and packing list. However, traders in Lao PDR are required to submit declaration form (three sets), cargo control document, invoice, carrier advice notes, any permit issued by a relevant ministry or department (three sets on an average), and certificates of origin showing origin of goods.



Source: Doing Business 2010, World Bank/IFS

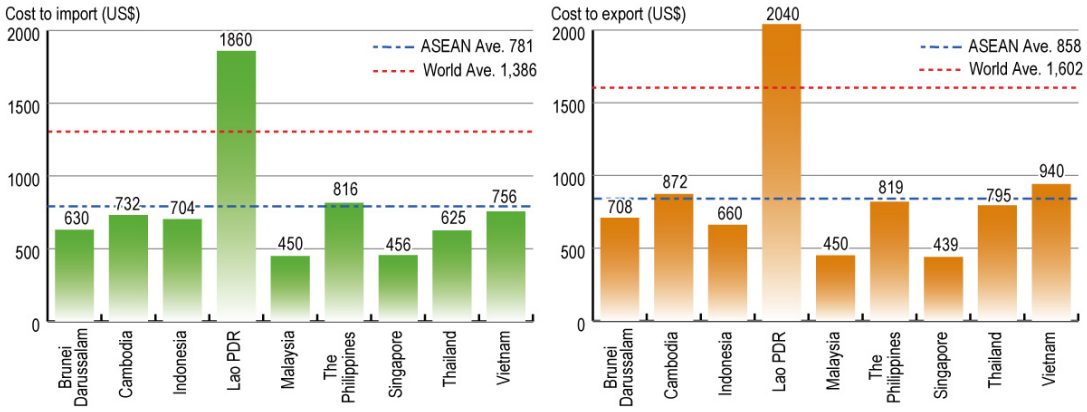
Figure 2-4-7 Documents Required to Export/Import

2) Cost to Export/Import

Figure 2-4-8 illustrates the costs of export/import in AMSs, ASEAN average and the world average.

According to the "Doing Business 2010" report, in the case of several developing economies, despite lower wage levels, traders must pay higher fees to customs brokers than their counterparts in developed economies. In ASEAN, this may be true of Cambodia, Lao PDR, Myanmar, and Viet Nam. Customs formalities are not the only factor affecting the time and cost. Cost to export/import is also greatly affected by geographical location of a country. Costs to export and import from/to landlocked country Lao PDR are 4.1 and 4.6 times higher than that of Singapore.

In contrast, despite the higher wage level, costs to export and import in Singapore and Malaysia are lowest among AMSs. Moreover, export/import costs in Singapore and Malaysia occupied 1st and 2nd cheapest in the world.

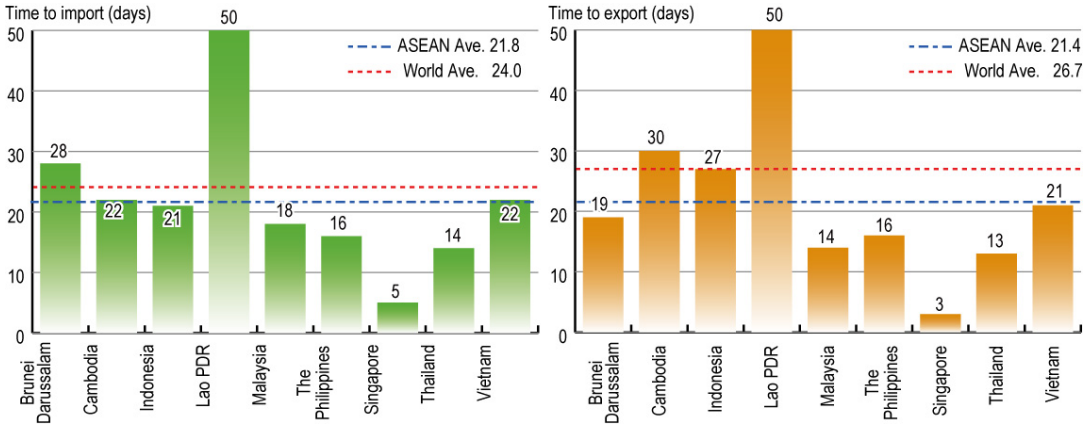


Source: Doing Business 2010, World Bank/IFS

Figure 2-4-8 Costs to Export/Import

3) Time to Export/ Import

Times to export/ import are also significantly diverse among countries. Traders in landlocked country, Lao PDR, are facing long lead time for export/import. They spend 50 days each for import and export, which is 10 times (export) and about 16 times (import) longer than Singapore. Time to export/import in Singapore is far and away the best among AMSs, and is even the shortest in the world (export: 5 days, import: 3 days).



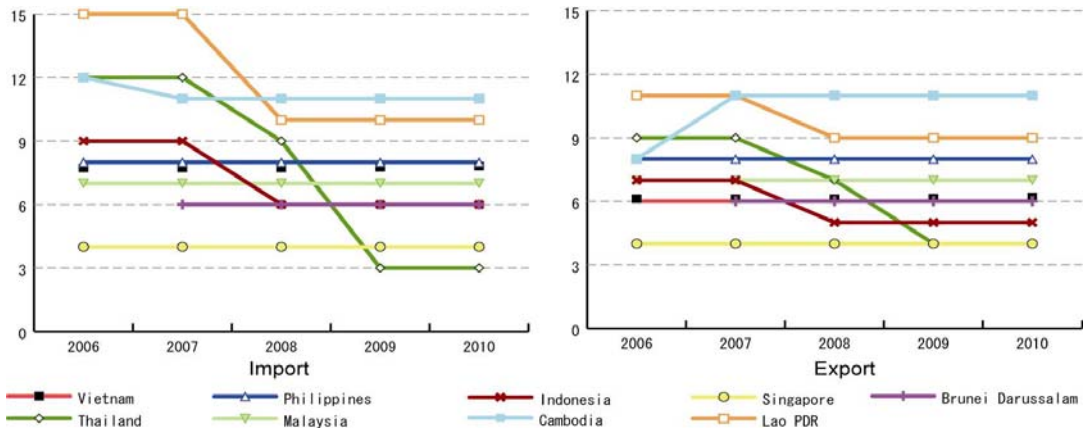
Source: Doing Business 2010, World Bank/IFS

Figure 2-4-9 Times to Export/Import

(3) Change in the Trade Performance of AMSs during 2006-2010

Doing business survey was started in 2004, and from 2006 onwards the survey introduced six performance indicators as same as currently used. Figure 2-4-10 to 12 shows historical change in six indicators of AMSs from 2006-2010.

As the Figure 2-4-10 clearly indicates, Thailand, Indonesia and Lao PDR successfully reduced number of documents required to export and import. Particularly, Thailand is the most consistent reformer among AMSs over the past 5 years. Number of documents for import was reduced from 12 to 3, and that for export was also reduced from 9 to 4. In contrast, in Cambodia, number of documents at export was increased from 8 in 2006 to 11 in the next year.

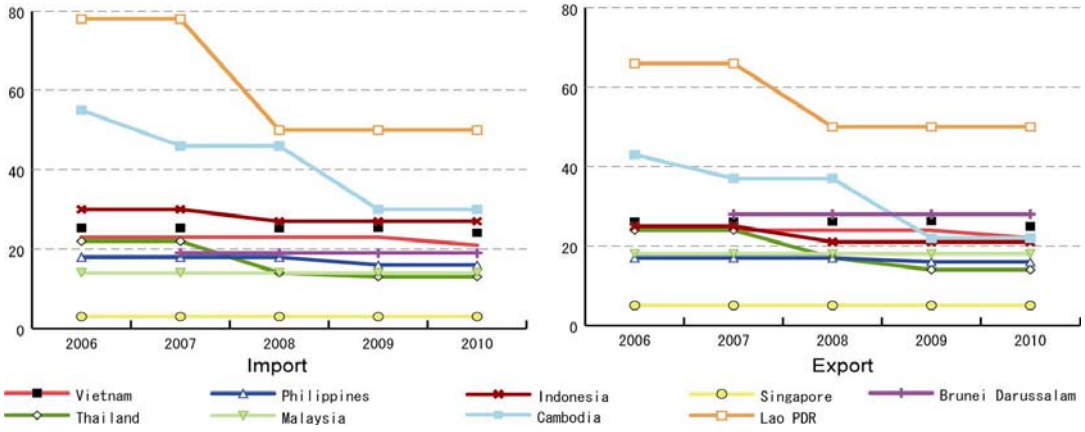


Source: Doing Business 2006-2010, World Bank/IFS

Figure 2-4-10 Change in Documents Required to Export/Import in AMSs 2006-2010

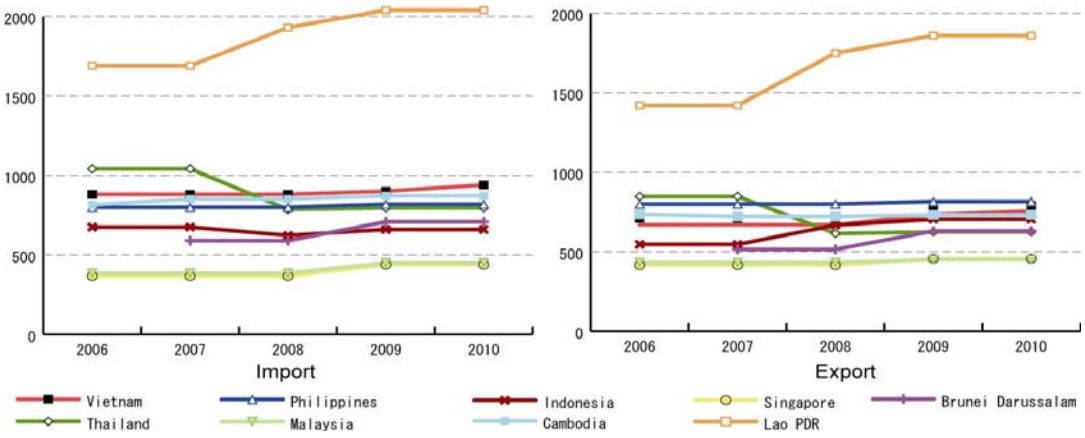
Reform of import/export procedure in Thailand has made a positive impact on time and cost. The average time and cost for export/import in Thailand has reduced 41.3% and 24.9% during past five years, respectively. Reduction of export/import documents in Lao PDR has also made significant positive impact on reducing time to export/import. Average time to export/import was reduced by 30.6%. However, cost of export/import in Lao PDR has gradually increased. The reason behind such increase is not clear.

Time to export/import in Cambodia was significantly reduced utilizing technical assistance for trade facilitation from international donor agencies. As a result, time to export/import of Cambodia has become comparable with other AMSs.



Source: Doing Business 2006-2010, World Bank/IFS

Figure 2-4-11 Change in Times to Export/Import in AMSs 2006-2010



Source: Doing Business 2006-2010, World Bank/IFS

Figure 2-4-12 Change in Costs to Export/Import in AMSs 2006-2010

2.5 SUMMARY

There is significant variation across AMSs in terms of land area, population, and economy. Recently, economic relation of the region has progressively increased in various aspects. According to ILO estimates, 5.3 million of migrants were circulated within ASEAN. Emigrants from developed countries (such as Singapore, Malaysia and Thailand) are occupying high-skilled positions in developing countries. In contrast, Cambodia, Indonesia, Lao PDR, Philippines, Myanmar, and Viet Nam are the labour-sending countries. These migrants within AMSs have obviously contributed to the dynamism of the region. Also, importance of intra-ASEAN trade and intra-ASEAN investment activities has increased in recent years.

Large gaps among AMSs are also applicable to logistics and trade environment. Singapore, Malaysia and Thailand received the quite high ratings on logistics and trade environment from international organization. Also, logistics and trade performance of Brunei Darussalam, Philippines and Indonesia are evaluated favourably. Since export oriented industries are indispensable engine for economic development in these countries, further improvement in logistics infrastructure as well as trade procedure system will be increasingly important even in the future.

In contrast, Lao PDR, Cambodia and Myanmar are still in the process of addressing their performance bottlenecks. Weak logistics competence, undeveloped infrastructure and inefficient trade procedures are major constraints in these countries. The key issue is that the trade supply chain is only as strong as its weakest link. Thus, a major challenge for AMSs is how to support these low performing countries benefit from a global trading system.

In terms of social and environment issues in the ASEAN region, poverty, accessibility of road and urbanization are indicated as social issues and carbon (CO_2) emission represent an environmental issue. The situation of poverty is harsh especially in Cambodia and Lao PDR among the member states. Additionally, urbanization has been rapidly expanded and especially population has been concentrated into several mega-cities. There is a wide gap on human development aspects among the member states therefore ASEAN expend their efforts on rural development and poverty eradication. With regard to carbon (CO_2) emission among AMSs, it has been raised over decades and its total amount of it is beyond 1 billion tons in 2006. In many countries, since the road construction has been prioritized to strengthen connectivity in each county, transport sector is almost represented by road and it severely affects carbon (CO_2) emission in the sector.

CHAPTER 3 CURRENT STATUS OF ASEAN TRANSPORT SECTOR

3.1 INTRODUCTION

This chapter reviews the current status and performance of the transport sectors i.e. road rail, inland waterways, air and maritime transport in ASEAN Member States (AMSs). In addition, the chapter also discusses the current status of the soft component i.e. transport facilitation that is vital for improving the performance, efficiency and effectiveness of the other three major transport sectors especially at intra-ASEAN level. The chapter discusses and compares the current scenario among the AMSs and highlights the major issues that need an attention to improve the transport performance in AMSs. With the purpose of easy understating, comparisons and review of current status, the chapter is divided by sectors in 4 sections i.e. Land Transport, Air Transport, Maritime Transport and Transport Facilitation. Each section also describes a brief introduction to specific sector.

3.2 LAND TRANSPORT

Efficient land transport plays a vital role in fostering international trade with and within ASEAN region. The removal of barriers to trade in the land transport sector is therefore doubly important. First, the land transport sector is in itself an important area of economic activity, and further liberalization in transport will therefore make an important contribution in trade and services. Secondly, by enhancing efficiency and reducing the costs of trade in goods, removal of barriers in the land transport sector will in turn lead to freer and more open markets in the trading of physical goods and movement of natural persons. To do this in ways that protect the natural environment, promote growth, and meet the complex demands arising from new safety requirements will require an unprecedented commitment of skills and resources, and new levels of cooperation.

In addition to physical hardcore development, the soft component such as legal, regulatory, institutional, human resource, operational and technological developments will also play a vital role in facilitating the efficient and effective transport system.

The following sections will discuss the 3 major component of the land transport i.e. road, rail and inland waterways in AMSs. These sections will discuss and compare the status of motorization, road and rail inventory, road safety, inland waterways route length, modal share etc. among others in AMSs. The two major component of current ASEAN Transport Action Plan (ATAP) i.e. ASEAN Highways and Singapore-Kunming Rail Link (SKRL) which are also the priority projects under ASEAN Economic Community (AEC) blueprint are discussed in detail. During the discussion, the certain issues were also highlighted that will need a specific attention to improve the overall land transport performance.

3.2.1 MOTORIZATION

Economic growth is being accompanied by rapid traffic growth in AMSs. Since 2000, the growth of motorization has been rapid in the ASEAN region. Yet, in comparison with other developed nations in the world, vehicle ownership is still low in ASEAN countries.

On analyzing the increase of automobiles in AMSs, since 2000, the number of automobiles increased by more than double in ASEAN countries such as Cambodia, Myanmar, Indonesia and Viet Nam. This rapid increase without the corresponding expansion in infrastructure and road services resulted in traffic congestion, especially in the major cities of AMSs. (Table 3-2-1 & Figure 3-2-1)

Table 3-2-1 Total Vehicle Registration (in '000)

Year	Brunei Darussalam	Cambodia	Indonesia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Viet Nam
2000	213	332	18,975	NA	10,599	439	3,701	693	20,836	6,695
2001	220	384	20,927	NA	11,303	445	3,866	708	22,589	8,916
2002	232	410	22,985	NA	12,022	462	4,188	707	24,517	10,880
2003	245	447	26,707	NA	12,819	476	4,292	711	26,379	12,054
2004	259	486	30,769	NA	13,765	760	4,761	727	20,625	14,150
2005	275	575	38,156	NA	14,816	979	5,060	755	25,266	16,978
2006	NA	714	45,081	NA	15,791	992	5,332	799	NA	19,589
2007	305	869	57,748	641	16,825	1,024	5,530	851	24,738	22,926
2008	NA	NA	NA	NA	NA	1,995	5,891	895	NA	26,624

Source: ASEAN Statistical Yearbook, 2008 and country websites/response NA – Not Available

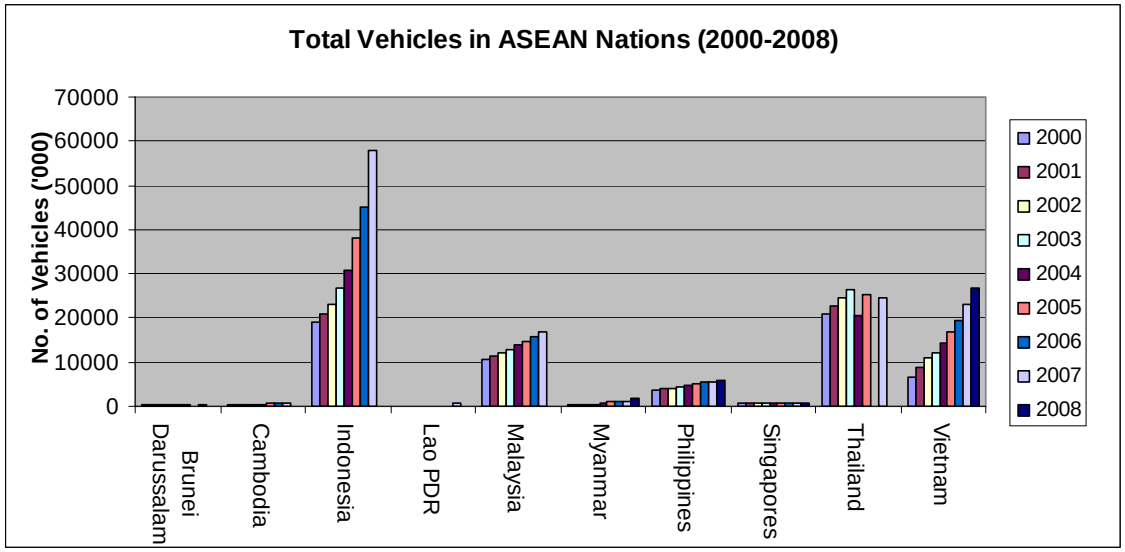


Figure 3-2-1 Increase in Total Registered Vehicles in AMSs (2000-2008)

On comparing the number of vehicles per 1000 population in ASEAN nation then Brunei Darussalam, Malaysia, Thailand and Indonesia have comparatively the maximum number of registered vehicles per 1000 population. In 2005, Brunei Darussalam with 744 vehicles per 1000 population has the highest vehicle density. Cambodia and Myanmar, meanwhile, have the least number of vehicle densities among the AMSs. (Table 3-2-2)

Table 3-2-2 Number of Vehicles per 1,000 Populations

Year	Brunei Darussalam	Cambodia	Indonesia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Viet Nam
2000	657	61	92	NA	451	9	48	172	334	90
2001	662	61	102	NA	471	9	49	171	359	97
2002	682	62	109	NA	490	9	52	169	390	NA
2003	700	66	125	NA	512	9	52	170	414	NA
2004	720	68	142	NA	538	14	57	172	333	NA
2005	744	70	174	NA	567	18	59	174	405	NA
2006	NA	NA	202	NA	593	18	61	182	NA	NA
2007	NA	NA	256	101	NA	18	62	186	375	263
2008	NA	NA	NA	NA	NA	34	65	185	NA	NA

Source: ASEAN Statistical Yearbook, 2008 and country websites/data. NA – Not Available

On comparing the distribution of registered vehicles, except for Brunei Darussalam and Singapore, the other AMSs are mainly dominated by two-wheelers. In 2007, of the total number of vehicles, the two-wheelers in Viet Nam and Cambodia are 95% and 84% respectively. (Table 3-2-3 and Figure 3-2-2). Such situation causes adverse impacts in terms of deterioration of environment, traffic congestions, accidents, energy waste, etc. Hence, there is a need for a modal shift to promote efficient, convenient and comfortable public transport especially in major cities in AMSs.

Table 3-2-3 Percentage Distribution of Registered Vehicles (2007)

Country	Motor cars	Motorized 2 or 3 wheelers	Others (Truck, Bus, Van etc.)
Brunei Darussalam	83	4	13
Cambodia	9	84	7
Indonesia	15	73	12
Lao PDR	2	79	19
Malaysia	45	47	8
Myanmar	6	65	29
Philippines (2006)	17	48	35
Singapore	61	17	22
Thailand	14	63	23
Viet Nam	5	95	0

Source: WHO & UN-ESCAP websites

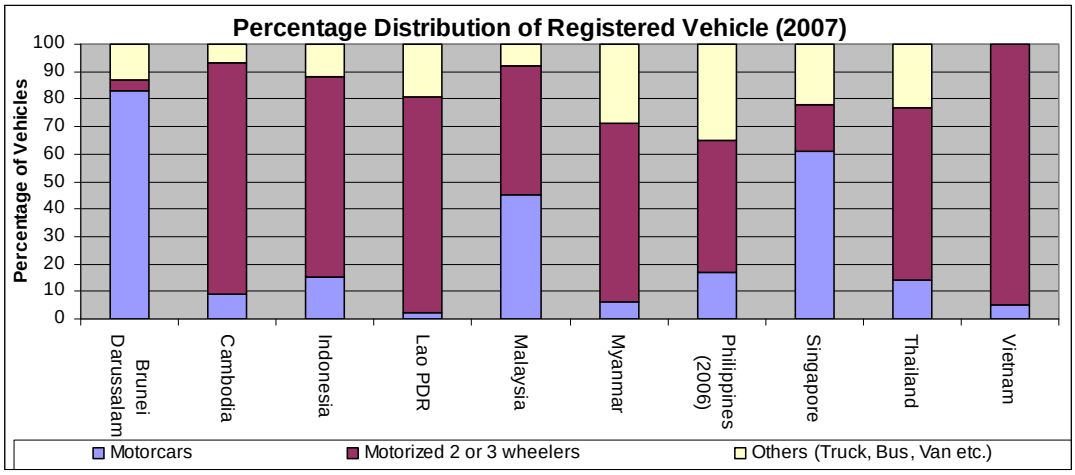


Figure 3-2-2 Percentage Distribution of Registered Vehicles (2007)

3.2.2 ROAD NETWORK INVENTORY

The road network and road length vary by country. Considering the total road length and paved road length, Indonesia has the largest network with 396,362 km (2007) and largest paved road length 221,905 km (2007) among the ASEAN member nations. Since 2000, Viet Nam made considerable progress and enhanced its road network length by more than ten (10) times, from 15,436 km in year 2000 to 160,089 km in 2007. Viet Nam also improved its paved road network by about seven times from 11,206 km in 2000 to 76,241 km in 2007. Thailand, Myanmar and Lao PDR also made a substantial progress in enhancing their total road network and paved road network. (Table 3-2-4, Table 3-2-5, Figure 3-2-3 and Figure 3-2-4)

Table 3-2-4 Total Road Length (in km)

Year	Brunei Darussalam	Cambodia	Indonesia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Viet Nam
2000	3,272	NA	355,951	25,090	66,445	28,596	29,056	3,100	50,724	15,436
2001	3,299	NA	361,782	25,090	71,814	28,790	29,878	3,120	51,544	15,571
2002	3,358	NA	368,362	32,625	72,165	28,790	30,030	3,150	53,761	NA
2003	3,471	NA	370,516	31,204	77,200	28,978	26,572	3,165	53,176	NA
2004	3,560	35,769	372,629	31,209	77,695	90,713	27,853	3,188	51,778	137,359
2005	3,650	NA	391,009	33,861	87,025	92,859	28,664	3,234	51,467	NA
2006	3,728	39,000	393,794	35,260	90,127	104,058	29,208	3,262	NA	NA
2007	NA	11,494	396,362	73,323	NA	111,737	29,370	3,297	98,053	160,089
2008	NA	NA	NA	NA	NA	125,355	29,650	3,325	NA	NA

Source: ASEAN Statistical Yearbook, 2008 and country websites/data. NA – Not Available

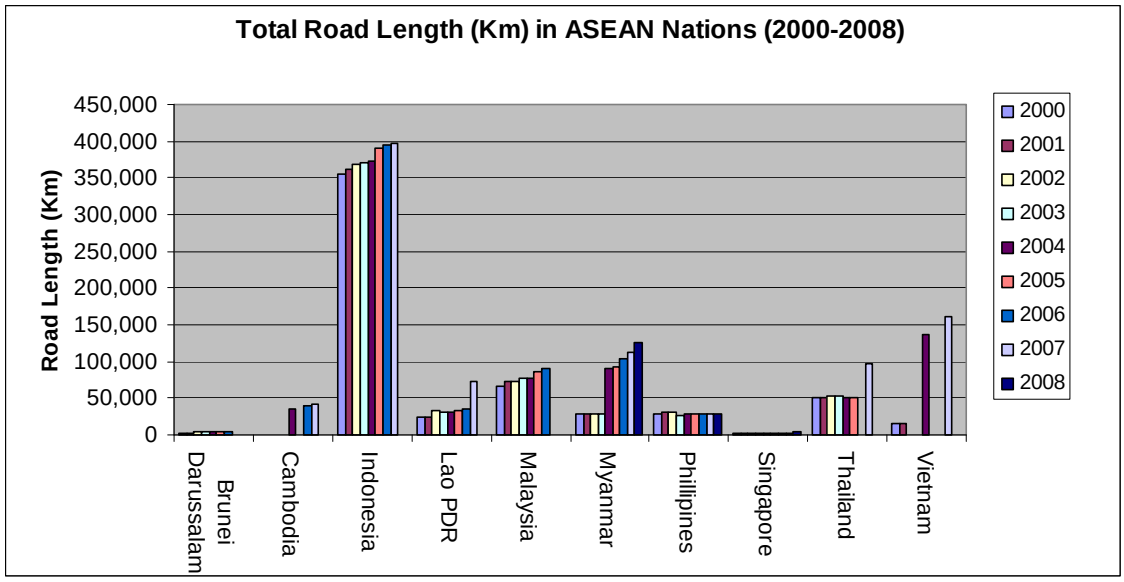


Figure 3-2-3 Growth of Total Road Length (km) in AMSs (2000-2008)

Table 3-2-5 Paved Road Length (in km)

Year	Brunei Darussalam	Cambodia	Indonesia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Viet Nam
2000	2,397	NA	203,214	3,897	50,621	22,630	17,020	3,091	49,166	11,206
2001	2,424	NA	212,935	3,897	55,933	23,179	18,144	3,119	50,992	11,258
2002	2,468	NA	211,998	4,592	56,366	NA	18,959	3,149	51,670	NA
2003	2,702	NA	216,109	4,491	59,513	NA	18,767	3,164	51,360	NA
2004	2,780	2,886	206,144	4,497	59,254	22,153	19,768	3,188	50,321	53,610
2005	2,819	NA	216,714	4,586	67,851	22,830	20,082	3,234	50,151	NA
2006	2,843	NA	216,545	4,548	71,292	23,880	20,502	3,262	NA	NA
2007	NA	2,376	221,905	5,133	NA	24,374	21,006	3,297	97,988	76,241
2008	NA	NA	NA	NA	NA	24,684	21,677	3,325	NA	NA

Source: ASEAN Statistical Yearbook, 2008 and country websites NA – Not Available

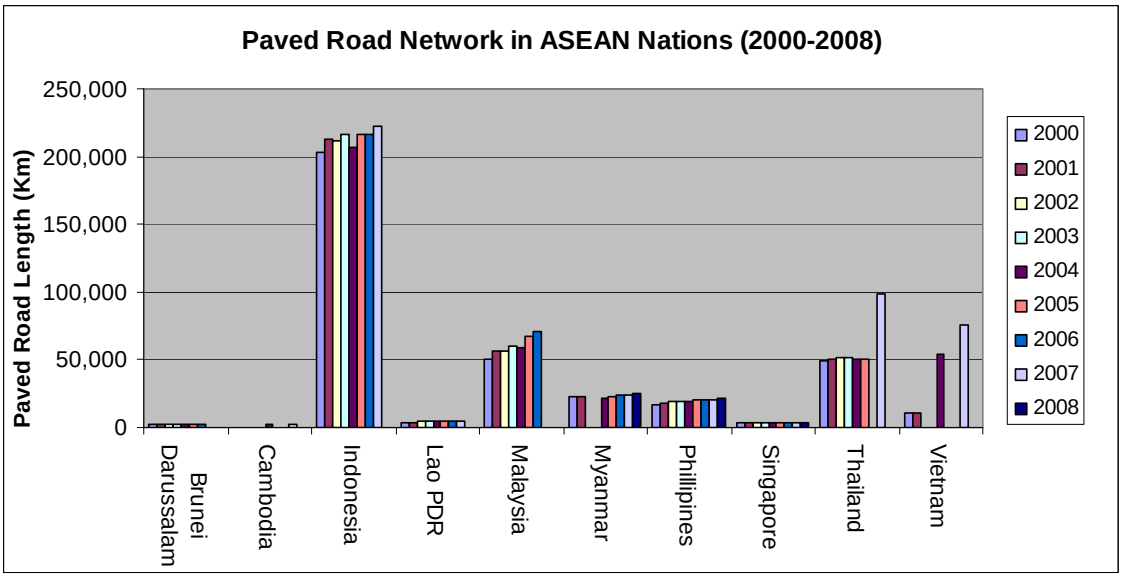


Figure 3-2-4 Growth of Paved Road Network in AMSs (2000-2008)

However, based on comparison of the percentage of paved road networks, Singapore and Thailand lead among the ASEAN countries, with approximately 100% paved network. Cambodia and Lao PDR have the lowest percentage with below 7% of paved road network. These nations have an exceptional task ahead and will require immense efforts and resources to match with the leading AMSs. (Table 3-2-6).

Table 3-2-6 Percentage of Paved Road Network

Year	Brunei Darussalam	Cambodia	Indonesia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Viet Nam
2000	73.3%	NA	57.1%	15.5%	76.2%	79.1%	58.6%	99.7%	96.9%	72.6%
2001	73.5%	NA	58.9%	15.5%	77.9%	80.5%	60.7%	100.0%	98.9%	72.3%
2002	73.5%	NA	57.6%	14.1%	78.1%	NA	63.1%	100.0%	96.1%	NA
2003	77.8%	NA	58.3%	14.4%	77.1%	NA	70.6%	100.0%	96.6%	NA
2004	78.1%	8.1%	55.3%	14.4%	76.3%	24.4%	71.0%	100.0%	97.2%	39.0%
2005	77.2%	NA	55.4%	13.5%	78.0%	24.6%	70.1%	100.0%	97.4%	NA
2006	76.3%	NA	55.0%	12.9%	79.1%	22.9%	70.2%	100.0%	NA	NA
2007	NA	5.7%	56.0%	7.0%	NA	21.8%	71.5%	100.0%	99.9%	47.6%
2008	NA	NA	NA	NA	NA	19.7%	73.1%	100.0%	NA	NA

Source: ASEAN Statistical Yearbook, 2008 and country websites NA – Not Available

Road density is another important parameter for comparison and analysis of the progress of road development. Singapore has the highest road density (road length) with 4,702 km road length per 1000 sq km of country area. It is followed by Brunei Darussalam, with a road density of 646 km per 1000 sq km of area. The Philippines has the lowest road density with 98.8 km road length per 1000 sq km of area. Viet Nam, Myanmar and Thailand made considerable progress in improving their respective road densities. (Table 3-2-7)

Table 3-2-7 Road Density (Road Length per 1000 sq km of total area)

Year	Brunei Darussalam	Cambodia	Indonesia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Viet Nam
2000	567.6	NA	191.3	106.0	201.2	42.3	96.9	4,384.1	98.9	46.6
2001	572.2	NA	194.5	106.0	217.5	42.6	99.6	4,412.4	100.5	47.0
2002	582.5	NA	198.0	137.8	218.5	42.6	100.1	4,454.8	104.8	NA
2003	602.1	NA	199.2	131.8	233.8	42.8	88.6	4,476.0	103.6	NA
2004	617.5	197.6	200.3	131.8	235.3	134.1	92.8	4,508.6	100.9	414.7
2005	633.1	NA	210.2	143.0	263.5	137.2	95.5	4,573.6	100.3	NA
2006	646.7	215.4	211.7	148.9	272.9	153.8	97.4	4,613.2	NA	NA
2007	NA	229.2	213.1	309.6	NA	165.2	97.9	4,662.7	191.1	483.3
2008	NA	NA	NA	NA	NA	185.3	98.8	4,702.3	NA	NA

Source: ERIA Study Team (based on data from ASEAN Statistical Yearbook, 2008 and country data NA – Not Available

3.2.3 ASEAN HIGHWAY AND CROSS BORDER LINKAGES

During the fifth ASEAN Transport Ministers' meeting in Hanoi in September 1999, the Ministerial Understanding on the Development of the ASEAN Highway Network Project was signed, which spelled out a plan of action to achieve the goal. Based on each member state's road conditions, ASEAN has identified the highway network, which consists of 23 designated routes, totalling approximately 38,400 km (Figure 3-2-5).

It is noted that the ASEAN highway network also consist of a part of the Trans-Asian Highway network. In other words, the said network is composed of the Asian Highway that passes through AMSs (shown in red in Figure 3-2-5) and an additional network as shaded in yellow in Figure 3-2-5.

The following time frame was developed and agreed for the accomplishment of ASEAN Highway network:

Stage - 1 (by 2000)	-	Network configuration and designation of national routes.
Stage -2 (by 2004)	-	Installation of road signs at all designated national routes. All designated routes to be upgraded to at least Class III standards. All missing links to be constructed and cross-border points will be designated.
Stage- 3 (by 2020)	-	All designated routes are to be upgraded to at least Class I standards. For low traffic volume non-arterial routes, Class II standards would be acceptable.

Source: ASEAN Logistics Network Map Study, JETRO, 2009

Figure 3-2-5 ASEAN Highway Network (includes Asian Highway)

It is interesting to note and analyze the respective physical (highway) linkages among AMSs. However, this mainly depends on the number of neighbouring borders and geographical location of each nation. For example, the Philippines, due to its geographical location and is surrounded by sea. Hence, it does not share its border and has no highway linkages with any other ASEAN countries.

Thailand has 13 highway linkages with four neighbouring States (Cambodia, Lao PDR, Malaysia and Myanmar), which is also the highest among ASEAN members states. This is followed by Lao PDR and Malaysia. (Refer Table 3-2-8, Figure 3-2-6 and Figure 3-2-7).

It is noted that despite sharing its border, Lao PDR and Myanmar do not have any direct highway linkages between them. The AH-2 and AH-3 passing through Thailand connects both the nations.

Table 3-2-8 ASEAN Highway Cross Border Links between the Nations

	Brunei Darussalam	Cambodia	Indonesia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Viet Nam
Brunei Darussalam					✓(2)					
Cambodia				✓(1)					✓(2)	✓(1)
Indonesia					✓(2)					
Lao PDR		✓(1)							✓(5)	✓(5)
Malaysia	✓(2)		✓(2)					✓(1)	✓(2)	
Myanmar									✓(4)	
Philippines										
Singapore					✓(1)					
Thailand		✓(2)		✓(5)	✓(2)	✓(4)				
Viet Nam		✓(1)		✓(5)						
Total Number of Linkages	2	4	2	11	7	4	0	1	13	6
Total Country Linkages	1	3	1	3	4	1	0	1	4	2

Source: ERIA Study Team

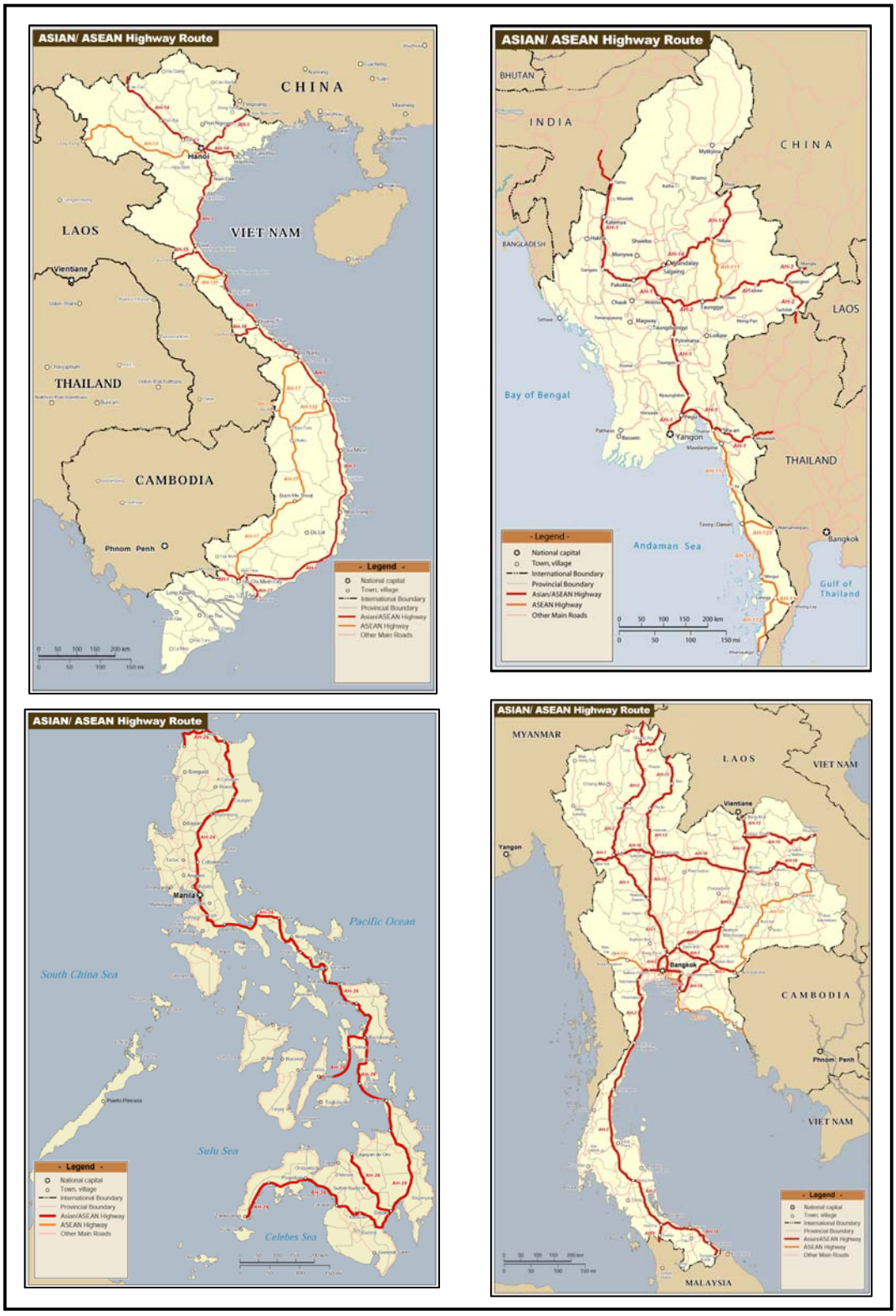
Note- The number in parenthesis indicates the number of physical highway link between the two nations.

✓ means that there is physical highway links between the two countries.

Blank boxes means either non-existence (or not applicable) of physical links between the two nations.

Source: ASEAN Logistics Network Map Study, JETRO, 2009

Figure 3-2-6 Highway Network in AMSs (1 of 2)



Source: ASEAN Logistics Network Map Study, JETRO, 2009

Figure 3-2-7 Highway Network in AMSs (2 of 2)

As stated earlier, ASEAN highway also constitutes a part of Trans-Asian Highway. On strictly reviewing only the Asian highway component in ASEAN countries, it reveals that in 2008, Lao PDR, Cambodia, Myanmar, the Philippines and Viet Nam did not have 'Primary' standard roads. In Lao PDR and Cambodia, even the Class-I standard roads do not exist and is mainly dominated by Class-III standard roads. These nations had a massive task ahead to improve the quality of highway roads. (Table 3-2-9 and Figure 3-2-8).

Based on the analysis of the progress made since 2004, Indonesia, Malaysia Myanmar, the Philippines and Thailand were able to increase the lengths of their Class-I standard roads. However, still significant percentages of Class-III, or below standard roads, exist in Myanmar, Cambodia, Lao PDR and the Philippines.

Table 3-2-9 Inventory of Asian Highway (km) in AMSs (2004-2008)

Nations	Primary			Class-I			Class-II			Class-III			Below Class-III & Others		
	2004	2006	2008	2004	2006	2008	2004	2006	2008	2004	2006	2008	2004	2006	2008
Cambodia	0	0	0	0	0	0	398	453	453	743	879	883	199	3	2
Indonesia	335	409	409	18	188	592	1600	1734	3,219	1965	1550	0	34	89	34
Lao PDR	0	0	0	0	0	0	0	0	244	2375	2032	1,967	3	285	107
Malaysia	795	795	795	67	67	148	733	733	636	0	0	0	0	0	0
Myanmar	0	0	0	147	147	173	144	0	35	983	1585	1,585	1729	1271	1216
Philippines	0	0	0	17	134	161	27	928	2,818	2872	1917	0	601	538	538
Singapore	11	1	11	8	8	8	0	0	0	0	0	0	0	0	0
Thailand	182	182	182	2572	2926	3,049	1226	1187	1,723	1128	813	155	4	2	2
Viet Nam	0	0	0	408	338	344	1915	2018	2,150	104	85	0	251	190	137
Total (km)	1323	1387	1397	3237	3808	4475	6043	7053	11278	10170	8861	4590	2821	2378	2036

Source: Statistical Yearbook for Asia and the Pacific 2008, UNESCAP and UN-ESCAP website

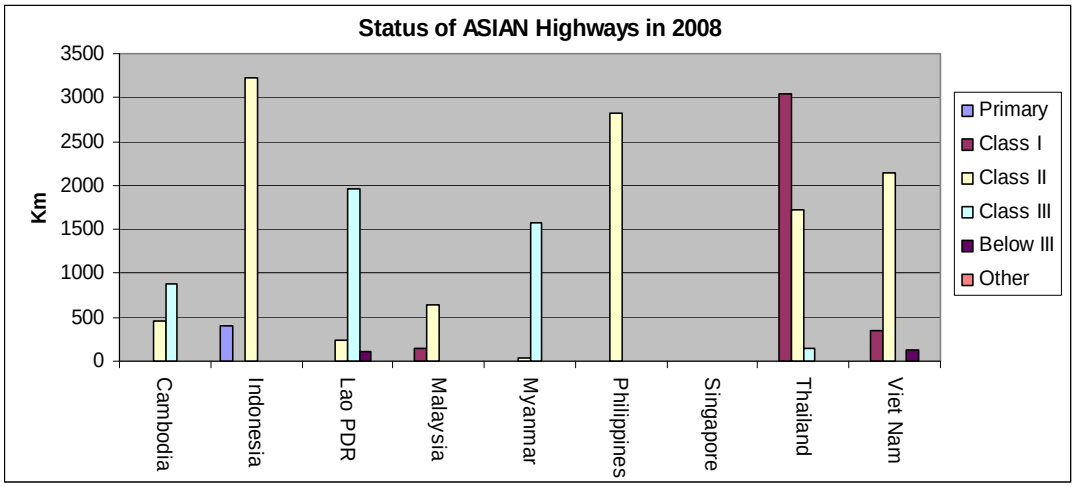


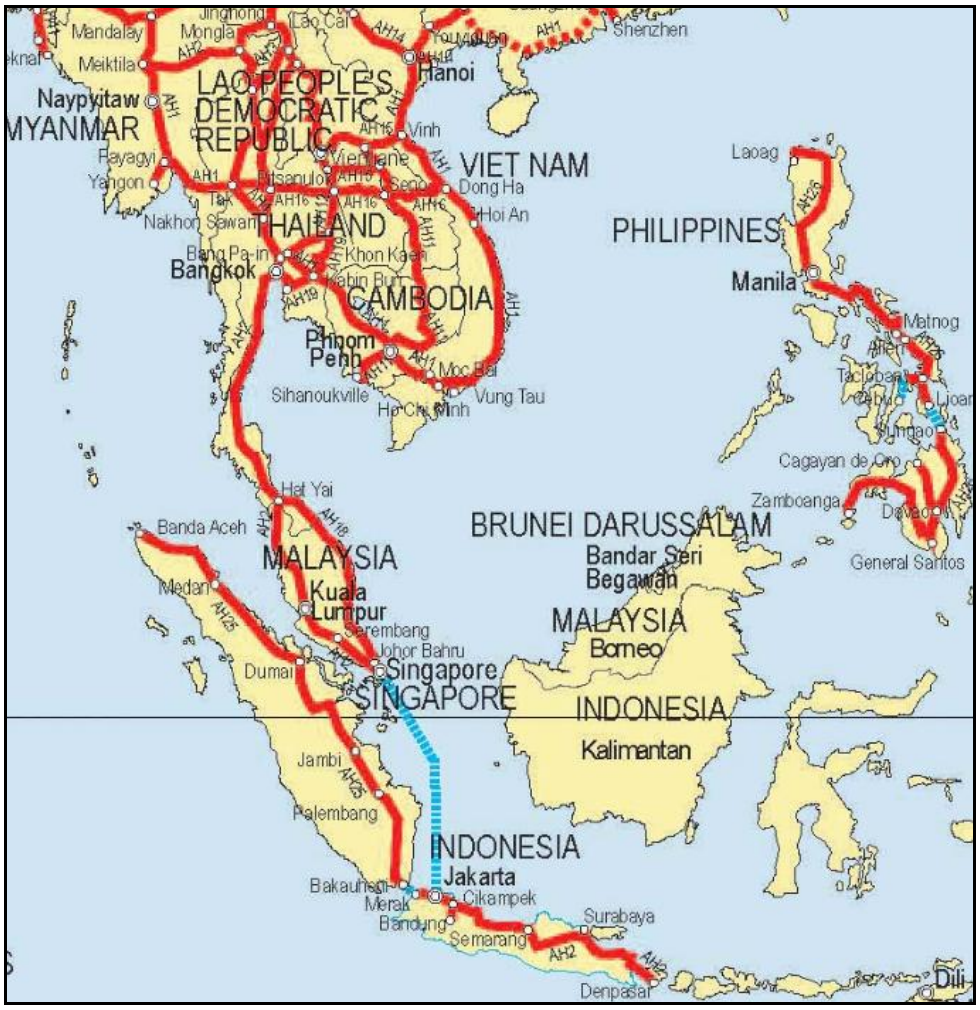
Figure 3-2-8 Status of Asian Highways in 2008 in AMSs

On further reviewing in detail the Asian Highway network, it is quite interesting to note the continuation of certain Highway links across the sea/river and their connectivity by 'Ferry Links'. For example, AH2 and AH25 in Indonesia are in the separate island in Indonesia and are connected by means of 'Ferry Link'. On reviewing such ferry links as mentioned under Asian Highway Network in context of ASEAN regions then there are seven (7) ferry links in 3 AMSs as shown in Table 3-2-10 and Figure 3-2-9 that connects the Asian Highway network.

Table 3-2-10 Ferry Links in the AMSs in Asian Highways

Country	Route Number	Origin-Destination	Length of Ferry Links (km)
Cambodia	AH-1	Mekong River Ferry Crossing-Neak Loeung	1.5 km
	AH-11	Rapeangkreal (Border of Lao PDR) - Stung Treng	0.7 km
Indonesia	AH-2	Gilimanuk Terminal -Banyuwangi Terminal	8 km
	AH-25	Bakauheni Ferry Terminal -Merak Ferry Terminal	26 km
Philippines	AH-26	Matnog Terminal - Allen Terminal	25 km
	AH-26	Ormoc Terminal - Cebu Terminal	65 km
	AH-26	Liloan Ferry Terminal -San Francisco Madilao Port	61.05 km

Source: UN-ESCAP website and country data



Source: UNESCAP website

Figure 3-2-9 Ferry Links in Asian Highways in ASEAN Region

Prior to discussing and comparing the progress that has been achieved in the implementation of the ASEAN Highways, it is important to understand the standards that has been adopted for the classification of ASEAN highways in four categories i.e. Primary, Class I, Class II, and Class III. The highways that does not match to the standards adopted for the lowest category i.e. Class III are considered under "Below Class III" category. The Table 3-2-11 provides the details of standards as adopted for ASEAN Highways.

Table 3-2-11 ASEAN Highway Standards

Highway Classification		Primary (4 or more lanes) (control access)			Class I (4 or more lanes)			Class II (2 lanes)			Class III (2 lanes)		
Terrain classification		L	R	M	L	R	M	L	R	M	L	R	M
Design speed (km/h)		100-120	80-100	60-80	80-110	60-80	50-70	80-100	60-80	40-60	60-80	50-70	40-60
Width (m)	Right of way	(50-70) ((40-60))			(50-70) ((40-60))			(40-60) ((30-40))			30-40		
	Lane	3.75			3.50			3.50			3.00 [3.25]		
	Shoulder	3.0		2.5	3.0		2.5	2.5		2.0	1.5 [2.0]		1.0 [1.5]
Min. horizontal curve radius (m)		390	230	120	220	120	80	200	110	50	110	75	50
Type of pavement		Asphalt/cement concrete			Asphalt/cement concrete			Asphalt/cement concrete			Double bituminous treatment		
Max. super elevation (%)		(7) ((6))			(8) ((6))			(10) ((6))			(10) ((6))		
Max. vertical grade (%)		4	5	6	5	6	7	6	7	8	6	7	8
Min. vertical clearance (m)		4.50 [5.00]			4.50 [5.00]			4.50			4.50		
Structure loading (minimum)		HS20-44			HS20-44			HS20-44			HS20-44		

Note:
1. Abbreviation: L = Level Terrain M = Mountainous Terrain R = Rolling Terrain
2.( ) = Rural (( )) = Urban
3. [ ] = Desirable Values
4. The right of way width, lane width, shoulder width and max. superelevation rate in urban or metropolitan area can be varied if necessary to conform with the member countries design standards.

Source : www.aseansec.org/ahnp_b.htm

On comparing the ASEAN Highway status between 2004 and 2008 as shown in Table 3-2-12, it reveals that some of the AMSs are still struggling to meet the targets set for ASEAN highways. As per ASEAN Highway targets, by the year 2004, all designated routes need to be upgraded to at least Class III standards and all missing links need to be constructed. As per Table 3-2-12, in 2008, below Class-III standard roads still exists in Indonesia, Lao PDR, Malaysia, Myanmar and Viet Nam. A large percentage of the total road networks in Myanmar still fall below Class-III category. In 2008, missing links also exist in Indonesia and Myanmar.

Table 3-2-12 Comparison of the ASEAN Highways Status between 2004 & 2008 in AMSs

Country	Total Length (km)		Primary (km)		Class I (km)		Class II (km)		Class III (km)		Below Class III (km)		Missing Links (km)	
	2004	2008	2004	2008	2004	2008	2004	2008	2004	2008	2004	2008	2004	2008
Brunei Darussalam	168.0	168.0	62.0	-	8.5	66.0	97.5	98.8	-	3.2	-	-	-	-
Cambodia	1506.5	1486.8	-	-	-	-	371.6	1335.8	994.9	151.0	140.1	-	-	-
Indonesia	9239.0	9928.4	344.0	80.0	546.0	437.5	2518.0	3947.4	4469.0	4075.4	1362.0	1362.0	-	26
Lao PDR	2956.0	2702.4	-	-	-	-	-	227.6	2336.0	1861.8	620.0	613.0	-	-
Malaysia	4410.9	4393.5	1060.3	1060.3	74.0	74.0	1847.6	1830.2	1389.0	1389.0	40.0	40.0	-	-
Myanmar	4543.0	4534.0	-	-	147.0	157.0	-	-	1032.0	1385.0	3163.0	2791.0	201	201
Philippines	2983.0	3563.9	-	71.0	469.0	196.1	637.0	8.4	1877.0	2990.8	-	-	-	-
Singapore	38.0	38.0	28.0	28.0	10.0	10.0	-	-	-	-	-	-	-	-
Thailand	6692.5	6669.2	350.1	386.6	4579.2	4695.4	1322.3	1394.4	424.9	192.8	16.0	-	-	-
Viet Nam	4532.0	4206.6	-	32.3	419.0	414.9	2441.0	2298.7	355.0	955.8	1317.0	505.2	-	-
Total	37068.9	37690.9	1844.4	1658.2	6252.7	6050.9	9235.0	11141.3	12877.8	13004.9	6658.1	5311.2	201	227

Source: The 2004 data is from ASEAN Highway Fact Book and the complied data for 2008 received from the Department of Highways, Thailand.
'–' means not applicable

It is to be noted that to facilitate transportation of goods in transit and to further integrate the region's economies, the priority routes such as 'Transit Transport Routes (TTR)' were identified in ASEAN highway network and are discussed in detail in the next section. However, as TTR routes are vital for regional and economic integration, the upgrading of TTR routes will always be the priority. On analyzing in detail the status of ASEAN Highways

in 2008 as shown in Table 3-2-13, there are still certain sections in TTR that are below Class-III standard. In TTR and other ASEAN Highways, the below Class-III standard roads still exist in Indonesia (AH-150, AH-151, AH-25), Lao PDR (AH12, AH15, AH-131, AH-132), Malaysia (AH-150), Myanmar (AH-1, AH-2, AH-3, AH-111, AH-112, AH-123) and Viet Nam (AH-13, AH-132). In Viet Nam, recently, the below Class III section on AH14 has been upgraded. To enhance trade and tourism, it is vital to upgrade these sections with a priority on the sections along the TTR.

Table 3-2-13 The ASEAN Highways Route Status in 2008 in AMSs

Country	Route No.	Itinerary	Total Length (km)	Primary (km)	Class I (km)	Class II (km)	Class III (km)	Below Class III (km)	Missing Links (km)	Transit Transport Routes Length (TTR) in km
Brunei Darussalam	AH 150	Sg. Tujuh - Kuala Lurah, Puni (Brunei Darussalam Check Point) - Labu (Brunei Darussalam Check Point)	168.0	-	66.0	98.8	3.2	-	-	168 km
Cambodia	AH 1	Poi Pet - Sisophon - Phnom Penh - Bavet	573.0	-	-	573.0	-	-	-	574 km
	AH 11	Sihanoukville - Phnom Penh - Kampong Cham - Stung Treng - Trapeangkreal	762.8	-	-	762.8	-	-	-	764 km
	AH 123	Cham Yeam - Koh Kong - Phum Daung Bridge - Sre Ambel - Chamkar Luong	151	-	-	-	151	-	-	-
Indonesia	AH 2	Merak - Jakarta - Semarang - Kartasura - Surabaya - Denpasar	1687.1	-	353.8	1333.3	-	-	-	1299 km
	AH 25	Banda Aceh - Medan - Pekanbaru - Jambi - Palembang - Lampung - Bakauheni - Merak	2783.3	-	33.7	1535.2	1188.4	-	-	2523 km
	AH 150	Serudong - Samarinda - Banjarmasin - Palangkaraya - (Entikong) - Pontiana	3073.0	-	-	359.0	1530.0	1184.0	-	321 km
	AH 151	Tebingtinggi - Padang - Bangko - Lubuk Linggau - Terbanggi Besar	1719.0	-	-	357.0	1184.0	178.0	-	-
	AH 152	Jakarta - Bogor - Sukabumi - Bandung - Yogyakarta – Kartasura	666.0	80.0	50.0	363.0	173.0	-	-	-

Country	Route No.	Itinerary	Total Length (km)	Primary (km)	Class I (km)	Class II (km)	Class III (km)	Below Class III (km)	Missing Links (km)	Transit Transport Routes Length (TTR) in km
Lao PDR	AH 3	Boten - Nateuy - Houayxay	227.6	-	-	227.6	-	-	-	251 km
	AH 11	Vientiane - Ban Lao - Thakhek - Seno - Phia Fai - Veunkham	832.0	-	-	-	832.0	-	-	861 km
	AH 12	Nateuy - Oudomxai - Louang- Phrabang -Vientiane	703.3	-	-	-	410.3	293.0	-	682 km
	AH 13	Nam Ngeun - Oudomxai - Taichang	189.0	-	-	-	189.0	-	-	-
	AH 15	Thakhek - Ban Lao - Keoneau	132.8	-	-	-	34.8	98.0	-	136 km
	AH 16	Savannakhet - Seno - Densavanh	241.1	-	-	-	241.1	-	-	240 km
	AH 131	Thakhek - Kiamuoya	137.7	-	-	-	41.7	96.0	-	-
	AH 132	Phia Fai - Ban Het	239.0	-	-	-	113.0	126.0	-	-
Malaysia	AH 2*	Bukit Kayu Hitam - Kuala Lumpur - Senai Utara - Second Linkage	821.0	795.0	26.0	-	-	-	-	980 km
	AH 18*	Rantau Panjang - Kuantan - Johor Bharu	756.6	-	41.0	715.6	-	-	-	-
	AH 140	Sungai Petani - Gerek - Kota Bharu	330.0	-	-	-	330.0	-	-	-
	AH 141	Port Klang - Kuala Lumpur - Kuantan	272.3	265.3	7.0	-	-	-	-	-
	AH 142	Gambang - Yong Peng	200.0	-	-	-	200.0	-	-	-
	AH 143*	Senai Utara - Johor Bharu	19.0	-	-	19.0	-	-	-	-
	AH 150	Serian - Kuching, Tebedu - Serian - Sg. Tujuh, Kuala Lurah - Runi, Labu - Kota Kinabalu - Serudong	1994.6	-	-	1095.6	859.0	40.0	-	1262 km

Country	Route No.	Itinerary	Total Length (km)	Primary (km)	Class I (km)	Class II (km)	Class III (km)	Below Class III (km)	Missing Links (km)	Transit Transport Routes Length (TTR) in km
Myanmar	AH 1	Tamu - Mandalay - Meiktila - Yangon - Bago - Payagyi - Thaton - Myawadi	1656.0	-	80.0	-	1206.0	379.0	-	1665 km
	AH 2	Meiktila - Loilem - Kyaing Tong - Tachilek	807.0	-	10.0	-	349.0	448.0	-	807 km
	AH 3	Mongla - Kyaing Tong	93.0	-	-	-	93.0	-	-	93 km
	AH 14	Muse - Thibaw - Mandalay	453.0	-	67.0	-	386.0	-	-	453 km
	AH 111	Thibaw - Loilem	239.0	-	-	-	-	239.0	-	-
	AH 112	Thaton - Mawlamyine - Thanbuzayat - Ye - Dawei - Lehnya - Khamaukgyi, Lehnya - Khong Loy	1145.0	-	-	19.0	84.0	982.0	60.0	-
	AH 123	Dawei - Maesameepass	141.0	-	-	-	-	-	141.0	-
Philippines	AH 26**	Laoag City - Manila - Daet - Surigao - General Santos - Malabang - Zamboanga City	3,266.27	71.0	196.08	8.36	2,990.8	-	-	3073 km
Singapore	AH 2*	Woodlands Checkpoint - Pan Island Express - Upp Bukit Timah Rd - West Coast Highway	19.0	11.0	8.0	-	-	-	-	-
	AH 143*	Tuas Checkpoint - Clementi Road - West Coast Highway	19.0	17.0	2.0	-	-	-	-	-
Thailand	AH 1	Mae Sot - Tak - Nakhon Sawan - Bangkok - Hin Kong - Kabinburi - Aranyaprathet	715.5	44.6	531.3	139.5	-	-	-	702 km
	AH 2	Tachilek - Mae Sai - Chiang Rai - Tak-Bangkok - Pranburi - Hat Yai - Chang Lon	1913.6	110.4	1800.9	2.2	-	-	-	1923 km
	AH 3	Chiang Khong - Chiang Rai	121.2	-	11.4	50.6	59.2	-	-	115 km
	AH 12	Nongkhai - Udonthani - Khonkaen - Nakhon Ratchasima - Hin Kong	571.3	-	571.3	-	-	-	-	533 km
	AH 13	Huai Kon - Phitsanulok - Nakhon Sawan	550.5	-	343.6	206.9	-	-	-	-
	AH 15	Udonthani - Nakhon Phanom	248.7	-	82.1	166.6	-	-	-	-
	AH 16	Tak - Phitsanulok - Lom Sak - Khonkaen -	703.4	-	324.4	322.7	56.4	-	-	713 km

Country	Route No.	Itinerary	Total Length (km)	Primary (km)	Class I (km)	Class II (km)	Class III (km)	Below Class III (km)	Missing Links (km)	Transit Transport Routes Length (TTR) in km
		Mukdahan								
	AH 18	Hat Yai - Sungai Kolok	311.1	-	311.1	-	-	-	-	-
	AH 19	Nakhon Ratchasima - Kabinburi - Chonburi - Bangkok	364.1	78.9	285.2	-	-	-	-	491 km
	AH 112	Khlong Loy - Bang Saphan	28.0			13.0	15.0			-
	AH 121	Mukdahan - Suwannaphum - Buriram - Aranyaprathet - Sa Kaeo	507.6	-	90.4	370.0	47.2	-	-	-
	AH 123	Myanmar Border - Bangkok - Chonburi - Chanthanburi - Hat Lek	634.2	152.7	343.6	122.8	15.1	-	-	-
Viet Nam	AH 1	Huu Nghi Quan - Hanoi - Vot (South of Vinh) - West Vung Ang Port - Dong Ha - Da Nang - West of Hoi An - Quang Ngai - Nha Trang - Bien Hoa - Ho Chi Minh City - Moc Bai	1803.0	32.3	88.5	1323.6	358.6	-	-	296 km
	AH 13	Tay Trang - Dien Bien - Tuan Giao - Son La - Hoa Binh - Ha Noi	499.5	-	8.2	-	279.3	215.5	-	-
	AH 14	Lao Cai - Doan Hung - Hanoi - Hai Phong	427.5	-	156.1	30.8	115.6	183.0***	-	-
	AH 15	Cau Treo - Vot (South of Vinh)	99.3	-	-	14.0	85.3	-	-	123 km
	AH 16	Lao Bao - Dong Ha	84.0	-	-	84.0	-	-	-	83 km
	AH 17	West of Hoi An - Thanh My - Kon Tum - Play Cu - Ban Me Thuot - Chon Thanh - An Suong - Bien Hoa - Vung Tau	958.5	-	162.1	737.4	59.0	-	-	75 km
	AH 131	Mu Da - West of Vung Ang Port	137.0	-	-	99.0	38.0	-	-	-
	AH 132	Bo Y - Dak To - Kon Tum - Quang Ngai	198.2	-	-	10.0	20.0	160.0	-	-

Source: The 2004 data is from ASEAN Highway Fact Book and the complied data for 2008 received from the Department of Highways, Thailand.

Final route numbering between Malaysia and Singapore is subject to consultation between both countries. **No Inventory data for 211.50 km.

Note: AH1, AH2, AH3, AH11, AH12, AH13, AH14, AH15, AH16, AH18, AH19 and AH25 are also a part of Trans Asian Highways.

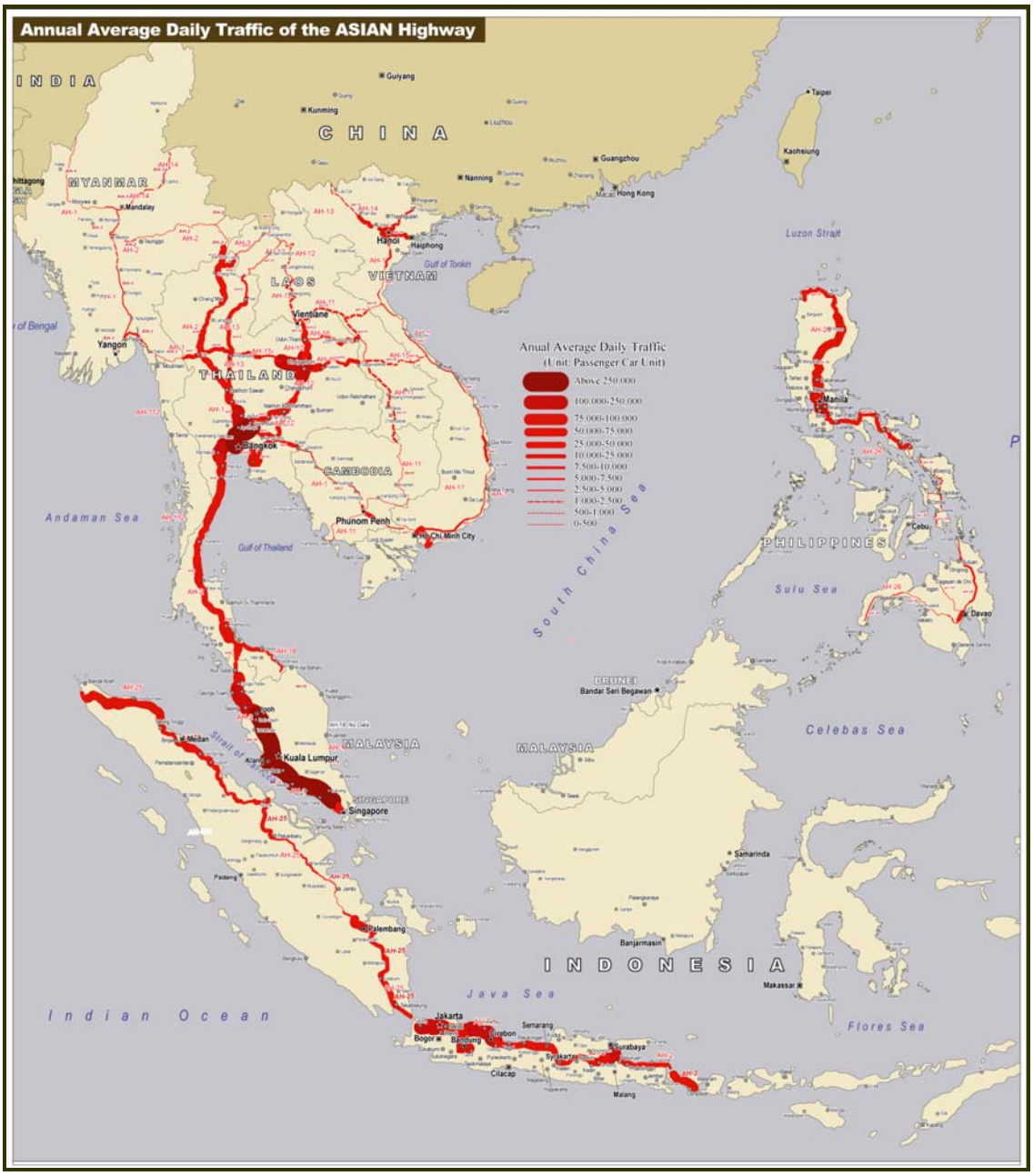
' - ' means 'Not Applicable' (no road length reported in that Class category)

*** Recently, this section has been upgraded.

On analyzing the traffic volume and number of lanes, it was observed that volume of traffic is large on highways such as that linking Singapore and Bangkok, Thailand, in the northern islands of the Philippines and in the Java region of Indonesia. On comparing the traffic volume with the number of existing lanes, it is interesting to note that except the highway that links Singapore and Bangkok, others mainly consist of two-lane roads only. To enhance the trade activities among AMSs, it is vital to improve the road infrastructure and quality of roads of the other highways. (Figure 3-2-10 and Figure 3-2-11).

Source: ASEAN Logistics Network Map Study, JETRO, 2009

Figure 3-2-10 Number of Lanes in Asian Highways



Source : ASEAN Logistics Network Map Study, JETRO, 2009

Figure 3-2-11 Traffic Volume on Asian Highways

3.2.4 TRANSIT TRANSPORT ROUTES (TTR)

To facilitate transportation of goods in transit, support the implementation of the ASEAN Free Trade Area (AFTA), and further integrate the region's economies, priority routes classified as 'Transit Transport Routes (TTR)' were identified. The 35 sections on various ASEAN Highways across AMSs were designated as TTR. The details of the routes are shown in Table 3-2-14, Figure 3-2-12 and Figure 3-2-13.

Table 3-2-14 Details of Designated TTR

Country	Route No.	Origin-Destination	Length (km)
Brunei Darussalam	AH-150	Sungai Tujoh/Miri (Brunei Darussalam / Malaysia Check Point) - Kuala Lurah /Limbang (Brunei Darussalam/Malaysia Check Point)	140
	AH-150	Puni/Limbang (Brunei Darussalam/Malaysia Check Point) - Labu/Lawas (Brunei Darussalam/Malaysia Check Point)	28
Cambodia	AH-1	Poi Pet (Cambodia/Thailand Border) - Sisophon - Phnom Penh - Bavet (Cambodia /Viet Nam Border)	574
	AH-11	Trapeing Kreal (Cambodia /Lao PDR Border) - Stung Treng - Kampong Cham - Phnom Penh - Sihanoukville Port	674
Indonesia	AH-2	Merak - Jakarta - Surakarta -Surabaya - Denpasar	1,299
	AH-150	Pontianak - Entikong/Tebedu (Indonesia/Malaysia, Sarawak Border)	321
	AH-25	Banda Aceh - Medan -Palembang - Bakahuni	2,523
Lao PDR	AH-3	Boten (Lao PDR/China Border) - Luang Namtha -Houi Sai (Lao PDR/Thailand border)	251
	AH-12	Natrey (J.R.AH.3)-Oudomsay - Luang Phrabang - Vientiane	682
	AH-11	Vientiane (J.R.AH.12) - Ban Lao - Thakhek - Savannakhet - Pakse - Veunkhame (Lao PDR/Cambodia Border)	861
	AH-15	Namphao (Lao PDR/Viet Nam Border)- Ban Lao (J.R.AH.11)	136
	AH-16	Savannakhet (Lao PDR/Thailand Border) –Danesavanh (Lao PDR/ Viet Nam Border)	240
Malaysia	AH-2	Bukit Kayu Hitam (Malaysia/Thailand Border) - KualaLumpur - Seremban - Senai Utara - Tanjung Kupang	980
	AH-150	Entikong/Tebedu (Indonesia/Malaysia Border) - Serian - Kuching	106
	AH-150	Serian - Sibu - Bintulu - Miri	861
	AH-150	Miri - Sg. Tujoh (Malaysia/Brunei Darussalam Check Point)	24
	AH-150	Kuala Lurah (Malaysia/Brunei Darussalam Check Point) - Limbang/Puni (Malaysia/ Brunei Darussalam Check Point)	45
	AH-150	Lawas/Labu (Malaysia/Brunei Darussalam Check Point) -Kota Kinabalu	226
Myanmar	AH-1	Tamu (Myanmar/India Border) - Mandalay - Meiktila – Payagyi (including Payagyi- Yangon) - Myawadi (Myanmar/Thailand Border)	1,665
	AH-2	Meiktila - Loilem - Keng Tung - Tachileik (Myanmar/ Thailand Border)	807
	AH-3	Kyaington (Keng Tung) - Mongla	93
	AH-14	Muse (Myanmar/China Border) - Mandalay	453

Country	Route No.	Origin-Destination	Length (km)
Philippines	AH-26	Laoag City-Manila-Matnog-(Ferry Service)- Allen or (DapDap) - Tacloban City - Liloan (Ferry Service) or (San Ricardo) - Lipata - Surigao City - Davao City - General Santos City - Cotabato City - Zamboanga City	3,073
Singapore		Designated Transit Transport Routes to be submitted at the time of deposit of Instrument of Ratification.	
Thailand	AH-1	Mae Sot (Thailand/Myanmar Border) - Tak - Bangkok - Hin Kong - Nakhon Nayok - Aranyaprathet - Khlong Luek (Thailand/Cambodia Border)	702
	AH-2*	Mae Sai (Thailand/Myanmar border) - Chiang Rai - Lampang - Tak - Bangkok (West Outer Ring Road) - Nakhon Pathom - Pak Tho - Chumphon - Suratthani - Phattalung - Hat Yai - Sadao (Thailand/Malaysia Border)	1,923
	AH-3	Chiang Rai - Chiang Khong (Thailand/Lao PDR Border)	115
	AH-12	Hin Kong - Saraburi - Nakhon Ratchasima - Khon Kaen - Nongkhai (Thailand/Lao PDR Border)	533
	AH-16	Tak - Phitsanulok - Khon Kaen - Kalasin - Somdet - Mukdahan (Thailand/Lao PDR Border)	713
	AH-19	Nakhon Ratchasima - Kabinburi - Laem Chabang East Outer Bangkok Ring Road (Tub Chang) - Bang Pa In	491
Viet Nam	AH-1	Moc Bai (Viet Nam/CambodiaBorder) - An Suong (Ho Chi Minh City)	99
	AH-1	Dong Ha – Da Nang/Tien Sa	197
	AH-15	Keo Nua (Viet Nam/Lao PDR Border) - Bai Vot - Vinh - Cua Lo	123
	AH-16	Lao Bao (Viet Nam/Lao PDR Border) - Dong Ha	83
	AH-17	Dong Nai - Vung Tau	75

*Including length between Tak - Bangkok 363 kms which is part of AH.– 1
Source: ASEAN website

Source: Land Transport Working Group Meetings

Figure 3-2-12 Transit Transport Routes along ASEAN Highways (1 of 2)

Source: Land Transport Working Group Meetings

Figure 3-2-13 Transit Transport Routes along ASEAN Highways (2 of 2)

3.2.5 URBAN TRANSPORT

As a result of rapidly growing motorization, many cities in the region are facing serious problems, including significant levels of traffic congestion, air pollution from transport sources, high rates of traffic accidents and inadequate access to transport facilities especially for poor and vulnerable groups, such as people with disabilities. Some of the most rapid increases in motorization have taken place in major cities and capital cities in ASEAN countries. The dominant transport mode in cities like Hanoi includes two and three wheelers. The central parts of capitals are particularly congested, with weekday peak-hour traffic speeds reported to be very low resulting in long travel time. The deteriorating urban environment threatens the "liveability" and productivity of many cities.

Public transport has a very important role in urban transportation. Except in Singapore where the modal share of public transport is more then 70%, other major ASEAN cities are still struggling to improve the public transport services and share. Despite Jakarta's successful

implementation of the Bus Rapid Transit (BRT) systems, its share remains low. Compared to rail-based mass transit systems, the BRT system tend to be much cheaper, faster to construct, more profitable to operate and economical to commuters. Hence, such system needs to be promoted and developed in other major ASEAN cities and capitals. Considering the environment performances, there is also a need to improve street furniture, pedestrian facilities and encourage the use of bicycles for at short distance travels.

3.2.6 ROAD SAFETY

According to a 2004 study by the Asian Development Bank (ADB), road crashes killed more than 75,000 people and injured around 4.7 million in AMSs. In addition, it is estimated that annually, 25 million people are directly affected by road trauma which lead to economic hardships.

Motorization is increasing significantly within ASEAN as an outcome of economic growth. The number of registered motor vehicles continues to escalate, especially motorcycles. This type of vehicle is the most popular within the region due to its relatively low cost and suitability to the environment. In some AMSs like Viet Nam, the number of motorcycles represents approximately 95% of the overall vehicle fleet.

It is estimated that 310,000 lives were lost and about 20 million were injured on the region's roads over the last five years. The cost in economic terms is huge, with approximately USD $15 billion or equivalent to 2.23% of ASEAN gross domestic product annually. In 2007, among the ASEAN countries, the numbers of fatalities were highest in Indonesia followed by Viet Nam, Thailand and others (Table 3-2-15 and Figure 3-2-14)

Table 3-2-15 Number of Fatalities and Injuries in 2007

Country	Number of Fatalities (2007)	Number of Non-Fatalities (Injured) (2007)
Brunei Darussalam	54	556
Cambodia	1545	25858
Indonesia	16548	66040
Lao PDR	608	8714
Malaysia	6282	21363
Myanmar	1638	12358
Philippines	706	5065
Singapore	214	10352
Thailand	12492	973104
Viet Nam	12800	445048

Source: WHO & UN-ESCAP websites & country data.

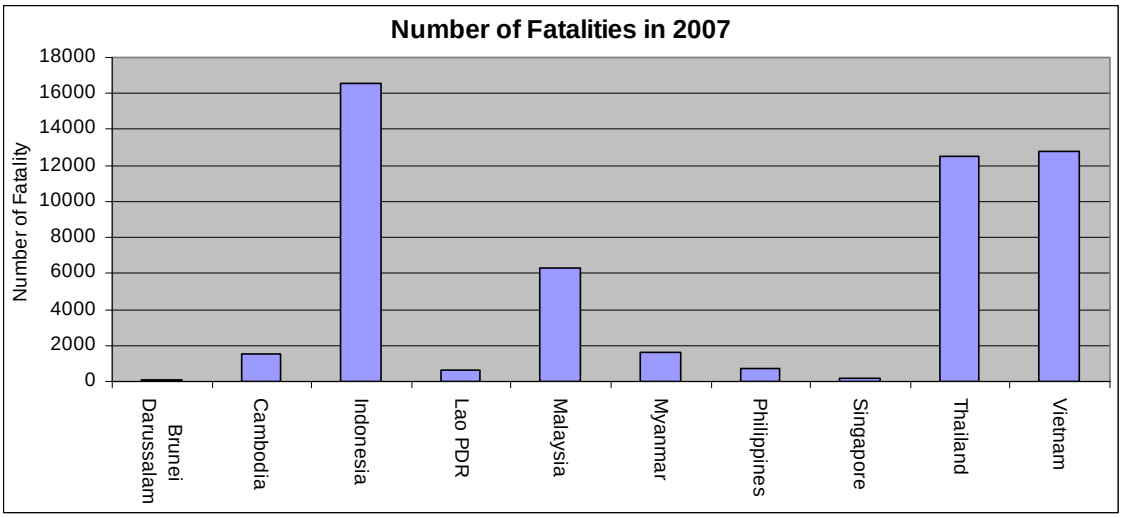


Figure 3-2-14 Number of Fatalities in 2007 in AMSs

On analyzing further the road user's death statistics, it reveals that a significant percentage of cyclist and pedestrian's are the victims of road accidents. It is surprising to note that despite dedicated efforts towards road safety in Singapore, of the total road user's death in 2007, approximately 27.1% and 10.3% victims were pedestrians and cyclist respectively. A high percentage of pedestrians were also victims of road accidents in the Philippines (43.6%), Myanmar (30.3%), Indonesia (15%) and Cambodia (13.3%). (Refer Table 3-2-16 and Figure 3-2-15). In Viet Nam in 2008, approximately 12,800 cases of traffic accidents occurred, killing 11,600 persons and injuring 8,100 persons. However, these numbers were less as compared to 2007 data. Hence, its number of traffic accidents went down by 12.5%, number of fatalities down by 11.9% and injuries down by 23.6%.

Table 3-2-16 Percentage of Road User Deaths (2007)

Country	Driver/Passenger of 4-Wheeler	Driver/Passenger of 2 or 3 Wheeler	Cyclist	Pedestrians	Others or Unspecified
Brunei Darussalam	75.8	11.1	1.9	9.2	2.1
Cambodia	14.9	62.8	4.7	13.3	4.2
Indonesia	7	61	13	15	4
Lao PDR	-	-	-	-	-
Malaysia	23.3	58	3	10.1	5.6
Myanmar	46.7	9.6	11.5	30.3	1.9
Philippines	36.4	12.3	5.7	43.6	2.0
Singapore	14.9	47.7	10.3	27.1	-
Thailand	11	69.7	2.8	8.3	8.2
Viet Nam	-	-	-	-	-

Source: WHO & UNESCAP websites & Country Data

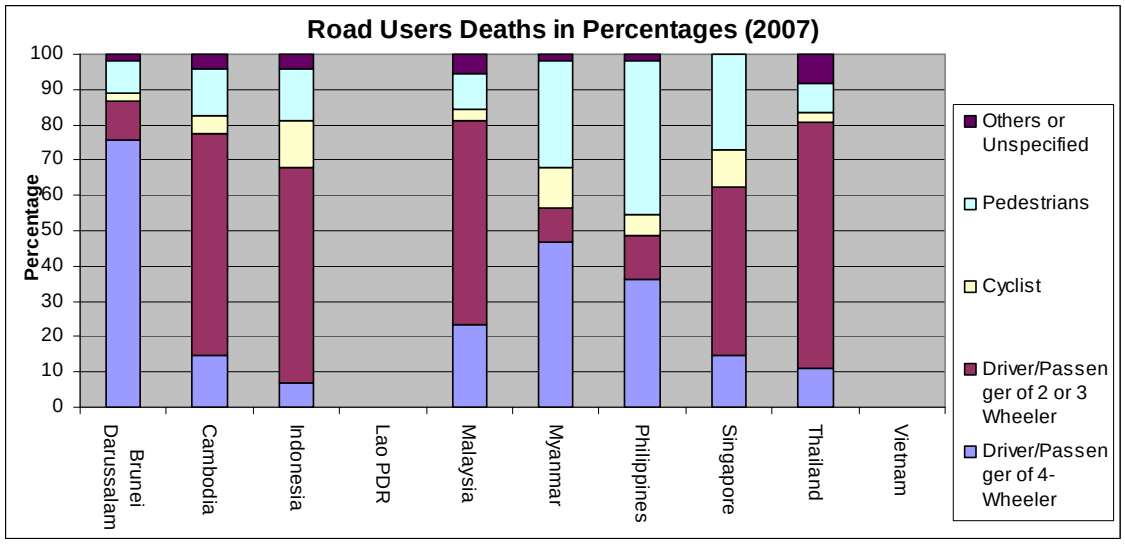


Figure 3-2-15 Percentage of Road Users Deaths (2007)

On comparing the fatality rate per 10,000 registered vehicles in 2007, it reveals that Cambodia, Lao PDR, Myanmar, Viet Nam (CLMV) nations are suffering the most from lack of traffic safety culture. The analysis states that Cambodia has a maximum fatality rate of 17.8 per 10,000 registered vehicles, followed by Myanmar (15.67), Lao PDR (10.23) and Viet Nam (5.58). (Figure 3-2-16).

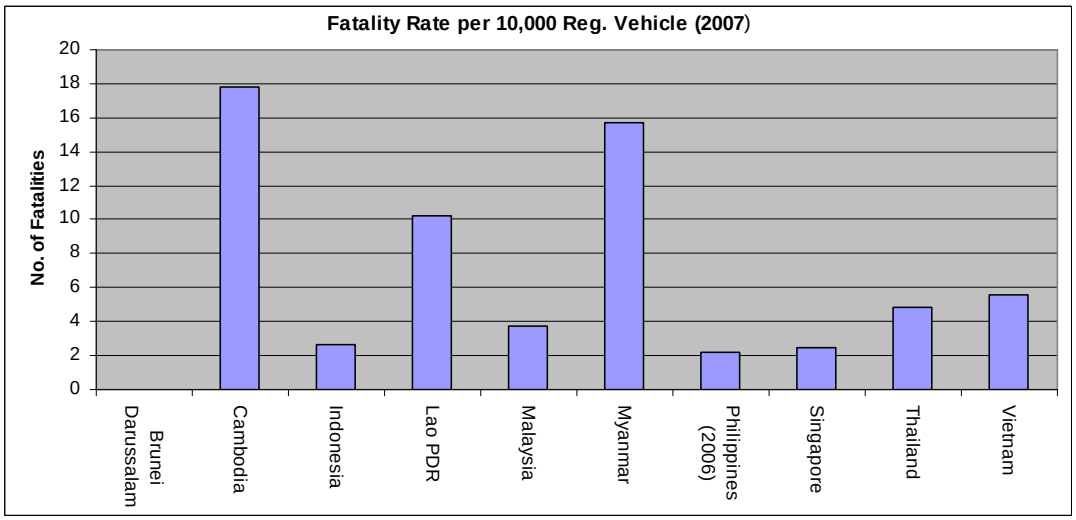


Figure 3-2-16 Fatality Rate per 10,000 Registered Vehicles (2007)

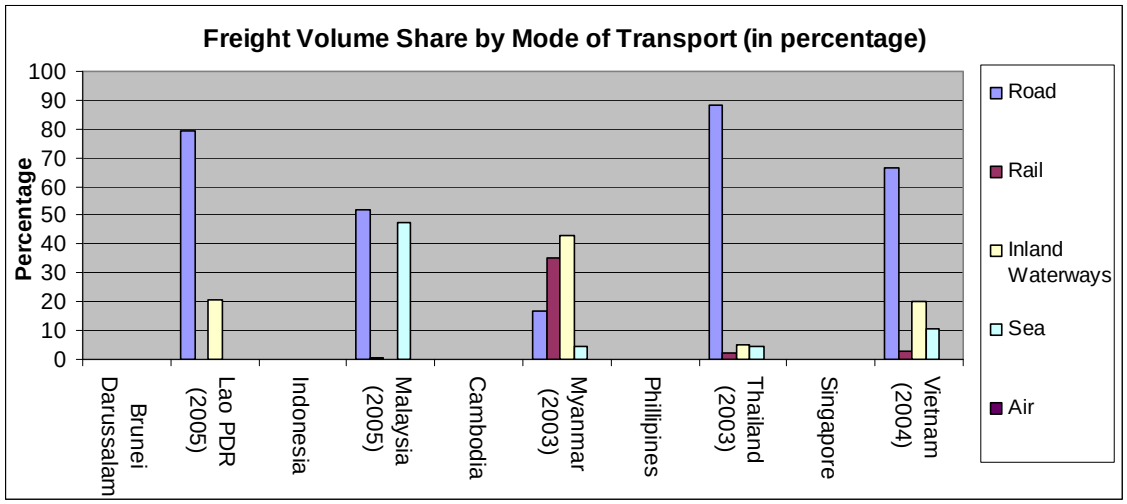
The above analysis and description reveals that there has been lack of attention and commitment to road safety by decision makers, often leading to insufficient road safety management and poor leadership. Most nations in the ASEAN region also suffer from the low level of road safety knowledge and awareness, unsafe vehicles and road conditions, inadequate legislation and enforcement. These all contributed to the poor road safety performance.

Land Transport and Road Safety Issues:

1. Lack of coordination and cooperation among the concerned stakeholders for the implementation of ASEAN highways, harmonization of the traffic signages and safe cross border movements of tourists and buses.
2. The need to promote green and environmentally-friendly technologies to combat rising pollution levels and climate changes. Specific pilot programmes should be initiated in cooperation with major international organizations and ASEAN.
3. There is a need to strengthen and enhance the existing weak institutional system in the AMSs especially in Lao PDR, Cambodia and Myanmar.
4. There is a need for capacity enhancement by provision of training and human resource development.
5. Enforcement of road safety norms and plan is required to reduce the high occurrence of accidents in AMSs. Specific efforts will be required to improve or upgrade the traffic safety facilities.
6. From road safety perspective, Programmes focusing on education and awareness need to be formulated and implemented.
7. To meet the targets as set for completion of the ASEAN highway by 2020, it is necessary to expedite the implementation activities. Specific efforts will be required in Lao PDR, Myanmar and Cambodia where Class-I roads are minimal or does not exist, as these countries mainly consist of Class-III roads or are below standards.
8. There is a need is to improve an efficient, comfortable and economical public transportation system to decongest traffic which are currently dominated by 2 wheelers and 3-wheelers in majority of ASEAN cities.
9. Highway and roads need to be connected to sea ports, inland ports, airport and railways.
10. Public Private Partnership (PPP) or private investment need to be promoted (through related norms/rules/laws) to overcome financial constraints for the improvement and implementation of Programme/projects in the road sector.

3.2.7 MODAL SHARE

The efficiency of the transport can be judged by its share with other modes of transport. The Figure 3-2-17 compares the freight volume share by different modes of transport in selected AMSs. The figure clearly highlights the dominance of road transport in trade. In Viet Nam, Thailand and Lao PDR, the share of road transport sector is more then 65%. In Myanmar, the inland waterways share is higher than the road. This may be due to large navigable river length and existence of poor quality of roads in Myanmar. The railway share except Myanmar is negligible in AMSs. Considering such trend, it is likely that the road share will likely go higher in the forthcoming years. Thus to facilitate such trend, it is vital to improve the quality of roads and other road infrastructure.



Source: ASEAN Logistics Network Map Study, JETRO, 2009

Figure 3-2-17 Transport Modal Share by Freight Volume in selected AMSs

3.2.8 RAIL NETWORK INVENTORY

Rail network is also an important indicator of a country's development, similar to road network lengths (and the extent to which the network is paved). However in the past, majority of AMSs do not give much emphasis to railway promotion and development.

Table 3-2-17 illustrates the trends of railway freight tonnage (net tons) over the period 1997–2007 in selected nations in the ASEAN region. Apart from Viet Nam (with an average annual growth rate of 7% per annum), the countries presented below recorded a negative growth rate. Malaysia and Indonesia recorded a negative average annual growth rate of -4.1 and -0.6 percent, respectively.

Table 3-2-17 Trend in Railway Freight Tonnage in the ESCAP Region, 1997–2007

Country	Rail Freight Tonnage (in millions)		Average Annual Growth Rate (%)
	Start of Period	End of Period	
Cambodia (1997-2007)	0.2	0.1	-6.7
Indonesia (1998-2005)	18.2	17.4	-0.6
Malaysia (1997-2006)	7.3	5	-4.1
Viet Nam (1998-2007)	4.9	9	7

Source: Review of Developments in Transport in Asia and the Pacific 2009

Same trend can be observed on the analysis and comparison of ton-km among AMSs. Except for Viet Nam, none of the said nations (as per available data) were able to improve their ton-km. Since 2000, Viet Nam was able to increase its ton-km by more than double, i.e. from 1,995 million tons in 2000 to 4,028 million tons in 2008. More than 20% decline in freight-km was observed in Thailand. (Table 3-2-18 and Figure 3-2-18).

Considering such trend, there is an urgent need to revive the railway sector in AMSs. Respective governments along with major investments also need to formulate effective policies to improve the railway performance in their nations.

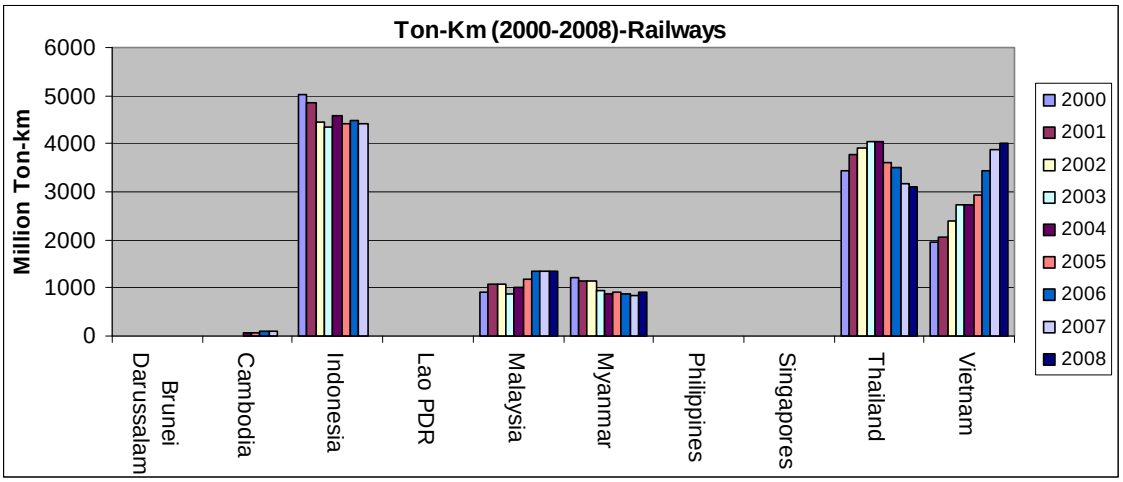


Figure 3-2-18 Railway Ton-km in AMSs

Table 3-2-18 Ton-km (million-ton) in AMSs

Year	Brunei Darussalam	Cambodia	Indonesia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Viet Nam
2000	NE	NA	5,009	NE	918	1,200	4.37	NE	3,429	1,955
2001	NE	NA	4,859	NE	1,094	1,152	6.01	NE	3,775	2,054
2002	NE	NA	4,450	NE	1,073	1,156	6.52	NE	3,894	2,392
2003	NE	NA	4,356	NE	887	959	5.69	NE	4,057	2,725
2004	NE	77	4,580	NE	1,016	871	4.32	NE	4,037	2,745
2005	NE	80	4,432	NE	1,178	912	1.89	NE	3,621	2,949
2006	NE	93	4,474	NE	1,337	882	NA	NE	3,508	3,447
2007	NE	89	4,425	NE	1,356	857	NA	NE	3,160	3,883
2008	NE	NA	NA	NE	1,351	912	NA	NE	3,112	4,028

Source: ASEAN Statistical Yearbook, 2008 & Country Data NA- Not Available NE – Non Existence

The development or increase of railway route lengths is another indicator to assess the progress made in railways in ASEAN regions. On analyzing the rail route length in each member country as shown in Table 3-2-19 and Figure 3-2-19, it reveals that since 2000, there has been hardly any significant addition to railway route lengths. As observed in Cambodia, Viet Nam, Malaysia and Thailand, not a single kilometre of additional rail length has been added since 2000. In other AMSs as well, additional lengths were almost negligible. Such lack of progress and investment in railways resulted in loss of railway freight tonnage among ASEAN countries, except in Viet Nam. Said country (Viet Nam) is the only nation that has been successful in increasing its freight tonnage by effective utilization of the available resources and railway length.

In terms of total rail length, Myanmar, Indonesia and Thailand are the leading nations followed by Viet Nam, Malaysia, and others.

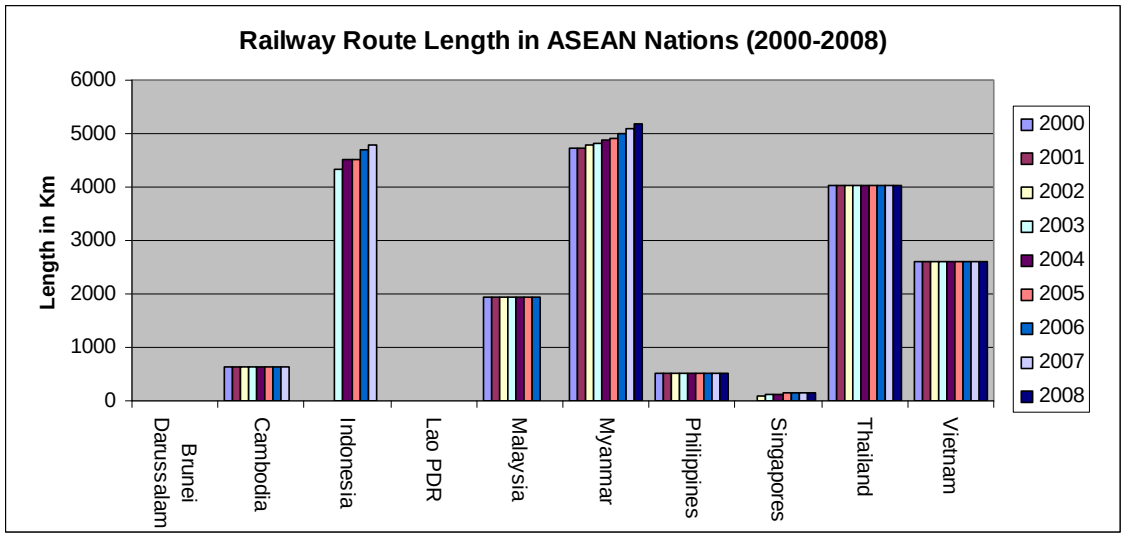


Figure 3-2-19 Railway Route Length in AMSs

Table 3-2-19 Railway Route Length (km) in AMSs

Year	Brunei Darussalam	Cambodia	Indonesia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Viet Nam
2000	NE	650	NA	NE	1,949	4,713	505.95	NA	4,044	2,600
2001	NE	650	NA	NE	1,949	4,725	505.95	NA	4,044	2,600
2002	NE	650	NA	NE	1,949	4,782	505.95	97	4,044	2,600
2003	NE	650	4,343	NE	1,949	4,820	505.95	128	4,044	2,600
2004	NE	650	4,517	NE	1,949	4,868	519.75	128	4,035	2,600
2005	NE	650	4,517	NE	1,949	4,920	519.75	138	4,035	2,600
2006	NE	650	4,682	NE	1,949	4,990	519.75	138	4,044	2,600
2007	NE	650	4,803	NE	NA	5,099	519.75	138	4,043	2,600
2008	NE	NA	NA	NE	NA	5,181	519.75	138	4, 043	2,600

Source: ASEAN Statistical Yearbook, 2008 & Country Data NA- Not Available NE – Non Existence of Railways

On comparing and analyzing the passengers carried by railways in AMSs then since 2000, not much significant differences were observed in the number of passengers carried, except in Singapore. It will be relevant to analyze and compare with the population growth in each respective nation. Despite the significant population growth since 2000 as shown in Table 3-2-21, the railways failed to increase its passenger volume capacities. The impact of population growth on railways passenger can be seen in Singapore where approximately 20.4% population increased between 2000 and 2008. During the same period, the railway passengers increased by approximately 50% i.e. from 1.1 million passengers in 2002 to 1.6 million passengers in 2008.

In terms of total annual passengers carried, Indonesia with an annual figure of approximately 194.1 million in 2008 carried the maximum number of passengers by railways. This is followed by Myanmar (73.56 million in 2008), Thailand (45.1 million in 2007), Viet Nam (11.3 million in 2008) and others. (Refer Table 3-2-20, Table 3-2-21, and Figure 3-2-20).

Table 3-2-20 Passenger Carried in AMSs (in Thousands)

Year	Brunei Darussalam	Cambodia	Indonesia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Viet Nam
2000	NE	336	191,600	NE	4,340	60,490	3,878	NA	55,461	9,806
2001	NE	223	188,400	NE	3,985	61,280	5,106	NA	56,325	10,627
2002	NE	133	175,716	NE	3,863	61,760	4,357	1,120	55,748	10,800
2003	NE	93	154,700	NE	3,701	56,670	3,900	1,164	54,130	11,600
2004	NE	81	149,918	NE	3,993	58,220	3,904	1,235	50,873	12,900
2005	NE	48	151,492	NE	4,024	69,270	3,309	1,293	49,671	12,800
2006	NE	14	159,419	NE	4,084	72,710	NA	1,372	48,867	11,600
2007	NE	11	175,336	NE	NA	75,960	NA	1,475	45,050	11,600
2008	NE	NA	194,076	NE	NA	73,560	NA	1,635	46,600	11,300

Source: ASEAN Statistical Yearbook, 2008 & country data NA- Not Available NE – Non Existence of Railways

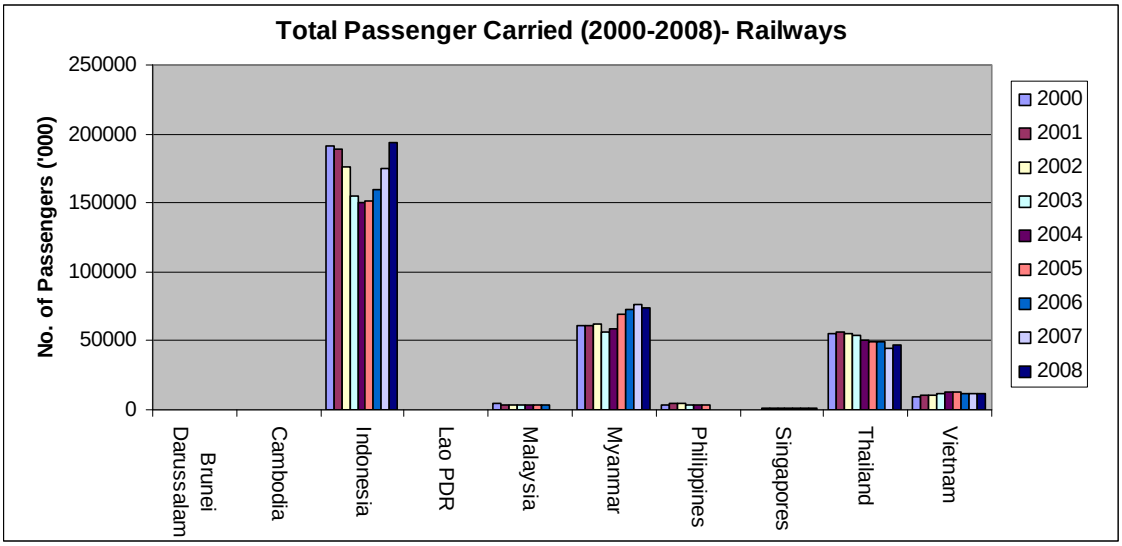


Figure 3-2-20 Total Passenger Carried by Railway in AMSs

Table 3-2-21 Mid Year Population of AMSs, 1980-2008 (National Estimates, in thousand)

Country	1980	1990	2000	2005	2006	2007	2008
Brunei Darussalam	196	253	333	370	383	390	397
Cambodia	6,590	8,600	12,760	13,807	14,081	14,364	14,656
Indonesia	146,777	179,248	205,280	219,852	222,747	225,642	228,523
Lao PDR	3,199	3,676	5,403	5,310	5,457	5,608	5,763
Malaysia	13,879	18,102	23,274	26,128	26,640	27,245	27,863
Myanmar	33,608	40,786	46,610	55,396	56,515	57,504	58,510
Philippines	48,098	60,703	77,689	85,261	86,973	88,575	90,457
Singapore	2,414	3,047	4,018	4,266	4,401	4,589	4,839
Thailand	46,718	55,839	62,347	65,099	65,574	66,041	66,482
Viet Nam	52,462*	66,017	78,663	83,106	84,137	85,155	86,160

Source: ASEAN Statistical Yearbook, 2008 and UN website (for 2000 data), *1979 figure

It is observed that the passenger-km among AMSs is not different from the situation of railway route length or number of passengers carried as discussed earlier. In terms of passenger-km since 2000, except for Viet Nam, Myanmar and Philippines, there had not been any significant increase observed in any other AMSs. Indeed, on comparing with the 2000 data a declining trend was observed in Cambodia, Indonesia and Thailand. Viet Nam and Philippines are the only two nations that had been successful in increasing the passenger-km by more than twice since 2000. (Table 3-2-22 and Figure 3-2-21).

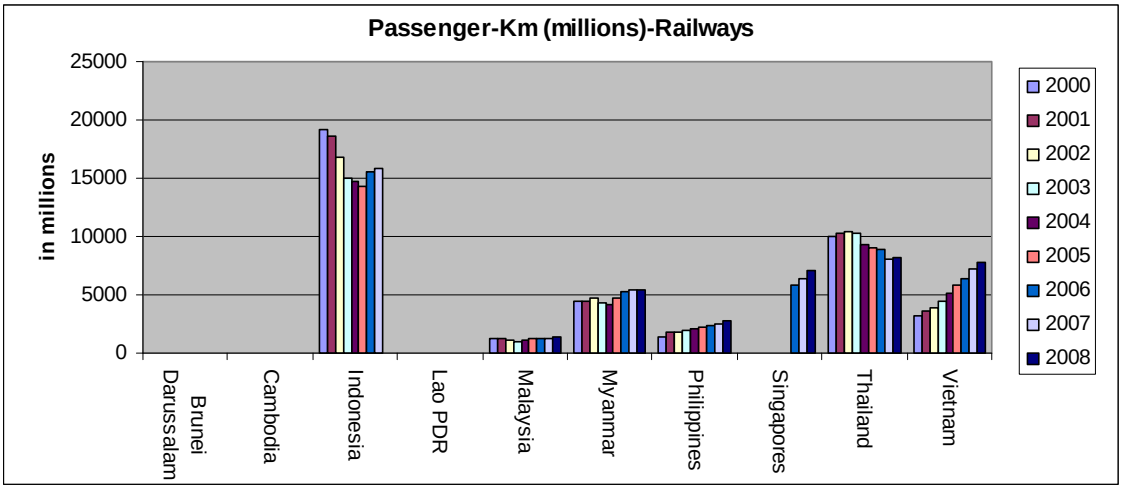


Figure 3-2-21 Railways Passenger–km in AMSs

Table 3-2-22 Passenger-km (million) in AMSs

Year	Brunei Darussalam	Cambodia	Indonesia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Viet Nam
2000	NE	45	19,228	NE	1,241	4,421	1,325	NA	9,935	3,247
2001	NE	NA	18,628	NE	1,199	4,477	1,797	NA	10,321	3,562
2002	NE	NA	16,829	NE	1,138	4,682	1,852	NA	10,378	3,935
2003	NE	NA	15,031	NE	1,031	4,286	1,944	NA	10,251	4,438
2004	NE	9	14,777	NE	1,152	4,166	2,047	NA	9,332	5,117
2005	NE	5	14,345	NE	1,195	4,750	2,240	NA	9,052	5,770
2006	NE	1	15,579	NE	1,248	5,275	2,396	5,898	8,824	6,391
2007	NE	1	15,872	NE	1,317	5,405	2,515	6,322	8,038	7,186
2008	NE	NA	NA	NE	1,386	5,358	2,749	7,039	8,217	7,736

Source: ASEAN Statistical Yearbook, 2008 & Country Data NA- Not Available NE – Non Existence of Railways

3.2.9 RAILWAY NETWORK AND CROSS BORDER RAILWAY LINKAGES

On reviewing the current railway network in ASEAN countries, it was found that there are many missing links in respective nations. Currently, the railway network in each nation is disintegrated and will require huge investment and resources to have an improved, efficient, effective and integrated railway system (Refer Figure 3-2-22, Figure 3-2-23, Figure 3-2-24 and Figure 3-2-25).

In comparison to the cross-border linkages by highways, the railways do not have many linkages among ASEAN countries. If the proposed network under Singapore-Kunming Rail Network (SKRL) project (to be discussed in the next section) is not implemented, only four

AMSs (Singapore, Malaysia, Lao PDR and Thailand) share cross-border railway linkages. Currently, railway links exist between the following nations:

1. Singapore and Malaysia
2. Malaysia and Thailand.
3. Thailand and Lao PDR

However, considering the ongoing SKRL project, the numbers of cross border railway linkages will be increased from the current four nations (Singapore, Malaysia, Lao PDR and Thailand) to seven nations (Singapore, Malaysia, Thailand, Cambodia, Lao PDR, Viet Nam and Myanmar). Table 3-2-23 presents the cross border linkages before and after the SKRL. Overall, the following cross-border linkages will be established after the implementation of SKRL project:

1. Singapore and Malaysia
2. Malaysia and Thailand.
3. Cambodia and Thailand
4. Cambodia and Viet Nam
5. Lao PDR and Thailand
6. Lao PDR and Viet Nam
7. Myanmar and Thailand

With the establishment of such railway linkages, trade and economic activities among AMSs will be facilitated. Such railway linkages will be of vital importance especially to the landlocked nation like Lao PDR. After the completion of SKRL project, Lao PDR will have a direct linkage to the ports in Viet Nam.

Table 3-2-23 Cross Border Railway Linkages Before and After SKRL

Country	Brunei Darussalam	Cambodia	Indonesia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Viet Nam
Brunei Darussalam										
Cambodia									✓(1)*	✓(1)*
Indonesia										
Lao PDR									✓(1)	✓(1)*
Malaysia								✓(1)	✓(2)	
Myanmar									✓(1)*	
Philippines										
Singapore					✓(1)					
Thailand		✓(1)*		✓(1)	✓(2)	✓(1)*				
Viet Nam		✓(1)*		✓(1)*						

Source: ERIA Study Team

Note- The number in the parenthesis indicates the number of physical railway link between the two nations.

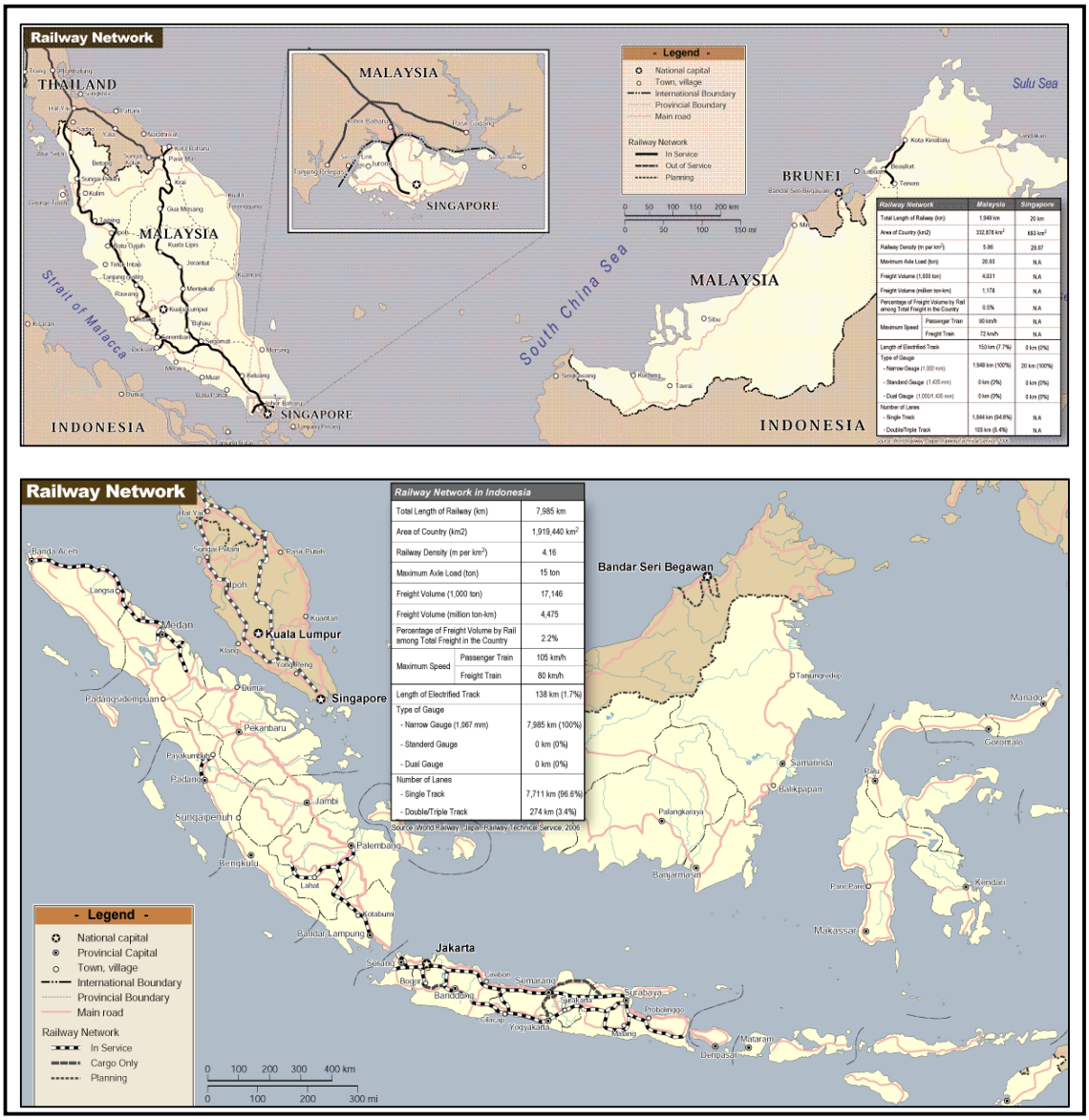
* means the railway linkages after the completion of SKRL project.

✓ means that there is physical rail links between the two countries.

Blank boxes means either non-existence (or not applicable) of physical rail links between the two nations.

Source: ASEAN Logistics Network Map Study, JETRO, 2009

Figure 3-2-22 Railway Network in all AMSs

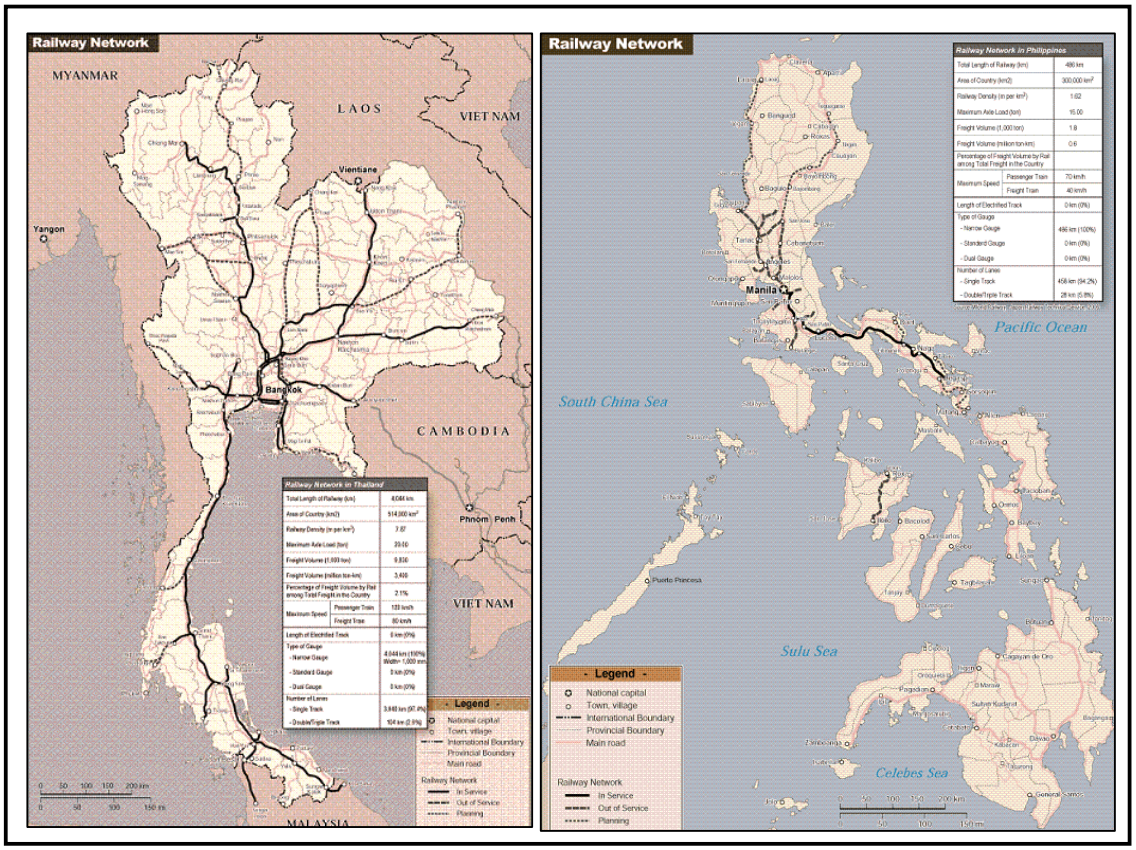


Source: ASEAN Logistics Network Map Study, JETRO, 2009

Figure 3-2-23 Railway Network in AMSs (1 of 3)

Source: ASEAN Logistics Network Map Study, JETRO, 2009

Figure 3-2-24 Railway Network in AMSs (2 of 3)



Source: ASEAN Logistics Network Map Study, JETRO, 2009

Figure 3-2-25 Railway Network in AMSs (3 of 3)

3.2.10 SINGAPORE-KUNMING RAIL LINK (SKRL)

The SKRL project was proposed at the Fifth ASEAN Summit in December 1995. It is a flagship project of the ASEAN-Mekong Basin Development Cooperation (AMBDC).

The SKRL feasibility study examining six alternative routes to link Singapore to Kunming, China was completed in August 1999. The study covered the technical, economic and financial feasibility of the routes, environmental impact, prioritized routes based on set criteria, financing options, and the appropriate implementation schedule. All six routes have a common sector from Singapore to Bangkok via Kuala Lumpur. The details of the six routes are briefly presented in Table 3-2-24 below:

Table 3-2-24 Routes Alternatives for SKRL Project

Route	Countries Involved	Direct Route (km)	New Construction	
			Main Route	Spur Line
1	Cambodia, Lao PDR, Viet Nam.	5382	431	585
2	Thailand, Myanmar and China	4559	1127	-
3	Lao PDR, China	4259	531	66
4	Lao PDR, China	4164	1300	-
5	Lao PDR, Viet Nam, Thailand	4481	616	-
6	Lao PDR, Viet Nam, Thailand	4255	589	-

Source: Feasibility Study for the SKRL.

Route 1, for its high social and economic impact which connects Cambodia, Lao PDR, Viet Nam and China, was selected. The part of the Route 2 that would integrate Myanmar into the regional rail network was also added to the SKRL route network. With this, the overall route configuration now covers seven AMSs and China. The SKRL route tried to utilize the existing railway network in the respective nations. However, to have a complete network, certain missing sections need to be constructed. The SKRL routes consist of the following missing links and spur lines (refer to Figure 3-2-26) for new construction:

1. From Poipet (Cambodia) to Sisophon (Cambodia)
2. From Phnom Penh (Cambodia) to Loc Ninh border (Cambodia & Viet Nam) to Ho Chi Minh City (Viet Nam)
3. From Namtok (Thailand) to Three Pagodas Pass (Thailand & Myanmar border) to Tanbyuzayat (Myanmar)

Spur Line:

1. Vientiane (Lao PDR) to Thakhek (Lao PDR) to Mu Gia (Lao PDR and Viet Nam border) to Vung Ang (Viet Nam).

Table 3-2-25 provides a description of existing and new requirements for the railway construction in the missing sector/routes and spur lines in SKRL network. To accomplish the SKRL network, new railway construction will be required in the CLMV (Cambodia, Lao PDR Myanmar Viet Nam) countries and Thailand. Considering capacity and resource constraints, especially in CLMV nations, special efforts and assistance will be required from the other AMSs, dialogue partners and other international organizations to accomplish the tasks. It is to be noted that the maximum length of new construction is required in the least developing nation, Lao PDR, to accomplish the spur line.

Table 3-2-25 New Construction Requirements in Missing Routes and Spur Line

Country	Missing Sector/Route and Spur Line	Existing (km)	New Construction (km)
Cambodia	Poipet (Thailand border) -Sisophon	-	48
Cambodia	Phnom Penh -Loc Ninh (Viet Nam border)	32	255
Viet Nam	Loc Ninh (border) - Ho Chi Minh City	20	129
Myanmar	Thanbyuzayat - Three Pagoda Pass	-	111
Thailand	Three Pagoda Pass - Nam Tok	-	153
Lao PDR	Vientiane-Thakhek-Mu Gia	-	466
Viet Nam	Mu Gia - Tan Ap- Vung Ang	6	119

Source: Feasibility Study for the SKRL and country data.

The current status of the SKRL project is summarized in Table 3-2-26.

Table 3-2-26 Current Status of Singapore-Kunming Rail Link Network (SKRL) Project

Country	Missing Sections/Route & Spur Lines	Rail Length (km)		Pre-Feasibility (Pre-FS) or Feasibility Study (FS) Status	Implementation Status	Planned Year for Implementation
		Existing Length of section	New Construction			
Cambodia	Poipet (Thailand border) - Sisophon	-	48	Completed	Ongoing	2013
Cambodia	Phnom Penh -Loc Ninh (Viet Nam border)	32	255	Ongoing	Not Commenced	2015
Viet Nam	Loc Ninh (Cambodia border) - Ho Chi Minh City	20	129	FS Completed	Not Commenced	2020
Myanmar	Thanbyuzayat - Three Pagoda Pass (Thailand Border)	-	111	FS Completed	Not Commenced	2020
Thailand	Three Pagoda Pass (Myanmar border) - Nam Tok	-	153	FS Completed	Not Commenced	2020
Lao PDR	Vientiane-Thakhek*	-	330	FS Completed	Not Commenced	2020
Lao PDR	Thakhek-Mu Gia (Viet Nam border)*	-	136	FS Completed	Not Commenced	2020
Viet Nam	Mu Gia (Lao PDR border) - Tan Ap*	-	53	Pre-FS Completed	Not Commenced	2020
Viet Nam	Tan Ap- Vung Ang*	6	66	FS Ongoing	Not Commenced	2020

*Spur Line FS - Feasibility Study Pre-FS – Pre Feasibility Study NA – Not Available

Source: ERIA Study Team (in consultation with SKRL Feasibility Study and various meetings (LTWG, EG, STOM etc) details)

Source: ASEAN website (SKRL Fact Sheet)

Figure 3-2-26 Singapore Kunming Rail Link (SKRL) Route Network

3.2.11 INLAND WATERWAY TRANSPORT (IWT)

The ASEAN region is generously endowed with some 51,000 km navigable inland waterways and plays an active role in transport development, especially in Viet Nam, Cambodia, Lao PDR, Myanmar and Thailand. Some are canals and single rivers, while others form parts of major deltas. The Lancang-Mekong River is famous in the world for its enormous contribution to the national and regional development. Others, including the Thanlwin River in Myanmar, the Chao Phraya River in Thailand and the Red River in Viet Nam, are less famous but equally important for their contribution to national economies and people's daily lives. Table 3-2-27 shows the navigable lengths in each AMSs.

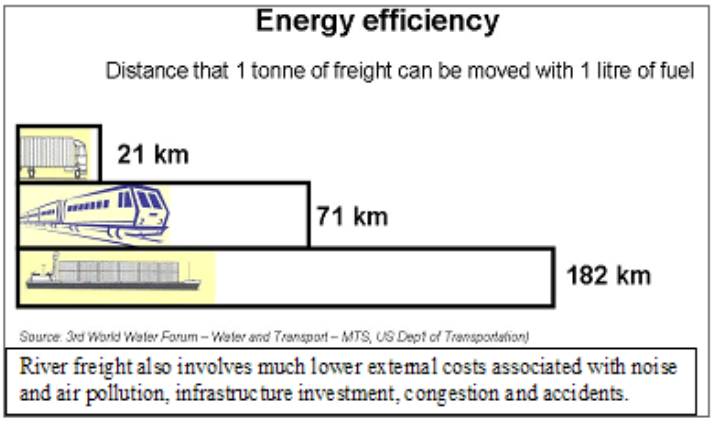
Table 3-2-27 IWT Navigable Length (km) in AMSs

Country	Navigable Length (km)
Brunei Darussalam	NA
Cambodia	1,750
Indonesia	20,456
Lao PDR	4,600
Malaysia	3,300
Myanmar	6,650
Philippines	1,033
Singapore	NA
Thailand	1,750
Viet Nam	11,400

Source: UNESCAP 1998/2001, ASEAN Transport and Communications Sectoral Report, 1999
NA- Not Available

The region's inland waterways play a vital role in the economic development of remote rural areas and in the welfare of their inhabitants who are usually among the lowest of the low-income groups in the region. For example, more than 60 million people live in the lower part of the Mekong Basin. Close to one third of the basin's population lives on less than one dollar per day and many of them depend wholly or partially on the basin's natural resources for their livelihood. In the absence of river and other forms of inland waterway transport, many remote underprivileged communities would be inaccessible or too costly to be provided with other means of service.

Despite the inland waterways' cost-effectiveness, relative fuel efficiency (refer to Figure 3-2-27), environment friendliness and importance for the mobility, welfare and development of remote communities in several countries of the region, inland waterways have suffered from lack of adequate investment and efforts for many years.



Source: Mekong River Commission Website

Figure 3-2-27 Inland Waterways Transport (IWT) Efficiency over Road and Rail Transport

The inland waterways' share of freight and passenger volume in comparison to road transport is quite low. In general, the following may be the reasons for the under utilization of existing IWT:

1. Undeveloped network. Currently, IWT mainly serves short-distance traffic.
2. Channels' obstructions (waterway maintenance, sedimentation, rapids, bank protection, low depth etc.)

3. Poor river port and related facilities. Lack of storage facilities and limited spaces for ports.
4. Poor intermodal connectivity to inland waterways. Results were found good in the fairly dense transport networks area where connectivity is good such as in Central Thailand, Bangkok etc
5. Lack of transport promotion strategy.
6. Operational and administrative shortcomings.
7. Lack of understanding of common navigation rules, safety and security standards. Poor signages and landmarks to aid navigation.
8. Lack of training, capacity building, socialization and awareness Programmes.
9. Inefficient custom and immigration procedures
10. Weak institutional arrangement for the promotion and management of IWT.
11. Insufficient number of workshops for ship building and maintenance.

Considering the advantages of inland waterways and its regional significance, there is a need to develop, promote and integrate it into the development of the ASEAN transportation network, particularly with respect to its intermodal transport linkages.

3.2.12 INLAND WATERWAY TRANSPORT IN THE SELECTED AMSS

The following section will briefly describe the IWT in selected nations.

(1) Cambodia

The inland waterway system of Cambodia has a total navigable length of 1,750 km, of which only 580 km are navigable all year round. The system consists of the Mekong River and its tributaries, Tonle Sap Lake and its tributaries, the Tonle Sap River, and the Bassac River. The Mekong River accounts for about 30% of the length of navigable inland waterways. Meanwhile, Tonle Sap River, Bassac River and the remaining waterways account for 15%, 5% and 50%, respectively. There are two international river ports in Cambodia which are both located on the Tonle Sap River in Phnom Penh. One is a conventional port comprising two berths and the second is a floating port.

Phnom Penh is some 100 km from the Viet Nam border by river. However, the bends of the river prevents the passage of vessels of more than 110 m long. Boats up to 150 tons capacity can be used to reach as far as Kratie. Larger boats can be used at high waters. Between Kratie and Stung Treng, 50-ton boats can pass without difficulty during rainy season. At low water levels however, the rocky conditions will only be passable to smaller vessels of up to 20 ton. Above Stung Treng to Veunkham just across the Lao border, only small boats of some 10-15 tons at low water and perhaps 50 tons at high water can pass through.

(2) Indonesia

There are more than 20,000 km of navigable waterways among 50 river systems in Indonesia. Over half of these rivers are in Kalimantan and the rest are in Sumatra. In Kalimantan and Sumatra, the river system provides a lifeline to communities, which are poorly served by roads (and by railways in the case of Sumatra). Inland waterways are already an important conduit for the movement of coal mines in the interior of Kalimantan to ports on its coast. The country's inland waterway system currently carries about 6 to 7 million tons of freight and 16 million passengers annually. Most of the vessels and terminals on the inland waterways system are owned and operated by the private sector.

In the past, some infrastructure improvements have been carried out, like the construction of new wharves, dredging of river channels at several river ports, and installation of navigational aids. However, because of the high seasonal variation in the water level of many rivers, the role of inland waterways is relatively minor and limited to certain areas of Sumatra and Kalimantan, if no further investment for improvement of crucial sections is provided.

(3) Lao People's Democratic Republic

There are 21 river port facilities on the Lao PDR side of the Mekong River (refer to Figure 3-2-28). With the exception of one river port (Kaolia) which is operated privately, all facilities are under the responsibility of the provincial government.

The Mekong River and its tributaries, the Nam Ou and Se Kong rivers, flow through the country for over 2,000 km or approximately 40% of the total length pass through the territory of the Lao PDR. However, rapids, waterfalls, and low water levels during the dry season reduce the navigable length for river transportation to only 1,300 km. Vessels up to 400 dead weight tons (DWT) can operate year round on the northern section of the Mekong River, while elsewhere operations are limited to barges of 200 DWT or less. Vessels carry mainly industrial and agricultural products. The main commodities handled are sand, rock, wood products, food grains, steel products, and logs. The majority of the traffic is domestic, but international traffic is important on the upper section among China, Lao PDR, Myanmar and Thailand. In the dry season, most of the rivers are navigable only by small, shallow-draft, narrow-beam passenger vessels.

The two sections between the China border – Houeisai – Luang Prabang have many small rapids that serve as barriers to navigation in the dry season. The section between Luang Prabang and Vientiane is navigable throughout the year but also has difficult sections, even at high water levels. The most easily navigable section is from Vientiane – Thakhek – Savannakhet, where navigation could be improved at a relatively low cost, although there are still several dangerous areas.

The main barrier along the Mekong is the Khemarat rapids between Savannakhet and Pakse, which completely cause closure of the river to dry season transport and severely limit wet season navigability. In the Pakse – Don Deth section, navigation is easier only to as far as the Cambodian border, where the Khone Falls is an impassable obstacle. A 5-km rail line on Khong Island used to operate in colonial times to tranship goods between the top and bottom of the falls.

(4) Myanmar

The network of main navigable waterways in Myanmar comprises the following river systems: the Ayeyarwady, Chindwin, Sittoung, Kaladan, Leinmyo, Thanlwin, Gyaing and Ataran systems. These rivers, with their numerous tributaries, offer 6,650 km of commercially navigable waterways. There are approximately 400 river stations on the Ayeyarwady and Chindwin systems, of which 16 are larger ports, each with an annual cargo handling capacity of at least 40,000 tons.

Owing to the relatively poor coverage of road and rail, large areas along the Ayeyarwady and Chindwin valleys are accessible only by water. Hence IWT has the largest share of the cargo volume transported in Myanmar. It is estimated that nearly five million tons of cargo and 45.8 million passengers are transported by IWT annually.

(5) Thailand

There are about 4,000 km of inland waterways in Thailand. About 3,700 km has a navigable depth of about 0.9 meter or more in a year. Inland navigation is mainly concentrated in four river systems: the Chao Phraya, Pasak, Tha Chin and Mae Klong systems.

The IWT is estimated to transport about 20 million tons of cargo annually, which is quite low when compared with the share of roads. Construction materials (especially sand), agricultural products and petroleum are the dominant commodities carried by IWT in Thailand.

Outside of Bangkok, very few passengers are transported on inland waterways. In Bangkok, Chao Phraya River and Khlong Saen Saeb are the major means of water-transportation. Express boats, long-tail boats and river-crossing ferries transport more than 360,000 passengers per day.

(6) Viet Nam

Viet Nam has 41,000 km of natural waterways, of which more than 8,000 km are used commercially. Of these, the Viet Nam Inland Waterways Administration manages about 6,000 km as well as the main river ports, Local governments manage the balance of the commercial waterways. Roughly 63% (6,000 km) of the country's total length of navigable inland waterways is concentrated in the rivers and canals of the Mekong Delta. (Refer to Figure 3-2-29)

Despite limited investment, the waterways remain attractive for the transport of coal, rice, sand, stone, gravel, and other usually high-weight low-value goods. Moreover, livelihoods and personal transport depend heavily and successfully on waterway transport in the delta regions of the Mekong and Red River.

River boats and barges have rapidly developed. In 1999, there were 63,600 units with a capacity of 1.7 million dead weight tons (DWT) and 197,000 passenger seats. In 2003 this had increased to 83,000 boats with a capacity of 3.7 million dead weight tons (DWT) and 280,000 passenger seats. In addition there are tens of thousands of small "country" boats and ferry boats. Some major channels handle dense volumes of traffic, in terms of dead weight tons (DWT) per year. For example in the south, the Cho Gao/Hau Giang and the Tien Giang River systems handle approximately 21.6 and 15.8 million dead weight tons (DWT) per year respectively, while the north the Kinh Thay River system handles approximately 15.2 million dead weight tons (DWT) per year.

3.3 AIR TRANSPORT

The air transport sector in the ASEAN region, which has a vast transportation area, has become an important mode actively supporting with air active region flow. As people, money and information move in a rapid and wide range global scale, the role of the air transport sector has become significant with the development of the liberalisation of air transport sector, the recent growing Low Cost Carriers (LCCs) and other advancements.

Towards the establishment of the ASEAN Economic Community (AEC) scheduled on 2015, the air transport sector, through the proposed ASEAN Single Aviation Market (ASAM), support the AEC to address problems related to Open Sky Policy as its elements. It also intends to promote safety, security, environment, and privatization to support further development and solve related problems.

3.3.1 ASEAN AIRPORTS AND AIRLINES

Recently, due to the rapid increase of air traffic volume, the ASEAN capital airports were constructed / improved considering the future demand increase. The feature of member states' capital airport and airlines including LCCs are described below.

(1) Airports

The capital airports of AMSs are sufficient in terms of runway lengths to accommodate the existing operation of aircrafts including large aircrafts such as B-747 and A-380. However, some of these airports still face problems in providing airport facilities such as terminal building, parking apron and number of runways. Therefore, AMSs have recently implemented the improvement of airport facilities and services to meet the rapid increase in air traffic volume.

Particularly, due to the increasing operation of LCCs, Changi, Kuala Lumpur, and Soekarno Hatta airports have started the expansion of the terminal projects for LCCS, known as the "Low Cost Terminal."

In 2006, Survanabhumi (Bangkok) International Airport was newly opened. The airport has two parallel runways (60 m. wide, 4,000 m. and 3,700 m. long) to accommodate simultaneous flight departures and arrivals. Initially, the handling capacity was 45 million passengers and 3 million tons of cargo per year.

The current status of the development activities undergoing at the airports in the capital cites of AMS are shown in Table 3-3-1 below.

Table 3-3-1 Airport Development Activities Undergoing in the Capital City

Airport Name (City)	Runway (L x W, m)	Current Information of Development Plan
Bandar Seri Begawan	3,658 x 46	Development project for airport city, cargo village and airline hub.
Pochentong (Phnom Penh)	3,000 x 44	Ongoing for terminal building expansion project.
Soekarno Hatta/ (Jakarta)	3,660 x 60 3,600 x 60	Master plan study for Jakarta Metropolitan area airport
Vientiane	3,000 x 45	Preparation for air-side facility improvement project.
Kuala Lumpur	4,056 x 60 4,124 x 60	LCCs terminal project in Kuala Lumpur started in 2009 and will be completed in 2011.
Yangon	3,413 x 61	New international airport in Naypyidaw is ongoing for construction and completion on 2011.
Ninoy Aquino (Manila)	3,737 x 60 2,258 x 45	Master plan study for Manila Metropolitan area airport
Changi (Singapore)	4,000 x 60 4,000 x 60 2,748 x 59	Terminal 1 upgrading project is ongoing up to 2011.
Survanabhumi (Bangkok)	4,000 x 60 3,700 x 60	Preparation for the Phase 2 project/ midfield terminal and a third runway.
Noi Bai (Hanoi)	3,700 x 60	Preparation for Terminal 2 development project.

Source: AMSs' Web site

(2) Airline

The current list of regular airline flights and comparison between number of airlines in 1998 and 2010 in AMSs are shown below Table 3-3-2.

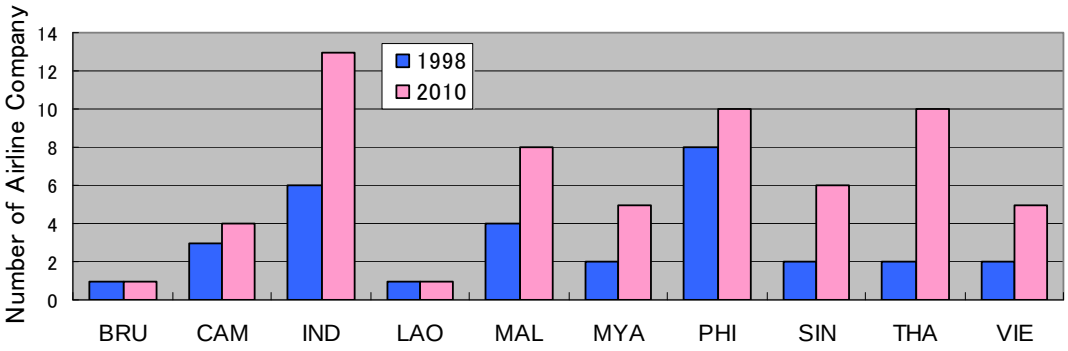
Table 3-3-2 AMSs Airlines in 2010

Country Name	No.	Airline Name
Brunei Darussalam	1	Royal Brunei Airlines
Cambodia	4	Cambodia Angkor Air, Royal Khmer Airlines, PMT air, Kampuchea Airlines
Indonesia	13	Garuda Indonesia, Batavia Air, Citilink, Indonesia AirAsia, Lion Air, Mandala Airlines, Merpati Nusantara, Riau Airlines, Sriwijaya Air Republic Express, Auvia Air, Cardig Air, Xpressair
Lao PDR	1	Lao Airlines
Malaysia	8	Malaysia Airlines, AirAsia, AirAsia X, Berjaya Air, Firefly, MA Awings Transmile Air Services, MASkargo
Myanmar	5	Myanma Airways, Air Bagan, Air Mandalay, Yangon Airways, Myanmar Airways International
Philippines	10	Philippine Airlines, Air Philippines, Cebu Pacific, Pacific Pearl Airways, South East Asian Airlines, Zest Airways Pacific East Asia Cargo Airlines, 2GO, Corporate Air, TransGlobal Airways,
Singapore	6	Singapore Airlines, SilkAir, Tiger Airways, Valuair, Jetstar Asia Airways Singapore Airlines Cargo, Jett8 Airlines
Thailand	10	Thai Airways, Air Phoenix, Nok Air, Orient Thai Airlines, SGA Airlines, SkyStar Airways, Thai AirAsia Air People International, Angel Airlines, K-Mile Air,
Viet Nam	5	Viet Nam Airlines, Indocina Airlines, JetStar Pacific Airlines Pacific Airlines, Viet Nam Air Services

Source: OAG Flight Guide, AMSs

Traditionally, the flag carrier of each country is responsible for their own air traffic. With the global spread of open sky policy, LCCs has started in operation of the ASEAN sky. For instance, AirAsia operates in Asia and has already established an airline company in capitals of few countries such as Indonesia, Malaysia, and Thailand.

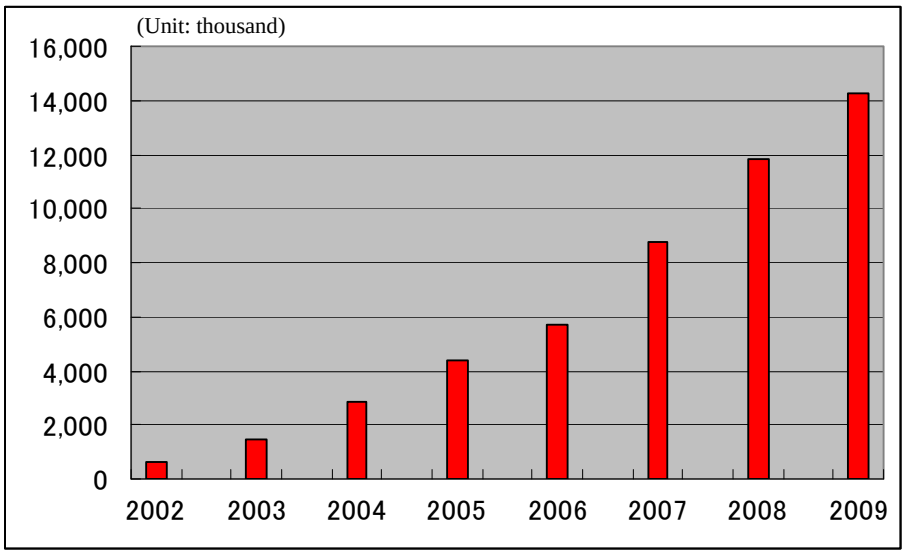
Since 1998, there has been a constant increase in the establishment of airline companies in ASEAN. The following figure shows the comparison of number of airline companies between 1998 and 2010. Based on this figure, most of AMSs except for the Philippines exhibit increase the operation of airlines.



Source: OAG Flight Guide Jan. 2010

Figure 3-3-1 Comparison for Number of Airlines 1998 and 2010 in AMSs

Figure 3-3-2 below shows the trend of air passenger volume of AirAsia group flights from 2002-2009. This indicates that the increase in ratio between 2002 and 2009 is significant with as much as 23.4 times.



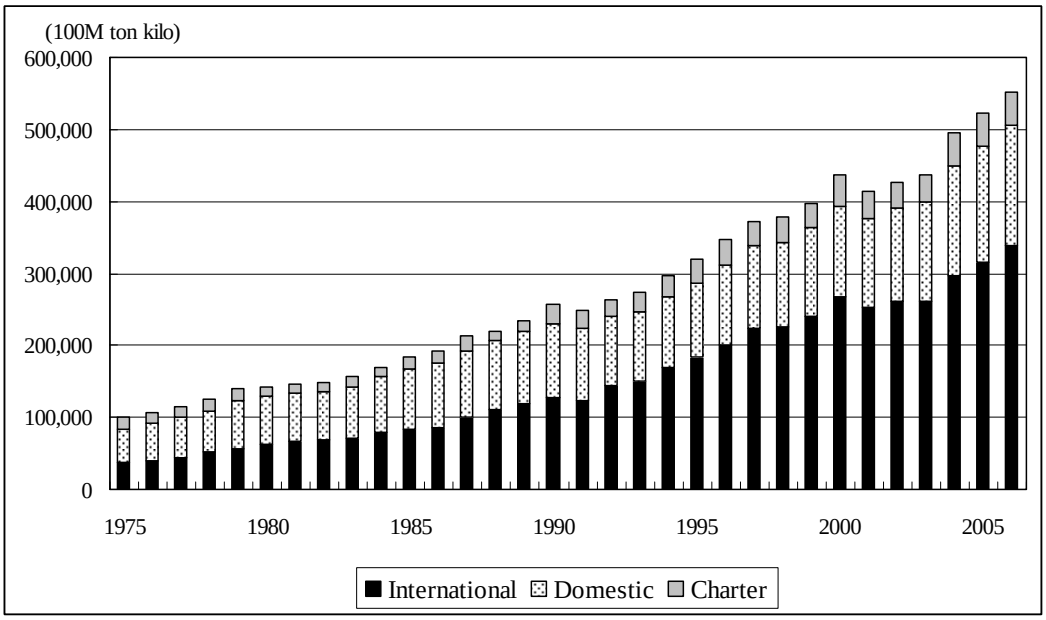
Source: AirAsia Annual report 2007, 2010

Figure 3-3-2 AirAsia Consolidated operating Passenger Carried 2002-2009

3.3.2 AIR TRAFFIC TREND (AIRCRAFT VOLUME, PASSENGER, CARGO)

There were significant aviation movements in 2009. The demand for air travel declined due to the aftermath of worldwide recession, including global devastations caused by the Lehman Shock, H1N1 flu virus and unstable fuel prices. Nevertheless, the IATA reported that aviation activities began to recover in the last quarter of 2009 and is expected to perform even well in 2010. The trend of air transport using Airbus was also foreseen increasing for 20 years since 2000 with annual growth rates of 6.8 % and 6.0 % for passenger and cargoes, respectively.

Furthermore, the outlook of the world international and domestic flight volumes from 1975 to 2006 based on ICAO statistics data, demonstrates an upward trend. In other aspects, world international flight volume has increased by around nine times while world charter and domestic flight volumes by around 3.5 times. Hence, the total flight volume has increased by around six times on the average.

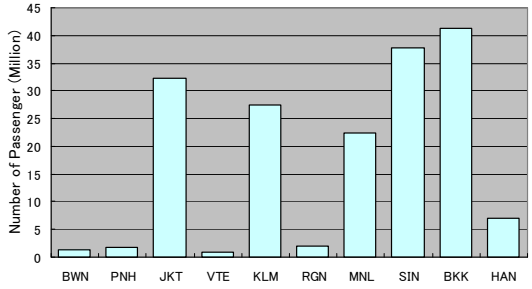


Source: ERIA Study Team based on ICAO

Figure 3-3-3 World Air Traffic Volume 1975-2006

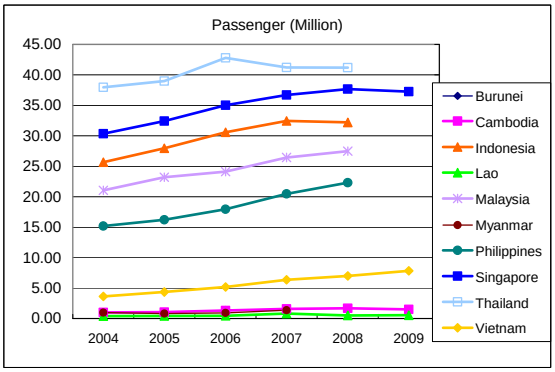
Asia region including AMSs also shows same air traffic trends on world air activity. The current feature of air traffic characteristics of capital airports and the past year's air traffic trends in AMSs are shown below. In 2008, there are more than 20 million annual passenger capital in AMSs' such as Ninoy Aquino (Manila), Kuala Lumpur, Soekarno Hatta (Jakarta), Changi (Singapore)and Survanabhumi (Bangkok). Aircraft movement at said airports also exhibit the same trend.

Meanwhile, in terms of cargo handling volume in 2008, Changi (Singapore) was the best airport among AMSs, and ranked 10th in the world.



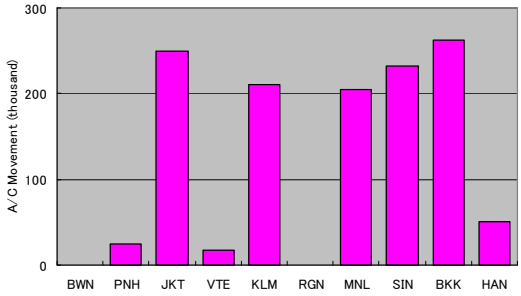
Source: ATWG ,AMS Website

Figure 3-3-4 ASEAN Number of Passengers in 2008



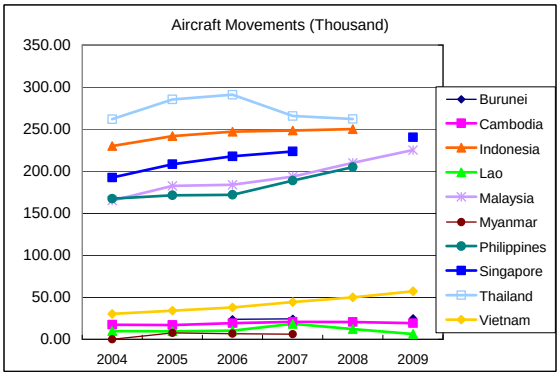
Source: ATWG ,AMS Website

Figure 3-3-5 ASEAN Number of Passengers (2004-2009)



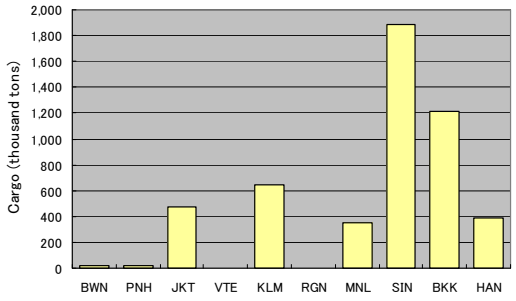
Source: ATWG ,AMS Website

Figure 3-3-6 ASEAN Number of Aircraft Movements in 2008



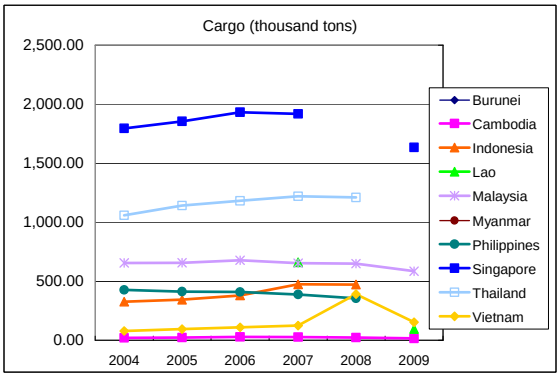
Source: ATWG ,AMS Website

Figure 3-3-7 ASEAN Number of Aircraft Movements (2004-2009)



Source: ATWG ,AMS Website

Figure 3-3-8 ASEAN Number of Cargo Volumes in 2008



Source: ATWG ,AMS Website

Figure 3-3-9 ASEAN Number of Cargo Volumes (2004-2009)

3.3.3 OPEN SKY

ASEAN, which has been promoting the establishment of AEC in 2015, must implement the Open Sky policy in order to accelerate growth of single aviation market in the air transport sector adopted in 1997. This form part of the ASEAN Vision 2020, ASEAN Transport Cooperation Framework Plan 1999-2004, ASEAN Transport Action Plan 2005-2010 and Roadmap for Integration of Air Travel Sector (RIATS) which started the step-by-step

liberalization of air services in the ASEAN region. Currently, AMSs through the Air Transport Working Group (ATWG) focus on the implementation of ASEAN Single Aviation Market (ASAM). This is described in the next clause.

(1) ASEAN Single Aviation Market (ASAM)

Report on "Developing ASEAN's Single Aviation Market (ASAM) and Regional Air Services Arrangements with Dialogue Partner" was prepared by the ASEAN-Australia Development Cooperation Programme in 2008. This report proposed to establish the ASAM by 2015 including its key elements, implementation programme, policy implications, assessment of the economic impact and others.

The key elements shown below and principles, including recommendations and implementation timeline, were proposed.

- Airline ownership and control
- Market access
- Commercial opportunities, tariffs and user charges
- Market regulation
- Environmental and social impacts
- Harmonisation of safety/ technical regulation, ATM

The implementation timeline for ASAM and RIATS in 2014-2015 is shown Table 3-3-3.

Table 3-3-3 Roadmap for Establishment of ASAM and RIATS

2008-2009	2010-2011	2012-2013	2014-2015
ASAM			
1. Adopt concept, enabling framework for ASAM 2. Develop implementation arrangement/ Agreement on ASAM	Finalise: Implementation arrangements & Agreement on ASAM	Implementation of the ASAM Agreement/ Arrangements according to ASEAN-x formula (two or more States could sign the Agreement at this stage)	ASEAN-wide implementation of the ASAM Agreement/ arrangement
RIATS			
1. Conclude and sign ASEAN Multilateral Agreement for the Full Liberalisation of Air Services 2. Implement ASEAN Multilateral Agreement on Air Services (as per the RIATS Roadmap)	Implementation of the Multilateral Agreement on Air Services (as per the RIATS Roadmap)	Coincides with the ASEAN-wide implementation of the Multilateral Agreement on Air Services (as per the RIATS Roadmap)	

Source: Report of "Developing ASEAN's Single Aviation Market and Regional Air Services Arrangements with Dialogue partner"

Also ASAM milestones and are described below.

- Milestone 1 (2014):
  - All Member States sign and implement the ASAM Agreement
  - Adoption of open 3rd, 4th, 5th, 6th freedom rights, limited 7th, 8th for passengers, open 7th for cargo
- Milestone 2 (2019-2020)

- Phasing out of remaining restrictions on ownership/ control, adoption of ASEAN Community Carrier criteria
- 9th freedom rights introduced

➢ Milestone 3 (2022-2023)

- Final stage of ASAM. Removal of restrictions on 7th, 8th and 9th freedom rights

(2) Liberalization

History of liberalisation of air services started way back in 1944 after the World War II. At first, international air transport was governed by the restrictive bilateral air services agreement. It has gone through some transitions including the modernized form of liberalisation such as the US open sky policy and EU unlimited liberalisation as a single aviation market.

The following table shows the typical change of air services agreement in the world including the corresponding liberalisation levels.

Table 3-3-4 Type of Liberalisation of Air Services Agreement

Agreement Type	Bilateral route	5th traffic right	Code share	Capacity	Designation	Pricing	Owner-ship	7th traffic right	Cabotage
Conventional Bilateral	**P**	**P**	**P**	**R**	**R**	**R**	**R**	**R**	**R**
US Open sky	**F**	**F**	**F**	**F**	**F**	**P**	**R**	**R**	**R**
APEC Multilateral	**F**	**F**	**F**	**F**	**F**	**F**	**P**	**R**	**R**
EU Single market	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**
Australia & New Zealand Single Market	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**

Note: R; Restricted, P; Partial Liberalized, F; Full Liberalized
Source: Miwa and Hanaoka (2004)

(3) Freedoms of the Air

Each freedom is subject to specific conditions that are determined through bilateral agreements between any two of the countries that are parties to the Convention.

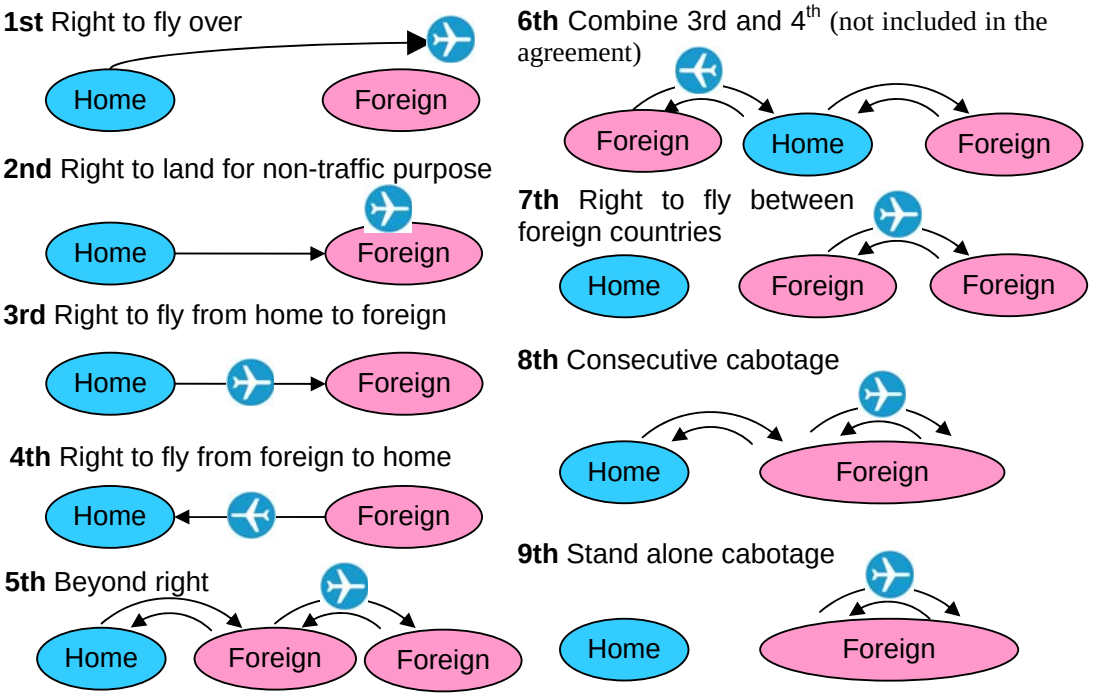
1) First Freedom: The right to fly and carry traffic over the territory of another partner to the agreement without landing.
2) Second Freedom: The right to land in those countries for technical reasons such as refuelling without boarding or deplaning passengers.
3) Third Freedom: The right of an airline from one country to land in a different country and board passengers coming from the airline's own country.
4) Fourth Freedom: The right of an airline from one country to land in a different country and board passengers travelling to the airline's own country.
5) Fifth Freedom: This freedom is known as "beyond rights". It is the right of an airline from one country to land in a second country, to then pick up passengers and fly on to a third country where the passengers then deplane.

6) Sixth Freedom: The right to carry traffic from one state through the home country to a third state.

7) Seventh Freedom: The right to carry traffic from one state to another state without going through the home country.

8) Eighth Freedom: This is consecutive cabotage. Airline cabotage is the carriage of air traffic that originates and terminates within the boundaries of a given country by an airline of another country.

9) Ninth Freedom: This is similar to the Eighth Freedom, and is the right to operate flights within a foreign country but without continuing or prior service to or from the airline's home country.



Source: ERIA Study Team

Figure 3-3-10 Freedom of the Air

3.3.4 AVIATION SECURITY

Establishment of AEC, single aviation market and open sky policy are undoubtedly necessary to achieve the economic development for AMSs. However, harmonized and integrated ASEAN should not only be convenience-oriented, but also consider coordinated security and safety which are essential prerequisites.

In the light of the terrorist attacks carried out with civil aircraft in the United States on 11 September 2001, enhancement measures including aviation screening has advanced worldwide to strengthen the counter-terrorism capabilities in the air transport sector.

After said attack, air transport sector particularly the aviation security continued to tackle countermeasures against terrorism that further occurred throughout the world, which includes the transatlantic aircraft plot in UK that launch introduction for prohibition all carry-on liquids in 2006, Glasgow International Airport attack in 2007, Detroit airliner incident in USA on 25 December 2009 and others.

As members of ICAO contracting states, AMSs have made considerable efforts to comply with the standards contained in ICAO Annex 17. In order to adapt to changes that the air transport sector faces, ICAO has been conducting a review of Annex 17 as necessary. Moreover, the Asia-Pacific Ministerial Conference on Aviation Security was held in Tokyo on March 2010, which adopted the Asia-Pacific Joint Declaration on Aviation Security.

(1) Major Components to Enhance Aviation Security

After the September 11 attack, each country, including AMSs, made efforts to enhance the aviation security to prevent against terrorism. The major components to enhance aviation are described below:

- Passenger
  - Hold baggage screening
  - Cabin baggage screening including liquid ban
  - Physical search of personnel
- Cargo and mail
  - Regulated Agent Regime
- Aircraft
  - Sky marshal
- Airport facility
  - Access control (door, gate and fence)
- Quality control
  - Audit/ inspection system
- Education and training
  - Security training course
  - Awareness training

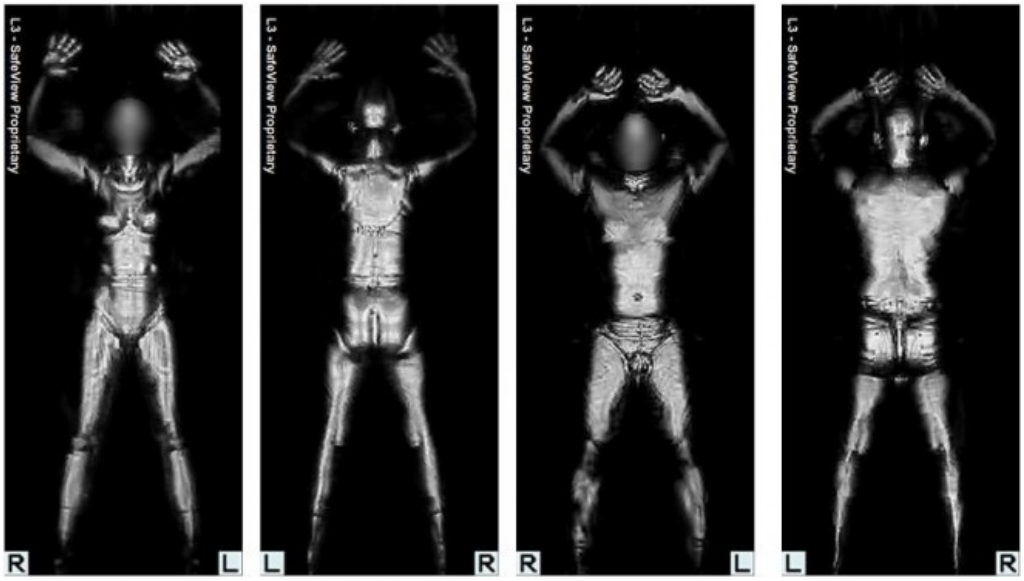
(2) Passenger Screening

Today's aviation security authority faces major concerns related to the Christmas day bombing attempt on a Northwest flight bound to Detroit, where explosives concealed in the attacker's underwear was planned to be detonated.

- Therefore, the Transportation Security Administration (TSA) has tried out a series of "whole body imagers" to search for threats that typical metal detectors could not find. This new full body scanner equipment has been introduced in US airports by the TSA. The photo of actual full body scanner in the US airport and images it created are shown in figures below:

Source: Aviation security international 2010

Figure 3-3-11 Body Scanner (L-3 Technology)



Source: Aviation security international 2010

Figure 3-3-12 Scanned Body Images

The use of the full body scanner equipment does not seem to violate universal human rights. Thus, the use of such device will be accepted in time across the globe.

3.3.5 AVIATION SAFETY

Aviation safety is the most significant consideration and involves a wide range of fields as noted in the ICAO Annex. These fields include personnel licensing, operation of aircraft, airworthiness of aircraft, air traffic services, aircraft accident and incident investigation, aerodromes and others.

This clause focuses on air traffic services, i.e., the Communication Navigation Surveillance / Air Traffic Management (CNS/ ATM).

(1) Current Issues

The following Table 3-3-5 shows the current major issues to be solved in the implementation of new CNS/ATM in AMSs. These issues are not applicable to all AMSs because some of them have already developed CNS/ATM while some have not.

Such issues are classified into five major parts: namely i) systems development, ii) airspace, iii) O&M and HRD, iv) flight procedures/ air navigation standard and v) safety management system.

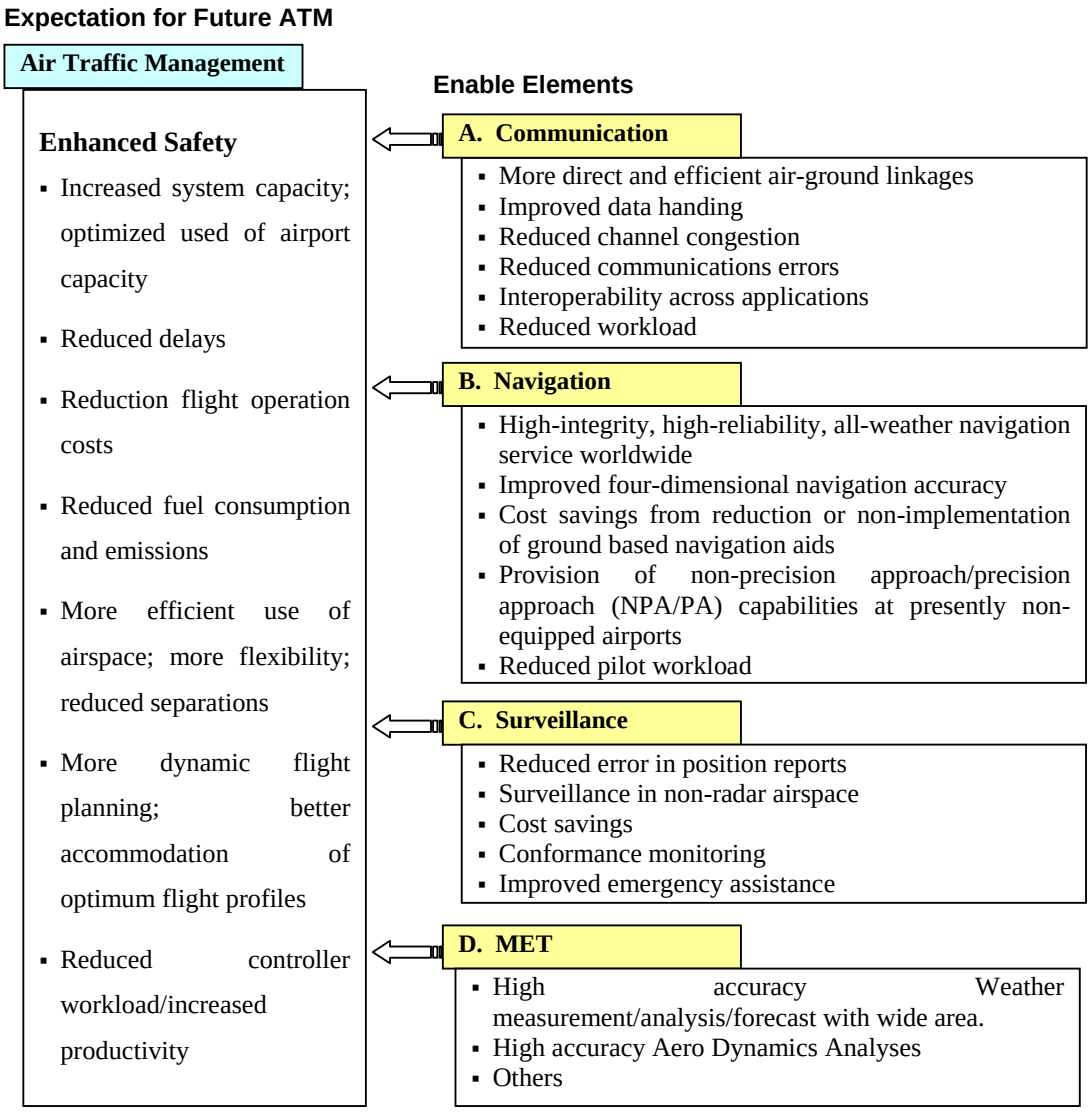
Table 3-3-5 Current Issues to be Solved for the New CNS/ATM

Issue	Condition
CNS/ATM Systems Development	➢ Vagueness of Global Master Plan in ASEAN ➢ Existence of Low Reliable Equipment and Systems ➢ Lack of Concrete Action Plan through 2015 for Development
Airspace	➢ Congestion of Major ER-Air Routes ➢ Congestion of Major Terminal Area ➢ Existence of Inefficient ATC Airspace
O&M, HRD	➢ Lack of Human Resources for new CNS/ATM ➢ Lack of Integrated Systematic Manuals / Handbooks for New CNS/ATM Facilities ➢ Lack of Training System for New CNS/ATM
Flight Procedures / Air Navigation Standard	➢ Securing Experts for PBN Flight Procedures ➢ Securing Experts for Air Navigation Standards
Safety Management System	➢ Lack of Safety Management Manual ➢ Inefficiency of Safety Management System

Source: ERIA Study Team

(2) Possible Scenario to New CNS/ ATM

The following Figure 3-3-13 shows the expected benefits for ATM with the new CNS/ATM in ASEAN region based on ICAO Global Air Navigation Plan for CNS/ATM Systems (ICAO Doc. 9750 Second Edition 2002).



Source: ERIA Study Team

Figure 3-3-13 Expected Benefits by Introduction of ATM

In order to implement the above ATM operation, the following systems will be vital elements from the viewpoint of CNS.

1) Communication

- ATS Message Handling System (AMHS)
- ATS Inter-facility Data Communication (AIDC)
- Aeronautical Telecommunication Network (ATN)
- Controller-Pilot Date Link Communications (CPDLC)

2) Navigation

- Aircraft Based Augmentation System (ABAS)
- Ground Based Augmentation System (GBAS)

3) Surveillance

- Automatic Dependent Surveillance – Broadcast (ADS-B)
- Automatic Dependent Surveillance – Contract (ADS-C)
- Secondary Surveillance Rader mode S (SSR Mode-S)
- Advanced Surface Movement Guidance and Control System (A-SMGCS)
- Multilateration

4) Meteorological (MET)

- Wide Area Forecast System (WAFS)
- Doppler Rader

In order to accept the above ATM plan, PBN is one of the new approaches for reaching the goal. The following Figure 3-3-6 shows the PBN Roadmap in the Asian and Pacific region planned by ICAO, compared with that of Japan. AMSs will follow this ICAO Roadmap which shows RNP 2 and RNP 4 being implemented by the year 2016 for oceanic routes, and RNAV 1 and RNP 2 being expected also by 2016.

Table 3-3-6 PBN Roadmap in Asia/ Pacific Region and Japan

<table>
<tr><th></th><th></th><th>2008</th><th>2009</th><th>2010</th><th>2011</th><th>2012</th><th>2013</th><th>2014</th><th>2015</th><th>2016</th><th>2017</th><th>2018</th><th>2019</th><th>2020</th><th>2021</th><th>2022</th><th>2023</th><th>2024</th><th>2025</th></tr>
<tr><td rowspan="6">ICAO (Asia/Pacific)</td><td>Route-Oceanic</td><td colspan="5">RNP(RNAV10)*</td><td colspan="4">RNP2, RNP40 (RNAV10)*</td><td colspan="9" rowspan="4">GNSS</td></tr>
<tr><td>Route-Remote Continental</td><td colspan="5">RNP(RNAV10)*</td><td colspan="4">RNP2 (RNAV2/RNP4/RNAV10)*</td></tr>
<tr><td>Route-Continental en-route</td><td colspan="5">RNAV2, RNAV5</td><td colspan="4">RNAV1, RNP2 (RNAV2/RNAV5)*</td></tr>
<tr><td>TMA</td><td colspan="5">RNAV1 (with RADAR)
Basic RNP1 (no RADAR)</td><td colspan="4">Expand RNAV1 or RNP 1 appplication Mandate RNAV1 or RNP1 approval in high density APO</td></tr>
<tr><td rowspan="2">Approach</td><td colspan="5">RNP APCH with Baro-VNAV</td><td colspan="4">Expansion of RNP APCH (wz Baro-VNAV) and APV</td><td colspan="9" rowspan="2">GNSS Landing</td></tr>
<tr><td colspan="5">RNP ARAPCH</td><td colspan="4">Expansion of RNP AR APCH</td></tr>
<tr><td rowspan="4">Japan</td><td>En-route</td><td colspan="5">RNAV5</td><td colspan="5">RNP2</td><td colspan="8">Mandate RNP2 at/above FL290</td></tr>
<tr><td>TMA</td><td colspan="5">RNAV1 SID/STAR</td><td colspan="5">Transmission from RNAV1 to RNP1</td><td colspan="8">Mandate RNP1at mid-high density APOs</td></tr>
<tr><td>Approach</td><td colspan="5">RNAV (GPS)</td><td colspan="5"></td><td colspan="8"></td></tr>
<tr><td></td><td colspan="5">RNP APCH with Baro-VNAV</td><td colspan="5">RNP APCH</td><td colspan="8">Expect to mandate RNP AR</td></tr>
</table>

Source: ICAO

(3) Recommendation

As a part of the ATM concept, PBN is one of vital factors which can accelerate the implementation of such concept. For the implementation of the ATM, each system of CNS mentioned shall be developed through the following:

- Recommendation 1: Integrated Global Master Plan for new CNS/ATM, which focuses on the ASEAN region should be formulated in terms of ATM for realizing the Seamless ASEAN Sky.
- Recommendation 2: PBN should be considered as one of the vital measures to properly implement the ATM concept. The introduction of PBN shall be in line with ICAO Roadmap in Asia and Pacific Region.
- Recommendation 3: The balanced development for ATM concept should be necessary. Proper enhancement for CNS is recommended.

3.3.6 ENVIRONMENTAL MEASURES RELATED AIR TRANSPORT SECTOR

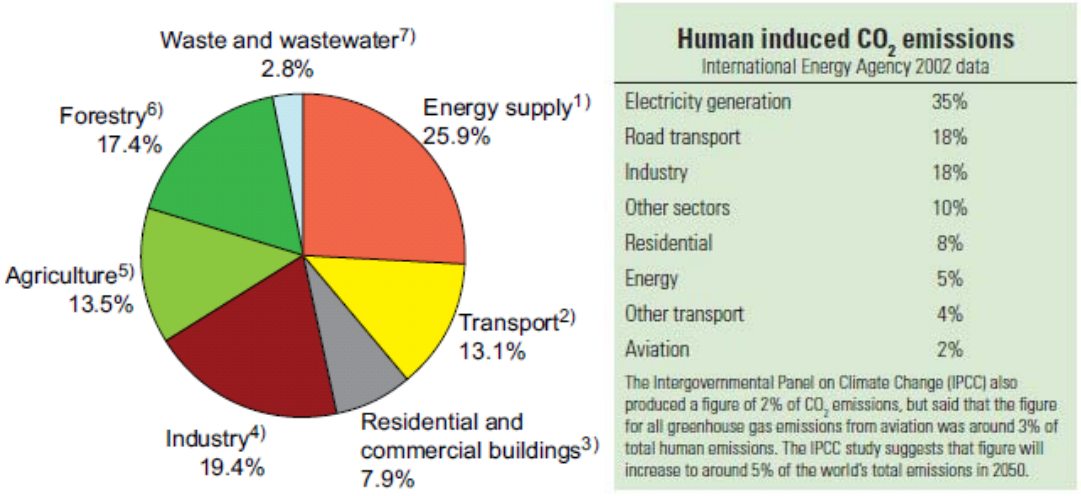
Environmental measures are one of the most significant issues for Air Transport sector in the ASEAN region. These include various concerns such as climate change, noise, air and water quality, and so on.

This clause highlighted climate change especially the reduction of Greenhouse Gas (GHG)/carbon emission. Even though air transport sector still only accounts for a small proportion of carbon (GHG) emission compared with other sector, work to reduce its environmental impact should be continued.

(1) Carbon (GHG) Emission

Carbon (GHG) emission by sector in 2004 detail is shown as chart in left of Figure 3-3-14. About 13 % of carbon (GHG) emissions were derived from the transport sector.

Air transport sector has an impact on climate change mainly through the carbon emission from aircraft operation. Moreover, globally, air transport sector accounts for 2 % of human-induced carbon (CO_2) emissions which are shown right of Figure 3-3-14.



Source: IPCC, ACI

Figure 3-3-14 Carbon (GHG) Emission by Sector (Left), Human induced Carbon (CO_2) Emission (Right)

(2) Reduction of Carbon (GHG) Emission

In order to reduce carbon or GHG emission at airports, several airport authorities and organizations and airline and aircraft/engine manufactures initiate related efforts and introduce countermeasure approaches such as technology, operational efficiency and infrastructure improvement.

- Technology: Ground Power Unit (GPU), Electrical Vehicle(EV) and New energy system
- Operational efficiency: Taxing time, fuel-efficient aircraft
- Infrastructure improvement: Rearrangement for facility layout,

(3) Emission Source related Aircraft Operation

In several reports conducted in Japan, carbon or GHG emission source from aircraft operation accounts for around 60 %. Meanwhile, those from related facility such as terminal building activities and vehicle activities account for around 30 % and 10 %, respectively.

Therefore, the Report of "Make Eco-airport come true" recommended three (3) proposals as shown in detail below.

1) Promotion of Utilization for GPU

Utilizing the GPU change over from Auxiliary Power Unit (APU) at the apron for parking of aircraft is commonly known to reduce the carbon (CO_2) emission drastically. For instance, in case of Boeing 777 aircraft, it can be reduced by 1/20 carbon (CO_2) emission hourly. Narita International Airport has high utilization factor of around 87 % in Japan 2006. The case study results which applied 90% utilization of GPU for some airports is described below in Table 3-3-7. The study result shows that in case of 90% GPU Utilization, carbon (CO_2) emission of -0.8% can be reduced to 4.2 %.

Table 3-3-7 Case Study for GPU Utilization of Japanese Airports

Airport Name	Chitose	Narita	Kansai	Hiroshima	Miyazaki
Utilization GPU in 2006[1)]	56%	87%[2)]	69%	50%[3)]	0%
Reduction ratio for application of 90% GPU Utilization	- 4.2%	- 0.8%	- 1.2%	- 1.3%	- 2.8%

Note: 1): Average of all category aircrafts at each airport
2): Only for installed parking spot data
3): Assumption for 50% due to unreliable data
Source: Report of "Make Eco-airport come true" (National Institute for Land and Infrastructure Management Japan: NILIM)

2) Introduction for Fuel-Efficient Aircraft

Boeing announced that B-787 Dreamliner is a super-efficient airplane with new passenger-pleasing features. It will bring the economy of large jet transports to the middle of the market, as it utilizes 20 % less fuel compared to any other airplane of the same size.

3) Reduction of Taxing Distance for Aircraft Operation

Rearrangement of existing airport facility is difficult to reduce the taxing distance for aircraft operation. However, with the increasing air traffic volume among AMSs, such reduction of taxing distance must be developed for each respective airport in the near future. Then consideration of taxing distance for aircraft operation contributes to the effective reduction.

(4) Environmentally-Friendly Action of AMSs

As part of ASEAN-Japan partnership, Ministry of Land Infrastructure, Transport and Tourism (MLIT), Japan, interview studied for capital airports in AMSs and gathered some present situations of environmentally-friendly actions which have introduced at the airport as summarized in Table 3-3-8.

Table 3-3-8 Eco-Friendly Airports Actions in AMSs

	BWN	PNH	CGK	VTE	KUL	RGN	MNL	SIN	BKK	HAN
1 Air Pollutant Emission Control										
1-1 Ground Power Unit	✓		✓	✓	✓					✓
1-2 Hydrant Refueling System	✓		✓		✓	✓	✓	✓		
1-3 Fuel truck refueling	✓			✓	✓	✓	✓	✓		
1-4 Clean vehicles						✓		✓		
2 Water Resource Consumption Control										
2-1 Rainwater	✓		✓		✓	✓				✓
2-2 Sewage			✓		✓			✓		✓
3 Water Pollution Prevention										
3-1 Rainwater	✓		✓		✓	✓	✓			
3-2 Sewage	✓		✓	✓	✓	✓	✓			✓
4 Wastes										
4-1 Facility for collecting and separating trash	✓				✓	✓	✓	✓		✓
4-2 Reusing recyclable waste								✓		
4-3 Composting and fertilizing raw garbage										
4-4 Biomass utilization system			✓							
5 Other										
5-1 Renewable energy								✓		
5-2 High-efficiency lighting system	✓			✓	✓			✓		✓
5-3 High-efficiency air conditioing facility	✓		✓		✓			✓		✓

Source: Report of "Basic study for Environmentally-friendly of Major overseas airports" (Japan Civil Aviation Authority of NILIM)

(5) EU Emission Trading System (ETS)

Emissions from Air Transport sector currently account for about 3% of total EU GHG or carbon emissions, but they are increasing rapidly by 87% since 1990 in EU. On current trends, Air Transport emissions are likely to more than double from present levels by 2020. This fast growth contrasts with the success of many other sectors of the economy in reducing emissions.

Therefore, EU Commission proposed the new directive for carbon or GHG emissions from flights to/ from and within the EU will be included in the EU ETS from 2012 and all airlines will be covered whatever their nationality including ASEAN careers. The contents of directives are shown below.

- Aviation will be included in the EU ETS from 2012; a proposed one-year introductory phase for intra-EU flights starting in 2011 has been dropped
- Emissions from aviation will be capped at 97% of their average 2004-2006 level in 2012. This will decrease to 95% from 2013, although this percentage may be reviewed as part of the general review of the Emissions Trading Directive
- Airlines will receive 85% of their emission allowances for free in 2012. This percentage may be reduced from 2013 as part of the general review of the Emissions Trading Directive.
- An exemption has been introduced for commercial air operators with very low traffic levels on routes to, from or within the EU or with low annual emissions (less than 10 000 tonnes CO2 a year). This means many operators from developing countries with only limited air traffic links with the EU will be exempt. This will not have a significant effect on the emissions covered by the EU ETS.
- A special reserve of free allowances has been added for new entrants or very fast-growing airlines. The reserve does not increase the overall cap on allowances and therefore does not affect the environmental impact of the system. Airlines that are growing will be able to benefit from the reserve up to a limit of one million allowances.

- A new mechanism has been introduced to ensure consistent and robust enforcement throughout the EU. As a last resort, Member States could ask for an operator to be banned from operating in the EU if it persistently fails to comply with the system and other enforcement measures have proven ineffective. (refer from EU web site)

3.3.7 PRIVATIZATION RELATED AIR TRANSPORT SECTOR

Basically, airport infrastructure development is implemented under the governments concerned. However, airport as the infrastructure of air transport sector recently loosens restrictions on foreign investment. Furthermore, foreign company enters into airport development projects in the world not only in the construction phase but also during operation.

From the viewpoint of maintaining the integrity of public fund, AMSs are willing to use private financial scheme such as PFI, BOT and BTO which are applied for the development of airports.

A major example on the utilization of foreign investment was the Philippines' Ninoy Aquino Airport Terminal 3 development project. This project was implemented by a consortium named PIATCO, jointly formed by Flughafen Frankfrut (German), Nisshoiwai (Japan), Singapore Chuan Hup Holding Limited and a Philippines' domestic company. It underwent litigation on bid-rigging case, delaying its operation for six years from the original schedule of 2008.

The Ministry of Transport and Communication of Thailand started considering the privatization of Airport Authority of Thailand (AAT) in 1998. The Airports of Thailand Public Company Limited (AOT) was corporatised from AAT, to be a public limited company on September 30, 2002 in order to promote the efficiency of airport operation, improve services for airport users and obtain financing from the private sector. Currently AOT has six international airports under responsibility; Bangkok/ Don Muang, Bangkok/ Suvarnabhumi, Chiang Mai, Phuket, Hat Yai Chiang Rai airports.

As discussed above, development and operation of airport under the private sector is necessary to pay attention for the future major theme.

3.4 MARITIME TRANSPORT

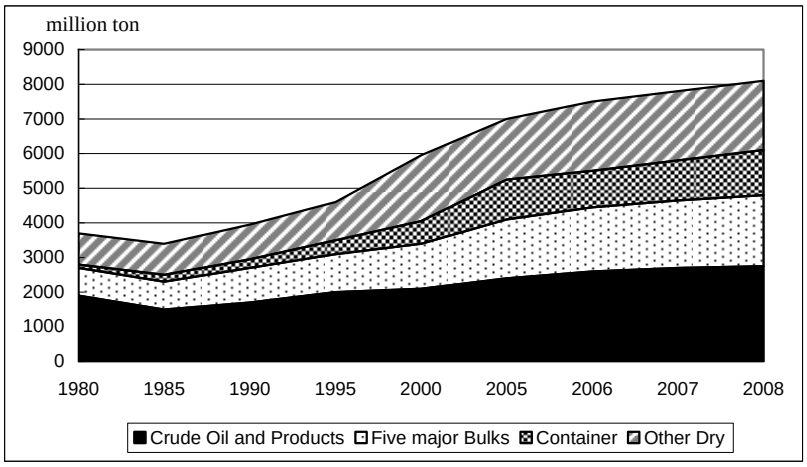
The maritime transportation takes the fundamental role in trading. Especially, liquid cargo (petroleum, oil products) and bulk cargoes (grain, fertilizer, cement, coal, iron ore and other minerals) have relied on maritime transportation. Recently, container terminal operation has been a beneficial business. Consequently, international hub ports such as Singapore Port, Tanjung Pelepas Port have sharply expanded their cargo throughput. Port serves as a gateway for freight and passenger to and from foreign countries, and has a function of connecting other transportation mode such as road and railway.

In this section, the current status of maritime transport of AMS, in terms of cargo throughput, 47 designated ports, safety, security, environment, privatization, cooperation with international organization and merchant fleet registration are discussed with certain issues highlighted.

3.4.1 CARGO THROUGHPUT

International maritime transport carries over 80% of the volume of world trade and takes the fundamental role in international logistics. According to the "Review of Maritime Transport 2009" by the United Nations, worldwide international seaborne trade in 2008 was 8.168 billion tons, of which 2.749 billion tons are for petroleum and oil products, 2.097 billion tons are for main bulks (iron ore, coal, bauxite/alumina, cement, grain, fertilizer) and 3.322 billion tons are for other dry cargoes, including containers. Worldwide international seaborne trade was below 4.0 billion tons in 1980, and has steadily increased with an average annual growth rate of approximately 3% as shown in Figure 3-4-1. Especially, container cargo has sharply increased, associated with regional economic growth and strong containerization development.

Malacca Strait located in Asian waters is the most crowded and significant shipping route. Most of the cargos transported between East-Asia and India/Europe/Middle East pass thorough Malacca Strait.

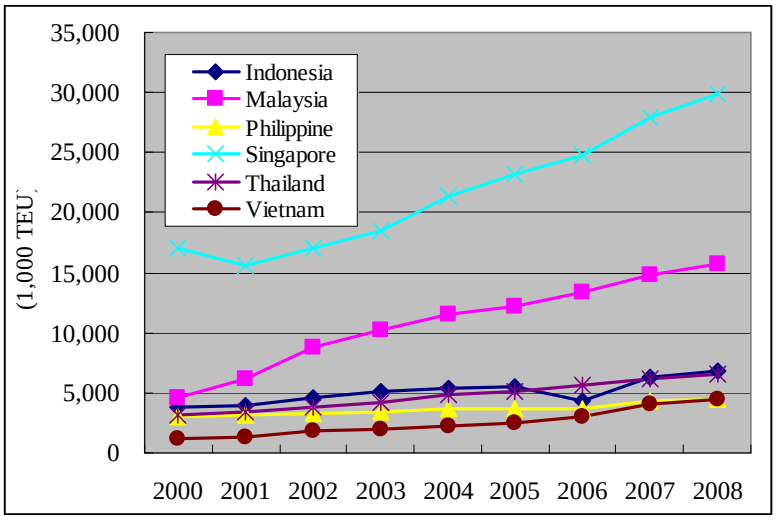


Source: Review of Maritime Transport 2009, UNCTAD Secretariat

Figure 3-4-1 International Seaborne Trade in the World

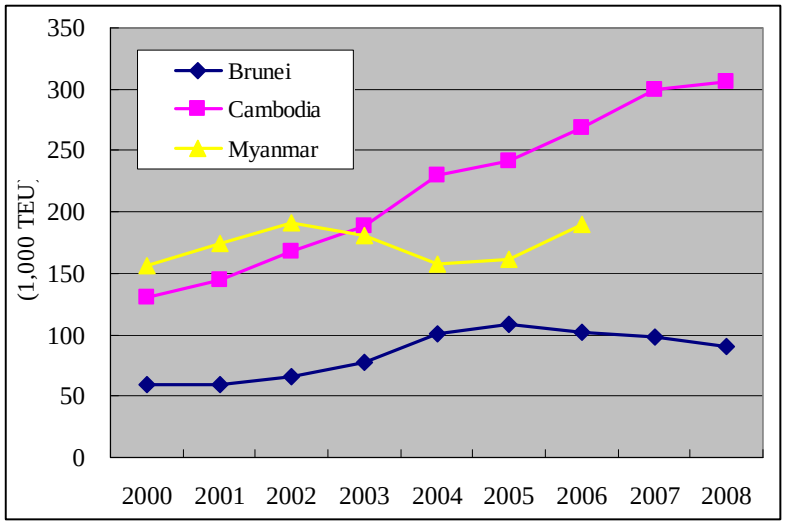
Total container cargo throughput of ASEAN countries, except for Myanmar, was 68.289 million TEU in 2008 and its average annual growth rate from 2000-2008 was 9.4%. Figure 3-4-2 and Figure 3-4-3 show the container throughput trend which is categorized into two groups by throughput: > or < 1.0 million TEU. Consequently, it is observed that Singapore and Malaysia has sharply increased. Singapore has taken a positive port sales based on high-performance service as an Asian hub port. Malaysia has also rapidly increased since Tanjung

Pelepas Port started its operation as a privatized port in 2000. Presently, mega carrier Maersk Line is the largest user of the port. Said port is the most convenient and controllable container terminal for Maersk Line as its hub in Asia.



Source: Containerization International Yearbook 2002-2010, AN BISSELL

Figure 3-4-2 Container Throughput of ASEAN Countries (Beyond 1 million TEU)



Source: 1) Port Authority of Sihanoukville, 2) Port Authority of Phnom Penh, 3) Myanmar Port Authority, 4) Ports Department, Ministry of Communications, Brunei Darussalam

Figure 3-4-3 Container Throughput of ASEAN Countries (Below 1 million TEU)

3.4.2 PORT STATUS OF 47 DESIGNATED PORTS

(1) Cargo Throughput

Preliminary 33 ports were identified as the main port for trans-ASEAN transport network in the ASEAN Transport Cooperation Framework Plan in 1999. The 1st Maritime Transport Working Group (MTWG) on February 2000 finalized the ASEAN -Wide Port System composed of 46 designated ports, which were adopted later at the 9th Senior Transport Officials Meeting (STOM) on April 2002. Finally, the research mission for this system

proposed that the port of Tanjung Pelepas should be added due to its emerging role in the region. Hence, a total of 47 designated ports were selected as shown in Table 3-4-1 and Figure 3-4-4.

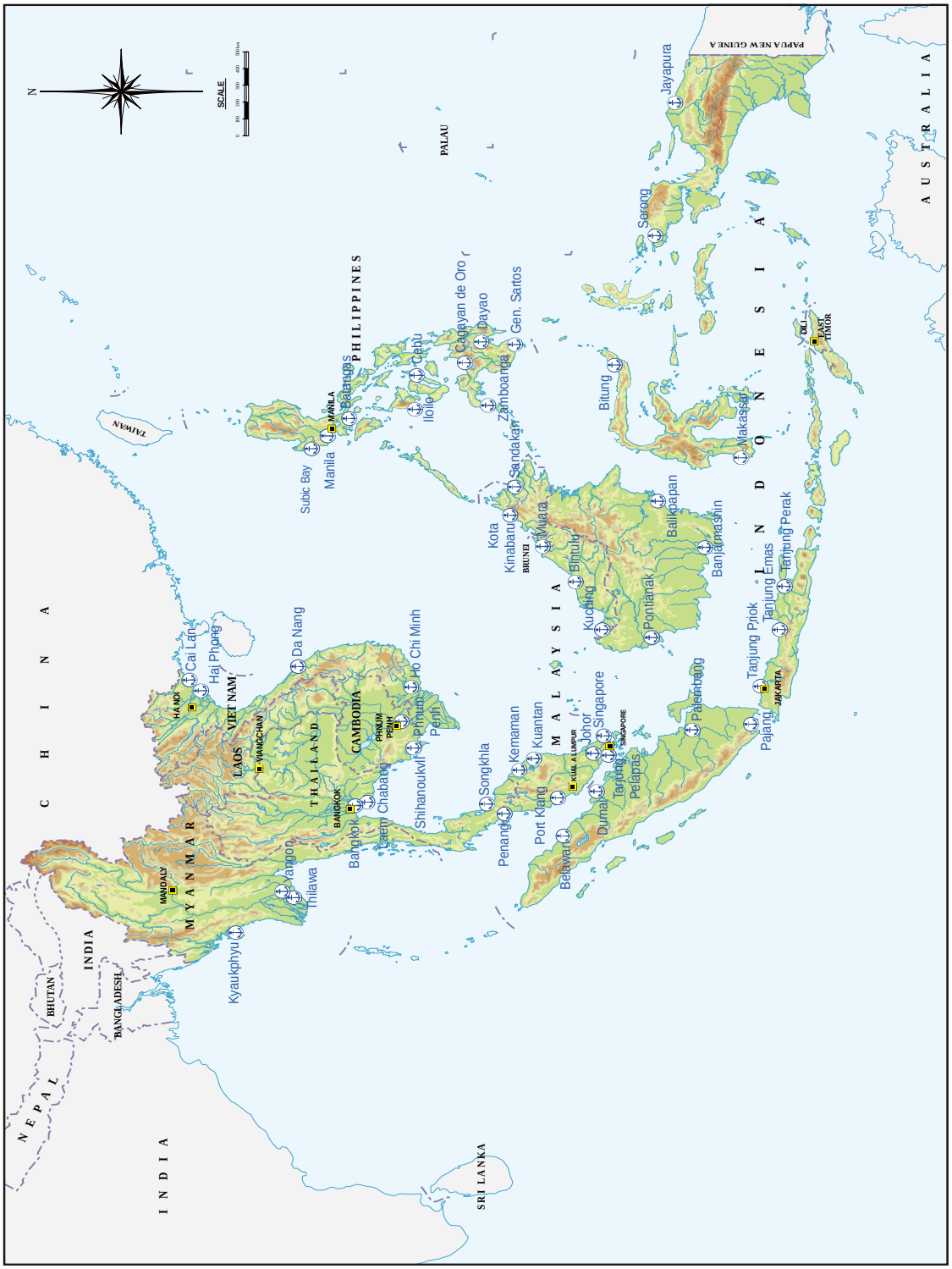
Table 3-4-1 Forty Seven Designated Ports

Country	Name of Port
Brunei Darussalam	Muara
Cambodia	Phnom Penh, Sihanoukville
Indonesia	Belawan, Dumai, Tanjung Priok, Palembang, Panjang, Pontianak, Tanjung Perak, Tanjung Emas, Makassar, Balikpapan, Banjarmasin, Bitung, Jayapura, Sorong
Malaysia	Port Klang, Penang, Johore, Tanjung Pelepas, Kuantan, Kemaman, Bintulu, Kuching, Sandakan, Kota Kinabalu
Myanmar	Yangon, Thilawa, Kyaukphyu
Philippines	Manila, Batangas, Subic Bay, Cebu, Iloilo, Cagayan de Oro, Davao, General Santos, Zamboanga
Singapore	Singapore
Thailand	Bangkok, Laem Chabang, Songkhla
Viet Nam	Ho Chi Minh, Hai Phong, Da Nang, Cai Lan

Source: ASEAN Secretariat

Table 3-4-2 shows the total cargo throughput and container throughput of the 47 designated ports in 2008. It was thus noted that the port of Singapore handled more than 500 million tons, including 300 million tons of container cargo and 167 million tons of liquid cargo. The 2nd ranking port among the ASEAN Countries is Port Klang with 152 million tons, followed by Tanjung Pelepas (88 million tons), Tanjung Priok (69 million tons), Laem Chabang Port (55 million tons), and Balikpapan Port (53 million tons).

On the Other hand, Regarding the container throughput, seven of the designated ports are ranked in "the World's Top 50 Container Ports" in "Containerization International Yearbook 2010", namely, Port of Singapore (1st, 29.9 million TEU), Port Klang (15th, 7.9 million TEU), Tanjung Pelepas (18th, 5.6 million TEU), Laem Chabang Port (21st, 5.2 million TEU), Tanjung Priok (25th, 4.0 million TEU), Ho Chi Minh Port (31st, 3.4 million TEU) and Manila Port (37th, 3.0 million TEU).



Source: ERIA Study Team

Figure 3-4-4 Location of the 47 Designated Ports

Table 3-4-2 Cargo Throughput of the 47 Designated Ports in 2008

Country	Port Name	Cargo Throughput	
		Total (tons)	Container (TEU)
		50,000,000 100,000,000	2,500,000 5,000,000
Brunei	Muara	948,033	90,372
Cambodia	Phnonpenh	1,119,645 *	47,349 *
	Sihanoukville	2,057,966	25,775
Indonesia	Belawan	20,094,000	590,069
	Dumai	6,168,000 *	0
	Tanjung Priok (Jakarta)	69,053,516 **	3,984,278
	Palembang	10,964,803	78,469
	Panjang	15,314,929	104,142
	Pontianak	4,233,845	132,732
	Tanjung Perak	12,011,157	1,119,353
	Tanjung Emas (Semarang)	6,784,097	373,644
	Makassar	10,147,382	353247
	Balikpapan	53,383,910	82,961
	Bitung	3,971,338	134,756
	Jayapura	882,834	42,563
	Sorong	909,422 *	9,339
	Banjarmasin	38,601,118	251,543
Malaysia	Port Klang	152,348,510	7,973,117
	Penang	25,999,896	929,639
	Johore (Pasir Gudang)	25,312,782	936,000
	Tanjung Pelepas	88,000,000	N/A
	Kuantan	9,405,465	127,061
	Kemaman	3,913,410	0
	Bintulu	40,470,300	290,167
	Kuching	11,460,182	291,063
	Sandakan	9,910,000	0
	Kota Kinabalu	6,758,793	193,854
Myanmar	Yangon Thilawa	12,003,103	189,690
	Kyaukphyu	21,627	0
Philippines	Manila	40,303,151	2,997,022
	Batangas	606,626	497
	Subic Bay	3,135,870 **	29,370
	Cebu	26,348,803	495,829
	Iloilo	2,236,789	81,936
	Cagayan de Oro	327,623	13,636
	Davao	3,597,396	349,006
	General Santos	1,936,854	113,886
	Zamboanga	1,575,206	64,960
Singapore	Singapore	515,415,000	29,918,000
Thailand	Bangkok	17,767,818	1,460,713
	Laem Chabang	54,837,542	5,240,075
	Songkhla	1,830,381	140,356
Viet Nam	Ho Chi Minh	64,591,113	3,433,621
	Hai Phong	25,054,027	1,398,654
	Da Nang	2,784,517	61,881
	Cai Lan	2,740,700	102,061

Note: Bar lines represents the scale of total tonnage. Due to width limitation, blue and red bar lines are broken into number of lines and each representing a maximum of 100,000,000 tons and 5,000,000 TEU respectively.
*: Data in 2007 **: Estimated

Source: The ERIA Study Team arranged based on "The Study on Guidelines for Assessing Port Development Priorities including Acceptable Performance Levels in ASEAN, JICA"

(2) Cargo Handling Capacity

The JICA study team with Lead Coordinator Country, Brunei Darussalam has executed "The Study on Guidelines for Assessing Port Development Priorities including Acceptable Performance Levels in ASEAN" as Measure No.6 of the Maritime Roadmap. In this study, the estimation model for container cargo throughput capacity was proposed, and Table 3-4-3 shows the result of the estimation and actual container throughput per berth in 2008. In said figure, conventional berths without quay gantry crane installed are excluded from the estimation model and are marked with**. Moreover, conventional berths which are not fully equipped are marked with the sign*.

This model estimates the operational performance of a container terminal. Operational performance is generally lower than the design capacity due to seasonal changes in container transportation, redundancy for future demand and other operational reasons. Estimated capacity seems to be 75%-85% of the actual terminal capacity. However, it is observed that Sihanoukville Port, Tanjung Priok Port, Port Klang, Johore Port, Tanjung Pelepas Port, Bintulu Port, Yangon Port, Manila Port, Davao Port, Singapore Port, Bangkok Port, Laem Chabang Port, Ho Chi Minh Port and Hai Phong Port have been fairly full. In this case, increase in productivity or expansion of berth is required to be planned and executed in consideration of future cargo demands and individual port conditions.

Table 3-4-3 Comparison between Actual Cargo Throughput in 2008 and Estimated Capacity of 47 Designated Ports (1/3)

Country	Port Name	Terminal Name	Estimated Capacity/Berth Container Throughput (2008)/Berth 100,000 200,000 300,000 400,000 500,000 600,000 700,000 TEU	Develop-ment Plan Yes/No
Brunei	Muara	Muara Container Terminal		Yes
Cambodia	Sihanoukville	New Container Terminal	Fairly Full	N/A
	Phnonpenh		**	Yes
Indonesia	Belawan	International Terminal		Yes
	Dumai		**	N/A
	Tanjung Priok (Jakarta)	Jakarta International C.T		Yes
	Tanjung Priok (Jakarta)	Terminal Petikemas Koja	Fairly Full	Yes
	Tanjung Priok (Jakarta)	Multi Terminal Indonesia PT		Yes
	Palembang	Container		Yes
	Panjang	Container Terminal		Yes
	Pontianak	Container Terminal	**	No
	Tanjung Perak	Terminal Peti Kemas Surabaya		N/A
	Tanjung Emas (Semarang)	Terminal Peti Kemas Semarang		Yes
	Makassar	Makassar Container T.		N/A
	Balikpapan	Semayang	**	N/A
	Bitung	Bitung Container Terminal		Yes
	Jayapura	Dermaga 1 and Dermaga 2	**	N/A
	Sorong	Dermaga1	**	N/A
	Banjarmasin	Trisaksti (Kade 1 sd 270)	**	N/A
Malaysia	Port Klang	Northport		Yes
	Port Klang	Westport	Fairly Full	Yes
	Penang	North Butterworth Container T.		Yes
	Johore (Pasir Gudang)	CT1 ~ 3	Fairly Full	No
	Tanjung Pelepas	Bearth 1 - 10	Fairly Full	Yes
	Kuantan			No

Source: The ERIA Study Team arranged based on "The Study on Guidelines for Assessing Port Development Priorities including Acceptable Performance Levels in ASEAN, JICA"

Table 3-4-3 Comparison between Actual Cargo Throughput in 2008 and Estimated Capacity of 47 Designated Ports (2/3)

Country	Port Name	Terminal Name	Estimated Capacity/Berth Container Throughput (2008)/Berth 100,000 200,000 300,000 400,000 500,000 600,000 700,000 TEU	Develop-ment Plan
	Kemaman	East Wharf	**	Yes
	Kemaman	West Whaf	**	Yes
	Bintulu	BICT	Fairly Full	Yes
	Kuching	Senari Terminal	**	N/A
	Sandakan		**	N/A
	Kota Kinabalu	Sapangar Bay Conteriner Port	**	N/A
Myanmar	Yangon	AWPT	Fairly Full	Yes
	Thilawa	Myanmar International Terminal Thilawa	**	Yes
	Kyaukphyu		**	Yes
Philippines	Manila	Port of Manila	N/A	N/A
	Manila	North Harbor	N/A	N/A
	Manila	South Habor	N/A	N/A
	Batangas	Batangas Port		Completed
	Subic Bay	New Container Terminal-1		No
	Cebu	Cebu International Port	**	Yes
	Iloilo	TMO-Loboc	**	Yes
	Iloilo	TMO-Fort San Pedro	**	Yes
	Cagayan de Oro	Cagayan de Oro	**	Yes
	Davao	Sasa Wharf	Fairly Full	Yes
	General Santos	General Santos Port	**	Yes
	Zamboanga	Zanboanga Port	**	Yes
Singapore	Singapore	All PSA	Fairly Full	Yes
	Singapore	Jurong Terminal		Yes
Thailand	Bangkok	Terminal 1	Fairly Full	None
	Bangkok	Terminal 2	Fairly Full	No

Source: The ERIA Study Team arranged based on "The Study on Guidelines for Assessing Port Development Priorities including Acceptable Performance Levels in ASEAN, JICA"

Table 3-4-3 Comparison between Actual Cargo Throughput in 2008 and Estimated Capacity of 47 Designated Ports (3/3)

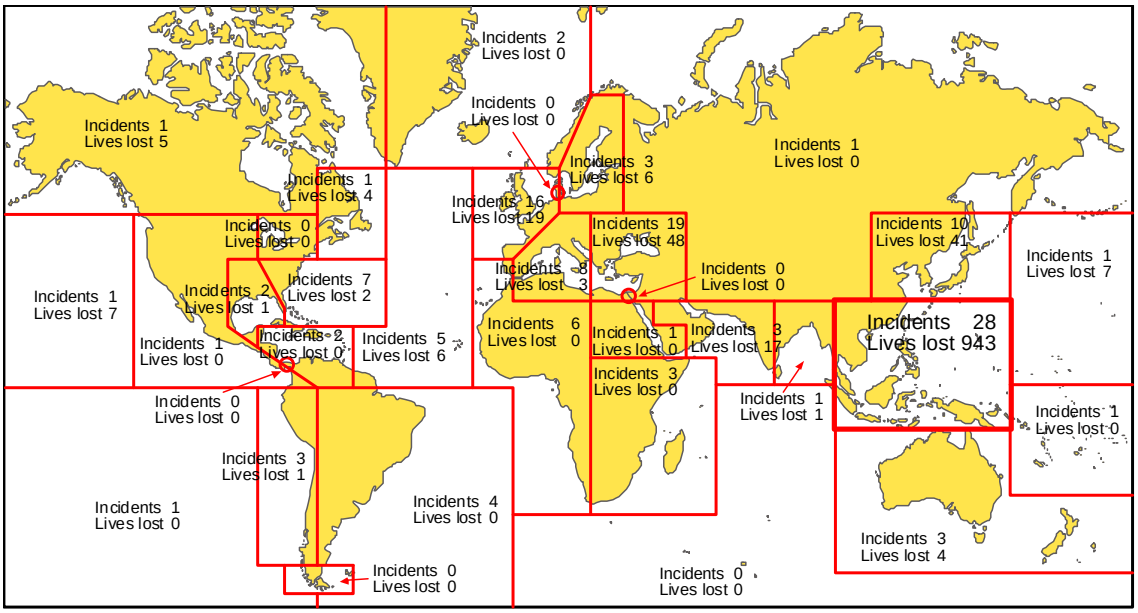
Country	Port Name	Terminal Name	Estimated Capacity/Berth / Container Throughput (2008)/Berth (100,000 200,000 300,000 400,000 500,000 600,000 700,000 TEU)	Develop-ment Plan
Thailand	Laem Chabang	A-0	**	Yes
	Laem Chabang	A-2	Fairly Full	Yes
	Laem Chabang	A-3		Yes
	Laem Chabang	B-1	Fairly Full	Yes
	Laem Chabang	B-2	Fairly Full	Yes
	Laem Chabang	B-3	Fairly Full	Yes
	Laem Chabang	B-4	Fairly Full	Yes
	Laem Chabang	B-5	Fairly Full	Yes
	Laem Chabang	C-1	*	Yes
	Laem Chabang	C-2	*	Yes
	Laem Chabang	C-3	*	Yes
	Songkhla		**	N/A
Viet Nam	Ho Chi Minh	Cat Lai Terminal	Fairly Full	Yes
	Ho Chi Minh	Vietnam International C.T.	Fairly Full	Yes
	Hai Phong	Chua Ve	Fairly Full	Yes
	Da Nang	Tien Sa Terminal		Yes
	Cai Lan	B5 - B7		Yes

Source: The ERIA Study Team arranged based on "The Study on Guidelines for Assessing Port Development Priorities including Acceptable Performance Levels in ASEAN, JICA"

3.4.3 SAFETY

In 2008, 127 maritime incidents and 1102 lives lost in the world were reported by the World Casualty Statistics 2008. Figure 3-4-5 shows the statistics for each of the 30 districts. It is observed that East Asian waters are the most dangerous areas where 28 incidents and 943 lives lost are identified, which are 22% and 86% respectively, of the total proportion.

In general, improvement of the navigation system/facilities, enhancement of seafarer education, and establishment of adequate maintenance system for vessels are urgently required in order to ensure navigational safety and reduce such incidents. As effective measure, implementation of the Long-Range Identification and Tracking System (LRIT) and introduction of an Automatic Identification System (AIS) are essential, and some AMS have already introduced and operated these systems. Furthermore, ASEA Search and Rescue Exercise (SAREX) should be further activated and enhanced to reduce lives lost.



Source: World Casualty Statistics 2008, LIoyd's Register-Fairplay Ltd

Figure 3-4-5 Number of Incidents and Lives Lost per Zone

3.4.4 SECURITY

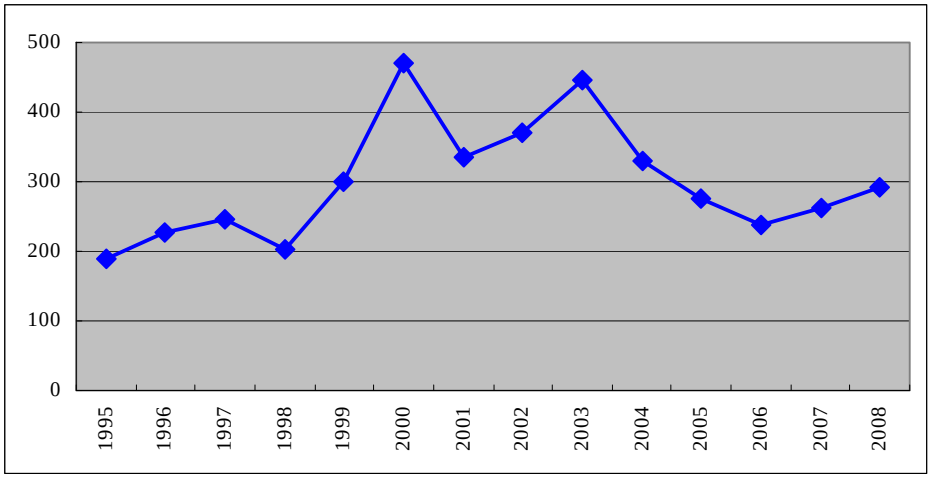
The International Maritime Bureau of the International Chamber of Commerce annually reports acts of piracy and armed robbery in the world waters. The number of said incidents increased from 2003-2006. Subsequently, it has been continuously increasing until 2008 as shown in Figure 3-4-6, with the number of said incidents reaching 293, which is 11% higher than that of 2007.

Figure 3-4-7 shows the main country/area (top seven) of piracy and armed robbery incidents. The number of incidents in the African region such as in the Red Sea/Gulf of Aden, Somalia and Nigeria has been sharply increasing in recent years, and is a serious issue for maritime transportation. Since June 2008, the United Nations Security Council has adopted a resolution for UN forces to take effective measures against such incidents, which is expected to increase.

On the other hand, the number of incidents in Southeast Asia has been decreasing with the enhancement of maritime security, as indicated in chart below. It was reduced to 43 in 2008 from 70 in 2007, particularly in Indonesia where it decreased to 28 in 2008 from 43 in 2007.

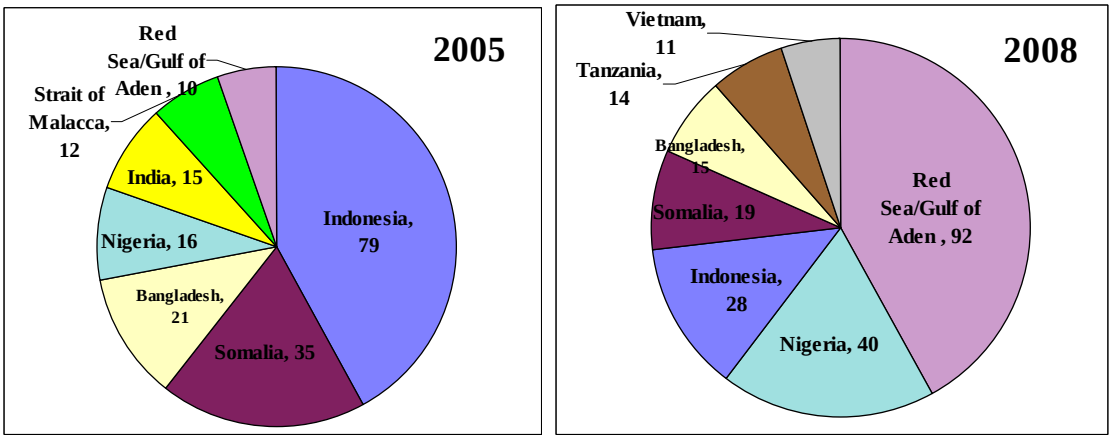
Due to concerns on the increasing number of such incidents, the Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia (ReCAAP) was finalized on 11 November 2004 in Tokyo and came into force on 4 September 2006.

As of December 2009, 15 countries have signed and ratified the ReCAAP, namely, Bangladesh, Brunei Darussalam, Cambodia, China, India, Japan, Korea, Lao PDR, Myanmar, Philippines, Singapore, Sri Lanka, Thailand, Viet Nam and Norway . Malaysia and Indonesia have also indicated their preparedness to cooperate with the ReCAAP. In order to manage and maintain the required information/statistics/report and provide appropriate alert signals, the Information Sharing Centre (ISC) was established in Singapore on November 2006.



Source: International Maritime Bureau, International Chamber of Commerce

Figure 3-4-6 Number of Piracy and Armed Robbery Incidents in the World Waters



Source: International Maritime Bureau, International Chamber of Commerce

Figure 3-4-7 Main Country/Area (Top 7) With Incidents of Piracy and Armed Robbery

3.4.5 ENVIRONMENTAL MEASURES

(1) Carbon (CO2) Emission

Maritime transport emits the most efficient (exhausting CO_2 volume/transport length) in carbon (CO2) compared to other transport modes. It is noted that carbon (CO_2) emissions from international shipping fleet are estimated to be between 1.6% and 4.1% of the world's carbon (CO_2) emissions from fuel combustion based on Review of Maritime Transport 2009.

Due to the increasing environmental awareness in the world, the second 'International Maritime Organization (IMO) GHG Study 2009' proposed to implement the available technical and operational measures to reduce carbon or GHG emissions as shown in Table 3-4-4. These measures are potentially significant in reducing the emissions rate by 25% to 75% compared to current levels. Furthermore, IMO's Maritime Environment Protection Committee (MEPIC) considers a number of mitigation measures aimed at reducing the carbon (CO_2) emissions from international shipping. ASEAN states are required to take these measures being members of IMO.

On the other hand, the Federation of ASEAN Shipowners' Association (FASA) has voluntarily supported the technical and operational measures to reduce carbon or GHG

emissions from ships. It also proposed the introduction of "GHG emission trading scheme" and establishment of "Global bunker levy (so-called GHG compensation fund)".

Table 3-4-4 Potential Efficiency Gains of Selected Technology and Operational Measures

Strategy/Measure	Reduction (%)	Strategy/Measure	Reduction (%)
Diesel electric drives	5-30	Voyage planning and weather routing	<10
Wind power: Flettner rotor	<30	Overall energy awareness	<10
Ship speed reduction	<23	Optimum hull dimensions	<9
Bulbous bow	<20	Design for reduced ballast operation	<7
Wind power: kites and sails	<20	Lightweight construction	<7
Air lubrification	<15	Propeller efficient monitoring	<5
Counter-rotating propellers	<12	Efficient propeller speed modulation	<5
Waste heat recovery	<10	Hull coating	<5
Automation	<10	Efficiency of scale	<4
Port turnaround time	<10	Solar power	<4
Propeller surface maintenance	<10	Fuel additives	<2

Source: The Second IMO GHG Study 2009

(2) Oil Spill Incident

Once a major oil spill incident occurs, marine environment suffers from widespread tragic damage. A Memorandum of Understanding on the ASEAN Oil Spill Response Action Plan (OSRAP) was signed by the Government of Brunei Darussalam, Indonesia, Malaysia, Philippines, Singapore and Kingdom of Thailand in 1993, with a view on preserving the marine and coastal environment of the ASEAN Region against major oil spill incidents. It has set the establishment of regional and sub-regional ASEAN oil spill response centres as a long term goal.

OSRAP meetings were held almost annually at member states. The five member-states were provided by the Government of Japan with a grant for combating oil spills, particularly for the procurement of equipment such as oil booms, skimmers and dispersants and acquiring information system.

A focal points meeting for the ASEAN OSRAP was conducted on 8-10 June 2009 in Jakarta. The meeting was sponsored by IMO in collaboration with the Ministry of Transport and the Ministry of Environment, Republic of Indonesia, and reviewed the draft Strategy and Action Programme (SAP) to revitalize and strengthen the ASEAN OSRAP. Furthermore, it has been decided that further action, including the expansion of membership states, is to be submitted on the next formal meeting in Brunei Darussalam.

3.4.6 PRIVATIZATION

Private sector participation is suitable for port operations, especially on container terminal, from the viewpoint of 1) enhancement and establishment of national shipping route, 2) relieving governments from high investment burdens, and 3) introducing higher standard port operation efficiency through fair competition,. Privatization of container terminal has drastically expanded along the increase in container throughput since the middle of 1990s. APM Terminals (APM), Hutchison Port Holdings (Hutchison), PSA International Pte Ltd. (PSA), and Dubai Ports World (DPW), the so-called Four Mega Operators, are expanding their container terminal business operations all over the world as shown in Table 3-4-5. In ASEAN countries, they expand their operations in seven countries and eleven ports as shown in Table 3-4-6.

Privatization is the current economic wind. Gradual deregulation of port activity, not only port operation but also forwarding and shipping, is necessary for well-balanced national development.

Table 3-4-5 Current Status of Four Mega Operators in the World

Operator	Number of Operating Port	Number of Expanded Country	Container Throughput in 2008 (million TEU)
APM (APM Terminals)	50	34	7.80
Hutchison (Hutchison Port Holdings)	50	26	6.76
PSA (PSA International Pte. Ltd.)	28	16	6.32
DPW (Dubai Ports World)	48	32	4.68

Source: The Ports and Harbours, Vol.86, Japan

Table 3-4-6 Current Status of Four Mega Operators in ASEAN Countries

Country	Port	Operator
Brunei	—	—
Cambodia	—	—
Indonesia	Tanjung Priok	Hutchison
	Tanjung Perak	DPW
Malaysia	Port Kelang	Hutchison
	Tnajung Pelepas	APM
Myanmar	Thilawa	Hutchison
Philippines	Manila	DPW
Singapore	Singapore	PSA
Thailand	Laem Chabang	PSA, Hutchison, DPW, APM
Viet Nam	Cai Mep Thi Vai	PSA, Hutchison, APM
	Hiep Phouc (HCM)	DPW
	Hai Phong	APM

Source: ERIA Study Team

3.4.7 COOPERATION WITH INTERNATIONAL ORGANIZATION FOR PORT ACTIVITIES

The Inter-Governmental Maritime Consultative Organization (IMCO) was established in Geneva in 1948. Its name was later changed to IMO in 1982. Its main task is to develop and maintain a comprehensive regulatory framework for shipping. Presently, its scope includes safety, environmental concerns, legal matters, technical co-operation, maritime security and the efficiency of shipping. IMO consists of Assembly, Council, Maritime Safety Committee, Marine Environment Protection Committee, Legal Committee, Technical Co-operation Committee, Facilitation Committee) and Secretariat. An assembly meeting is usually held every two years.

As of April 2010, its number of members is 169 states and associate members consisting of three states. ASEAN states, except for Lao PDR, have been inducted members. Lao PDR is a land-locked country, but has own shipping fleet for transporting to and from foreign countries

through ports in its neighbouring countries, for instance, Vung Ang Port, Viet Nam. Thus, it is recommended that Lao PDR should be among the inducted member of IMO.

Table 3-4-7 and Table 3-4-8 show current IMO-initiative convention status of ASEAN states as of April 2010. In order to enhance and improve safety and security, and to preserve environment, ASEAN states are required to sign and enforce the following conventions and take effective measures based on conventions.

Table 3-4-7 Current Maritime Convention Status Regarding Safety and Security

	SOLAS Convention 74	SOLAS Protocol 78	SOLAS Protocol 88	LOAD LINES Convention 66	LOAD LINES Protocol 88	TONNAGE Convention 69	COLREG Convention 72	CSC Convention 72	CSC amendments 93	STCW Convention 78	STCW-F Convention 95	SAR Convention 79	STP Agreement 71	STP Protocol 73	INMARSAT Convention 76	INMARSAT OA 76	INMARSAT amendments 94	INMARSAT amendments 98	IMSO amendments 2006	FACILITATION Convention 65	SUA Convention 88	SUA Protocol 88	SUA Convention 2005	SUA Protocol 2005
Brunei Darussalam	x	x		x		x	x			x					x	x		x			x	x		
Cambodia	x	x	x	x	x	x	x			x											x	x		
Indonesia	x	x		x		x	x	x		x			x	x	x	x	x	x		x				
Malaysia	x	x		x		x	x			x					x	x								
Myanmar	x	x		x		x	x			x											x	x		
Philippines	x			x		x				x			x		x	x					x	x		
Singapore	x	x	x	x	x	x	x			x		x			x	x	x	x		x	x			
Thailand	x			x		x	x			x					x	x				x				
Viet Nam	x	x	x	x	x	x	x			x		x			x	x		x		x	x	x		

Note: x; signed, blank; not yet signed
Source: International Maritime Organization

Table 3-4-8 Current Maritime Convention Status Regarding Environmental Preservation

	MARPOL 73/78 (Annex I/II)	MARPOL 73/78 (Annex III)	MARPOL 73/78 (Annex IV)	MARPOL 73/78 (Annex V)	MARPOL Protocol 97 (Annex VI)	London Convention 72	London Convention Protocol 96	INTERVENTION Convention 69	INTERVENTION Protocol 73	CLC Convention 69	CLC Protocol 76	CLC Protocol 92	FUND Convention 71	FUND Protocol 76	FUND Protocol 92	FUND Protocol 2003	OPRC Convention 90	HNS Convention 96	OPRC/HNS 2000	BUNKERS CONVENTION 01	ANTI FOULING 01	BALLASTWATER 2004	NAIROBI WRC 2007	HONG KONG SRC 2009
Brunei Darussalam	x									x	x	x	x		x									
Cambodia	x	x	x	x						x	x	x			x									
Indonesia	x									x		x	x											
Malaysia	x			x						x		x	x		x		x			x				
Myanmar	x																							
Philippines	x	x	x	x		x						x			x									
Singapore	x	x	x	x	x					x	x	x			x		x		x	x				
Thailand	x																x							
Viet Nam	x											x												

Note: x; signed, blank; not yet signed
Source: International Maritime Organization

3.4.8 MERCHANT FLEET REGISTRATION

The capacity of the world merchant fleets registered in the world has steadily increased with an average annual growth rate of 2.5% since 1980, and reached 831 million gross tones in 2008. On the other hand, the capacity of merchant fleets registered in AMS was 66 million gross tones, which was 8.0 % out of the world total. It has sharply increased due to rise in cargo demand, and its average annual growth rate from 1980-2008 was recorded to be 6.2%.

Among AMS, Singapore has especially expanded the capacity of merchant fleets registered in its own states. It could be supposed that open registry policy, which is open for foreign owned company with duty to fulfil some requirements, impacts on the increase in fleet registration. Cambodia and Viet Nam also operates the so-called open registries, and its fleet registration has steadily increased.

Table 3-4-9 Capacity of Merchant Fleets Registered in AMS

(Unit: 1,000GRT)

Country	1980	1990	1995	2000	2005	2008
Brunei Darussalam	1	358	366	361	479	494
Cambodia			60	1,792	1,850	2,096
Indonesia	1,412	2,179	2,771	3,387	4,305	5,810
Malaysia	702	1,718	3,283	5,665	5,758	7,078
Myanmar	88	827	523	512	436	166
Philippine	1,928	8,515	8,744	7,192	5,268	5,029
Thailand	392	615	1,743	1,962	3,026	2,842
Viet Nam	241	470	700	929	1,671	2,993
Singapore	7,664	7,928	13,611	23,414	30,823	39,886
World Total	419,911	423,627	490,662	573,121	665,506	830,660
ASEAN Total	12,428	22,610	31,801	45,214	53,616	66,394
ASEAN Share	3.0%	5.3%	6.5%	7.9%	8.1%	8.0%

Source: Review of Development in Transport in Asia and the Pacific 2009, ESCAP

3.5 TRANSPORT FACILITATION

Well-facilitated transport is essential to create an efficient and integrated logistics and multi-modal transport system for seamless movement of goods, connecting air, maritime, railway, inland-waterway and road transport.

To implement the ATAP 2005-2010, three transport facilitation agreements, ASEAN Framework Agreement on the Facilitation on Goods in transit, Multimodal Transport and Inter-state Transport, have been concluded. These agreements have figured prominently in each semi-annual TFWG discussion. This chapter will describe the updated status of each framework agreements at the beginning.

Transport facilitation and trade facilitation are very linked/overlapped to each other. To achieve the goal of the transport sector, it is necessary to cooperate with other authorities as ATAP includes concerted actions with customs procedure. The following section will discuss issues of transport and trade facilitation as well as detailed current status of three principal agreements and their protocols.

3.5.1 ASEAN FRAMEWORK AGREEMENTS ON TRANSPORT FACILITATION

The goal of transport facilitation in the region is to create an efficient and integrated logistics and multi-modal transportation system for facilitating seamless movement of goods. To implement the ATAP 2005-2010, three transport facilitation agreements namely, ASEAN Framework Agreement on the Facilitation on Goods in transit, Multimodal Transport and Inter-state Transport, has been concluded. Implementation including ratification of agreement/protocol, however, varies in countries. Below is the description of these three agreements:

(1) ASEAN Framework Agreement on the Facilitation of Good in Transit (AFAFGIT)

1) Objectives of the agreement

The objectives of this agreement are;

- To facilitate transportation of goods in transit, to support the implementation of the ASEAN Free Trade Area, and to further integrate the region's economies
- To simplify and harmonize transport, trade and customs regulations and requirements for the purpose of facilitation of goods in transit; and
- To establish an effective, efficient, integrated and harmonized transit transport system in ASEAN.

2) Current Status

This frame work agreement was finalized and signed in 1999. It has 9 protocols as its integral parts and concerned Working Groups are designated for the ratification and monitoring the progress of these protocols. The current status including ratifications and the concerned issues related to each protocols are discussed below:

Protocol 1 - Designation of Transit Transport Routes and Facilities

Protocol 1 was signed on 8th February 2007. The STOM shall be the responsible body for the monitoring, review, coordination and supervision of all aspects to the Protocol. In the protocol, transit transport routes are designated in the appendix and it is addressed in article 2 that "the affirmation shall be with the mutual agreement of the immediate neighbouring Contracting Party or Parties." To expedite the ratification process of the Protocol, it is suggested to AMS to issue a letter to its neighbouring Member States to confirm the designated transit routes which has been identified under this Protocol.

Protocol 2 – Designation of Frontier Posts

Protocols 2 and 7 are under the responsibility of the ASEAN Directors-General of Customs and have been specifically tasked to the CPTFWG. The amended text of the Protocol 2 was tabled at the 4th CPTFWG Meeting in March 2008 for the consideration of AMS. To share information on the status of the finalization of the Protocol, Joint TFWG and CPTFWG Coordination Meeting was held on 2 Oct 2009 in Singapore.

Protocol 3 – Types and Quantity of Road Vehicles

Protocol 3 has been signed on 15 September 1999 and ratified by 10 countries. This Protocol has entered into force as of May 2010. There has been antinomy between the Protocol and AFAFIST in respect of the number of vehicles that can be authorized for transit transport and are as follows.

Article 4 in Protocol 3 of AFAFGIT: "…The Contracting Parties hereby agree that the number of road transit transport vehicles which shall be allowed to be used for transit transport shall be no more than sixty (60) vehicles per Contracting Party."

Article 9 of AFAFIST: "…the number of interstate transport vehicles allowed to be used for inter-state transport shall be no more than five hundred (500) vehicles per Contracting Party"

In the inaugural meeting, TTCB agreed that once the vehicles authorized for inter-state transport, they can be used for transit transport with liberal approach to set the quotas of transit transport vehicles. It was agreed that the number of vehicles that could be authorized for transit transport would be 500 vehicles per Contracting Party.

Protocol 4 – Technical Requirements of Vehicles

Transport operators are required to register vehicles to be used in transit transport under Protocol 4 which is signed in 1999 and ratified by 10 countries. This Protocol has entered into force as of May 2010To implement this protocol, each country has to establish registration and certification procedures. For the purpose of simplification and harmonization, the necessity to exchange information on the procedures was considered as one of the important step. In this regard, the TTCB meeting tasked the TFWG to discuss with AMS on the possibility of simplification and harmonization of the procedures and draft the mechanism for the exchange of registration procedures across AMS. Based on this, TFWG will report its recommendation to the TTCB in the next scheduled meeting for their consideration.

Protocol 5 – ASEAN Scheme of Compulsory Motor Vehicle Third-Party Liability Insurance

Protocol 5 was signed on April 2001 and has entered into force in September 2003.

The Council of Bureau, which was established to coordinate and supervise the legal, technical, administrative and financial operations of the National Bureaux, was suspended. The TTCB requested the ASEAN Insurance Regulators Meeting (AIRM) and the Council of Bureaus to work on developing the insurance scheme and its extension to all vehicles under the AFAFGT and the AFAFIST. After AFAFIST and enforcement of Protocols 1, 2, 3 and 4, the scheme should be ready to operate.

Protocol 6 – Railways Border and Interchange Stations

The finalization of Protocol 6 has been postponed until the SKRL Project is completed. Even in the absence of Protocol 6, AFAFGT can be implemented for the purpose of transit transport by road. It was agreed in TTCB meeting that the negotiation of Protocol 6 is deferred till such time that the missing links/spur-lines of the SKRL have been completed. On the bilateral basis, Cross-border rail protocols exist between the China and Viet Nam and between Thailand and Malaysia. A new train service operating from Bangkok in Thailand to Thanalaeng in Lao PDR opened in March 2009.[1]

Protocol 7 – Customs Transit System

This Protocol is under the responsibility of the ASEAN Directors-General of Customs and has been specifically tasked to the CPTFWG. Joint TFWG and CPTFWG Coordination Meeting were held on 2 Oct 2009 in Singapore to share information on the development of work under the Protocol. To achieve greater synergy and convergence for the timely operationalisation of AFAGIT, the text of the Protocol and its technical appendix have been reviewed and finalized by the Legal Services and Agreements of the ASEAN Secretariat.

Protocol 8 – Sanitary and Phytosanitary Measures

Protocol 8 is signed on October 2000 and ratified by 10 countries as of August 2010. The ASEAN Senior Officials Meeting of the ASEAN Ministers on Agriculture and Forestry (SOM-AMAF) shall be the responsible body for the Protocol. To implement the Protocol, TTCB addressed that there is a necessity to strengthen the coordination among relevant bodies and Coordinating Committee for the Implementation of ASEAN Trade in Goods Agreement (ATIGA) and establishment of arrangements and inspection procedures to facilitate the transit transport of Sanitary and Phytosanitary (SPS) goods.

[1] Connecting greater Mekong subregion railways a strategic framework , ADB August 2010

Protocol 9 – Dangerous Goods

This Protocol was signed on 20th September 2002. The Protocol defines and identifies "dangerous goods" with an establishment of a permit scheme. Permit schemes of NTTCCs will be followed by TTCB with the support of STOM. UN Model Regulations, European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) has been adopted by the TTCB.

(2) ASEAN Framework Agreement on Multimodal Transport (AFAMT)

The AFAMT is patterned based on the pertinent provisions of the UN Convention on International Multimodal Transport of Goods, 1992 UNCTAD/ICC Rules for Multimodal Transport Documents and Decision 331 and 425 on International Multimodal Transport by the Commission of the Cartagena Agreement.[2] The signing of the AFAMT will further facilitate the door-to-door delivery of goods in ASEAN, using various modes of transport, under a single transport document.

1) Objectives

ASEAN have recognized:

- That international multimodal transport is one means of facilitating the expansion of international trade among the members of ASEAN as well as between a Member Country and Third countries;
- The need to stimulate the development of smooth economic and efficient multimodal transport services adequate to the requirements of international trade;
- The desirability of adopting certain rules relating to the carriage of goods by international multimodal transport contracts, including provisions concerning the liability of multimodal transport operators;
- The need to create a balance of interests between users and suppliers of international transport services; and
- The need that this Agreement should not affect the national law relating to regulations and control of unimodal transport operations.

2) Current Status

This agreement has been singed on 17 November 2005 by all AMS and only three countries have ratified as of March 2010. In the last TTCB meeting, Brunei Darussalam, Indonesia, Malaysia and Viet Nam mentioned that they will ratify the agreement within a year. The details are shown in Table 3.5.1.

(3) ASEAN Framework Agreement on the Facilitation of Inter-State Transport (AFAFIST)

The first draft for the facilitation of inter-state transport was introduced in the ASEAN and Transit Transport Agreement was presented by Thailand during the 4th STOM in Cebu, the Philippines in September 1997[3]. All AMS has signed the AFAFIST by December 2009.

1) Objectives

The objectives of this agreement are:

[2] 'Implementation of Multimodal Transport Rules, UNCTAD 2001

[3] The 25th ASEAN Senior Transport Officials Meeting Document, The ASEAN Secretariat's Discussion Paper

- To facilitate inter-state transport of goods between and among the Contracting Partners to support the implementation of the ASEAN Free Trade Area, and to further integrate the region's economies
- To simplify and harmonize transport, trade and customs regulations and requirements for the purpose of facilitation of inter-state transport of goods; and
- To work in concert towards establishing an effective, efficient, integrated and harmonized regional transport system that addresses all aspects of inter-state transport.

2) Current Status

Myanmar had secured her domestic clearance and signed the AFAFIST during the 15th ATM Meeting on 10th December 2009. Accordingly the agreement has been signed by all AMS. Follow up action will consist of the commencement of the domestic ratification procedures by all AMSs. Only three countries, Cambodia, Philippines and Thailand, have ratified the agreement. The details are shown in Table 3-5-1.

(4) Overview of Three Framework Agreements

Table 3-5-1 shows the current status of ratification and the internal formality to enact necessary domestic laws and regulations. These will also affect the framework agreement. As shown in the table, the Protocol 2, 6 and 7 has not finalized nor has been signed by AMS. However, in the last few years, finalization, signing, and ratifications for agreements and protocols have been accelerated. For example AFAMT and AFAFIST have been signed. However, efforts are required for its actual operationalisation.

While actions in ATAP and Roadmap for the Integration of Services have focused on three Framework Agreements, STOM and related Working Groups are not responsible for the implementation of Protocol 2, 5, 7 or 8 of AFAFGIT. Nevertheless, cooperation and sharing of information between TFWG and other main implementing bodies are important to accelerate the implementation of these agreements.

Table 3-5-1 Status of Ratification for ASEAN Transport Facilitation Agreement

AGREEMENT/PROTOCOL	DATES OF SIGNING	DATES OF RATIFICATION BY MEMBER STATES										DATE OF ENTRY INTO FORCE
		BRN	CAM	INA	LAO	MAL	MYM	PHI	SIN	THA	VNM	
ASEAN Framework Agreement on the Facilitation of Goods in Transit (AFAFGIT)	16/12/98	15/8/00	30/4/99	13/1/00	21/12/99	2/3/99	16/12/98	20/5/99	2/10/00	17/2/99	24/6/99	2/10/00
Protocol 1	8/2/07	19/10/09	27/10/09					13/11/07				
Protocol 2												
Protocol 3	15/9/99	8/9/04	9/5/07	23/6/00	19/1/00	24/7/09	21/8/00	25/11/99	2/5/06	19/4/10	15/11/99	5/10
Protocol 4	15/9/99	8/9/04	9/5/07	23/6/00	19/1/00	24/7/09	21/8/00	26/11/09	2/5/06	19/4/10	15/11/99	5/10
Protocol 5	8/4/01	8/4/02	30/1/02	30/7/02	6/11/02	26/3/02	16/10/03	22/9/03	29/8/02	8/1/03	2/7/01	16/10/03
Protocol 6												
Protocol 7												
Protocol 8	27/10/00	7/8/10	23/5/03	31/12/02	9/5/01	10/8/10	10/9/02	26/11/09	3/3/06	23/8/03	29/3/01	
Protocol 9	20/9/02	30/3/04	9/5/07	29/8/03	19/5/03		25/4/03	5/5/03	12/9/07		15/11/02	
ASEAN Framework on Multimodal Transport (AFAMT)	17/11/05		27/10/09					30/6/08		11/7/08		11/8/08[a]
ASEAN Framework Agreement on the Facilitation of Inter-State Transport (AFAFIST)	10/12/09											

Source: ERIA, ASEAN Secretariat

Note. [a] AFAMT's entry into force is on the 30th day after the deposit of the second instrument of ratification or acceptance, and is effective only among ASEAN Member State that have ratified it or accepted it. [b]BRN=Brunei Darussalam, CAM=Cambodia, INA=Indonesia, LAO=Lao PDR, MAL=Malaysia, MYM=Myanmar, PHI=Philippines, SIN: Singapore THA:Thailand VNM=Viet Nam

(5) Implementation Arrangement for Three Framework Agreements

1) TTCB

ASEAN Transport Cooperation Framework Plan (1999-2004) specified establishment and institutionalization of the National Transit Transport Coordinating Committees (NTTCCs) and Regional Transit Transport Coordinating Board (TTCB).The functioning of the TTCB is to oversee the overall coordination and implementation of three framework agreements, AFAFGT, AFMT and AFAFIST. For better coordination, the Chairmanship and Vice Chairmanship of TTCB and TFWG shall be from the same member state and shall meet once a year. It is also expected to endorse a comprehensive work plan, which has been prepared with support from the APRIS Technical Assistant Team.

TFWG shall be the main supporting body to assist TTCB in matters related to the implementation of the agreements. In addressing relevant issues, TTCB shall also be supported by relevant ASEAN bodies, including

- Customs Procedures and Trade Facilitation WG,
- Land Transport WG,
- Relevant working group/committee that may be assigned by the SOM-AMAF, and
- A Council of Bureaux and/or AIRM.

The TOR of TTCB has been revised and the scope of NTTCCs and TTCB was expanded to cover AFAMT and AFAFIST as well as AFAFGIT in 2009 and it was adapted in 15th ATM. The Inaugural TTCB Meeting was held in Jakarta on 5-6 November 2009. The board proposed overall work plan with a timeframe from 2010-2015. APRIS II Consultant has supported in the preparation of the work plan, which is under review by each nation. The work plan currently contains 55 main deliverables and 144 measures. However, it is suggested to update it annually prior to the TTCB meeting. Currently Terms of Reference of TTCB has been adapted.

2) NTTCCs

NTTCCs are expected to develop and adopt annual overall work plans at national levels. This will be based on the TTCB work plans and AMS requirements. The activities may include composition of organizational structure with member's details, implement the plan and resolve concerned issues.

Currently all AMS have established NTTCCs or identified the organization which undertakes a role of NTTCCs. Table 3-5-2 shows the detailed status of NTTCCs in each county.

In GMS Cross Border Transport Agreement (CBTA), 6 countries have established National Transport Facilitation Committees (NTFC) in coordination and support from the ADB. These committees have been conformed to NTTCC in each country. CBTA was originally trilateral agreement between Viet Nam, Thailand, and Lao PDR in 1999. Later, by 2003, Cambodia, China and Myanmar also singed the Agreement.

The activation of the NTTCCs and the meeting of the TTCB will provide a mechanism which will ensure the accelerated and harmonized progress in future.

Table 3-5-2 Status of NTTCCs Establishment

	Established Organization	Chaired by	Remarks
Brunei Darussalam	NTTCC	The Permanent Secretary of Ministry of Communications.	
Cambodia	NTTCC		To oversee existing cross border transport facilitation arrangements with Lao PDR, Thailand and Viet Nam and future implementation of AFAFGIT and CBTA for GMS.
Indonesia	NTTCC	Secretary-General of Ministry of Transportation. - The meeting of the	NTTCC has been convened once and was decided to revise the Decree to accommodate all related institutions / stakeholders. The revised Decree on transit was being developed;
Lao PDR	National Transport Committee (NTC)	The Minister of Public Works and Transport.	NTC covers NTTCC for ASEAN and National Transport Facilitation Committee (NTFC) for GMS transport facilitation agreements.
Malaysia	NTTCC	Deputy Secretary General of Ministry of Transport.	
Myanmar	National Transport Facilitation Committee (NTFC)	The Deputy Minister, Ministry of Rail Transportation.	Covering both ASEAN (NTTCC) and GMS (NTFC)
Philippines	NTTCC	The Undersecretary for Road Transport and involving all related agencies.	
Singapore	NTTCC involving related agencies	The Group Director of the Land Transport Authority;	
Thailand	NTFC	The Permanent Secretary of Ministry of Transport,	To handle ASEAN and other multilateral agreements on transport facilitation covering movement of goods and people.
Viet Nam	NTFC	The Vice Minister of Transport,	To handle ASEAN and other multilateral agreements on transport facilitation covering movement of goods and people.

Source: ERIA Study Team, data based on Three Framework Agreements and Meeting Record of ASEAN

3) Other Implementation Assistance

There is some implementation assistance for the Three Framework Agreements in the form of ASEAN joint meetings with other WG or dialogue partners.

As one of the assistance activities under the new ASEAN-EU project scheme, it was proposed to prepare and implement the AFAFGT, AFAMT, AFAFIST and other relevant ASEAN

transport agreements. This will facilitate in the movement of goods and passenger vehicles, and implementation of connectivity initiatives. The following activities were executed:

- Special Meeting of the CPTFWG on ASEAN Customs Transit System (ACTS) under APRIS II Programme has been held twice.
- ASEAN-EU Programme for Regional Integration Support (APRIS II) funded the study on "Implementing the Transport Protocols 3, 4, and 5 under the AFAFGT". The study objective was to identify and eliminate the barriers that are obstructing the effective implementation of Transport Protocols 3, 4 and 5.
- Scoping and needs assessment study on developing implementation strategy for the Operationalisation of the ASEAN Transport Facilitation Agreements has secured technical and funding support from the ASEAN – Australia Development Cooperation Programme (AADCP)
- On 2 October 2009, the 1st Joint Meeting of the TFWG and CPTFWG on the Implementation of the 1998 AFAFGT was held in Singapore. Since Transport Facilitation covers some trade facilitation measures, TFWG exchanged their experience and information with CPTFWG to accelerate the implementation of Protocol 2 and Protocol 7 of AFAGT.

3.5.2 INSTITUTIONAL AND HUMAN RESOURCE DEVELOPMENT

With the growth of global trade and increasing security threats to the international movement of goods, more efficient and safe logistics are required in international transport and trade system. Since it is getting more difficult for conventional freight forwarding operation to meet the changing international need, institutional and human recourse development needs to be accelerated.

(1) Human Resource Development

According to FIATA, today an industry covers approximately 40,000 forwarding and logistics firms, also known as the "Architects of Transport", employing around 8 - 10 million people in 150 countries.[4] The performance of logistics highly depends on to skills, knowledge, and competencies of personnel involved in transport and logistics-related work. To realize efficiently facilitated intra and inter-ASEAN movement of goods, there is a pressing need for human resource development.

Education and training opportunities for logistics varies in AMS. Country Survey in ASEAN Logistics Development Study showed that extensive education and training opportunities are available in Singapore, Thailand, Malaysia and Philippines. They have already established a certain level of human resources development Programme while those opportunities are hardly existent in CLMV and Brunei Darussalam. Current progress by AFFA and STOM under the actions of Roadmap for the Integration of Logistics Services came out with increase in development plans to provide training and education in those countries recently.

(2) Human Resource Development in ASEAN Transport Cooperation

To achieve the efficient and seamless transport logistics systems, AMSs are developing human resources and planning capacity building Programmes for managers and operators. Although actions of ATAP and Roadmap stated its implementation in each time frame, the actual progress has just started.

In ATAP 2005-2010, the following two actions related to human resource development are stated;

[4] FIFATA, 2010 http://www.fiata.com/index.php?id=30

- **TF No.7** Conduct training/skills upgrading Programmes (e.g., seminars, workshops, etc) to enhance institutional and human capacity in the implementation of the ASEAN transport facilitation agreements.
- **TF No.8** Promote ASEAN transport intermediaries such as freight forwarders MTOs, logistics service providers, truck/haulage operators

To improve and progress on transport and trade services, the Roadmap for the Integration of Logistics Services also specified and endorsed the following four actions;

- **No.39:** Develop and upgrade skills and capacity building through joint trainings and workshops
- **No.40:** Encourage the development of national skills certification system for logistics service providers
- **No.41:** Encourage the development of an ASEAN common core curriculum for logistics management, and
- **No.42:** Encourage the establishment of national / sub-regional centre of excellence (training centre).

The above roadmap actions are implemented under the responsibility of STOM and AFFA. AFFA proposed the logistics-related courses namely Fundamentals of Logistics Management, Multimodal Transport and International logistics, and Supply Chain Management. These courses will facilitate in the integration and enhancement of logistics services and cover the measures No.37, 39, and 41 of the Roadmap. In addition to above courses, AFFA also proposed Diploma in International Freight Management.

To implement measure No.42, AMS except for Cambodia, Lao PDR, Myanmar and Viet Nam have established their national training centres for logistics. Myanmar has taken certain actions to establish it and Viet Nam instead of logistic centre has established the freight forwarding centre. AFFA may extend its support in the establishment of Logistic Centre in Cambodia and Lao PDR.

Also, according to the 7th AFFA forum, Thailand extended a capacity building Programme for the successful implementation of multimodal transport in CLMV nations. In addition, Brunei Darussalam plans to undertake its national capacity building for multimodal transport training. They need assistance on the sourcing of experts, possibly from UNESCAP/AFFA.

It is to be noted that the above mentioned capacity building Programmes have just been initiated and need to be continued. In other words, the two ATAP actions (TF No. 7 and No. 8) need to be continued with much more focus during the ASTP 2011-2015 too.

(3) Capacity Development Programmes by ASEAN Dialogue Partner

1) ASEAN-Japan Comprehensive Economic Partnership

Under the concept of "ASEAN-Japan Comprehensive Economic Partnership," the ASEAN-Japan Transport Logistics Improvement Plan (A-J TLIP) was established at the 3rd ASEAN-Japan Transport Ministers Meeting (ATM+J). Since then, Japan formulated the guideline and has been providing the capacity development Programmes for transport logistics under the A-J TLIP.

ASEAN-Japan Transport Logistics Improvement Plan（A-J TLIP）

- adopted at the 3rd ATM+J in 2005,
- is aimed for the improvement of logistics-related infrastructure, institutions for logistics, and transport activities through logistics service providers.

Guideline for ASEAN-Japan Transport Logistics Capacity Building (A-J TLCB)

- adopted at the 5th ATM+J in 2007,
- is an outline for an operational method and a cooperative framework regarding the capacity building Programme

In the guideline, individual objectives are indicated for governments, associations, managers and operators of logistics as follows;

- **For governments (In charge of transport logistics):** The government who is in charge of transport logistics need to acquire skills to establish policies, laws and supporting systems for the industry in the ASEAN region.
- **For logistics associations:** Logistics associations, especially for management personnel, need to acquire knowledge and skills on organizational start-up, management and strategies in ASEAN region.
- **For managers of logistics companies (Truck, Warehousing, Forwarding and etc.):** Management personnel need to acquire skills to manage the company effectively, deliver quality services to the customers and consider environmental aspects. These ideas will lead them to a higher level of management.
- **For operating staff of logistics companies:** Operating personnel need to acquire knowledge and operating skills on driving, cargo handling, warehousing, etc. in order to provide safe and reliable just-in-time services to customers.

Under this guideline Programme, Seminars and workshops were held in each ASEAN countries from 2007-2009. Policy Dialogue & Workshop has been held in Lao PDR and Thailand. Following studies has been conducted in these three years;

- FY 2007: Study on logistics training system and qualification system in Japan
- FY 2008: Study on logistics training system and qualification system in ASEAN
- FY 2009: Formulating a sustainable training / qualification system and compiling a text book for basic transport operations

2) Programme for Improving Efficiency of Logistics and Distribution of the East-West Corridor and the Southern Economic Corridor

Japan has worked and exchanged experiences with the countries of the Mekong Region in diverse fields and currently providing support to two such corridors namely, the East-West Economic Corridor connecting Viet Nam, Laos, Thailand, and Myanmar, and the Southern Economic Corridor linking Thailand, Cambodia, and Viet Nam.

Japan is currently supporting the above corridors in enhancing efficient logistics system, Programmes for improving efficiency of logistics and distribution of the East-West Corridor and the Southern Economic Corridor. The term "economic corridor" refers to roads, bridges, and other transport infrastructure that passes through several countries, enabling the active movement of people and products across national borders.

The Programme has two parts as follows;

Table 3-5-3 Programme for Improving Efficiency of Logistics and Distribution of the East-West Corridor and the Southern Economic Corridor

Part A	• Function enhancement project for customs clearance • Improvement project for physical distribution base • Development project for roadside station and appurtenant facilities • Human resource development project - Developing Curriculum's and Text Books - Conducting Pilot lecture for Logistics Service Providers in CLMV
Part B	• Establishment of logistics training centre • Sub-regional logistics training centre (Viet Nam)

Under this Programme, Human Resource Development Programme will be implemented in CLMV with two projects, namely, developing curriculums and text books, conducting pilot lecture for logistics service providers in CLMV as proposed above.

3) Assistant Programme by UNESCAP

In order to improve domestic capacity in logistics training and examination, UNESCAP has conducted surveys for the HRD needs in logistics and provided training manuals to enhance the professional competence and skills to LSPs and freight forwarders.

The Programme of assistance has two components;

- The preparation of an interactive manual on training fundamentals and
- The conduct of workshops on training fundamentals

This manual is on the training fundamentals and is designed to assist trainers from national training institutes and trainers from the transport industry in delivering the training material related to freight forwarding, multimodal transport and logistics. The draft manual was validated at the Training of Trainer workshop (TOT) organized by ESCAP in conjunction with the AFFA in 2000.

As well as assistance by Dialogue partners, continued intra-ASEAN cooperation in respect of human resource development including training in other countries is considered of value.

(4) Institutional LSP capacity developing

With the growth of global trade and increasing security threats to the international movement of goods, the customs administrations are shifting their focus more on securing the international trade flow and speeding up the collecting customs duties. To meet that demand, the capacity development of logistics service providers is of prime importance along with governments and institutions as well.

Authorized Economic Operator (AEO) Programme has been developed to accelerate and simplify the customs procedure to logistics service provider. who has been approved by or on behalf of a national customs administration. This will be done in compliance with World Customs Organization (WCO) or equivalent supply chain security standards. In ASEAN, Singapore has already entitled AEO Programme under the name of Secure Trade Partnership (STP). Since most members of WCO have acceded to Standards to Secure and Facilitate (SAFE) framework in the world, promoting AEO Programmes in ASEAN are expected in the near future.

Third party Logistics (3PL) facilitated in realizing high quality logistics including 'Just in Time' or Supply Chain Management (SCM). According to the Council of Supply Chain Management Professionals' glossary, Third party Logistics (3PL) is defined as "A firm [that]

provides multiple logistics services for use by customers. Preferably, these services are integrated, or "bundled" together, by the provider. Among the services 3PL provide are transportation, warehousing, cross-docking, inventory management, packaging, and freight forwarding."

According to Integration of ASEAN's Priority Sectors (Phase 2), the major use of 3PL services are by multinational companies (MNCs) only. Such 3PLs are very active in Singapore and Malaysia. Of the world's top 25 Third party Logistics (3PL) companies, 17 of them have their base in Singapore. The top 10 Third party Logistics (3PL) companies in Malaysia are foreign-owned.

(5) Development Agenda

Although ATAP actions and the Roadmap stated the time-frame for the implementation of institutional and human resource development, the actual progress has just started. Considering that such development requires long-term approach with continuous efforts, it is suggested to continue this with much focused approach and further acceleration.

Manuals and guidelines have been provided by dialogue partners and international organizations such as UNESCAP and ADB. These documents can be utilized for the capacity development training in AMS. To formulate training Programmes, it would be better to transfer the responsibility to respective governments (in-charge of transport logistics), to prepare and plan the Programme for the implementation. Such training will benefit logistics association, managers of logistics companies (Truck, Warehousing, Forwarding and etc.), and operating staff of logistics companies.

3.5.3 LOGISTICS AND MULTI-MODAL TRANSPORTATION

(1) Logistics Services

Within ASEAN, a change in direction has been undertaken from the history of export-oriented industrialization in favour of greater development of maritime transport, with the move toward containerization also having been advanced. Likewise, the conventional production systems within the ASEAN region were characterized by the concluding of all phases of production within single countries, a reflection of underdeveloped infrastructure building, high tariffs and other contributing factors. From here on, however, the integration of production bases, like that seen by automobile manufacturers and the consumer electronics industry with the start up of the ASEAN Free Trade Area (AFTA), will fuel a shift to the format of concentrating production in single locations within ASEAN, with completed products exported to destinations around the world. In fact, the establishment of such an international division of labour system is already underway. Powered by such changes in production systems, logistics within the ASEAN region will experience the ongoing advancement of production base integration and the move toward international labour specialization. This trend will generate the need for introduction of supply chain management (SCM) and the formation of other effective production and sales systems. Against such a backdrop, the need for combined inter-modal transport within ASEAN will continue to grow.

With regard to such "combined intermodal transport," the following definitions have been coined.

- Shipping that extends across two or more countries.
- Combinations of two or more transport modes.
- Transport based on integrated responsibility.
- Application of integrated freight charges.

- Issue of inter-modal transport bills (or through bills of lading).

1) Strategic Logistics Centres

Generally speaking, the functions of logistics centres may be categorized into those that pertain to storage, transhipment, sorting, distribution processing, delivery and information. Nevertheless, under conditions in which the surrounding environments pertaining to traffic and logistics have not been adequately developed within the ASEAN region, the functions of logistics centres have tended to concentrate largely on storage.

From here on, to ensure that the promotion of logistical streamlining within ASEAN succeeds in cutting distribution costs in the region, it will be necessary to achieve essential full-scale logistics centre functions capable of reducing lead time and furnishing seamless and efficient supply chain services.

Table 3-5-4 Logistics Centre Categories

Category	Functions
Multifunction logistics centre	Although no clear definition exists, such centres possess hub functions encompassing traffic and distribution, and effectively integrate delivery centre, dry port and truck terminal functions. Information and communication technology (ICT) functions are mobilized for operation, with centres supplying SCM services and other added value.
Delivery centre	Handling of efficient delivery operations from long- to short-distance transport. Also performs repacking and assembly work.
Dry port	Located some distance from ports and equipped with customs clearance, temporary warehouses and other related facilities.
Truck terminal	Facility with only truck-to-truck transhipment function for products not requiring added value.

2) ASEAN Single Window (ASW)

In the interest of forming "single markets and production bases" in the AEC, at an ASEAN summit meeting convened in October 2003 a task force was launched to promote the ASEAN Single Window (ASW) concept as an ASEAN-wide undertaking. In gearing up for transport facilitation, furthermore, the utilization of ICT is also included among the targets.

Within the approach of logistical streamlining in moving to form the AEC, the ASW system is envisioned to play an instrumental role in accelerating customs procedures. ASW is a scheme contained within the approach of logistical streamlining accompanying formation of AEC, under which applications and approval/ authorization procedures straddling a number of different administrative agencies upon importing or exporting are submitted collectively using an electronic declaration form, with approval received on a lump basis. Essentially, therefore, this is a one-stop service for customs procedures.

In more specific terms, ASW is a system based on the operation and integration of the National Single Windows (NSW) of the AMSs. It is believed that ASW will realize the following three functions.

- Single submission of data and information.
- Single and synchronized processing of data and information.
- Single decision-making for customs release and cargo clearance.

3) Cross-Border Single-Stop Inspection (SSI)/ Single-Window Inspection (SWI)

AMSs effort to better facilitate and streamline logistics within the ASEAN region to free up procedures at cross-borer areas. The related infrastructure development is vital to facilitate

cross-border logistics movement. However, due largely to the lagging progress in constructing infrastructure in AMS, the current status of these efforts may be summarized as follows.

- In Singapore, Malaysia, Thailand and Viet Nam, simplification across the entire sphere of procedures is comparatively advanced. With the exception of Viet Nam, the time demanded for customs clearance ranges from several hours to no more than one day.
- In Myanmar and Laos, the procedures remain complicated due to the need to demonstrate export track records at the border customs houses of these countries, with customs clearance requiring two days or more.
- In Laos as well, with the exception of transit shipments routed through third nations, procedures are concluded at the border alone. With regard to the neighbouring countries of Thailand and Viet Nam, it is possible to enter in vehicles.
- Although Singapore commercial vehicles are not permitted to enter Malaysia, Malaysian vehicles are sanctioned to operate in Singapore. This eliminates the need to repack cargo loads if the vehicle is Malaysian.
- In terms of cross-border railway, there are existing links between the China and Viet Nam and between Thailand and Malaysia with bilateral agreement. A new train service operating from Bangkok in Thailand to Thanalaeng in Lao PDR opened in March 2009.[5]

To reduce logistical costs within ASEAN at cross-border areas in order to facilitate more streamlined logistics and transport, as well as reduce lead time and supply seamless and efficient supply chain services, it will be vital to introduce SSI/ SWI schemes under which both countries are able to conduct export and import procedures one time at single locations. In order to particularly succeed in reducing customs clearance time in cross-border transport involving vehicle transport from here on, approaches are being advanced in which both countries cooperate at the borders to introduce SSI/ SW customs procedures, under which import and export procedures are conducted one time at a single location.

In reality, there is only one location where such customs clearance is being carried out at a cross-border point on the roads (Lao Bao in Viet Nam/Densavanh in Laos) with that operation underway at Stage 1 of the four stages of implementation in addition to cross-boarder railways. Accordingly, the "ideal" situation of transport through simplified cross-border transit (customs procedures) and vehicle transport without any need for repacking has yet to be realized. From here on, efforts will be made not only to make the transition to the customs clearance procedures needed to implement SSI/SWI and resolve other system-based issues pertaining to the cross-border mode, but also simultaneously convert to electronic handling of customs clearance procedures to shorten the lead-time for the overall procedural flow.

[5] Connecting greater Mekong subregion railways a strategic framework , ADB August 2010

Table 3-5-5 Steps Toward Single Stop and Single Window

Stage	Procedural Details
Stage 1	Export and import country customs offices jointly conduct cargo inspections in import side bonded area. Customs clearance document screening, quarantine and emigration/immigration control carried out by both exporting and importing countries.
Stage 2	In addition to cargo inspections, arrangements also made to conduct document screening at a single location (transition to the customs office Single Window scheme). At this stage, emigration/immigration control conducted by both exporting and importing countries.
Stage 3	Animal and plant quarantines implemented jointly (transition to quarantine Single Window scheme). Emigration/immigration control conducted by both exporting and importing countries.
Stage 4	Integration of emigration/immigration control, implementing Single Stop/Single Window customs clearance.

Source: ASEAN Logistics Network Map 2nd edition, based on deliberations with Asian Development Bank, and region-specific training country reports on August 2007.

4) Advanced Application of Logistics

The Information and Communication Technology (ICT) is one of advanced application for the transport facilitation sector requires the improvement of efficiency, quality service and enhancement security for logistics field. It should coordinate logistical materials, cargo and position information utilizing electronic tags, GPS and other means to promote greater EDI and efficiency in trade procedure. The practical realization of advanced application will be expected improvement customs clearance and related information, greater supply chain efficiency, the perspective of enhanced security, and the streamlining of repacking operations during border customs clearance.

The status of ICT Application in logistics as of 2007 for AMSs vary. At that time, only Singapore and Malaysia have developed paperless customs clearance. Even though the Cambodia, Philippines (partially introduced) and Viet Nam did not introduce EDI system, they have introduced Automated System for Customs Data (ASYCUDA), a computerized customs management system which covers most foreign trade procedures, developed by UNCTAD. According to UNCTAD, Lao PDR government signed ASYCUDA project document on February 2010[6]. In the questionnaire on the Study[7], Brunei Darussalam answered that E-customs and E-port will be integrated in second quarter 2010, in the questionnaire conducted on February 2010 and Indonesia answered that her integrated portal for ship and port services, namely Inaportnet.

3.6 SUMMARY

The following paragraph summarizes the current status by each transport sector.

Land Transport

Sustaining and supporting the rapid economic and social development in the ASEAN region presents a range of complex challenges for the land transport system. Providing the capacity to accommodate vastly increased vehicles especially 2-3 wheelers, freight volumes and meet the personal mobility needs of burgeoning urban populations is in itself a daunting task. Considering that currently railways and inland waterways have a very limited role in ASEAN region, it is likely that the road sector will continue its dominance in the forthcoming years. With such trend, it is vital to improve the quality of roads and road infrastructure in AMSs.

[6] ASYCUDA Website by UNCTAD, as of April 26, 2010

[7] Answer from a questionnaire distributed in EG meeting on February 2010

However, taking into account of various advantages of inland waterways and railways specially related to climatic and environmental benefits, efforts are required to improve their share in ASEAN countries. The initiation of SKRL project is a first step to promote railways in ASEAN region. Such efforts need to be promoted and continued. As railways promotion needs a huge investment and considering the economic capacity of AMSs, it will also be wise to initiate efforts in parallel to improve and promote public transport (Bus Rapid Transport) to decongest and reduce accidents in the selected metro or capital cities in AMSs. The efforts are required to utilize the immense potential of existing Inland waterways in AMSs.

Air Transport

The air transport sector, through the proposed ASEAN Single Aviation Market (ASAM), and addressing problems and elements related to Open Sky Policy will support the establishment of the ASEAN Economic Community (AEC) by 2015. Currently, the rapid air transport traffic volume in ASEAN region is supported mainly by LCCs such as AirAsia, Jetstar and etc. With the emergence of high demand trend in air traffic volume, some of AMSs are developing airports and facilities such as terminal buildings and runways. The open sky policy creates opportunities which promote a competitive environmental in the air transport sector and activates inter- and intra-region trade.

However, harmonized and integrated ASEAN should not only be convenience-oriented, but should also consider coordinated security, safety and environmental issues which are essential prerequisites in improving the overall performance of air transport sector.

In the light of the terrorist attacks on civil aircraft in the United States on 11 September 2001, enhancement measures including aviation screening have been advanced worldwide to strengthen the counter-terrorism capabilities in the air transport sector. After said attack, air transport sector particularly the aviation security continued to tackle countermeasures against such terrorism but still such act further occurred in the world. Need is to introduce more advanced technologies in the aviation safety sector in AMS. Such new technologies will be able to enhance reliability, efficiency, alleviation of congestion and quality of air safety field such as CNS/ ATM services. An environmental measure is currently a global issue and air transport sector must consider, including reduction of carbon (GHG) emission. Privatization of infrastructure is the concern of respective government including the air transport sector. Development and operation of airports under the private sector needs to pay attention to the future prospects and trends.

Maritime Transport

Cargo throughput of AMS has steadily increased, and considering the economic growth, it is expected to continuously increase in forthcoming years too. This increasing cargo demand in the future needs to be addressed. Hence, aside from port development/expansion through introduction of advanced technology and establishment of new shipping route, enhancement of port productivity through privatisation and liberalisation are also required.

Preservation of environment is a global issue which needs to be given prime importance. Though, from the viewpoint of carbon (CO_2) emission, maritime transportation is an environmentally-friendly transport in comparison to other transportation mode, still there is a scope to make it more energy efficient. Effective measures are required to accommodate international standard and execute them in cooperation with international organization, i.e., IMO.

Keeping safety and security are also fundamental matters for navigation. However, the number of accidents and lives lost in Asian waters including Malacca Strait was the worst in the world waters in 2008. Hence, improvement of safety and security will be a priority issue

and for further improvement, this will require the human resource development and introduction of advanced ICT in maritime transport sector.

Transport Facilitation

The three transport facilitation agreements namely, ASEAN Framework Agreement on the Facilitation on Goods in Transit, Multimodal Transport and Inter-state Transport plays and will play a major role in future too in facilitating transport in ASEAN region. Despite the accelerated process especially in last few years, still not all agreements and protocols have been ratified by AMS. The TTCB and NTTCCs are responsible for the overall coordination and implementation of these frameworks agreements and as a first step, the NTTCC's has been established in all AMS. The other Programmes such as ASEAN-EU Programme and Australia Development Cooperation Programme (AADCP) are also supporting in implementing these framework agreements.

Today, logistics industry includes approximately 40,000 forwarding and logistics personnel and to improve trade and transport performance in ASEAN region, it is vital to improve the skills, knowledge, and competencies of the personnel involved. In this regard, national training centres have been established in few AMS and capacity building Programme are ongoing. It is to be noted that capacity building Programmes have just been initiated and need to be continued for effective results. Japan under the A-J TLIP Programme is active in supporting and implementing the capacity development Programmes for transport logistics in AMS.

The preparations for the establishment of ASEAN Single Window by 2010 are not proceeding as planned and specific efforts are required to meet the said target year. However, the National Single Window (NSW) systems have been established in few AMS. In terms of customs clearance facilitation, till date only one cross border point (Lao PDR –Viet Nam) was able to reach to stage-1 (out of total 4 stages) in addition to railway linkages. The efforts are need to be accelerated to improve trade and transport logistics in ASEAN region.

CHAPTER 4 ASSESSMENT OF THE IMPLEMENTATION OF ASEAN TRANSPORT COOPERATION

4.1 TRANSPORT SECTOR RELATED ON-GOING INITIATIVES OF ASEAN COOPERATION

The objective of this chapter is to review the earlier transport action plans, the assigned roadmaps, cooperation with dialogue partners and regional initiative that has been taken up under various programs in ASEAN region. Such review is important to understand the trend in general, the major projects that have been completed or ongoing and areas of cooperation program in ASEAN region. The understanding of all these ongoing or completed initiative will be able to provide a broad direction for the formulation of ASEAN Strategic Transport Plan, 2011-2015. The various roadmaps (Air, Maritime and Logistics) as adopted by ASEAN and the projects as described in it will be of immense importance and will be able to provide some focus area that needs to be considered for inclusion in ASTP, 2011-2015.

4.2 ASEAN TRANSPORT ACTION PLAN (ATAP)

The Association of South-East Asian Nations or ASEAN was established on 8 August 1967 in Bangkok by the five original Member States namely, Indonesia, Malaysia, Philippines, Singapore, and Thailand. Brunei Darussalam joined on 8 January 1984, Viet Nam on 28 July 1995, Laos and Myanmar on 23 July 1997, and Cambodia on 30 April 1999.

ASEAN Member States (AMSs) widely recognize that transport is among the key catalysts of economic development and international competitiveness, in view of its role as a critical logistics and service support sector. The improvement of transport and communications facilities is among the major aims of the Association of South-East Asian Nations. In the recent past, Member States closely engaged in the successful implementation of the ASEAN Plan of Action in Transport 1994-96, 1996-1998, 1999-2004 (in line with ASEAN Vision 2020) and 2005-2010. In addition to the actions plans, National and Regional Workshops on the Role of Transport and Communications in the ASEAN Region in the 21st Century were developed as “ASEAN Transport Cooperation Framework Plan” in 1998. ASEAN Transport Cooperation Framework Plan was developed to serve as the implementation road map for concerted cooperation in the transport sector in line with the transport priorities and action agenda set forth in the ASEAN Vision 2020 and the Hanoi Plan of Action. The Framework Plan specifically provides the overall policy and development framework to guide regional cooperation in the ASEAN transport sector.

4.2.1 CHRONOLOGY OF PREVIOUS PLANS

The following sections will briefly highlight the thrust areas of earlier Transport Action Plans:

(1) ASEAN Plan of Action in Transport and Communications (1994-1996)

The Singapore Declaration of 1992 and the Framework Agreement on Enhancing ASEAN Economic Cooperation direct that the AMSs "further enhance regional cooperation to provide safe, efficient and innovative transportation and communications infrastructure network" and "continue to improve and develop the intra-country postal and telecommunications system to provide cost- effective, high-quality and customer-oriented services. The following were the priority theme issues under this plan:

1) Development of Multimodal Transport and Trade Facilitation.

2) Development of ASEAN Inter- connectivity in Telecommunications, including Fixed and Mobile Voice and Data and EDI Services, for Trade and Business Communications, and to Enhance Land, Sea and Air Transport.

3) Harmonization of Road Transport Laws, Rules and Regulations in ASEAN.

4) Improvement of Air Space Management in ASEAN

5) Development of ASEAN Rules and Regulations for Carriage of Dangerous Goods and Industrial Wastes on Land and By Sea

6) Human Resources Development in Transport and Communications

(2) ASEAN Plan of Action in Transport (1996-1998)

During the First ASEAN Transport Ministers' Meeting held in Bali, Indonesia on 17-19 March 1996, the Ministers signed Ministerial Understanding on ASEAN' Cooperation in Transportation which identified priority areas for cooperation, mechanism for coordination and implementation pertaining to ASEAN cooperation in transport. With regard to the ASEAN Plan of Action on Transport and Communication 1996-1998, the Ministers agreed that Member States shall endeavour to complete the implementation of the Plan of Action which includes the following theme issues:

1) Development of Multimodal Transport and Trade Facilitation;

2) Development of ASEAN Interconnectivity in Telecommunications, including Fixed and Mobile Voice and Data and EDI Services for Trade and Business Communications, and to Enhance Land, Sea, and Air Transport;

3) Harmonization of Road Transport Laws, Rules and Regulations in ASEAN;

4) Improvement of Air Space Management in ASEAN;

5) Safety of Maritime Transport and Prevention of Pollution from Ships;

6) Human Resources Development in Transport and Communications;

7) Developing a Competitive Air Services Policy which may be a gradual step towards an Open Sky Policy in ASEAN.

(3) ASEAN Plan of Action in Transport (1999-2004)

The Successor Plan of Action in Transport 1999-2004 presents some 55 projects and activities to be implemented during the six-year period in five sectoral programme areas; namely: Transport Facilitation, Air Transport, Land Transport, Maritime Transport, and Integrated Transport Development to achieve, among others, a harmonized, coordinated and integrated transportation system in the ASEAN region, through the following broad-based strategies:

1) Development of infrastructure

2) Promotion of Completive Transport Services

3) Capacity Building Initiatives (Institutional and Human Resources Development)

4) Improving Transport Safety and Environment

5) Greater Private Sector Participation/Involvement

More specifically, the strategic thrusts for ASEAN cooperation in the transport sector for the period 1999-2004 are, as follows:

1) Transport Facilitation

Strategic Thrust - Intensify cooperation in the promotion and facilitation of an efficient, effective and reliable transport system for goods and peoples to support trade, investment and tourism in the ASEAN region.

2) Air Transport

Strategic Thrust - Institute enhanced regulatory and competition policy for the ASEAN civil aviation sector and improve the quality and breadth of aviation safety standards, to promote greater economic integration in the ASEAN region and strengthen external linkages.

3) Land Transport

Strategic Thrust - Enhance cooperation in the development of a harmonized and coordinated regional land transport infrastructure network and in the improvement of the interconnectivity and interoperability of land transport networks.

4) Maritime Transport

Strategic Thrust - Create a competitive policy environment for the ASEAN maritime transport sector, in which the private sector is encouraged to invest in infrastructure and in operating transport service; where ports have improved capacity, efficiency and productivity and shipping has a liberalized regime; and with due recognition to maritime safety and the environment.

5) Integrated Transport Development

Strategic Thrust - Enhance cooperation in the systematic planning, development and implementation of an integrated and coordinated transportation network in the ASEAN region.

4.2.2 OUTLINE OF ASEAN TRANSPORT ACTION PLAN (ATAP), 2005-2010

At the Ninth ASEAN Summit in Bali, Indonesia in October 2003, the ASEAN leaders signed the Declaration of ASEAN Concord II (Bali Concord II) to reaffirm ASEAN as a concert of Southeast Asian nations, bonded together in partnership, in dynamic development and in a community of caring societies. The leaders agreed to establish an ASEAN Community which would rest on the three pillars of "ASEAN Security Community"," ASEAN Economic Community" and "ASEAN Socio-cultural Community", as embodied in the Bali Concord II. The leaders pledged to achieve this ASEAN Community by the year 2020.

The following policy directions for intensified cooperation were adopted for the ASEAN transport sector for 2005-2010:

1) Promoting efficient door-to-door cargo transport and cross-border transport facilitation, through the simplification/harmonization of trade and transport documentation and procedures, establishing uniform and transparent transit and cargo clearance systems and procedures, developing an efficient and global/regional-minded freight forwarding industry, third party logistics services, and haulage industry and utilizing ICT applications;
2) Improving land transport network infrastructure for better connections and linkages with the national, regional and international maritime (seaports and inland waterways) and air gateways. The development of land transport trade corridors with an appropriate mix of modes—roads, rail and inland waterways, with an established hierarchy of modal interfaces such as inland terminals, container stations and cargo clearance facilities is desirable;

3) Developing responsive regional maritime transport policies to address the growing containerization in the region, improvement of the efficiency and productivity in ASEAN ports, rationalization of shipping services and the opportunities for increased multimodal transport services;

4) Promoting open-sky arrangements by building upon the Roadmap for Integration of ASEAN (RIA) for ASEAN Competitive Air Services Policy, including exploiting the potentials of full air freight services liberalization, through plurilateral or multilateral basis, to support increased intra-ASEAN travel, trade and investment;

5) Enhancing transport security and safety in the regional supply-chain networks, through capacity building initiatives, technical networking, and regular exchange of relevant technologies, best practices and information;

6) Pursuing environmentally sustainable regional transport strategies, including accession to the relevant international conventions and protocols, promotion of environmentally-friendly transportation technology and transportation modes, among others;

7) Creating enabling policy towards conducive environment for the increased private sector involvement and/or public-private partnerships in the provision and operation of transport infrastructure and transport and logistics facilities and services;

8) Intensifying cooperative bonds with dialogue partners like China, India and Japan, by way of policy consultations and joint programs and activities, as well as initiating new cooperative programs with the European Union, Korea, among others;

9) Intensifying cooperation with international and regional organizations such as International Civil Aviation Organization (ICAO), International Maritime Organization (IMO), United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), United Nations Conference on Trade and Development (UNCTAD) and the Asian Development Bank (ADB), among others, on mutually beneficial programs and activities as well as initiating new cooperation programs; and

10) Promoting greater involvement of the ASEAN Airlines Meeting (AAM), ASEAN Federation of Forwarders Associations (AFFA), ASEAN Ports Association (APA), Federation of ASEAN Shipowners' Associations (FASA) and Federation of ASEAN Shippers' Councils (FASC) by way of joint consultation, identification, formulation and implementation of ASEAN transport programs and activities.

The above mentioned Policy Agenda were carried out through 48 proposed actions, goals and strategic thrust which will be discussed in the following sections.

Goals and Strategic Thrust, ATAP 2005-2010

At the Ninth ASEAN Transport Ministers (ATM) Meeting in Yangon, Myanmar in October 2003, the Ministers in their commitment to realize the ASEAN leaders' goal of an ASEAN Economic Community reaffirmed that an efficient and integrated transport system is key for ASEAN to integrate with the global economy, improve competitiveness and enhance the inflow of foreign direct investment. They agreed to intensify regional activities to enhance multimodal transport linkages and interconnectivity, promote the seamless movement of peoples and goods, promote further liberalization in the air and maritime transport services, and further improve integration and efficiency of transport services and the supporting logistics systems. The Ministers also agreed to work towards developing a regional action plan for staged and progressive implementation of Open Sky arrangement in ASEAN.

The Table 4-2-1 highlights the 'Goals' and 'Strategic Thrust' areas for the four transport sectors in ATAP:

Table 4-2-1 Goals and Strategic Thrust Area in ATAP

	Goals	Strategic Thrust
Land Transport	• Establishing efficient, integrated, safe and environmentally sustainable regional land transport (road and railway) corridors linking all members and neighbouring trading partners	• Improving land transport infrastructure integration and inter-modal interconnectivity, with principal airports, ports , and inland waterways, and ferry links • Promoting concerted and coordinated efforts at policy and operation level to develop ASEAN land transport trade corridors.
Air Transport	• Establishment of a regional open sky arrangement to support regional economic integration • Achieving globally-acceptable standards in aviation security and safe	• Implementing the regional plan on the ASEAN Open Sky Policy, on a staged and progressive basis • Promoting satellite-based air navigational and automatic sensing systems to effectively control air traffic and improve safety in airspace
Maritime Transport	• Creating a more efficient and competitive regional maritime transport sector. • Achieving globally-acceptable standards in maritime safety and security and protection of marine environment.	• Formulating and implementing a common regional shipping policy. • Improving maritime safety and security and protection of the marine environment by enhancing cooperation amongst AMSs to facilitate the acceptance and implementation of IMO conventions
Transport Facilitation	• Creating an integrated and efficient logistics and multi-modal transportation system, for cargo movement between logistics bases and trade centres within and beyond ASEAN	• Operationalising the ASEAN Framework Agreements on the Facilitation of Goods in Transit, Inter-State Transport and Multimodal Transport • Enhancing capacity and skills development to further progress regional transport facilitation cooperation. • Conceptual planning for an integrated inter-modal transport network in ASEAN.

Transport Actions in ATAP, 2005-2010

The Policy Agenda, Goals and Strategic Thrust as described in the prior sections were carried out through 48 proposed actions during 2005-2010. Out of these 48 actions, the Land Transport addressed 13 actions, Air Transport addressed 10 actions, Maritime Transport addressed 14 actions and Transport facilitation addressed 11 actions. The Table 4-2-2 below provides the description of these actions:

Table 4-2-2 Transport Actions in ATAP, 2005-2010

	Transport Actions in ATAP, 2005-2010
Land Transport	1. Implement the Singapore–Kunming Rail Link (SKRL) sections, as follows: Poipet-Sisophon Railway Link Project (Cambodia); Ho Chi Minh City – Loc Ninh Railway Link Project (Viet Nam); and Spur Lines between Three Pagoda Pass and Thanbyuzayat (Myanmar) and Vientiane – Mu Gia – Tan Ap – Vung Ang (Lao PDR/Viet Nam) 2. Implement the priority road infrastructure projects for the ASEAN Highway including the Mawlamyine–Thanbyuzayat section in Myanmar; Attapeu–Phia Fai section in Lao PDR; and Quang Ngai–Kon Tum section in Viet Nam 3. Implement the ASEAN Highways route numbering system 4. Harmonize the ASEAN Highways' road signage system, to include the requirements for tourism purposes and road safety 5. Implement the ASEAN Regional Road Safety Strategy and Action Plan 6. Adopt and implement the ASEAN Intelligent Transport System (ITS) Decision Support Framework 7. Formulate regional plan to guide cross-border movement of tourist, chartered and scheduled bus transport services, including the harmonization/standardization of technical and safety requirements 8. Enhance technical and human capacity for the development and planning of more effective, functioning and safer urban transport systems and facilities 9. Early implementation of the relevant ASEAN land transport agreements and their protocols 10. Regular exchange of best practices on public-private partnerships in the development, commercialization, construction and operation of land transport infrastructure and facilities 11. Conduct development studies on intra-ASEAN ferry links to connect the major ASEAN land transport/highways/corridors 12. Formulate regional policy framework for developing Inland Waterways Transport (IWT) services 13. Promote intra-ASEAN development of environmentally-friendly transport vehicles through the use of alternative fuels
Air Transport	1. Adopt and implement the ASEAN open sky policy, for both passenger and cargo services by building on the approved Roadmap for Integration of ASEAN (RIA) for ASEAN Competitive Air Services Policy through plurilateral, multilateral or inter-sub-regional liberalization and cooperation arrangements. 2. Develop an airline industry liberalization roadmap/program for the ASEAN region 3. Promote safe, efficient and effective Air Traffic Management (ATM) through enhanced integrity and interoperability of ASEAN Communications, Navigation and Surveillance (CNS) Systems 4. Intensify aviation and airport security through HRD and application of IT 5. Enhance cooperation to ensure, among others, transfer of advanced civil aviation technologies 6. Regular exchange of best practices on public-private partnerships in the development, commercialization, construction and operation of air transport infrastructure and facilities 7. Further liberalize air transport ancillary services 8. Improve/reform the regulatory structure/framework of the air transport industry for better efficiency and performance of the air transport industry (airports, ground handling services, ownership /foreign equity rules, etc.) for better efficiency and performance 9. Enhance regional capacity for combined air and maritime search and rescue (SAR) operations 10. Adopt initiatives to increase air access with dialogue partners

	Transport Actions in ATAP, 2005-2010
Maritime Transport	1. Identifying and designating the important maritime trade corridors/seaways for regional seaborne trade that are vital for the success of ASEAN Economic Community (AEC). 2. Promoting effective and competitive intra-ASEAN shipping in those trade corridors / seaways through (a) rationalization / synchronization of shipping services; b) expanded shipping services linking the 47 designated regional ports and secondary ports ; and c) Greater cooperation within ASEAN sub-regions , through improved sea linkages and in near-coastal shipping, including the implementation of the relevant recommendations of the ASEAN Maritime Transport Development Study 3. Achieve significant liberalization of intra-ASEAN maritime transport services 4. Support and promote the development of ASEAN-based shipping fleet for intra-ASEAN and international trade 5. Further study on expanding the agreement on common ASEAN near coastal voyage limits 6. Conduct studies on introduction of high-speed cargo and passenger vessels and intra-regional feeder services servicing the regional gateway and secondary ports 7. Enhance the activities of the ASEAN Forum on IMO Conventions to facilitate the accession and implementation of relevant IMO conventions by AMSs 8. Strengthen the institutional capacity, human resource base and cooperation linkages of AMSs for achieving improved maritime safety, security and preventing marine pollution (e.g., ISPS Code, STCW trainers' training, etc) 9. Pursue the "ASEAN Clean Seas Strategy" 10. Intensify maritime transport security through capacity building and IT-based programs 11. Pursue the Handling of Dangerous Goods in ASEAN Ports' Project and other APA-initiated mutually beneficial projects 12. Enhance regional capacity for maritime search and rescue (SAR) operations 13. Strengthen maritime transport human resource capacity 14. Regular exchange of information and best practices in maritime transport policy and development programs
Transport Facilitation	1. Early implementation of the ASEAN transport facilitation agreements 2. Operationalise/enhance capacity for the National Transit Transport Coordinating Committees (NTTCCs) in all Member States 3. Regular implementation evaluation/monitoring meetings of regional Transit Transport Coordinating Board (TTCB) 4. Simplify/harmonize trade/transport procedures and documentation 5. Formulate uniform guidelines and requirements for the registration of Multimodal Transport Operators (MTOs) 6. Promote the usage of trade terms and practices related to multimodal transport, including the INCOTERMS (International Commercial Terms) 7. Conduct training/skills upgrading programs (e.g., seminars, workshops, etc) to enhance institutional and human capacity in the implementation of the ASEAN transport facilitation agreements. 8. Promote ASEAN transport intermediaries such as freight forwarders, MTOs, logistics service providers, truck/haulage operators 9. Promote strategic logistics centres, e.g. inland clearance depots, regional warehouse and distribution centres linking the major regional trade centres 10. Promote ICT applications for seamless cargo transportation through the integration of surface, maritime and air cargo information systems and related information networks such as customs and trade-related systems. 11. Exchange of experiences/update of developments on multimodal transport operations in Member States

4.2.3 HISTORY OF SPECIFIC MEASURES BY SECTOR

The review of the transport actions by grouping them in specific sectors will be able to provide a concise "move forward" direction/progress of the transport actions. The review of actions by sectors will be comparatively easy to analyze and understand the development, continuation, progress and achievements in each transport sectors. The tables below highlights the progress or "move forward" of each specified sectors by grouping the transport actions and comparing them between 1999-2004 Plan and 2005-2010 Plan. Such comparison for land transport, air transport, maritime transport and transport facilitation is shown in Table 4-2-3 to Table 4-2-6.

Such comparison by sectors will be able to provide a broad framework of actions that need to be continued or included in ASEAN Strategic Transport Plan (ASTP), 2011-2015.

Table 4-2-3 Land Transport Actions/Measures by Sectors in the earlier Transport Plans

Land Transport Actions 1999-2004	Land Transport Actions 2005-2010
ASEAN Highway	**ASEAN Highway**
LT1- Adoption of a Ministerial understanding on the development of the ASEAN Highways. LT2 - Conduct of feasibility studies/analyses and /or detailed engineering studies of priority projects under the ASEAN Highway network project.	LT2- Implement the priority road infrastructure projects for the ASEAN Highway including the Mawlamyine–Thanbyuzayat section in Myanmar; Attapeu–Phia Fai section in Lao PDR; and Quang Ngai–Kon Tum section in Viet Nam LT3- Implement the ASEAN Highways route numbering system LT4- Harmonize the ASEAN Highways' road signage system, to include the requirements for tourism purposes and road safety
Remarks ASEAN Highway network was adopted and studies were conducted.	**Remarks** Certain projects were implemented. However, still Class-III and below grade road exists in some AMSs.
SKRL	**SKRL**
LT3- Conduct of feasibility studies/analyses and/or detailed engineering studies of the missing links under the Singapore Kunming Rail Link Project	LT1- Implement the Singapore–Kunming Rail Link (SKRL) sections, as follows: Poipet-Sisophon Railway Link Project (Cambodia); Ho Chi Minh City – Loc Ninh Railway Link Project (Viet Nam); and Spur Lines between Three Pagoda Pass and Thanbyuzayat (Myanmar) and Vientiane – Mu Gia – Tan Ap – Vung Ang (Lao PDR/Viet Nam)
Remarks SKRL network was adopted and feasibility studies were taken up.	**Remarks** Feasibility studies were carried out with limited construction/implementation.
Road Safety	**Road Safety**
LT12- Development of ASEAN Road Safety Audit system	LT5- Implement the ASEAN Regional Road Safety Strategy and Action Plan
Remarks Some initiative taken up on Road Safety audit system.	**Remarks** Initiatives were taken to formulate MRSSWG at national and ASEAN level.

Land Transport Actions 1999-2004		Land Transport Actions 2005-2010
Intelligent Transport System (ITS)		**Intelligent Transport System (ITS)**
LT9- Policy development for an ASEAN Intelligent Transport System	⇨	LT6- Adopt and implement the ASEAN Intelligent Transport System (ITS) Decision Support Framework
Remarks Policy were formulated for ITS.		**Remarks** Study for ITS has been completed.
Cross Border Movement		**Cross Border Movement**
LT4-Instituting a liberalized ASEAN wide policy for road transport services (for both passengers and cargoes) e.g., enhancing market access for transit and interstate transport services, tourist and/or chartered buses, etc. LT5- Expansion of inter-railway agreements to facilitate cross-border movement of goods and peoples and provide opportunities for multi modal transport operations, by way of access and transit rights to railway infrastructure. LT8- Awareness and accession to international conventions relating to land transport cross-border facilitation.	⇨	LT7- Formulate regional plan to guide cross-border movement of tourist, chartered and scheduled bus transport services, including the harmonization/standardization of technical and safety requirements
Remarks		**Remarks** Regional Plan not yet formulated/initiated.
Inland Waterways Transport		**Inland Waterways Transport**
LT11-Adoption of common guidelines and procedures for the inland transport of dangerous goods.	⇨	LT11-Conduct development studies on intra-ASEAN ferry links to connect the major ASEAN land transport/highways/corridors LT12- Formulate regional policy framework for developing Inland Waterways Transport (IWT) services.
Remarks		**Remarks**
		IWT Regional Plan not yet formulated/initiated
Environment		**Environment**
LT10- Conduct of development study for sustainable urban transport and road safety planning in the ASEAN region.	⇨	L13- Promote intra-ASEAN development of environmentally-friendly transport vehicles through the use of alternative fuels
Remarks		**Remarks** Limited efforts were made in selected AMSs.

Land Transport Actions 1999-2004		**Land Transport Actions 2005-2010**
Agreements		**Agreements**
LT6- Implementation of the ASEAN agreements on the mutual recognition of driving licenses and commercial vehicle inspection certificates. LT7- Coordination/harmonization of laws, rules and regulations on motor vehicle administration, traffic rules and regulations on motor vehicle administration, traffic law and road safety enforcement e.g.. those relating to registration and licensing, pricing, insurance coverage, franchising procedures of vehicles used for cross-border and transit movements.	⇨	LT9 - Early implementation of the relevant ASEAN land transport agreements and their protocols
Remarks		**Remarks** Not all agreements are yet ratified.
	⇨	**Technical & Human Capacity Dev.**
		LT8 - Enhance technical and human capacity for the development and planning of more effective, functioning and safer urban transport systems and facilities. LT10- Regular exchange of best practices on public-private partnerships in the development, commercialization, construction and operation of land transport infrastructure and facilities.
		Remarks Exchange of practices is a common feature during LTWG meetings. Workshops/Seminars were conducted to enhance capacity.

Table 4-2-4 Air Transport Actions/Measures by Sectors in the earlier Transport Plans

Air Transport Actions 1999-2004	Air Transport Actions 2005-2010
Open sky	**Open sky**
AT-1 Development of the priority ASEAN-wide airports system to cater to the expanded opportunities in inter-regional trade, investment and tourism. AT-3 Development of the liberalization policy for air freight services AT-4 Adoption of more liberal and flexible air services arrangements in ASEAN, initially for ASEAN's sub regional groupings like BIMP-EAGA and the CLMV Countries.	AT-1-Adopt and implement the ASEAN open sky policy, for both passenger and cargo services by building on the approved Roadmap for Integration of ASEAN (RIA) for ASEAN Competitive Air Services Policy through plurilateral, multilateral or inter-sub-regional liberalization and cooperation arrangements AT-2 Develop an airline industry liberalization roadmap/ program for the ASEAN region AT-7 Further liberalize air transport ancillary services
Remarks Preparation for ASEAN Open sky policy.	**Remarks** Promotion for ASEAN Open sky policy
Aviation safety	**Aviation safety**
AT-2 Coordination and contingency planning amongst AMSs for the Year 2000 (Y2K) problem. AT-8 Development of a detailed and coordinated plan for the implementation of the CNS/ATM system within ASEAN AT-9 Monitoring implementation of the reduced vertical separation minimum (RVSM) above FL290, with the end in view of achieving a coordinated regulatory framework for regional implementation in ASEAN AT-10 Strengthening the airworthiness and flight safety oversight capabilities of AMSs AT-11 Continuing HRD programs on aviation management, air traffic services and CNS/ATM applications	AT-3 Promote safe, efficient and effective Air Traffic Management (ATM) through enhanced integrity and interoperability of ASEAN Communications, Navigation and Surveillance (CNS) System
Remarks Upgrading conventional CNS/ATM	**Remarks** Promotion for satellite based CNS/ATM system.
Aviation security	**Aviation security**
AT-7 Strengthening regional cooperation in the implementation of the ASEAN Multilateral Aeronautical Search and Rescue Agreement	AT-4 Intensify aviation and airport security through HRD and application of IT AT-9 Enhance regional capacity for combined air and maritime search and rescue (SAR) operations
Remarks Not yet been considered for aviation security. It is before terrorism attack in USA.	**Remarks** Acknowledgment for importance of aviation security
Institutional, Regulatory	**Institutional, Regulatory**
AT-12 Enhanced networking and cooperation amongst national civil aviation training institutes	AT-5 Enhance cooperation to ensure, among others, transfer of advanced civil aviation technologies AT-8 Improve the regulatory framework of the air transport industry for better efficiency and performance

Air Transport Actions 1999-2004		Air Transport Actions 2005-2010
Remarks		**Remarks**
Dialogue partner		**Dialogue partner**
AT-5 Engaging effective cooperation, dialogue and partnership between and amongst ASEAN aviation administrations, national airlines and national tourism organization (NTOs) in areas of common interest AT-6 Strengthening cooperation and coordination with the association of ASEAN national airlines and international organization like IATA and ICAO		AT-10 Adopt initiatives to increase air access with dialogue partner
Remarks		**Remarks**
		PPP
		AT-6 Regular exchange of best practices on public-private partnerships in the development, commercialization, construction and operation of air transport infrastructure and facilities
		Remarks

Table 4-2-5 Maritime Transport Actions/Measures by Sectors in the earlier Transport Plans

Maritime Transport Actions 1999-2004	Maritime Transport Actions 2005-2010
Enhancement of Network	**Enhancement of Network**
MT-1 Development of the priority ASEAN-wide Ports system. MT-2 Development of a regional policy and development framework for competitive Maritime transport system	MT-1 Identify and designate the important maritime trade corridors/seaways for regional seaborne trade. MT-2 Promote effective and competitive intra-ASEAN shipping in those trade corridors / seaways MT-6 Conduct studies on introduction of high-speed cargo and passenger vessels and intra-regional feeder services servicing the regional gateway and secondary ports.
Remarks	**Remarks** MT-1 and 2 have been conducted as measurement of Maritime Roadmap
Liberalization	**Liberalization**
MT-5 Simplification and harmonization of port documentation and procedures, relating to vessel and cargo movements	MT-3 Achievement of significant liberalization of intra-ASEAN maritime transport services.
Remarks	**Remarks** It has been conducted as measurement of Maritime Roadmap
Technical Improvement	**Technical Improvement**
MT-4 Development of port EDI network among ASEAN ports and the global port community.	MT-4 Support and promote the development of ASEAN-based shipping fleet for intra-ASEAN and international trade.
Remarks	**Remarks** It has been conducted as measurement of Maritime Roadmap
Human and Institutional development	**Human and Institutional development**
MT-12 Strengthening regional capacity for maritime search-and-rescue (SAR) operations	MT-8 Strengthen the institutional capacity, human resource base and cooperation linkages of AMSs for achieving improved maritime safety, security and preventing marine pollution MT-12 Enhance regional capacity for maritime search and rescue (SAR) operations. MT-13 Strengthen maritime transport human resource capacity MT-14 Regular exchange of information and best practices in maritime transport policy and development programs
Remarks	**Remarks**
Cooperation with IMO	**Cooperation with IMO**
MT-7 Progressive implementation and/pr adoption of IMO conventions	MT-7 Enhance the activities of the ASEAN Forum on IMO Conventions to facilitate the accession and implementation of relevant IMO Conventions by AMSs
Remarks	**Remarks**

Maritime Transport Actions 1999-2004		Maritime Transport Actions 2005-2010
Safety and Security		**Safety and Security**
MT-9 intensified cooperation on Port State Control (PSC) activities for substandard ships and errant shipmasters, among others MT-11 Development of an EDI-based information system for dangerous of goods in selected ASEAN ports.	⇨	MT-10 Intensify maritime transport security through capacity building and IT-based programs MT-11 Pursue the Handling of Dangerous Goods in ASEAN Ports' Project and other APA-initiated mutually beneficial projects.
Remarks		**Remarks**
Environment		**Environment**
MT-10 Cooperation in transportation oil spill prevention and preparedness	⇨	MT-9 Pursue the "ASEAN Clean Seas Strategy".
Remarks		**Remarks**
Agreement		**Agreement**
MT-8 Common ASEAN near coastal voyages	⇨	MT-5 Further study on expanding the agreement on common ASEAN near coastal voyage limits
Remarks		**Remarks**
Tourism		
MT-6 Promotion of regional cruise tourism	⇨	
Remarks		
Cooperation with Dialogue Partner		
MT-3 Engaging effective cooperation, dialogue and partnership between and among ASEAN port authorities, ship-owners, freight forwarders and shippers' councils	⇨	
Remarks		

Table 4-2-6 Transport Facilitation Actions/Measures by Sectors in the earlier Transport Plans

Transport Facilitation Actions 1999-2004	Transport Facilitation Actions 2005-2010
ASEAN Framework Agreements	**ASEAN Framework Agreements**
TF1 Operationalisation of the Framework Agreement on the Facilitation of Goods in Transit TF2 Implementation of the Framework Agreement on Multimodal Transport. TF3 Implementation of the Framework Agreement on the Facilitation of Inter-State Transport. TF6 Establishment / institutionalization of the National Transit Transport Coordinating Committees TF7 Establishment / institutionalization of the Regional Transit Transport Coordinating Board	TF1 Early implementation of the ASEAN transport facilitation agreements. TF2 Operationalise/enhance capacity for the National Transit Transport Coordinating Committees (NTTCCs) in all Member States. TF3 Regular implementation evaluation/monitoring meetings of regional Transit Transport Coordinating Board (TTCB).
Remarks	**Remarks**
Transport Infrastructure Development	**Transport Infrastructure Development**
TF4 Development study for improved land transport facilitation and transport logistics in ASEAN, e.g. freight corridor demonstration projects; establishment of Inland Trucking Depots (ITDs), improvement of cross-border facilities, etc.	TF9 Promote strategic logistics centres e.g. inland clearance depots, regional warehouse and distribution centres linking the major regional trade centres.
Remarks	**Remarks**
Logistics Facilitation	**Logistics Facilitation**
TF8 Harmonization of terminologies and codes used in multimodal and transit transport operations	TF4 Simplify/harmonize trade/transport procedures and documentation. TF5 Formulate uniform guidelines and requirements for the registration of Multimodal Transport Operators (MTOs). TF6 Promote the usage of trade terms and practices related to multimodal transport, including the INCOTERMS (International Commercial Terms).
Remarks	**Remarks**
Institutional and Human Resource Development	**Institutional and Human Resource Development**
TF9 HRD programs on EDI and other IT applications (e.g. e-commerce, bar coding) and on Intermodal / Multimodal Transport System. TF10 Training of Trainers for Multimodal Transport Operators	TF7 Conduct training/skills upgrading programs (e.g., Seminars, workshops, etc) to enhance institutional and human capacity in the implementation of the ASEAN transport facilitation agreements. TF8 Promote ASEAN transport intermediaries such as freight forwarders, MTOs, logistics service providers, truck/haulage operators. TF11 Exchange of experiences/update of developments on multimodal transport operations in Member States.

Transport Facilitation Actions 1999-2004		Transport Facilitation Actions 2005-2010
Remarks		**Remarks** Collaborated with Japan Initiated APSL.
Application of Advanced Technology and management		**Application of Advanced Technology and management**
TF5 Developing or implementing Information Technology (IT) solutions in the management of transit transport and multimodal transport systems, e.g. Electronic Interchange (EDI); electronic networking with customs authorities, the port community, etc .,cargo/container transport tracking/monitoring systems.	⇨	TF10 Promote ICT applications for seamless cargo transportation through the integration of surface, maritime and air cargo information systems and related information networks such as customs and trade-related systems.
Remarks		**Remarks**

4.3 ROADMAPS

4.3.1 ROADMAP FOR INTEGRATION OF AIR TRAVEL SECTOR (RIATS)

(1) Objective

The objective of this initiative is to advance the full liberalisation of air transport services in ASEAN, to achieve the ASEAN Leaders' vision of Open Sky in the ASEAN region. This Roadmap will build upon the Roadmap for ASEAN Competitive Air Services Policy adopted by the Ninth ATM Meeting in Yangon, Myanmar in October 2003. The Roadmap will complement the overall policy goals of the Action Plan for ASEAN Air Transport Integration and Liberalisation to be adopted at the Tenth ATM in Phnom Penh, Cambodia in November 2004.

(2) Measures

This Roadmap provides concrete actions that AMSs shall pursue to achieve greater and significant air transport liberalisation in ASEAN, through a staged and progressive implementation. This roadmap includes issues specific to a) Liberalisation of air freight services; and b) Liberalisation of scheduled passenger services.

In the implementation, two or more AMSs who are ready can negotiate, conclude and sign implementing agreements/arrangements in line with the ASEAN-X Formula, on a plurilateral, multilateral or sub-regional basis. The other Member States could join in the implementation when they are ready. AMSs can also conclude more liberal bilateral arrangements for air services liberalisation.

AMSs shall be provided flexibility with regard to the implementation of the proposed timeline for the specific measures.

(3) Coverage

The liberalization measures will cover the movement/ carriage of both passengers and cargo or freight by air transport.

(4) Progress of pecific issues

The progress of specific issues of RIATS as well as related Agreements and their progress is shown below Table 4-3-1.

Table 4-3-1 Progress of Specific Issues of RIATS

NO.	MEASURES */Timeline*	Related Agreement	PROGRESS
SPECIFIC ISSUES			
I	**Liberalisation of Air Freight Services**		
	Full liberalisation of ASEAN air freight services */**Dec.2008***	**Protocol to Implement the Sixth Package of Commitments on Air Transport Services under the ASEAN Framework Agreement on Services**	**Signed** on 10 Dec. 2009 **Ratified** Myanmar: 04/05/10 Viet Nam:
		ASEAN Multilateral Agreement on the Full Liberalisation of Air Freight Services (MAFLAFS)	**Signed** on 20 May 2009 **Ratified** Brunei Darussalam: 30/03/10 Malaysia: 15/12/09 Myanmar: 07/08/09 Philippines: 12/05/10 Singapore: 03/07/09 Thailand: 13/10/09 Viet Nam: 22/12/09
		Protocol 1 on Unlimited Third, Fourth and Fifth Freedom Traffic Rights among Designated Points in ASEAN	**Signed** on 20 May 2009 **Ratified** Brunei Darussalam: 30/03/10 Malaysia: 23/01/10 Myanmar: 07/08/09 Philippines: 12/05/10 Singapore: 03/07/09 Thailand: 13/10/09 Viet Nam: 22/12/09
		Protocol 2 on Unlimited Third, Fourth and Fifth Freedom Traffic Rights among All Points with International Airports in ASEAN	

NO.	MEASURES /*Timeline*	Related Agreement	PROGRESS
II	**Liberalisation of Scheduled Passenger Services**	**ASEAN Multilateral Agreement on Air Services (MAAS)**	**Signed** on 20 May 2009 **Ratified** Brunei Darussalam: 30/03/10 Malayasia:15/12/09 Myanmar: 07/08/09 Philippines: 12/05/10 Singapore: 03/07/09 Thailand: 13/10/09 Viet Nam: 22/12/09
3	Liberalisation of scheduled passenger services with no limitations on third and fourth freedom traffic rights for all designated points within the ASEAN sub-regions /***Dec.2005***	**Protocol 1** on Unlimited Third and Fourth Freedom Traffic Rights within the ASEAN Sub-Region	**Signed** on 20 May 2009 **Ratified** Brunei Darussalam: 30/03/10 Malaysia: 23/01/10 Myanmar: 07/08/09 Philippines: 12/05/10 Singapore: 03/07/09 Thailand: 13/10/09 Viet Nam: 22/12/09
4	Liberalisation of scheduled passenger services with no limitations on third and fourth freedom traffic rights for at least two designated points in each country between the ASEAN sub-regions /***Dec.2006***	**Protocol 2** on Unlimited Fifth Freedom Traffic Rights within the ASEAN Sub-Region	**Signed** on 20 May 2009 **Ratified** Brunei Darussalam: 30/03/10 Malaysia: 23/01/10 Myanmar: 07/08/09 Philippines: 12/05/10 Singapore: 03/07/09 Thailand: 13/10/09 Viet Nam: 22/12/09
5	Liberalisation of scheduled passenger services with no limitations on fifth freedom traffic rights for all designated points within the ASEAN sub-regions /***Dec.2006***	**Protocol 3** on Unlimited Third and Fourth Freedom Traffic Rights between the ASEAN Sub-Regions	**Signed** on 20 May 2009 **Ratified** Brunei Darussalam: 30/03/10 Malaysia: 23/01/10 Philippines: 12/05/10 Singapore: 03/07/09 Thailand: 13/10/09 Viet Nam: 22/12/09
6	Liberalisation of scheduled passenger services with no limitations on fifth freedom traffic rights for at least two designated points in each country between the ASEAN sub-regions /***Dec.2008***	**Protocol 4** on Unlimited Fifth Freedom Traffic Rights between the ASEAN Sub-Regions	**Signed** on 20 May 2009 **Ratified** Brunei Darussalam: 30/03/10 Malaysia: 23/01/10 Philippines: 12/05/10 Singapore: 03/07/09 Thailand: 13/10/09 Viet Nam: 22/12/09
7	ASEAN-wide liberalisation of scheduled passenger services, with no limitations on third and fourth freedom traffic rights for the capital city in each AMSs /***Dec.2008***	**Protocol 5** on Unlimited Third and Fourth Freedom Traffic Rights between ASEAN Capital Cities	**Signed** on 20 May 2009 **Ratified** Brunei Darussalam: 30/03/10 Malaysia: 23/01/10 Singapore: 03/07/09 Thailand: 13/10/09 Viet Nam: 22/12/09
8	ASEAN-wide liberalisation of scheduled passenger services, with no limitations on fifth freedom traffic rights for the capital city in each ASEAN Member State /***Dec.2010***	**Protocol 6** on Unlimited Fifth Freedom Traffic Rights between ASEAN Capital Cities	**Signed** on 20 May 2009 **Ratified** Brunei Darussalam: 30/03/10 Malaysia: 23/01/10 Singapore: 03/07/09 Thailand: 13/10/09 Viet Nam: 22/12/09

4.3.2 ROADMAP TOWARDS AN INTEGRATED AND COMPETITIVE MARITIME TRANSPORT IN ASEAN

(1) Objectives

The objective of this roadmap is to promote the progressive liberalization of maritime transport services in AMSs. This is consistent with and supportive of the ASEAN leaders' commitment in the Bali Concord II of October 2003, to develop ASEAN as a single market and production base. Specifically, it furthers the goals enunciated in the Vientiane Action Programme (VAP) 2004-2010 and ASEAN Transport Action Plan (ATAP) 2005-2010, and the ASEAN leaders' call to institute new mechanisms and measures to strengthen the implementation of its existing economic initiatives.

(2) Measures

The roadmap provides a time-bound action plan for concrete actions that AMSs shall pursue in order to achieve a more open, efficient and competitive ASEAN maritime transport system. In keeping with the Bali Concord II, the roadmap includes both cooperation and liberalization measures.

(3) Coverage

The specific measures will cover the movement/carriage of both passengers and cargo or freight by maritime transport, and the provisions of the port and related services necessary for the safe, efficient, secure and reliable operation of maritime transport services. Implementation of the specific measures is subject to conformance with international conventions and/or the relevant national laws and regulations.

(4) Specific Measures and Progress

Specific measures and respective progress reported at 19th MTWG Meeting on 20-22 April 2010 is summarized in Table 4.3.2.

Table 4-3-2 Specific Measure and Progress of Roadmap for Maritime Transportation

No.	Action	Target Date [1)]	Progress
	Developing a single ASEAN Voice		
1	Adopt the general principles and framework for a common shipping policy	12/31/07	Completed.
2	Establish mechanism for the consultation, coordination and consensus of ASEAN responses to emerging maritime issues, which may have an impact on the interest of AMSs	12/31/08	On-going Malaysia has updated on IMO-related developments and MTWG requested AMSs to provide Malaysia with suggestions on issues and concerns requiring discussion by the consultation group. MTWG encouraged Member States to utilize the consultation group to discuss common issues and concerns to achieve a single ASEAN voice.
	Infrastructure		
3	Review list of ports in the ASEAN transport network to ensure that all ports of regional significance are included	12/31/07	Partially completed and partially on-going.
4	Compile a database on ASEAN network ports. This could include inventory of the facilities available, shipping services, port tariffs, and other indicators	12/31/08	On-going APA is on the progress of the development of the Database on ASEAN Network Ports. Forty-three (43) ports out of the forty-seven (47) ports included in the ASEAN-Wide Port Network have submitted the accomplished survey forms. Survey matrices for these ports are available at the APA website. The Meeting encouraged the data on four (4) remaining ports from Malaysia (Port Klang, Penang, Bintulu (Sarawak) and Kemaman) to be transmitted to APA to ensure the database completion by December 2010.
5	Develop a database of maritime trade movements to and from within ASEAN	12/31/09	Almost completed The system development for the Database of Maritime Trade Movements to and from within ASEAN was completed in December 2009 and testing completed in April 2010. The data collection for the period up to December 2008 for the ASEAN network ports has also been completed. MTWG requested AMSs to provide their final comments/inputs on the said project report, if any, to Malaysia no later than 7 May 2010. Should there be no comments, the final draft project report is considered adopted. The AMSs could explore the database at http:www.aseandb.net

No.	Action	Target Date [1)]	Progress
6	Develop guidelines for assessing port development priorities, including acceptable performance levels	12/31/09	Almost completed Brunei Darussalam and JICA completed the Final Report on the Study on Guidelines for Assessing Port Development, including Acceptable Performance Levels. The Report covers the cargo throughput capacity of ports, assessment of port development priorities, and the application of the guidelines regarding the classification of network ports and their expected roles, proposed methodology for estimating container terminal performance and procedures for assessing port development priorities. Should there be no comments by 7 May 2010, the final draft project report is considered adopted.
7	Identify required improvement areas in ASEAN network port performance and capacity, based among others, on regular forecasts of maritime trade and requirements	12/31/09	On-going The progress report has submitted by Malaysia. The Workshop on Measure no. 7 will be convened in late July 2010 and the expected submission of the draft Final Report of Measure No.7 in the end of August 2010. Because Measures 5, 6 and 7 are linked to Measure No. 8 and cognizant of the timelines for the latter, the MTWG encouraged Malaysia/ROK to consider extending the July 2010 Workshop for Measure No. 7 for an additional day in order to assist Viet Nam and Japan with preparatory project activities for Measure No. 8.
8	Develop project priorities, based on the guidelines for assessing port development, to raise performance and capacity levels towards bridging such gaps in ASEAN network ports	12/31/10	In preparation According to the presentation paper by Viet Nam at 19th MTWG Meeting, the study is scheduled to be executed from June 2010 to January 2011 in cooperation with JICA, however, MTWG encouraged Viet Nam/JICA to revisit its proposed study methodology to help ensure achievement of the timeline for the measure's completion by December 2010.
9	Explore funding mechanisms, where necessary, to support the implementation of identified projects in the ports of AMSs	12/31/12	No action for present
10	Ensure that all ASEAN network ports meet the acceptable performance and capacity levels	12/31/15	No action for present

No.	Action	Target Date [1)]	Progress
	Market Integration		
11	Confirm the principle of open access to the international maritime trade of all AMSs, as per the decisions of the other relevant ASEAN sectoral bodies, such as the ASEAN Coordinating Committee on Services (CCS), and ASEAN Maritime Transport Sectoral Negotiation Working Group	12/31/09	<u>On-going</u> Indonesia updated Principles and Strategy Paper for the ASEAN Single Shipping Market. MTWG agreed to request AMSs to provide their comments/inputs to Indonesia on the proposed principles and strategies, no later than 24 May 2010, after which Indonesia shall finalize and circulate a revised the Paper for consideration and adoption at the next MTWG meeting.
12	Develop the strategies for an ASEAN Single Shipping Market	12/31/09	
13	Implement the ASEAN Single Shipping Market	12/31/11	<u>No action for present</u> It is not implemented for the present, and it will start after completion on Measure No.11 and No.12
	Harmonization		
14	Develop guidelines on acceptable practices in the provision of fiscal support for shipping operations	12/31/09	<u>On-going</u> Philippines proposed concept paper on the proposed approach to developing the guidelines on acceptable practices in the provision of fiscal support for shipping operations in ASEAN, including the comparative matrix of current practices in AMSs. MTWG requested AMSs to submit their further comments/inputs on the concept paper, if any, to Philippines by 24 May 2010. Furthermore, MTWG requested Philippines to prepare a Draft Guidelines for circulation to AMSs by 24 June 2010, for eventual consideration and adoption at the next MTWG meeting.
15	Harmonies ship registration practices	12/31/09	<u>On-going</u> Philippines summarized draft paper consolidating matrices on the conditions precedent and related documentary requirements for the registration of ships in AMSs. After thorough deliberation, MTWG concluded that harmonizing ship registration processes will be difficult to achieve at this point considering the respective domestic laws and procedures of AMSs and that such harmonization needs further study and deliberation. MTWG agreed that the output for Measure No. 15 will consist of a Directory of Ship Registration Practices in ASEAN for the consideration and adoption of the next MTWG. MTWG also agreed to give AMSs one month until 24 May 2010 to revert to Philippines with their respective comments/updates on the matrices and other relevant information for the said directory.

No.	Action	Target Date 1)	Progress
16	Develop guidelines for structure of port tariffs in ASEAN transport network ports	12/31/09	On-going Revised Questionnaire for Measure No. 16 made by Thailand, has been circulated to AMSs and that responses are being awaited from remaining seven AMSs. Based on the AMSs' responses, Thailand will prepare the Draft Report and the Draft Guidelines for the Structure of Port Tariffs in ASEAN transport network ports to AMSs and circulate the said drafts by 24 June 2010 for eventual consideration and adoption in the next MTWG.
	Human Resources and Capacity Development		
17	Establish centres of logistics excellence at selected tertiary institutions within ASEAN	12/31/09	On-going MTWG has encouraged Member States to provide their information on the available maritime education and training courses. Singapore received said information from some AMSs and is awaiting feedback from the remaining six Member States. MTWG agreed to give the remaining Member States one month until 24 May 2010 to provide Singapore with said feedback. As agreed upon in the 17th MTWG, the information shall subsequently be uploaded onto the ASEAN website.
18	Develop strategy, including encouraging private sectors, for enhanced shipboard placements	12/31/09	On-going Indonesia and Philippines has circulated the concept paper on the "Development of a Strategy for Enhanced Shipboard Placement". MTWG requested the Member States to submit their inputs/comments on the concept paper no later than 24 May 2010. MTWG agreed to subsequently consider the Final Draft Strategy Paper for adoption at the next MTWG meeting.
19	Establish regional centres of maritime excellence to provide advanced training in high technology aspects of maritime operations and specialized courses in areas such as port and shipboard security.	12/31/11	On-going MTWG requested AMS to provide inputs/comments on the information shared by Singapore. Singapore will report to the 20th MTWG Meeting on the progress of activities under the Measure towards timely implementation.
20	Implement single labour market for ASEAN seafarers.	12/31/13	No action for the Present

4.3.3 ROADMAP FOR THE INTEGRATION ON LOGISTICS SERVICES

The TFWG is the responsible body for coordinating and implementing the transport related measures of the ASEAN Roadmap for the Integration of Logistics Services[1]. Those measures relates to enhancing multimodal transport infrastructure development, intensifying transport facilitation program, upgrading of human competencies of ASEAN logistics services providers, and in the progressive liberalization of the related transport services.

[1] The 25th ASEAN Senior Transport Officials Meeting Document, The ASEAN Secretariat's Discussion Paper

(1) Objectives

The objectives of this initiative are to:

- Create an ASEAN single market by 2015 by strengthening ASEAN economic integration through liberalisation and facilitation measures in the area of logistics services; and
- Support the establishment and enhance the competitiveness of an ASEAN production base through the creation of an integrated ASEAN logistics environment.

(2) Measures

This Roadmap provides concrete actions that AMSs shall pursue to achieve greater and significant integration of logistics services in ASEAN, through progressive implementation of the measures, which include the liberalisation of logistics services, enhancing competitiveness of ASEAN logistics services providers through trade and logistics services facilitation, expanding capability of ASEAN logistics service providers, human resource development, and enhancing multi-modal transport infrastructure and investment.

(3) Coverage

The scope of the measures will cover freight logistics and related activities. The implementation of the specific measures shall be subject to the relevant national laws and regulations.

Table 4-3-3 shows the Roadmap and progress the specific measures only tasked to STOM or TFWG.

Table 4-3-3 Specific Measure and Progress of Roadmap for the Integration of Logistics Services (1)

No.	Specific Measure	Progress	IMPLEMENTING BODY
I	**Member country shall endeavour to achieve substantial liberalization of logistics services in the following sectors**		
1	Liberalize Maritime cargo handling services		*CCS*
2	Liberalize Storage and warehousing services		*CCS*
3	Liberalize Freight transport agency services		*CCS*
4	Liberalize Other auxiliary services		*CCS*
5	Liberalize Courier services		*CCS*
6	Liberalize Packaging services		*CCS*
7	Liberalize Customs clearance services		*CCS & CCC*
	Maritime transport services		
8	International Freight Transportation excluding Cabotage		*CCS*
	Air freight services		
9	Implement ASEAN Multilateral Agreement of the Full Liberalization of Air Freight Services	*See Table 4-3-1 for the detail*	*STOM*
	Rail freight transport services		
10	International rail freight transport services	*See Chapter 3 section 2 for the detail*	CCS, relevant STOM WG
	Road freight transport services		
11	International road freight transport services	*See Chapter 3 section 2 for the detail*	*CCC CPTFWG*
II (a)	**Trade and Customs Facilitation**		
12	Implement provisions in the WTO Agreement on Customs Valuation.		CCC/CPTFWG
13	Implement the WCO Immediate Release Guidelines and review, as appropriate, the de minimums levels (value thresholds) for express delivery of air shipments and implement/introduce EDI to speed up customs clearance.		CCC/CPTFWG
14	Promote the implementation of the WCO Framework of Standards to Secure and Facilitate Global Trade.		CCC/CPTFWG
15	Identify suitable standards to secure the interoperability and interconnectivity in facilitating trade within customs jurisdiction, including those of Information and Communication Technology.		*CPTFWG*
16	Enact domestic legislation to provide legal recognition of electronic documents/ transactions.		*TELSOM/CPTFWG*
17	Encourage application of standardized trade data and documents for trade facilitation through the adoption of International standards like WCO data model, United Nations Trade Data Elements Directory (UNTDED), UN-eDocs and the electronic submission of document.		CPTFWG and SEOM
18	Adopt service commitments (Client Service Charters) by ASEAN customs authorities.		CCC

Table 4-3-4 Specific Measure and Progress of Roadmap for the Integration of Logistics Services (2)

No.	Specific Measure	Progress	IMPLEMENTING BODY
19	Encourage implementation of 24x7 customs operations to accelerate the cargo customs clearance as requested by the industry and subject to the relevant national regulations.		CPTFWG and SEOM
20	Promote relevant technologies for advanced information systems to be shared among governmental agencies, shippers, and industry, in advancing supply-chain security initiatives.	ASEAN ITS Policy Framework has developed by Japan. Exchanging best practices is the Regular feature of four WGs. To share their technologies, Inviting other WG special participant from energy or trades WG were invited to share the information and knowledge.	CEWG/STOM /TELSOM
21	Develop the Single Window approach for customs clearance.		ASW-SC / CPTFWG /SEOM
22	Promote the use of RFID (Radio Frequency Identification) applications to facilitate cross-border use of RFID in trade and customs as well as cross border tracking of goods.		TELSOM / CPTFWG / ASW-SC
23	Facilitate cross border electronic transactions, information sharing, electronic payment and electronic signatures.		TELSOM WG ALL / CPTFWG
24	Encourage enterprises to adopt/develop interoperable supply chain management systems in ASEAN to link up planning solutions, automated storage and retrieval systems and wireless tracking technologies.		TELSOM WG ALL / CPTFWG
25	Enhance cooperation and communications between customs and the business sector including through electronic means.		CCC/CPTF-WG / AFFA / ASEAN Shippers Council
26	Implement risk management practices to facilitate trade, while maintaining effective customs control.		*CPTFWG*
27	Enhance transport security and safety in the regional supply-chain networks, through capacity building initiatives, technical networking, and regular exchange of relevant technologies, best practices and information.	AFFA proposed the logistics-related courses for capacity development in 19th TFWG. (See Chapter 3 section 5.2 for the detail.) CLMV countries are requesting training program by other country such as Singapore and Thailand as well as assistant by Dialogue partners.	*STOM / CPTFWG / ASW-SC*
28	Conduct regular formal dialogues between private sectors, relevant associations and government related bodies.		*CCC/CPTFWG / ASW-SC*

Table 4-3-5 Specific Measure and Progress of Roadmap for the Integration of Logistics Services (3)

No.	Specific Measure	Progress	IMPLEMENTING BODY
II (b)	**Logistics Facilitation**		
29	Enhance the transparency of domestic regulation for logistics related regulation through timely publication of investment regulation, licensing criteria, licensing decisions by the Governments and facilitate consultation with the private sector.		*CCI / CCS / STOM Working Groups*
30	Conclude and sign the ASEAN Framework Agreement on Facilitation of Inter-State Transport.	Signing of the AFAFIST by all AMS following the signing by Myanmar during the 15th ATM. See Chapter 3 section 5.2. (3) for the detail.	*STOM*
31	Operationalise the ASEAN Framework Agreement on the Facilitation of Goods in Transit and the ASEAN Framework Agreement on Multimodal Transport to promote efficient door-to-door cargo transport and cross-border transport facilitation.	These ASEAN Framework Agreements are being implemented with support study by APRIS II Program. NTTCCs have established in each AMS and inaugural TTCB meeting was held proposing Overall Work Plan for operationalisation of three agreements. (See Chapter 3 section 5.1.(1) and (2))	STOM/CCC
32	Improve land transport network infrastructures and services to achieve better inter-connectivity, inter-operability and inter-modality with the national, regional and international maritime and air transport gateways.	This has been addressed under ASEAN Highway (AH) network and Singapore Kunming Railway (SKRL) project which are planned for completion by 2020 and 2015 respectively.	*STOM*
33	Strengthen intra-ASEAN maritime and shipping transport services.	The Study on Promoting Efficient and Competitive Intra-ASEAN Shipping Services has been done in March 2005 by Australia.	*STOM*
34	Establish enabling and conducive policy environment for increased private sector involvement and/or public-private partnerships in the development of transport logistics infrastructure and the provision and operation of transport logistics facilities.	No concrete step has been taken up for Public-Private Partnership in the development of transport logistics infrastructure and the provision and operation. The experience and best practices are exchanged continuously to share the information.	*STOM*
35	Identify and develop other mechanisms to further facilitate the movement of natural persons involving logistics services.		*CCS*

Table 4-3-6 Specific Measure and Progress of Roadmap for the Integration of Logistics Services (4)

No.	Specific Measure	Progress	IMPLEMENTING BODY
Ⅲ	**Expanding Capability of ASEAN Logistics Service Providers**		
36	Adopt best practices in the provision of logistics services and support the development of SMEs in the sector, including the formation of SME networks.	Developing logistics training centres in	*SEOM / STOM*
37	Promote regional cooperation to assist CLMV countries especially least developed countries.	In capacity building, ASEAN and AFFA offered logistics training programs. Also, trainers can be sent with request from CLMV countries.	*STOM*
38	Develop and update an ASEAN database on logistics services providers with a view to enhance the development of networking activities.	No database was developed or updated on logistics services providers. Remark: Thailand is responsible for developing and updating database for AH. In 17th LTWG meeting Thailand presented 2004 data and 2008 data.	*ASEC with inputs from STOM and AFFA*
Ⅳ	**Human Resource Development**		
39	Develop and upgrade skills and capacity building through joint trainings and workshops.	Some dialogue partners such as Japan and UNESCAP have been offering capacity building programs. See Chapter 3 section 5.2 for the detail.	STOM CCCAFFA and other related body
40	Encourage the development of national skills certification system for logistics service providers.	Not much progress in ASEAN Framework but each AMS have developed national skills certification system for service providers. See Chapter 3 section 5.2 for the detail.	*AFFA and other related bodies*
41	Encourage the development of an ASEAN common core curriculum for logistics management.	AFFA proposed the logistics-related courses for capacity development in 19th TFWG. See Chapter 3 section 5.2 for the detail.	*AFFA and other related bodies*
42	Encourage the establishment of national /sub-regional centre of excellence (training centre).	AMS have established their national training centres for logistics, except for Cambodia, Lao PDR, Myanmar and Viet Nam. See Chapter 3 section 5.2 (2) for the detail.	*STOM and AFFA*

Table 4-3-7 Specific Measure and Progress of Roadmap for the Integration of Logistics Services (5)

No.	Specific Measure	Progress	IMPLEMENTING BODY
v	**Enhance Multi-Modal Transport Infrastructure and Investment.**		
43	Identify and the ASEAN transport logistics corridor network and formulate the necessary infrastructure development requirements to support the improvement of inland transport network infrastructure, the inter-modal linkages between connecting modes of transport, to match inland with maritime transport infrastructure and to improve connectivity between ASEAN logistics gateways, among others.		*STOM*
44	Promote the usage of trade terms and practices related to multimodal transport, including the INCOTERMS (International Commercial Terms).	There is an ongoing regional effort to promote but it is still under preparation.	*STOM / AFFA*

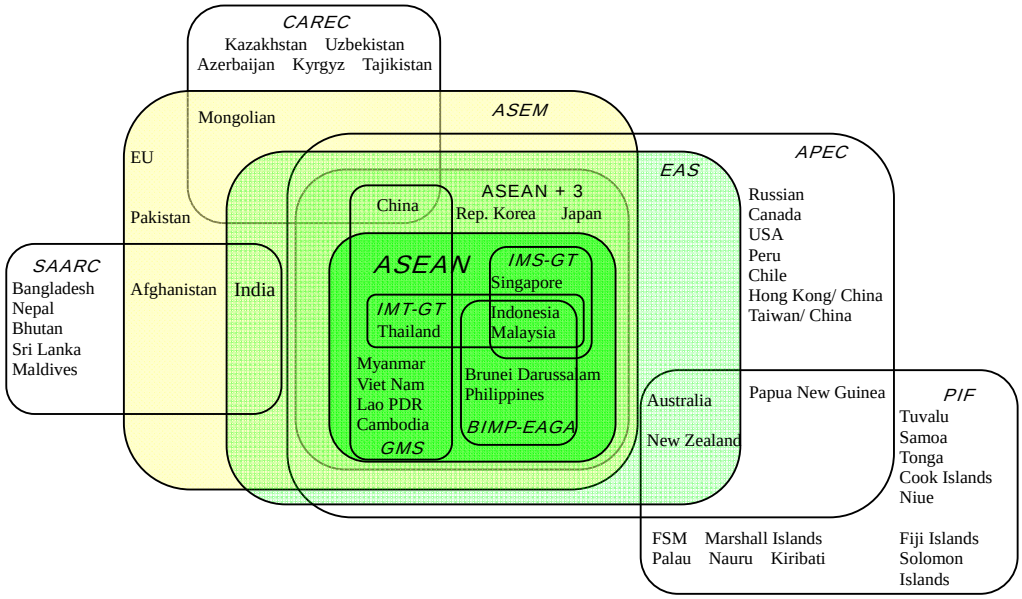
Source: ASEAN Logistics Development Study, Record of 15th – 19th TFWG Meeting, and ASEAN Economic Score Card

4.4 TRANSPORT SECTOR COOPERATION WITH DIALOGUE PARTNERS

In recent years, various regional initiatives have been proposed by dialogue partners such as China, Japan, India, the European Union and Republic of Korea. Regional cooperation in East Asia is in progress as of ASEAN + 1 or ASEAN + 3 with their comprehensive and / or independent themes to obtain initiatives for investment and support from dialogue partners.

Their cooperation is beneficial and actually saw results for ASEAN to achieve AEC.

Sector-wise specific programs in cooperation with Dialogue Partners - China, Japan and the Republic of Korea are mentioned below. On-going ASEAN's internal/external regional cooperation in East Asia and Asia Pacific area are summarized as shown in Figure 4-4-1, which ASEAN has provided a forum to related countries for negotiations in order to work towards maintaining 'ASEAN Centrality'.



Note;

GMS	: Greater Mekong Subregion
IMS-GT	: Indonesia, Malaysia, Singapore - Growth Triangle
IMT-GT	: Indonesia, Malaysia, Thailand - Growth Triangle
BIMP-EAGA	: Brunei, Indonesia, Malaysia and Philippines - East ASEAN Growth Area
EAS	: East Asia Summit
APEC	: Asia Pacific Economic Cooperation
ASEM	: Asia European Meeting
CAREC	: Central Asian Regional Economic Cooperation
SAARC	: South Asian Association for Regional Cooperation
PIF	: Pacific Islands Forum

Source: ERIA Study Team

Figure 4-4-1 Regional Cooperation Framework

(1) Land Transport

Table 4-4-1 Present Status of Cooperation with Dialogue Partner on Land Transport

Dialogue Partner	Project Name	Outline/Status
China	Strategic Plan for ASEAN-China Transport Cooperation	• Establishing China-ASEAN Strategic Plan Working Group, which aims to discuss important issues concerning the implementation of the Strategic Plan. • Identifying short-term priority projects by 2010 based on the list of priority projects identified in the Strategic Plan. • Initiating implementation of the priority projects by 2010. • AMSs and China will hold negotiation on jointly approved initiative funds for implementation of the Strategic Plan; • Actively seeking diversified financing channels. • Enhancing business cooperation; • Holding workshops or forum on the priority projects. • Enhancing cooperation between research institutes and relevant transport associations through information and personnel exchange.
	Workshop on Highway Plan, Design, Construction, Maintenance and Management between China and AMSs	• Promoting the technical exchanges and cooperation between China and ASEAN by strengthening the common understanding between the officials concerned.
	ASEAN-China Strategic Plan	• Facilitating the development of an integrated transport infrastructure system connecting the Southeast Asian Nations and the East Asian Nations. • Four north-south and three east-west transport corridors be developed, linking China and AMSs' major cities.
Japan	ASEAN-Japan Transport Partnership Project (AJTP)	• Facilitating Cargo Transportation and Logistics • Promoting Safe and Sustainable Shipping • Enhancing Air Transport Safety and Efficiency • Cooperation by Mutual Exchange of Information, Experience and Best Practices
	ASEAN-Japan Action Plan on Environment Improvement in Transport Sector (AJ-APEIT)	• Developing national implementation plans in a certain AMS • Capacity development for government officials • Promote certification system for environmentally-friendly businesses • Introduce Japanese case for government officials
	ASEAN-Japan information platform	• Collecting and analyzing current environmental data and data monitoring
Republic of KOREA	ASEAN-ROK Transport cooperation Projects	• Cooperating in the areas, inter alias, planning, designing, construction and maintenance of road, bridge, tunnel, railway and intelligent transport system • ROK requested AMS to submit detailed project proposal with regards to items bellow at 17th LTWG Meeting: - Human Resources Development and Education - Institutional and Technical Assistances - Infrastructure Feasibility Studies

Source: ERIA Study Team

(2) Maritime Transport

Table 4-4-2 Present Status of Cooperation with Dialogue Partner on Maritime Transport

Dialogue Partner	Project Name	Objectives/Outline
China	Strategic Plan for ASEAN-China Transport Cooperation	Refer to Land Transport
	ASEAN-China Maritime Consultation Mechanism (ACMCM)	• Providing necessary technical assistance for marine pollution prevention and maritime security in the areas of maritime safety and security • Establishing cooperation mechanism for maritime rescue and salvage, marine environmental protection, and port state control.
Japan	ASEAN-Japan Transport Partnership Project (AJTP)	• Facilitating Cargo Transportation and Logistics • Promoting Safe and Sustainable Shipping • Enhancing Air Transport Safety and Efficiency • Cooperation by Mutual Exchange of Information, Experience and Best Practices
	ASEAN-Japan Action Plan on Environment Improvement in Transport Sector (AJ-APEIT)	• Developing national implementation plans in a certain AMS • Capacity development for government officials • Promoting certification system for environmentally-friendly businesses • Introducing Japanese case for government officials
	ASEAN-Japan Transport Statistics Database	• Providing framework for the operation of database by consolidating the useful findings and learning gained from the various initiatives under ASEAN-Japan Transport Information Platform project. • Capacity development for government officials of maritime transport sector to utilize the database
	ASEAN-Japan Seafarers Policy Cooperation	• Deepening mutual understanding and developing policy cooperation with regard to seafarers among AMSs and Japan
	ASEAN-Japan Maritime Transport Security program	• Improving maritime security level in the ASEAN-Japan • Promoting cooperation for training of security officers
	ASEAN-Japan Port technology Joint Research Project	• Advance port related technology in ASEAN-Japan through joint researches on port technology issues, such as overage port structures, improvement and environmental preservation.
	ASEAN Mega-Float Promotion Project	• Conducting research to find needs for the Mega-Float, a very large floating structure, in the ASEAN-Japan water area.
Republic of KOREA	ASEAN-ROK development Cooperation in Port Sector	• Guidelines for assessing port development priorities (Measure 6) - Forecasting the maritime trade and demand for port development based on measure 5 and economic indicators (Measure 7) - Clarifying the gap between demand forecasted and current supply capacity of port service (Measure 7) - Identifying the required improvement area and projects (Measure 7) • Developing project priorities listed in measure 7 based on guidelines of measure 6 (Measure 8)
	ASEAN-ROK Transport Cooperation Roadmap	• Identifying the Required Improvement Areas (Measure 7) of ASEAN Maritime Transport Roadmap

Source: ERIA Study Team

(3) Air Transport

Table 4-4-3 Present Status of Cooperation with Dialogue Partners on Air Transport

Dialogue Partner	Project Name	Objectives/Outline
China	Strategic Plan for ASEAN and China Transport Cooperation	Refer to Land Transport
	ASEAN-China Air Transport Agreement	• Removing restrictions on air services with a view of achieving full liberalization between and beyond ASEAN and China
Japan	ASEAN-Japan Transport Partnership Project (AJTP)	• Facilitating Cargo Transportation and Logistics • Promoting Safe and Sustainable Shipping • Enhancing Air Transport Safety and Efficiency • Cooperation by Mutual Exchange of Information, Experience and Best Practices
	ASEAN-Japan Air Transport Project (AJAT)	• ASEAN-Japan New Air Navigation System • ASEAN-Japan Aviation Security Project
	ASEAN-Japan Transport Information Platform Project (AJOA2)	• Updating of the Common Data Templates • Data encoding, validation and updating • Formulating the network: country focal points and online discussion forum • Access to the database • Security of the database/backup for recovery • Monitoring and evaluation/Promotion of awareness
	ASEAN-Japan Eco-Airport Guidelines	• Realizing and creating an environmentally-friendly airport • Establishment of Eco-Airport Council • Preparation and implementation of the airport environmental plan • Evaluation of the airport environmental plan • Evaluation and public disclosure of airport environmental plan
	ASEAN-Japan New Air Navigation System	• Follow up the Action Plan / Recommendation for the New Air Navigation System (CNS/ATM).
	ASEAN-Japan Aviation Security Project	• Enhancing aviation security in the whole region, making the most of shared information and experience on relevant policies and security measures through a survey, workshop, and expert meeting, etc.
	ASEAN-Japan Airport Study Project	• Enhancing policies and measures that are critical for improvement of operation and environment quality of airports in ASEAN-Japan region
	ASEAN-Japan Action Plan on Environment Improvement in Transport Sector	• Developing national implementation plans in a certain AMS • Capacity development for government officials • Promote certification system for environmentally-friendly businesses • Introduce Japanese case for government officials
	Operational Guideline of the ASEAN-Japan Transport Statistics Database	• Providing framework for the operation of database by consolidating the useful findings and learning gained from the various initiatives under ASEAN-Japan Transport Information Platform project.
Republic of KOREA	ASEAN-ROK Transport Cooperation	• Cooperate in the areas of air services arrangements, airline cooperation, air transport safety and security and airport construction.
	ASEAN-ROK Air Transport Agreement	
India	ASEAN-India Air Transport Agreement	• Establishing integrated, efficient and competitive international air transportation between ASEAN and

Dialogue Partner	Project Name	Objectives/Outline
		India to enhance trade, the welfare of consumers, and economic growth; • Contributing to the progress of regional and international civil aviation by gradual liberalization of air transport between ASEAN and India • Concluding an agreement for the purpose of operating air transport between ASEAN and India
European Union (EU)	ASEAN Air Transport Integration Project (AATIP)	Financing Agreement between ASEAN and the European Community

Source: ERIA Study Team

(4) Transport Facilitation

Table 4-4-4 Present Status of Cooperation with Dialogue Partner on Transport Facilitation

Dialogue Partner	Project Name	Objectives/Outline
China	Strategic Plan for ASEAN and China Transport Cooperation	Refer to Land Transport
Japan	ASEAN-Japan Action Plan on Environment Improvement in the Transport Sector (AJ-APEIT)	• Developing national implementation plans in a certain AMS • Capacity development for government officials • Promote certification system for environmentally-friendly businesses • Introduce Japanese case for government officials
	Operational Guidelines for AESEAN-Japan Transport Statistics Database	• Providing framework for the operation of database by consolidating the useful findings and learning gained from the various initiatives under ASEAN-Japan Transport Information Platform project.
	ASEAN-Japan Transport Information Platform project	• Collecting and analyzing current environmental .data and data monitoring
	Program for Improving Efficiency of Logistics and Distribution pf the East-West Corridor and the Southern Economic Corridor	Part A : On-going • Function enhancement project for customs clearance • Improvement project for physical distribution base • Development project for roadside station and appurtenant facilities • Human resource development project Part B : To be prepared (under F/S) • Establishment of logistics training centre - Sub-regional logistics training centre (Viet Nam)
	ASEAN-Japan Logistics Capacity Building Program (AJTLCB)	• Improvement of logistics-related infrastructure, institutions for logistics, and transport activities by logistics service providers
	ASEAN-Japan Transport Partnership Project (AJTP)	• Facilitating Cargo Transportation and Logistics • Promoting Safe and Sustainable Shipping • Enhancing Air Transport Safety and Efficiency • Cooperation by Mutual Exchange of Information, Experience and Best Practices
Republic of KOREA	ASEAN-ROK Transport cooperation	• Strengthen cooperation in different modes of transport and develop a network of road, water, railway and air services to facilitate transportation to meet the future demands generated by ASEAN-Korea free trade agreement.
	ASEAN-ROK Transport cooperation Roadmap	• ROK requested for AMS to submit new project proposal for inclusion in the Roadmap at 17th TFWG Meeting:

Source: ERIA Study Team

4.5 SUB-REGIONAL INITIATIVES

Since the early 1990s, several sub regional initiatives have been launched to narrow the economic gap among AMSs especially in rural areas of the countries. In this section, three major initiatives, the GMS, BIMP-EAGA and IMT-GT, are introduced their outline of the program and actions especially focus on transport sector.

4.5.1 GMS: THE GREATER MEKONG SUB-REGION ECONOMIC COOPERATION PROGRAM2

(1) Background and Outline of the GMS

Most of the region along with the Mekong still remains in poverty and their GDP per capita is under USD 2. Each member country of ASEAN has been experienced significant economic development however the poverty has not been solved especially in the rural area in the region. Under such situation, the Greater Mekong Sub-region (GMS) Economic Cooperation Programs established in 1992 with the ADB's assistance to enhance economic relations among the countries along with the Mekong. The member countries are Cambodia, the People's Republic of China (PRC), Lao People's Democratic Republic (Lao PDR), Myanmar, Thailand, and Viet Nam which covers about 325 million people and 2.6 million km^2 of land.

According to the ADB, the GMS challenges following five issues.

- the disparities between urban and rural communities
- a growing gap between rich and poor
- inadequate attention to the special needs of ethnic minorities
- gender inequities, lack of access to basic health and education
- inadequate protection of the environment on which traditional livelihoods depend

Transportation is one of the nine priority sectors in the GMS program, others are agriculture, energy, environment, human resource development, investment, telecommunications, tourism and trade.

(2) Goal and Strategy of the GMS

At the first summit held on November 2002, the six GMS leaders endorsed the ten-year strategic framework with five strategic thrust. The goals of the framework are "a well-integrated and prosperous Mekong sub-region – free of poverty and committed to protecting the environment that is vital to the sub-region's future wellbeing" which will be achieved through the following five development thrust.

i) Strengthen infrastructure linkages through a multi-sectoral approach

ii) Facilitate cross-border trade and investment

iii) Enhance private sector participation in development and improve its competitiveness

iv) Develop human resources and skill competencies, and

v) Protect the environment and promote sustainable use of the sub-region's shared natural resources.

The GMS initiative expects the enhancement of connectivity within the sub region, improvement of competitiveness and greater sense of community. Especially in terms of the

[2] Source: http://www.adb.org/GMS/

connectivity, upgrading and expanding infrastructures in the GMS such as road, rail, water and air transport systems will strengthen network not only among the GMS countries but also with other Asian countries. It is expected that enhancing connectivity in a physical way will contribute to improve the GMS competitiveness which induce upgrading of income and quality of life in the GMS.

(3) GMS Plan of Action

At the 13th GMS Ministerial Conference in Vientiane, Lao PDR on December 2004, the Plan of Action (POA) was compiled as the midterm action road map for cooperation in the nine priority sectors. After reviewing and endorsing the POA by the second GMS Leaders summit on July 2005, the five-year Vientiane POA for GMS Development was agreed in the third GMS Joint Summit Declaration to accelerate economic development, poverty reduction, social development and environment protection in the GMS.

The Table 4-5-1 shows the outline of the POA 2008-2012 in number of projects and its budget by the priority sectors. There are three groups which categorized by the situation of the projects.

- Group 1: Projects that are ongoing or for immediate implementation and with identified financing
- Group 2: Projects for implementation later within the plan period and/or projects requiring financing
- Group 3: Projects with no definite timeline and/or cost estimate and financing

Table 4-5-1 Number of Projects and Budget for Plan of Action 2008-2012

Sector	No. of Projects				Estimated Total Cost ($M)	Financing ($M)
	Group 1	Group 2	Group 3	Total		
Transport	25	11	33	69	14,985.85	13,111.50
Energy	17	4	11	32	5,269.30	3,180.70
Telecommunications	14	5	2	21	354.49	331.79
Agriculture	9	6	18	33	79.29	59.79
Environment	14	6	0	20	345.40	337.25
Tourism	8	11	10	29	429.90	264.05
Human Resource Development	10	3	13	26	144.56	142.06
Trade Facilitation	12	17	0	29	160.37	66.40
Investment	2	0	0	2	NA	NA
Total	111	63	87	261	21,769.16	17,493.54

Source: Summarized by ERIA Study team using data from "GMS Vientiane Plan of Action 2008-2012" January 2008, ADB Website (http://www.adb.org/GMS/projects/adb-projects.asp)

In the nine priority sectors, the transport sector is planned to have totally 69 projects out of 261 projects and its estimated total cost is around USD 15,000 million which is nearly 70% of the POA. The energy sector follows to the transport with 32 projects and around USD 5,270 million in estimated total cost.

In terms of the transport sector, there are six strategic thrusts mentioned at the Plan of Action (POA) 2008-2012 as follows;

i) Strategic Thrust I: Complete key parts of the GMS transport network and improve links with other regions and sub region,

ii) Strategic Thrust II: Transform transport corridors into economic corridors,

iii) Strategic Thrust III: Mobilize private sector participation in transport sector activities,

iv) Strategic Thrust IV: Promote the development of modes other than road transport and competition between transport modes,

v) Strategic Thrust V: Facilitate implementation of transport-related training programs,

vi) Strategic Thrust VI: Address transport-related negative impacts.

Looking at the detail of transport projects, the total financing for the Group 1 is allocated around USD 11,065 million and all of the projects of the Group 1 targets to the Strategic Thrust except projects in Group 2 and Group 3 since they have not launched yet or defined their timeline and budget.

(4) Transport Programs Supported by ADB

ADB has taken a strong initiative to promote GMS cooperating with other donors such as OPEC, World Bank, JICA, China Development Bank, etc. Since the GMS cooperation established in 1992, it has been contributed to achieve infrastructure development in the sub region. Implemented or on-going projects in infrastructure reaches USD 11 billion especially including improvement of highway between Phnom Penh, Cambodia and Ho Chi Minh, Viet Nam, and expansion of the East-West Corridor Project from Andaman Sea to Da Nang.

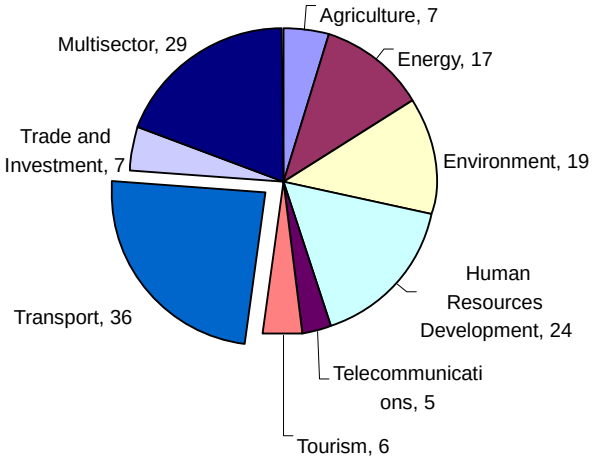
According to the ADB, it has supported the GMS programs by loans and Technical Assistances (TAs). In terms of the loans, totally 38 loans has been implemented since 1992 reaching USD 10,997 million. Road development or improvement is the most priority sector in the loans with 23 projects and followed by eight projects in energy, two projects in each maritime and tourism and only one project in air transport.

Table 4-5-2 ADB Loan Projects

No.	Project Title	Country	Approval Year	Total Project Cost ($M)
Land				
1	Yunnan Expressway	PRC	1994	461.4
2	Champassak Road Improvement	Lao PDR	1995	60.1
3	Phnom Penh-Ho Chi Minh City Highway	Cambodia	1998	52.7
4	Phnom Penh-Ho Chi Minh City Highway	Viet Nam	1998	144.8
5	Southern Yunnan Road Development	PRC	1999	770.3
6	East-West Corridor Project	Lao PDR	1999	205.0
7	East-West Corridor Project	Viet Nam	1999	387.0
8	Guangxi Roads Development	PRC	2001	455.2
9	Cambodia Road Improvement	Cambodia	2002	77.5
10	Northern Economic Corridor	Lao PDR	2002	95.8
11	Western Yunnan Roads Development Project	PRC	2003	582.0
12	Guangxi Roads Development II	PRC	2004	726.0
13	Dali-Lijang Railway Project (Yunnan Province)	PRD	2004	548.0
14	GMS Kunming-Haiphong Transport Corridor Noi-Bai-Lao Cai Highway Technical Assistance	Viet Nam	2005	8.0
15	GMS Kunming-Haiphong Transport Corridor: Yen Vien-Lao Cai Railway Upgrading Project	Viet Nam	2006	160.0
16	GMS Rehabilitation of the Railway in Cambodia	Cambodia	2006	73.0
17	Western Guangxi Roads Development Project	PRD	2007	1566.0
18	Northern GMS Transport Network Improvement	Lao PDR	2007	88.5
19	GMS Southern Coastal Corridor	Cambodia	2007	18.7
20	GMS Southern Coastal Corridor	Viet Nam	2007	208.7
21	Greater Mekong Subregion: Kunming - Hai Phong Transport Corridor - Noi Bai - Lao Cai Highway Project	Viet Nam	2007	1216.0
22	Central Yunnan Province	PRC	2008	745.0
23	Greater Mekong Subregion: Ha Noi-Lang Son, GMS: Ha Long-Mong Cai, and Ben Luc-Long Thanh Expressways Technical Assistance (ADF)	Viet Nam	2008	30.8
Air				
24	Siem Reap Airport	Cambodia	1996	17.0
25	Second Road Improvement	Viet Nam	1996	237.0
Maritime				
26	Saigon Port	Viet Nam	1995	40.0
27	Fangcheng Port Project	PRC	1996	135.0
Energy				
28	Theun Hinboun Hydropower	Lao PDR	1994	270.0
29	Nam Leuk Hydropower Development	Lao PDR	1996	112.6
30	Greater Mekong Subregion Transmission Project	Cambodia	2003	95.0
31	Nam Theun 2 Hydroelectric Project	Lao PDR	2005	1250.0
32	Regional Communicable Diseases Control	Cambodia	2005	11.2
33	Regional Communicable Diseases Control	Lao PDR	2005	7.5
34	GMS Regional Communicable Diseases Control	Viet Nam	2005	20.0
35	Second Power Transmission and Distribution	Cambodia	2006	52.4
Tourism				
36	Mekong Tourism Development	Cambodia, Lao PDR, Viet Nam	2002	47.1
37	Greater Mekong Subregion: Sustainable Tourism Development	Lao PDR	2008	10.9
38	Greater Mekong Subregion: Sustainable Tourism Development (ADF)	Viet Nam	2008	11.1
TOTAL				10997.3

Source: Summarized by the consulting team using data from the ADB Website (http://www.adb.org/GMS/projects/adb-projects.asp)

On the other hand, in the nine priority sectors totally 150 TA projects have been conducted by the ADB. The following table 4.5.3 shows the breakdown of the number of TA projects by priority sectors. TAs in the transport sector is 36 projects at the first place, and TAs for the trade and investment is seven projects.



Source: Summarized by the ERIA Study Team using data from the ADB Website (http://www.adb.org/GMS/projects/adb-projects.asp)

Figure 4-5-1 ADB's TA Projects by Sector for GMS

The details of the TAs projects for Transport are indicated by Table 4-5-3 as follows.

Table 4-5-3 TA Projects for Transport

No.	Technical Assistance	Year Approved
1	Greater Mekong Subregion Ha Noi-Lang Son and Ha Long-Mong Cai Express Projects	2008
2	Second Northern Greater Mekong Subregion Transport Network Improvement	2008
3	Development Study of GMS Economic Corridors (Supplementary)	2008
4	Greater Mekong Subregion Highway Expansion (Supplementary)	2008
5	Enhancing Transport and Trade Facilitation in the Greater Mekong Subregion	2008
6	Greater Mekong Subregion Highway Expansion	2008
7	Western Yunnan Roads Development II (PPTA-PRC) (Supplementary)	2008
8	Western Yunnan Roads Development II (formerly [Ruili-Longlin] Expressway)	2007
9	GMS Luang Prabang Airport Improvement	2006
10	Guangzi Longlin-Baise Expressway	2006
11	Central Yunnan Roads Development (Wuding-Kunming)	2006
12	Development Study on the GMS North-South Economic Corridor	2006
13	GMS Northern Transport Network	2005
14	Preparing the Railway Development Project (Yunnan-Yuxi Mengzi Railway)	2005
15	Restructuring of the Railway in Cambodia	2005
16	GMS Rehabilitation of the Railway in Cambodia	2005
17	GMS Southern Coastal Corridor	2005
18	Coordinating for GMS: North-South Economic Corridor Bridge Project (formerly Third Mekong Bridge)	2004
19	GMS Infrastructure Connections in Northern Lao (SSTA)	2004
20	GMS Transport Sector Strategy Study	2004
21	GMS Southern Coastal Corridor (SSTA)	2003
22	Preparing the Kunming-Haiphong Transport Corridor Project-Viet Nam	2002
23	GMS: Cambodia Road Improvement Project Engineering Design Update	2002
24	GMS: Cambodia Road Improvement Project- Small-Scale Technical Assistance for Resettlement Study and Social Impact Assessment	2002
25	GMS: Cambodia Road Improvement Project – Small-Scale Technical Assistance for Environmental Assessment	2002
26	GMS: Cambodia Road Improvement Project – Small-Scale Technical Assistance for Economic Analysis	2002
27	Preparing the Northern Economic Corridor Project – Lao PDR	2001
28	Preparing the Western Yunnan Roads Development Project – PRC	2001
29	East-West Corridor Coordination – Lao PDR and Viet Nam	1999
30	Cross-Border Movement of Goods and People in the GMS	1997
31	Chiang Rai-Kunming Road Improvement via Lao PDR	1997
32	Study of the Lao-Thailand-Viet Nam East-West Transport Corridor	1996
33	Thailand-Cambodia-Viet Nam Southern Coastal Road Corridor	1996
34	Mitigation of Non-physical Barrier to Cross-Border Movement of Goods and People	1996
35	GMS Infrastructure Improvement: Ho Chi Minh City to Phnom Penh	1995
36	Study of the Lao-Thailand-Viet Nam East-West Transport Corridor	1994

Source: ADB Website (http://www.adb.org/GMS/projects/adb-projects.asp)

4.5.2 BIMP-EAGA: BRUNEI, INDONESIA, MALAYSIA, PHILIPPINES, EAST ASEAN GROWTH AREA[3]

(1) Background and Outline of the BIMP-EAGA

The BIMP-EAGA initiative launched at 1994 as the cooperation of four countries especially targeted the economic development to reduce disparities in ASEAN. The area of BIMP-EAGA is characterized as the common culture and ethnic therefore it has potential to develop an economy; however, it has also been faced lack of essential infrastructure which becomes large constraint for economic development in the sub region.

[3] Source: http://www.bimp-eaga.org/index.php , http://www.adb.org/BIMP/default.asp

To overcome such situation, the four countries, Brunei, Indonesia, Malaysia and Philippines took initiatives for cooperation on the sub region coordinated with the private sector. The Initiative covers 57.5 million people and 1.6 million km^2 of the land consisted of following areas;

- Brunei: Full territory
- Indonesia: East, West, Central and South Kalimantan; Central, Couth and Southeast Sulawesi; Irian Jaya; and Maluku
- Malaysia: Labuan and Sabah and Sarawak
- Philippines: Mindanao and Palawan

The BIMP-EAGA initiative prioritizes four sectors as infrastructure including transport and ICT, natural resources, tourism and SME development which compiled as the clusters. Outline of the four clusters is indicated in the Table 4-5-4.

Table 4-5-4 Major Four Sectors (Clusters)

Cluster	Lead Country	Working Groups Covered
Transport, Infrastructure and ICT Development Working Group (TIICTD) Cluster	Brunei Darussalam	Air Linkages, Sea Linkages, Construction and Construction Materials, Telecommunications/ICT
Natural Resource Development (NRD) Working Group Cluster	Indonesia	Agro-Industry, Fisheries Cooperation, Forestry and Environment, Energy
Joint Tourism Development (JTD) Working Group Cluster	Malaysia	Joint Tourism Development
SME Development (SMED) Working Group Cluster	Philippines	Capital Formation and Financial Services, TF on Customs, Immigration, Quarantine and Security (CIQS) Initiatives

Source: ADB http://www.adb.org/BIMP/bimp-eaga.asp

(2) Goal and Strategy of the BIMP-EAGA

According to the BIMP-EAGA Roadmap 2006-2010, the ultimate goal of BIMP-EAGA is to narrow the development gap across and within the EAGA member countries as well as across the ASEAN-6 countries. Its immediate goal is to increase trade, investments and tourism within EAGA. In the Roadmap, following three targets were specified:

- Increase intra- and extra-trade among EAGA focus areas by 10% by 2010
- Increase investments in the EAGA sub region by 10% by 2010
- Increase tourism movement in the EAGA sub region by 20% by 2010.

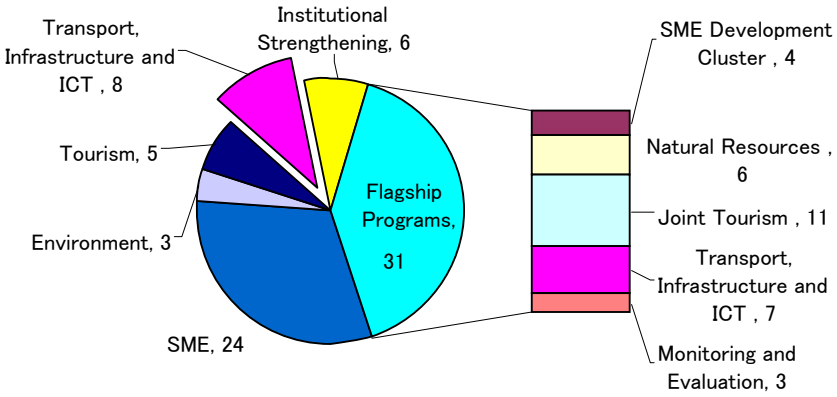
After the Midterm Review (MTR) of the Roadmap, the clusters and working groups re-prioritized the projects by expected impact, feasibility and remaining period of each projects and identified action plans which were expected to contribute directly to the development goals of the initiative. Identified action plans were as follows;

- Transport, Infrastructure, and ICT Development
- Natural Resources Development
- Small Medium Enterprises Development
- Joint Tourism Development
- Trade Facilitation/Customs, Immigration, Quarantine, Security (CIQS)

- BIMP-EAGA Business Council (BEBC)

(3) BIMP-EAGA Action Plan

The BIMP-EAGA initiative has been implemented 77 projects as its action plan for 2006-2010 (Figure 4-5-2). Projects for SME development are totally 28 with the flagship programs out of 77 projects followed by 16 tourism development projects and 15 projects for transport, infrastructure and ICT development.



Source: Summarized by the consulting team using data from BIMP-EAGA Website (http://www.bimp-eaga.org/about.php)

Figure 4-5-2 Number of Projects by the BIMP-EAGA Action Plan 2006-2010

The next table 4-5-5 indicates the breakdown of the project for transport and infrastructure development. Totally 14 projects has been conducted for three related categories, such as improvement of the EAGA air, sea and land connectivity, basic infrastructure development and flagship projects for transport, infrastructure and ICT Development.

Table 4-5-5 Projects for Transport and Infrastructure

No.	Projects	Timeframe
Improvement of EAGA Air, Sea and Land Connectivity		
1	Prepare a study on improving inter-modal transport services in EAGA	2006
2	Expedite the development of integrated, multi-modal transport logistics services within EAGA	2006-2010
3	Provide incentives and support for increased private sector involvement and/or public-private partnerships in the development of transport infrastructure and the provision of transport services in priority routes especially those presently underserved	2006-2010
4	Promote the possibility of setting up EAGA transport consortiums to service EAGA routes	2006-2008
5	Support initiatives to establish, through bilateral agreements, liberalized transport arrangements in BIMP-EAGA within the framework of ASEAN agreements	2006-2008
6	Establish an inland clearance depot for trade and transhipment at EAGA borders.	2006-2007
Basic Infrastructure Development		
7	Promote and facilitate public and private sector initiatives in providing more cost-effective basic infrastructure facilities through joint cooperation in resource mobilization	2006-2010
Transport, Infrastructure and ICT Development (TIID) Cluster under Flagship Projects		
8	Complete the EAGA road infrastructure projects	2006-2010
9	Develop new and improve existing ports/ wharves in EAGA	2006-2010
10	Promote shipping line services in the Greater Sulu-Sulawesi Sea Ring (GSSR)	2006-2008
11	Promote the establishment and sustainability of priority EAGA air, sea and land routes for trade, travel and tourism connections	2006-2008
12	Establish an inter-city bus express service in EAGA.	2006-2010
13	Implement agreements on cross-border movement of goods and people, such as the ASEAN Framework Agreement on Goods in Transit, across EAGA focus areas	2007 onwards
14	Improve ICT facilities and services in EAGA, especially at the border areas, to facilitate greater cross-border economic interaction	2006-2010

Source: Summarized by the consulting team using data from BIMP-EAGA Website (http://www.bimp-eaga.org/about.php)

(4) ADB Assistance in the BIMP-EAGA

ADB has supported the BIMP-EAGA initiative since 1996 and assigned as Regional Development Advisor (RDA) from 2001 to play a leading role of its development. The next table shows the breakdown of completed projects by ADB assistance from 1996-2006 with totally USD 5.47 million by 10 projects. On-going five projects in 2007-2008 are supported by USD 7.55 million and approved three projects for 2010 with USD 16.5 million.

Table 4-5-6 Completed Projects by ADB

No.	Technical Assistance	Year Approved	Amount (USD million)
1	Study of the Brunei Darussalam-Indonesia-Malaysia-Philippines East ASEAN Growth Area	1996	1.8
2	SME Development Strategy in BIMP EAGA	1999	0.3
3	Strengthening Sub regional Cooperation in the Transport Sector of the EAGA and IMT-GT Regions	2002	0.13
4	Expanding the Strategy for SME Development in EAGA	2002	0.24
5	Prioritizing Strategic Directions for BIMP-EAGA	2002	0.4
6	Facilitating Business Information Exchange for SMEs in BIMP-EAGA	2002	0.5
7	Coordinating the Revival of Cooperation Activities in BIMP-EAGA	2002	0.6
8	Strengthening SMEs Regional Networking in BIMP-EAGA	2002	0.7
9	Developing a Database on Cross-Border Trade and Investment in BIMP-EAGA	2004	0.3
10	Enhancement of Sub regional Cooperation in BIMP-EAGA and IMT-GT	2006	0.5
Total			5.47

Source: Summarized by the consulting team using data from ADB Website (http://www.adb.org/BIMP/assistance.asp)

Table 4-5-7 On-going Projects by ADB

No.	Technical Assistance	Year Approved	Amount (USD million)
1	Support for Customs, Immigration, Quarantine, and Security Harmonization in BIMP-EAGA	2007	0.6
2	Efficiency Improvement and Connectivity Strengthening in ASEAn	2007	2.75
3	Comprehensive Midterm Review of the BIMP-EAGA Roadmap to Development	2008	0.3
4	Supporting Sound Environmental Management in BIMP-EAGA	2008	2.2
5	Institutional Development for Enhanced Sub regional Cooperation in the aSEA	2008	1.7
Total			7.55

Source: ADB Website (http://www.adb.org/BIMP/assistance.asp)

Table 4-5-8 Proposed Projects by ADB

No.	Technical Assistance	For Approval	Amount (USD million)
1	Support for Trade Facilitation in the Brunei Darussalam-Indonesia-Malaysia-Philippines East ASEAN Growth Area	2010	1.5
2	Establishing a Sub regional Project Development Facility for BIMP-EAGA and IMT-GT	2010	2
3	Coastal and Marine Resources Management in the Coral Triangle: Southeast Asia	2010	13
Total			16.5

Source: Summarized by the consulting team using data from ADB Website (http://www.adb.org/BIMP/assistance.asp)

In addition to these projects, it has been agreed to focus on infrastructure development in the EIMP-EAGA initiative which identified 12 priority projects especially in transport and environment sector for 2010-2011 with total cost reaching USD 1 billion.

Table 4-5-9 Priority Infrastructure Projects for 2010-2011

Year	Brunei	Indonesia	Malaysia	Philippines	Total Cost (USD Million)
2010		-Tarakan-Serudong Road	-Sarawak-Kalimantan Power Interconnection	-Expansion of Mindanao Ports Program I	429.2
		-Sarawak-Kalimantan Power Interconnection	-Lahud Datu Palm Oil Industrial Cluster	-Palawan Ports Development Program	
2011	-Kuala Lurah Border Crossing Facility	-Pontianak-Entikong Transport Link		-Expansion of Mindanao Ports Program II	525.7
	-Pandaruan Bridge (between Brunei and Malaysia)	-Enhancing the Manado-Bitung Link		-Rehabilitation of the Davao-General Santos Road	
Total	15.2	632.7	206.0	101.0	954.9

Source: ADB Website (http://www.adb.org/BIMP/assistance.asp)

4.5.3 INDONESIA, MALAYSIA, THAILAND GROWTH TRIANGLE4 (IMT-GT) INITIATIVE

(1) Background and Outline of the IMT-GT Initiative

The IMT-GT was launched in 1993 as sub regional cooperation initiative by three member countries, Indonesia, Malaysia and Thailand, to accelerate economic integration in less developed areas in the countries. In the initiative the private sector expected to play a significant role, however, investment for infrastructure from the private sector was not facilitated as expected. To overcome the situation, the IMT-GT has been re-organized its programs to vital the initiatives since 2002 and it was positioned as the Initiative for ASEAN Integration (IAI) in 2004.

The Initiative covers 72 million people and 602,293 km^2 in land which consist of following area;

- Thailand: 14 provinces in Southern Thailand
- Malaysia: 8 states in Peninsular Malaysia
- Indonesia: 10 provinces in Sumatra

According to ADB, it restarted to support the IMT-GT Initiative in 2006 to develop a new Roadmap of the Initiative. Moreover ADB was appointed as development partner of the IMT-GT cooperation at the second leaders' summit in January 2007.

(2) Goal and Strategy oh the IMT-GT Initiative

The development goal of the Initiative is to achieve a seamless, progressive, prosperous and peaceful sub region with improved quality of life. And it is expected to contribute in establishing the ASEAN Economic Community (AEC) by 2020. To realize this goal, economic development leading by the private sector is emphasized in the Roadmap for Development 2007-2011 through increasing trade and investment intra- and inter- IMT-GT. Physical improvement of connectivity within the sub region is expected to be completed through projects for load, airport and port by 2011.

[4] Source: IMT-GT's Secretariat (CIMT) website, http://www.imtgt.org/index.htm

There are six working groups in the Initiatives along with priority sectors as follows;

- Infrastructure and Transport (WGIT)
- Trade and Investment (WGTI)
- Human Resource Development (WGHRD)
- Agriculture, Agro-Based Industry, and Environment (WGAAE)
- Tourism (WGT)
- Halal Products and Services (WGHAPAS)

Strategic Thrust defined in the Roadmap are:

i) Facilitate and promote intra- and inter-IMT-GT trade and investments

ii) Promote the growth of agriculture and agro-industry and tourism

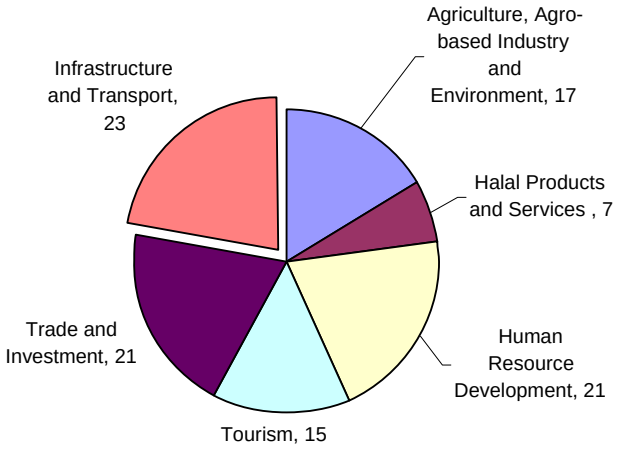
iii) Strengthen infrastructure linkages and support to the integration of the IMT-GT sub region

iv) Address cross-sectoral concerns such as HRD, labour and environment issues

v) Strengthen institutional arrangements and mechanisms

(3) IMT-GT Action Plans for 2007-2011

Totally 104 projects has been conducted in the Initiative under the Action Plan for 2007-2011. Among six priority sectors, the infrastructure and transport have 23 projects out of 104 projects as the first place followed by 21 projects for the trade and investment sector, and halal products and services.



Source: Summarized by the consulting team using data from IMT-GT's Secretariat website (http://www.imtgt.org/index.htm)

Figure 4-5-3 Number of Projects by Sectors for IMT-GT Action Plans for 2007-2011

In terms of infrastructure and transport, the detail of the projects is indicated in the Table 4-5-10 along with its strategic thrust to strengthen infrastructure linkages and support to the integration of the IMT-GT sub region. Breakdown of the projects are 10 projects for land transport, seven (7) for maritime, three (3) for each energy, air transport and PPP, and one for trade facilitation. That is to say, land and marine transport have been focused in the IMT-GT.

Table 4-5-10 IMT-GT Projects for Infrastructure and Transport

No	Title	Country	Timeframe
1	ASEAN Highway Route 25 (AH 25) between Banda Aceh and Palembang in Sumatra (north-south link)	Indonesia, Malaysia, Thailand	2007-2011
2	ASEAN Highway Route 151East-West Feeder Link between Pakanbaru-Bukittinggi-Padang; Tebing Tinggi-Pematang Siantar; Jambi-Sarolangun; and Bengkulu-Lubuk Linggau-Lahat; Baturaja-Bandang Lampung	Indonesia, Malaysia, Thailand	2007-2011
3	Cooperation in use of alternative and clean sources of energy, such as bio-fuel	Indonesia, Malaysia, Thailand	2007-2011
4	Cooperation in Mini-Hydro: Independent Power Producer in West Sumatera, Indonesia	Indonesia	2007-2011
5	Development of Mainline Trans Sumatera Railway	Indonesia, Malaysia, Thailand	2007-2011
6	Development of new Kantang Coastal Port at Naklua	Thailand	2007-2010
7	Development of Ro-Ro Ferry Services in the IMT-GT	Indonesia, Malaysia, Thailand	2007-2011
8	Formulation of Program for Cooperation in Energy in IMT-GT	Indonesia, Malaysia, Thailand	2007-2008
9	Harmonization and reduction of tariffs in the IMT-GT region	Indonesia, Malaysia, Thailand	2007-2009
10	Improvement of Belawan Port	Indonesia	2007-2010
11	Improvement of Dumai Port	Indonesia	2009
12	Improvement of Existing Tammalang Port, Satun Province	Thailand	2007-2008
13	Improvement of Existing Tammalang Port, Satun Province	Thailand	2006-2007
14	Nathawi-Prakob/Durian Burong-Alor Setar	Malaysia, Thailand	2008
15	Padang Besar-Bukit Kayu Hitam Highway	Malaysia	2008
16	Pattani-Yala-Betong-Penang	Thailand	2008
17	Provide incentives and support for increased private sector involvement and/or public-private sector partnerships in the development of transport infrastructure and provision of transport services in priority routes	Indonesia, Malaysia, Thailand	2007-2010
18	Rehabilitation of Aceh Ports (Lhokseumawe, Sabang and Kuala Langsa)	Indonesia	2007
19	Road transport facilitation through mutual recognition of: road vehicle registration; transport operating license; vehicle inspection certificates	Indonesia, Malaysia, Thailand	2007-2011
20	Satun-Wang Prachan/Wang Kelian-Perlis Highway Development	Malaysia, Thailand	2008
21	Southern Thailand-Northern Malaysia Railway	Malaysia, Thailand	2007-2009
22	Support to initiatives to establish through MOU on Air Linkages, liberalized transport arrangements in IMT-GT within the framework of ASEAN Agreements	Indonesia, Malaysia, Thailand	2007-2010
23	Toll Roads Projects: (i) Binjai-Medan-Tebing Tinggi (AH 25, partial toll road); and (ii) Medan-New Kualanamu Airport	Indonesia	2007-2008

Source: Summarized by the consulting team using data from IMT-GT's Secretariat website (http://www.imtgt.org/index.htm)

(4) Progress in the Trade Sector and the Transport Sector

The Midterm Review was reported on July 2009 for the IMT-GT Roadmap. In the MTR dialogue "Building a Dynamic Future: A Roadmap for Development 2007-2011" (IMT-GT Roadmap), 16-17 July 2009 Bangkok, Thailand, several sector specific findings were shared[5].

For the infrastructure and transport sector, following major findings were indicated in the presentation;

- Pre-FS or FS to develop variety of transport links in the sub region is required.
- Road development for the connectivity corridors have to be reviewed.
- Less progress in air transport
- Less potential for PPP in tollgate, etc.

For the trade and investment sector, mainly three issues were updated as follows;

- One-stop investment centres have been working order.
- The private sector has less interest in Plaza and Townships
- Coordination with other initiatives in ASEAN is required

4.6 REVIEW OF IMPLEMENTATION OF ASEAN TRANSPORT ACTION PLAN (ATAP)

The objective of this chapter is to review the progress made to the specified 48 actions in ASEAN Transport Action Plan, 2005-2010 by AMSs. The first four sections of the chapter review the actions related to land transport, air transport, and maritime transport and transport facilitation. This is followed by the summarized progress and trend analysis of 48 actions. The trend analysis of 48 actions is an attempt to highlight the key elements/areas of ATAP by grouping the relevant actions. Such trend analysis draws attention to some of the actions that have not been addressed in ATAP, 2005-2010.

4.6.1 REVIEW OF LAND TRANSPORT ACTION MEASURES

(1) Action-No.1

Implement the Singapore – Kunming Rail Link (SKRL) sections, as follows:

1) Poipet – Sisophon Railway Link Project (Cambodia)

- Construction of the missing links, guided by the Inter-Ministerial Committee for SKRL, is ongoing.
- SKRL Line involving US$148 million is supported by the ADB, the Governments of Australia and Malaysia and counterpart resources from Cambodia.
- A Rehabilitation Project funded by the Asian Development Bank (ADB) is in progress (started in 2008), which also includes the 48 km of missing link from Sisophon to Poipet, and is planned to be completed by 2013.

[5] "Highlights of the Review of the Sectors of Cooperation in the IMT - GT Road Map 2007 - 2011 (Appendix7 of the MTR Dialogue Bangkok, July 2009)"

2) Ho Chi Minh City – Loc Ninh Railway Link Project (Viet Nam)

- Feasibility study of 129 km is completed in 2005. In 2009, the updated study was completed (by a joint venture between China National Machinery Import and Export Corporation (CMC) and China Railway Construction Corporation (CRCC)) to seek ODA from the Government of China.
- The construction is expected to be completed by 2020.
- The agreement between Viet Nam and Cambodia on the railway connection point has been signed and came into force on 4 November 2008.
- Viet Nam has sent the summary project plan and will coordinate the rail connection point with Cambodia.
- Chinese government dispatched the team in July 2009 to undertake the feasibility study on the missing link section from Batdoeung to Trapeang-Sre, railway connectivity point between Cambodia and Viet Nam in the SKRL project.

3) Section between Nam Tok (Thailand) - Three Pagoda Pass -Thanbyuzayat (Myanmar)

- The final feasibility study for Thailand – Myanmar Rail Link was done by Korea International Cooperation Agency (KOICA) in April 2007.
- As per the study, the construction of the missing link from Namtok – Three Pagodas Pass in Thailand and from Three Pagodas Pass – Thanbyuzayat in Myanmar would cost about US$ 491 million and US$ 246 million respectively.
- For operational compatibility, Myanmar has yet to fulfil the requirements as laid down in the target standard of SKRL.
- Myanmar has been implementing the upgrading with its limited resources, which may not be enough to implement the SKRL project.
- It has been proposed to Korea Transport Institute (KOTI) under the ASEAN – Korea cooperation to conduct further study and develop detailed designs of the missing link as the continuation of the earlier study.

4) Spur Lines between Vientiane – Mu Gia – Tan Ap – Vung Ang (Lao PDR/Viet Nam)

- Commencement of the construction is not yet determined.
- Viet Nam Railway Administration (VNRA) in coordination with Lao PDR, completed the "Pre-Feasibility Study" of Vung Ang – Tan Ap – Mu Gia section in 2007 and Mu Gia – Tha Khek section in 2008.
- By 2015, Viet Nam expects to finish the feasibility study of the entire Vientiane – Tha Khek – Mu Gia – Tan Ap – Vung Ang section.
- A technical support will be jointly called from Korea to implement the feasibility study and to seek fund for construction.

Remarks: Due to financial constraint the progress of Singapore-Kunming Railway Link (SKRL) project has been slow during ATAP duration. To achieve the target of completion of SKRL project by 2015, the efforts to mobilize financial resources need to be accelerated.

(2) Action No. 2

Implement the priority road infrastructure projects for the ASEAN Highway:

1) Projects for ASEAN Highway (AH)

- Myanmar
  - AH-1: Kalay – Gangaw (150 km): upgrading of this road section is on going.
  - AH-2: Tachileik – Kyaingtone – Meikhtila (243 km of road section): upgraded to Class 3 standard in 2006.
  - AH-3: Kyaingtone (Keng Tung) – Mongla (93 km; BOT): upgrading completed in the end of 2006.
  - AH-14: Mandalay, Thibaw – Muse (453 km): upgraded to Class 3 standard in 2006.
- Lao PDR
  - AH-3: Nam Lang (Luang Namtha) – Houayxai (Lao PDR/Thailand border) (144 km): upgrading completed in July 2007.
  - AH-15: Namphao (Lao PDR/Viet Nam border) - Ban Lao (J.R.AH.11) (86 km): the rehabilitation of this road section was completed in April 2006. Improvement of seven Bailey bridges is pending funding approval from SIDA.
- Philippines
  - AH-26: Pan Philippine Highway, Surigao (Lipata) – Davao City; and Pan Philippine Highway, Calbiga – Tacloban: upgrading of these road sections started in 2008.
- Cambodia
  - AH-1: Poipet – Sisophon (48 km; ADB loan): the road construction was completed in 2008.
  - AH-11: Kratie – Stung Treng to Cambodia/Lao PDR border (198 km): the road construction was completed in May 2007.
- Viet Nam
  - Many routes upgraded to ASEAN Class 1, some are upgraded to express, especially transit corridors, e.g., Lao Cai – Hai Phong (AH-14), Bien Hoa – Vung Tau (AH-17), Gie – Ninh Binh (AH-1), Da Nang – Quang Ngai (AH-1)
- China agreed to support feasibility studies in Cambodia, Lao, Myanmar, Viet Nam (CLMV) nations to connect the road network to the ASEAN Highway
- China along with Thailand will finance the construction of Houei Sai – Chiang Khong Mekong
- Bridge of Kn Man Road (Kunming-Bangkok Highway via Lao PDR)

2) Mawlamyine – Thanbyuzayat Section in Myanmar

- The infrastructure upgrading work has been completed for a stretch of 20 km (out of 60 km on AH-112) through Myanmar self-financing.

3) Attapeu – Phia Fai Section in Lao PDR

- No Information available.

4) Quang Ngai – Kon Tum Section in Viet Nam

- Feasibility study has been completed and approved. Detail design preparations are in progress.

Remarks: Till date, the ASEAN Highway is not able to meet the target as set for the year 2004 i.e. all designated routes to be upgraded to at least Class 3 standards by 2004. As per 17th LTWG meeting held in April 2010, 2069.5 km of highways still exists below Class 3 standards on Transit Transport Routes (TTR). There is a need to upgrade all the missing links and below Class 3 roads with a priority to the up gradation of Transit Transport Routes.

(3) Action No. 3

Implement the ASEAN Highway route numbering system :

- Route numbers have been assigned.
- Singapore and Malaysia have yet to resolve the issue related to "Route Numbers" on the routes linking both countries and need to confirm the "Transit Transport Routes" details.
- In Viet Nam, AH route numbering implementation is in progress and schedule of completion will be last Quarter of 2010.
- In Myanmar, route numbering signs have been installed on AH-1, AH-2, AH-3 and AH-14 (also a part of Asian Highway Network) of Myanmar section.
- In Thailand, the installation of route numbering signs has been completed.

Remarks: The route numbers has been assigned and it is likely that the route numbering system on the entire ASEAN Highway will be completed by 2012 or so.

(4) Action No. 4

Harmonize the ASEAN Highways road signage system to include the requirements for tourism purposes and road safety:

- The 21st STOM endorsed the recommendations of the 10th ASEAN Highway Sub-working Group Meeting.
- In Viet Nam, Circular No. 09/2005/TT-BGTVT is adjusting road signage to comply with Vien Convention of 1968.
- Viet Nam completed adjusting road signage in Moc Bai – Vung Tau and Lao Bao – Tien Sa corridors.
- Signage in Cau Treo - Cua Lo route in Viet Nam is being adjusted and will be completed by July 2010.

Remarks: The harmonized traffic signage system has been endorsed by STOM and adopted by AMS. However, not significant progress has been realized during the ATAP duration. It has been recommended by 17th LTWG held in April 2010, to install the harmonized route numbering signages on the ASEAN Highways in stages, with the first phase focusing on the designated Transit Transport Routes (TTR).

(5) Action No. 5

Implement the ASEAN Regional Road Safety Strategy and Action Plan:

- During the 1st MRSSWG, it was agreed that all member states will develop the regional strategy and action plan for 2011-2020 through the consolidation of national plans on road safety and using the strategic framework identified in the 2005-2010

ASEAN Road Safety Action Plan and aligning this with the UN Declaration on the Global Decade of Action on Road Safety 2011-2020.

- There is a need to generate fund from international agencies for its realization.
- Brunei notes the UN Decade Road Safety Declaration and will evaluate ways to implement the same.
- Cambodia is preparing the Decade of National Road Safety Action Plan 2011-2020 that is aligned with the UN Decade Road Safety Declaration. The National Road Safety Committee has established a task force specifically for Phnom Penh. Since then, the task force has already met thrice. It expects to complete its National Road Safety Plan by end of 2010 and has completed one road safety seminar.
- Indonesia has completed its review of the Road Traffic and Transport Act, resulting in a separate chapter on road safety. It expects to finalize its Government Regulation for implementation by July 2010.
- Lao PDR plans to evaluate first the implementation of its existing national Road Safety Strategies and Action Plan and hopes to complete a new road safety action plan for 2011-2015 corresponding to UN Resolution calling for the Global Decade of Action for Road Safety.
- Malaysia is currently implementing its five-year road safety plan, 2006-2010. In addition, Malaysia has started sectoral consultation with its road safety stakeholders as initial preparation for its second ten-year road safety plan 2011-2020 to respond to the Global Decade of Action and expects to finish it by November 2010.
- Philippines has completed its assessment of its road safety action plan 2007-2010, which serves as the basis for the 2011-2020 action plan. This new plan shall be aligned with the ASEAN Declaration and also support the UN Resolution calling for the Global Decade of Action for Road Safety, Moscow Declaration and the UNESCAP-Bangkok Declaration.
- Singapore cited its ongoing road safety initiatives which include, among others, road safety improvement around school zones, target areas with high incidence of road accidents, improvement of road safety infrastructure such as concrete bollards at selected bus stops, and enhanced safety of pedestrians.
- Thailand completed its road safety master plan for 2009-2012. The action plan for the subsequent period up to 2020 will be worked out later since the implementation of the current plan has just started. In Thailand, 2010 has been declared as the year for transport safety with road safety activities throughout the year to support this.
- Viet Nam is working on its transport safety strategy covering the period until 2020, identifying its vision for road safety up to 2030, and preparing a road safety action plan covering the period 2011-2020 to correspond with the Global Decade of Action.

The following 5 sub-working groups with the country coordinators were agreed in principle:

- Safety Management – Philippines
- Safety Systems – Malaysia
- Safer Roads – Thailand
- Safer Vehicles – Indonesia
- Safer Road Users – Malaysia

Remarks: In the absence of any regional/master/action plan, the implementation of safety program during the ATAP duration didn't able to progress as anticipated. However, during

the 17th LTWG and 1st MRSSWG (Multi-sectoral Road Safety Special Working Group) meeting held in April 2010, it was recommended to accelerate this initiative and develop 'Regional Strategy' and 'Action Plan' for 2011-2020 through the consolidation of national plans on road safety and using the strategic framework identified in the 2005-2010 ASEAN Road Safety Action Plan. These plans should align with the UN Declaration on the Global Decade of Action on Road Safety 2011-2020. The formulation of recommended plans needs to be formulated during ASTP duration.

(6) Action No. 6

Adopt and implement the ASEAN Intelligent Transport System (ITS) Decision Support Framework:

- Completed in December 2005 with support from Japan.
- Japan Government under the Japan ASEAN Integration Fund (JAIF) is considering a proposal about "ITS Capacity Building Program" submitted by the Land Transport Authority of Singapore.
- Thailand has implemented automatic systems integration of data from ITS and utilized computerized transport and traffic management information system.

Remarks : The study with support from Japan has been completed. The study suggested certain tasks for ASEAN and individual nations. As a first step, the following tasks are recommended for ASEAN:

1. Set up an ITS Task Group and Working Groups
2. Formulate concrete goals
3. Design an ITS System Architecture
4. Determine standards that should be followed by all AMSs
5. Support human resource development needed for ITS.

After accomplishment of the above tasks, the individual AMSs will have to take certain specific tasks at national level to develop and implement and ITS system in their nation.

As a first step, it is suggested to undertake these suggested measures by 'Formulation of ITS Master Plan' and implementing in parallel the capacity development program in AMS with a focus on CLMV nations.

(7) Action No. 7

Formulate regional plan to guide cross-border movement of tourist, chartered and scheduled bus transport services, including the harmonization/standardization of technical and safety requirements:

- LTWG in consultation with TFWG will prepare the draft agreement taking into account the various existing bilateral and multilateral agreements among ASEAN members.
- On 2nd November 2007, an arrangement has been signed among Thailand, Lao PDR and Viet Nam on the operation of the tourism road transport.

Remarks: This action could not be initiated during ATAP duration.

(8) Action No. 8

Enhance technical and human capacity for the development and planning of more effective, functioning and safer urban transport systems and facilities:

- There is on-going assistance from Japan.
- ASEAN Japan Workshop-cum-Seminar on Automobile Technical Cooperation and Urban Public Transport Studies has been conducted in AMSs and Japan. (Recent ones were held in 2008 in Myanmar, Lao PDR and Cambodia.)

Remarks: This is the ongoing initiative in assistance from Japan and proposed to be continued in ASTP too. However, it is suggested to focus more on CLMV nations.

(9) Action No. 9

Early implementation of the relevant ASEAN land transport agreements and their protocols:

- The study on 'Implementing the Transport Protocols 3, 4, and 5 under the ASEAN Framework Agreement on the Facilitation of Goods in Transit' funded by EU-ASEAN Programme for Regional Integration Support (APRIS) is being conducted and interim report has identified some remaining legal administrative or practical issues which need to be resolved.
- Ratification Status
  - ASEAN Framework Agreement on the Facilitation of Goods in Transit:
  - Protocol 1: Ratified by Philippines, Brunei and Cambodia.
  - Protocol 3: Ratified by ASEAN members except Thailand.
  - Protocol 4: Ratified by ASEAN members except Thailand and Philippines.
  - Protocol 5: No member state has ratified yet.
  - Protocol 8: Ratified by ASEAN members except Brunei, Philippines and Malaysia.
  - Protocol 9: Ratified by ASEAN members except Thailand and Malaysia.
  - ASEAN Framework on Multimodal Transport: Only Thailand, Cambodia and Philippines have ratified.
- Viet Nam and Thailand have reported that the agreements/protocol's ratification is in process and will be ratified in 2010.

Remarks: The ratification dates and other details are described earlier in the section 3.4.2 of Chapter-3. As the land transport agreements/protocols is same as of transport facilitation agreements/protocols and to avoid the duplication with Action No 1 of Transport Facilitation, it is proposed to shift this action from 'Land Transport' sector to 'Transport Facilitation' sector in ASTP.

(10) Action No. 10

Regular exchange of best practices on public-private partnerships in the development, commercialization, construction and operation of land transport infrastructure and facilities:

- It is a continuous process and a regular feature of LTWG where member states share their best practices.

Remarks: This is one of the regular feature of LTWG where AMSs exchange their experiences and best practices. However, if possible, it is suggested to introduce relevant best

practices from European Union (EU) and other parts of the world that may facilitate in improving the land transport system in AMSs.

(11) Action No. 11

Conduct development studies on intra-ASEAN ferry links to connect the major ASEAN land transport/highways/corridors:

- Studies are ongoing.
- During 11th ASEAN Highway Sub-Working Group Meeting in 2007, Indonesia proposed 15 intra-ASEAN ferry link routes connecting to highways/corridors for study purposes.
- As a part of BIMP-EAGA maritime transport framework, it is to promote EAGA seaborne trade and tourism.

Remarks: The information about ongoing development studies on ferry links and their current status is very limited. However, based on the review and updates from AMSs, relevant ferry link studies that connect ASEAN Highways will be proposed in ASTP.

(12) Action No. 12

Formulate regional policy framework for developing Inland Waterways Transport (IWT) services:

- During the 14th LTWG, it was discussed that STOM Expert Group on ATAP will further consider this initiative. In the 17th LTWG, it was proposed to take this initiative under ASTP 2011-2015.
- Earlier during the 13th LTWG meeting, it was discussed to support the revised project proposal of China for the Development Study for the Inland Waterway Improvement in CLMV countries.

Remarks: This action could not be initiated during the ATAP duration. The 17th LTWG noted the ERIA team's recommendation to include this action 'Formulation of Regional Master Policy Plan for IWT in ASEAN Region' in ASTP. As IWT has many advantages over other modes of transport especially related to climatic and environmental benefits, it is strongly recommended to include this as an action in ASTP. It is also to be noted that currently very limited and integrated information is available related to IWT in ASEAN region.

(13) Action No. 13

Promote intra-ASEAN development of environmentally-friendly transport vehicles through the use of alternative fuel:

- It is a continuous process.
- During LTWG, invited colleagues from ASEAN energy sectoral bodies shared their works/projects.
- Viet Nam's progress:
  - Carried out research on utilizing liquefied petroleum gas (LPG) for gasoline and diesel automobiles
  - Operating about 1,000 LPG taxis in Ho Chi Minh City, Da Nang and Ha Noi
  - Piloting the operation of compressed natural gas (CNG) public buses in Ho Chi Minh City and Dong Nai province
  - Carried out experiment on the use of E5 for gasoline automobiles

- Government issued Decision No. 177/2007/QD-TTg dated 20th November 2007 approving the "Work plan to promote bio-diesel by the year 2015 with visibility in 2020".

Remarks: This is a continuous process and during LTWG meetings, colleagues from specialized organizations/agencies are invited to share their experiences and projects related to promotion of environmentally-friendly vehicles and fuels to AMSs. It is suggested to continue and include this action in ASTP too. However from the perspective of progressing ahead, it is suggested to adapt and implement few practices at least as a pilot projects to understand the viability and benefits of the promotion of environmentally-friendly vehicles and fuels in AMSs.

4.6.2 REVIEW OF AIR TRANSPORT ACTION MEASURES

(1) Action-No.1

Adopt and implement the ASEAN open sky policy, for both passenger and cargo services by building on the approved Roadmap for Integration of ASEAN (RIA) for ASEAN Competitive Air Services Policy through plurilateral, multilateral or inter-sub-regional liberalization and cooperation arrangements

- The Roadmap for Integration of Air Travel Sector (RIATS) including Agreement and Protocol for Air Passenger Services and the Air Freight Services, as well as the Multilateral Agreement on the Full Liberalization of Passenger Air Services (MAFLPAS) are described present status below Table.

Remarks: Agreements and Protocols of RIATS have signed and some countries have ratified. Next ASTP activity is focused on the full implementation of the Multilateral Agreement on Air Services, the Multilateral Agreement on the Full Liberalization of Air Freight Services and the MAFLAPAS.

Table 4-6-1 Progress of RIATS and Related Agreements and Protocols

Name	Progress or Expected date
Memorandum of Understanding (MOU) on Air Freight Services	**Signed** on 19 Sep. 2002
Protocol to Implement the Fourth Package of Commitments on Air Transport Services under the ASEAN Framework Agreement on Services	**Signed** on 23 Nov. 2004
ASEAN Multilateral Agreement on the Full Liberalisation of Air Freight Services (MAFLAFS)	**Signed** on 20 May 2009 **Ratified** Brunei: 30/03/10 Malaysia: 15/12/09 Myanmar: 07/08/09 Philippines: 12/05/10 Singapore: 03/07/09 Thailand: 13/10/09 Viet Nam: 22/12/09
Protocol 1 on Unlimited Third, Fourth and Fifth Freedom Traffic Rights among Designated Points in ASEAN	**Signed** on 20 May 2009 **Ratified** Brunei: 30/03/10 Malaysia: 23/01/10 Myanmar: 07/08/09 Philippines: 12/05/10 Singapore: 03/07/09 Thailand: 13/10/09 Viet Nam: 22/12/09
Protocol 2 on Unlimited Third, Fourth and Fifth Freedom Traffic Rights among All Points with International Airports in ASEAN	
ASEAN Multilateral Agreement on Air Services (MAAS)	**Signed** on 20 May 2009 **Ratified** Brunei: 30/03/10 Malayisa:15/12/09 Myanmar: 07/08/09 Philippines: 12/-0/10 Singapore: 03/07/09 Thailand: 13/10/09 Viet Nam: 22/12/09
Protocol 1 on Unlimited Third and Fourth Freedom Traffic Rights within the ASEAN Sub-Region	**Signed** on 20 May 2009 **Ratified** Brunei: 30/03/10 Malaysia: 23/01/10 Myanmar: 07/08/09 Philippines: 12/05/10 Singapore: 03/07/09 Thailand: 13/10/09 Viet Nam: 22/12/09
Protocol 2 on Unlimited Fifth Freedom Traffic Rights within the ASEAN Sub-Region	**Signed** on 20 May 2009 **Ratified** Brunei: 30/03/10 Malaysia: 23/01/10 Myanmar: 07/08/09 Philippines: 12/05/10 Singapore: 03/07/09 Thailand: 13/10/09 Viet Nam: 22/12/09
Protocol 3 on Unlimited Third and Fourth Freedom Traffic Rights between the ASEAN Sub-Regions	**Signed** on 20 May 2009 **Ratified** Brunei: 30/03/10 Malaysia: 23/01/10

Name	Progress or Expected date
	Philippines: 12/05/10 Singapore: 03/07/09 Thailand: 13/10/09 Viet Nam: 22/12/09
Protocol 4 on Unlimited Fifth Freedom Traffic Rights between the ASEAN Sub-Regions	**Signed** on 20 May 2009 **Ratified** Brunei: 30/03/10 Malaysia: 23/01/10 Philippines: 12/05/10 Singapore: 03/07/09 Thailand: 13/10/09 Viet Nam: 22/12/09
Protocol 5 on Unlimited Third and Fourth Freedom Traffic Rights between ASEAN Capital Cities	**Signed** on 20 May 2009 **Ratified** Brunei: 30/03/10 Malaysia: 23/01/10 Singapore: 03/07/09 Thailand: 13/10/09 Viet Nam: 22/12/09
Protocol 6 on Unlimited Fifth Freedom Traffic Rights between ASEAN Capital Cities	**Signed** on 20 May 2009 **Ratified** Brunei: 30/03/10 Malaysia: 23/01/10 Singapore: 03/07/09 Thailand: 13/10/09 Viet Nam: 22/12/09
Multilateral Agreement on the Full Liberalisation of Passenger Air Services (MAFLPAS)	
Protocol 1 on Unlimited Third and Fourth Freedom Traffic Rights between Any ASEAN Cities	**Will be signed in November 2010** **Timeline of 30 June 2010**
Protocol 2 on Unlimited Fifth Freedom Traffic Rights between Any ASEAN Cities	**Will be signed in November 2010** **Timeline of 30 June 2013**

Source: ATWG

(2) Action-No.2

Develop an airline industry liberalization roadmap/ program for the ASEAN regions

- This TOR (prepared by Viet Nam) was submitted at ATWG-13 and was endorsed in-principle by ATWG-13.

Remarks: Develop an airline industry liberalization roadmap/ program for the ASEAN region. This action is necessary to achieve ASAM. This shall be continued under ASTP till 2015.

(3) Action-No.3

Promote safe, efficient and effective Air Traffic Management (ATM) through enhanced integrity and interoperability of ASEAN Communications, Navigation and Surveillance (CNS) System

- This activity has been conducted under the ASEAN-Japan Transport Partnership Programme (ASEAN-Japan New Air Navigation System - AJAT-1).

Remarks: ICAO planed the roadmap for CNS/ ATM system for Asian countries including AMSs which shall be followed as shown below.

<table>
<tr><th></th><th></th><th>2008</th><th>2009</th><th>2010</th><th>2011</th><th>2012</th><th>2013</th><th>2014</th><th>2015</th><th>2016</th><th>2017</th><th>2018</th><th>2019</th><th>2020</th><th>2021</th><th>2022</th><th>2023</th><th>2024</th><th>2025</th></tr>
<tr><td rowspan="5">ICAO (Asia/Pacific)</td><td>Route-Oceanic</td><td colspan="5">RNP(RNAV10)*</td><td colspan="4">RNP2, RNP40 (RNAV10)*</td><td colspan="10" rowspan="3">GNSS</td></tr>
<tr><td>Route-Remote Continental</td><td colspan="5">RNP(RNAV10)*</td><td colspan="4">RNP2 (RNAV2/RNP4/RNAV10)*</td></tr>
<tr><td>Route-Continental en-route</td><td colspan="5">RNAV2, RNAV5</td><td colspan="4">RNAV1, RNP2 (RNAV2/RNAV5)*</td></tr>
<tr><td>TMA</td><td colspan="5">RNAV1 (with RADAR)
Basic RNP1 (no RADAR)</td><td colspan="4">Expand RNAV1 or RNP 1 appplication Mandate RNAV1 or RNP1 approval in high density APO</td><td colspan="10">GNSS</td></tr>
<tr><td rowspan="2">Approach</td><td colspan="5">RNP APCH with Baro-VNAV</td><td colspan="4">Expansion of RNP APCH (wz Baro-VNAV) and APV</td><td colspan="10" rowspan="2">GNSS Landing</td></tr>
<tr><td colspan="5">RNP ARAPCH</td><td colspan="4">Expansion of RNP AR APCH</td></tr>
</table>

Source: ICAO

Figure 4-6-1 PBN Roadmap in Asian/ Pacific Region

(4) Action-No.4

Intensify aviation and airport security through HRD and application of IT

- This activity has also been integrated under the ASEAN-Japan Transport Partnership Programme (ASEAN-Japan Aviation Security Project - AJAT-2).

Remarks: This action is necessary to harmonize and integrate of ASAM. This shall be continued under ASTP till 2015.

(5) Action-No.5

Enhance cooperation to ensure, among others, transfer of advanced civil aviation technologies

- Training programme by SAA is on-going.

Remarks: This action is necessary to enhance civil aviation technology essentially. This shall be continued under ASTP till 2015.

(6) Action-No.6

Regular exchange of best practices on public-private partnerships in the development, commercialization, construction and operation of air transport infrastructure and facilities

- Member states are encouraged to provide relevant country reports.

Remarks: This action is necessary to consideration of development infrastructure of air transport sector especially CLMV. This shall be continued under ASTP till 2015.

(7) Action-No.7

Further liberalize air transport ancillary services

- "Guidelines for Liberalization of the ASEAN Air Transport Ancillary Services" have been established and AMSs have continuously made commitments to liberalizing ancillary services.

Remarks: This action is necessary to achieve ASAM. This shall be continued to ASTP till 2015. This shall be continued under ASTP till 2015.

(8) Action-No.8

Improve the regulatory framework of the air transport industry for better efficiency and performance

- ATWG envisioned this action item to liberalize market access, ownership rules and competition and consumer protection policies, subsidies and state aid.

Remarks: This action is integral to the establishment of ASAM. This shall be continued under ASTP till 2015.

(9) Action-No.9

Enhance regional capacity for combined air and maritime search and rescue (SAR) operations

- ASEAN Search and Rescue Directory has been completed and uploaded on the ASEAN website.

Remarks: This action is enhances regional integration under ASAM. This shall be continued under ASTP till 2015.

(10) Action-No.10

Adopt initiatives to increase air access with dialogue partner

- ASEAN has commenced formal negotiations with China and will proceed to start similar processes with India and Republic of Korea.

Remarks: This action is enhances regional integration within ASEAN and with ASEAN's Dialogue Partners. This shall be continued under ASTP till 2015.

Among the ten (10) air transport actions as specified in ATAP 2005-2010, the major activities during 2005-2010 related to the liberalisation of air services such as the conclusion of multilateral air agreements and protocols. While only one action is completed, i.e. ASEAN Search and Rescue Directory on ASEAN website, the remaining actions relating to the enhancement of safety, security, human resource development, environmental consideration and regular exchange of best practices Are either on-going or not followed up. The recommendation is for these actions to continue under the ASTP 2011-2015.

4.6.3 REVIEW OF MARITIME TRANSPORT ACTION MEASURES

(1) Action No. 1

Identify and designate the important maritime trade corridors/seaways for regional seaborne trade that are vital for the success of the ASEAN Economic Community (AEC)

- A study on "Promoting efficient and competitive intra-ASEAN shipping services" funded by the ASEAN-Australia Development Cooperation Program (AADCP) was completed in March 2005 to identify measures that could be initiated by AMSs in improving efficiency and competitiveness of shipping services between ASEAN ports. As a result, the "Roadmap towards an Integrated and Competitive Maritime Transport in ASEAN" was developed and subsequently adopted during the 13th ATM Meeting in Singapore in November 2008. In the roadmap, 20 measures were adopted from the viewpoint of i) developing a single ASEAN voice, ii) development of infrastructure, iii) market integration, iv) harmonization, and v) human resources and capacity development. Action No.1 has been implemented by Measure No.3 to No.10 as shown below in said Roadmap. Measure No.3 to No.10 were adopted from the viewpoint of development of infrastructure, are deemed to specify measures for Action No.1: Identifying and designating the important maritime trade

corridors/seaways for regional seaborne trade that are vital for the success of the AEC.

Measure No. 3: Review list of ports in the ASEAN transport network to ensure that all ports of regional significance are included.

Measure No. 4: Compile a database on ASEAN network ports, which could include an inventory of the facilities available, shipping services, port tariffs, and other indicators.

Measure No. 5: Develop a database of maritime trade movements to and from within ASEAN.

Measure No. 6: Develop guidelines for assessing port development priorities, including acceptable performance levels.

Measure No. 7: Identify required improvement areas in ASEAN network port performance and capacity based on regular forecasts of maritime trade and requirements, among others.

Measure No. 8: Develop project priorities based on the guidelines for assessing port development, to raise performance and capacity levels towards bridging such gaps in the ASEAN network ports.

Measure No. 9: Explore funding mechanisms, where necessary, to support the implementation of identified projects in the ports of AMSs.

Measure No. 10: Ensure that all ASEAN network ports meet acceptable performance and capacity levels.

- As to the progress of each measure, Measure No. 3 is partially completed and remains in progress; Measure No. 4 is on progress; Measures No. 5 and No.6 have been almost completed; Measure No7 is on progress; Measure No. 8 is under preparation. Meanwhile, no actions have been taken for Measures No. 9 and No. 10.

Remarks: Action No.1 covers comprehensive measures, and thus, the above mentioned measures in the roadmap were adopted to achieve said action. Regarding implementation of these measures, a timeline and lead country coordinator was designated for each measure. The lead country coordinators explain the progress of the measures during every MTWG meeting.

(2) Action No. 2

Promote effective and competitive intra-ASEAN shipping in trade corridors/seaways through the following actions, including the implementation of the relevant recommendations of the ASEAN Maritime Transport Development Study

Sub-Action No.1 **Rationalization/synchronization of shipping services**

- Action No.2/Sub-Action No.1 has been implemented by the measures defined in the Roadmap. Measures No. 1 and No. 2, which are adopted from the viewpoint of developing a single ASEAN voice and Measures No. 11, No. 12 and No. 13, which are adopted from the viewpoint of market integration, are deemed to specify measures for Action No.2/Sub-Action No.1: promote rationalization/synchronization of shipping services. These measures are mentioned below.

Measure No. 1: Adopt the general principles and framework for a common shipping policy

Measure No. 2: Establish mechanism for the consultation, coordination and consensus of ASEAN responses to emerging maritime issues, which may have an impact on the interest of AMSs

Measure No. 11: Confirm the principle of open access to the international maritime trade of all AMSs, as per the decisions of the other relevant ASEAN sectoral bodies, such as the ASEAN Coordinating Committee on Services (CCS), and ASEAN Maritime Transport Sectoral Negotiation Working Group.

Measure No. 12: Develop the strategies for an ASEAN single shipping market.

Measure No. 13: Implement the ASEAN single shipping market.

- As to the progress of these measurements, Measure No. 1 has been completed. Measure No. 2, No. 11 and No. 12 are on progress, and No. 13 will be executed after the completion of Measures No.11 and No.12.

Sub-Action No.2) **Expanded shipping services linking the 47 designated regional ports and secondary ports**

- Action No.2/Sub-Action No.2 has been also implemented by the measures defined in the Roadmap. Measure No.3 to No.10, which are adopted from the viewpoint of development of infrastructure, are deemed to specific measure for Action No.2/Sub-Action: Expanded shipping services linking the 47 designated regional ports and secondary ports.
- As to contents and progress of these Measures are mentioned in (1) Action No.1.

Sub-Action No.3) **Greater cooperation within ASEAN sub-regions, through improved sea linkages and near coastal shipping**

- It is observed that specific measure focus on this action has not been implemented yet.

Remarks: Action No.2 is also comprehensive measure including various issues. Measure No.1, No.2 and No.11 to 13 in the Roadmap cover Sub-Action No.1 in ATAP 2005-2010, Measure No.3 to No.10 cover Sub-Action No.2, Meanwhile, not specific measure has been implemented for Sub-Action No.3.

(3) Action No. 3

Achieve significant liberalization of intra-ASEAN maritime transport services

- Action No. 3 has also been implemented through the measures in the roadmap. Measures No. 14, No. 15 and No. 16, as shown below, which were adopted from the viewpoint of harmonization, are deemed to specify measures for achieving significant liberalization of intra-ASEAN maritime transport services.

Measure No.14: Develop guidelines on acceptable practices in the provision of fiscal support for shipping operations.

Measure No.15: Harmonize ship registration practices.

Measure No.16: Develop guidelines for the structure of port tariffs in ASEAN transport network ports.

- All measures under this action have been implemented mainly by the lead country coordinator and are on progress.

Remarks: Action No. 3 also involves comprehensive and fundamental issues, thus, Measure No.14 to No.16 in the Roadmap was adopted to achieve this action.

(4) Action No. 4

Support and promote the development of ASEAN-based shipping fleet for intra-ASEAN and international trade

- Action No. 4 has also been implemented by the measures in the roadmap. Measures No.17 to No. 20 shown below aim to support and promote the development of ASEAN-based shipping fleet for intra-ASEAN and international trade through human resources and capacity development:

Measure No. 17: Establish centres of logistics excellence at selected tertiary institutions within ASEAN.

Measure No. 18: Develop strategy, including encouraging private sectors, for enhanced shipboard placements.

Measure No. 19: Establish regional centres of maritime excellence to provide advanced training in high technology aspects of maritime operations and specialized courses in areas such as port and shipboard security.

Measure No. 20: Implement single labour market for ASEAN seafarers (in accordance with the decisions of the other relevant ASEAN sectoral bodies, such as the ASEAN CCS, and ASEAN Maritime Transport Sectoral Negotiation Working Group).

As to the progress of these measurements, Measure No.17, No.18 and No.19 has been implemented and on the progress. Measure No.20 has not yet started.

Remarks: Action No.4 is fundamental issues to support the development of ASEAN shipping fleet, and Measure No.17-No.20 in Roadmap was adopted as a specific measure to execute this action.

(5) Action No. 5

Further study about expanding the agreement on common ASEAN near coastal voyage (NCV) limits

- Singapore drafted common ASEAN NCV limits based on the questionnaire inputs previously submitted by the member states. As a general rule, the MTWG agreed that the common ASEAN NCV should be in-line with the existing and amended Standards of Training, Certification and Watch-keeping (STCW) NCV principles. IMO has been currently reviewing the STCW Convention, including principles covering NCV limits, and is due to be completed on June 2010. To put the proposed common ASEAN NCV limits in perspective, MTWG agreed that the NCV limits should, as far as possible, encompass only ports of AMSs. However, each member state could have its own definition of NCV limits that allows ships to ply in ports beyond their boundaries, so as to determine the standard of competence for the issuance of certificates to seafarers engaged on such voyages. IMO is presently undertaking a review of the STCW Convention and the STCW Codes. Taking this into account, MTWG agreed that member states should continue to comply and be guided by the training and certification standards of seafarers and other guidance concerning NCV limits prescribed under the SCTW Convention, upon approval by the IMO.

Remarks: Through the assistance and cooperation of IMO, this action has been executed and will be continued until the signing and ratifying of the STCW Convention by AMSs.

(6) Action No. 6

Conduct studies on introduction of high-speed cargo and passenger vessels and intra-regional feeder services servicing the regional gateway and secondary ports

- This study was executed under the scheme of ASEAN-Japan Partnership (AJMT-4: ASEAN-Japan High Speed Maritime Network) from 2004-2006. Feasibility of the network between Japan and Viet Nam for high-speed vessels was examined. Corresponding report was summarized and conveyed to Thailand. Based on the study, it was found that the introduction of high-speed cargo and passenger vessels was not feasible due to high cost of high-speed vessels, namely "Techno Super Liner". In Japan, this vessel was temporarily entered the existing shipping route, but now it is no prospect of commercial use due to considerable operating costs alike an aircraft.

Remarks: Thailand has recommended conducting a preliminary survey, which assesses the requirement for high-speed maritime transport services and identifies the viable shipping route. This survey should be conducted by other scheme of action such like a study on regional and coastal shipping.

(7) Action No. 7

Enhance the activities of the ASEAN Forum on IMO Conventions to facilitate the accession and implementation of relevant IMO conventions by AMSs

- Four IMO-ASEAN projects have been successfully implemented from 2005-2007. Presently, a draft MOU for the IMO-ASEAN partnership is under consideration by IMO Headquarters and is expected to be transmitted to the ASEAN Secretariat for circulation to AMSs and eventual consideration in the next MTWG Meeting. Draft IMO-ASEAN MOU incorporates activities covered under the IMO Integrated Technical Cooperation Programmed (ITCP) for the biennium 2010-2011, i.e., ASEAN-Oil Spill Response Action Plan (OSRAP) meeting, regional workshop on preparedness for and response to HNS Incidents in port areas, workshops on marine casualty investigation and application of AFS Convention (the introduction of environmentally sound measures to collect, handling and disposal of waste generated in applying and removing AFS), as proposed by Indonesia.

Remarks: In order to enhance and improve safety and security, and to preserve environment, ASEAN states are required to conduct the IMO initiative conventions and take effective measures based on the results of the conventions. Enhancement of IMO-ASEAN partnership is vital for maritime transportation, thus, this action should be constantly continued.

(8) Action No. 8

Strengthen the institutional capacity, human resource base and cooperation linkages of ASEAN Mmember countriesStates for achieving improved maritime safety, security and preventing marine pollution (e.g., ISPS Code, STCW trainers' training, etc)

- Regarding the ISPS code, trainees were sent to Japan under the scheme of ASEAN-Japan Maritime Transport Security Program (AJMT-2), and four joint exercises were executed. As mentioned above, IMO is presently undertaking a review of the STCW Convention and the STCW Codes. Meanwhile, MTWG agreed that member states should continue to comply and be guided by the training and certification standards of seafarers and other guidance concerning NCV limits prescribed under the SCTW Convention, upon approval by the IMO.

Remarks: Institutional enhancement and development of human resources are fundamental measures to enhance safety and security, and to preserve environment. Thus, this action will be continued in cooperation with dialogue partners and IMO.

(9) Action No. 9

Pursue the "ASEAN Clean Seas Strategy"

- Member states await the official proposal from Denmark on possible funding support.

Remarks: Little progress has been made with this Action, and it is required to procure funding from dialogue partners or international organizations.

(10) Action No. 10

Intensify maritime transport security through capacity building and IT-based programs

- This action has been executed by IMO and Japan's 4th ASEAN-Japan Maritime Security Joint Exercise and 7th ASEAN-Japan Port Security Experts Meeting under AJMT-2 scheme. In order to enhance the maritime security through capacity building, AJMT-2 is being held as the seminar on maritime security and security expert conference, and to provide communication training on security information since 2003.

Remarks: Threat of piracy and armed robbery has been currently rising. The measure to control these illegal acts requires overall cooperation. Accordingly, this action will be continued in cooperation with dialogue partners and IMO.

(11) Action No. 11

Pursue the "Handling of Dangerous Goods in ASEAN Ports" Project and other APA-initiated mutually beneficial projects

- "Handling of Dangerous Goods in ASEAN Ports" was completed by APA in 2006, and "Sustainable Port Development in the ASEAN Region", which is a three-year extension of the said project, has officially started in August 2009. It is being implemented by the German Technical Cooperation (GTZ) in cooperation with the Partnership in Environmental Management for Seas of East Asia (PEMSEA). The project consists of six phases. Phase 1 is currently on-going (Initial review/2009-2012), and the participating ports are Iloilo, Bangkok, Laem Chabang, Sihanoukville, Phnom Penh, Saigon, Tanjung Priok, Cagayan de Oro and Tanjung Perak.

Remarks: APA has implemented the Project: "Sustainable Port Development in the ASEAN Region" which focuses on; i) Capacity development through application of proven tools, systems and best available practices, ii) Adapting national legislation to international regulations, codes of practice and standards, iii) Cooperation with other organizations and programmes: PEMSEA, EPA, ECOPORTS, etc, and iv) Development and implementation of modular training program on Port Safety, Health and Environment (SHE) Management.

(12) Action No. 12

Enhance regional capacity for maritime search and rescue (SAR) operations

- The existing program on ASEAN Search and Rescue Exercise (SAREX) involves participation of both air and maritime SAR agencies. The SAR activities usually come under the responsibility of a single SAR agency of each member state. MTWG agreed to play a supporting role to the ATWG in the implementation of this action, with Brunei Darussalam as the Lead Coordinator. An ASEAN SAR Directory has been completed and uploaded to the ASEAN website.

Remarks: ASEAN SAR Directory has been completed and uploaded to the ASEAN website; however, the SAREX should be maintained and activated in cooperation with member states.

(13) Action No. 13

Strengthen maritime transport human resource capacity

- In order to strengthen maritime transport human resource capacity, the International Cooperative Training Program for Asian Seafarers under the ASEAN-Japan Transport Partnership (ASEAN-Japan Seafarer Policy Cooperation) as well as Measures No.17 and No.18 of the maritime Roadmap as shown below have been implemented.

  Measure No.17: Establish centres of logistics excellence at selected tertiary institutions within ASEAN

  Measure No.18: Develop strategies, including encouraging private sectors, for enhanced shipboard placements

Remarks: The project of ASEAN-Japan Seafarer Policy Cooperation will be continued. Meanwhile, Measures No.17 and No.18 have been executed and are in progress.

(14) Action No. 14

Regular exchange of information and best practices in maritime transport policy and development programs:

- This action has already been a regular item in the MTWG agenda. Member states are encouraged to provide relevant country reports under this action.

Remarks: This action has been implemented during MTWG Meeting which is held twice a year, and it is desirable to continue the MTWG Meeting as well as the present.

4.6.4 REVIEW OF TRANSPORT FACILITATION ACTION MEASURES

(1) Action-No.1

Early implementation of the ASEAN transport facilitation agreements.

- The ASEAN transport facilitation agreements are corresponded to three agreements, AFAFGIT, AFAMT and AFAIST which signed by all AMS respectively. The detailed status is shown in Chapter 3.4.1.
- In AFAFGIT, the protocol 2 and 7 have been finalized and reviewed in 2009. Protocol 6 will be in process after SKRL completion.
- The first joint meeting of TFWG and CPTFWG for implementation of has been held in November 2009 to expedite the ratification and implementation of the agreements and Protocols.
- The AFAMT required 7 years to prepare and negotiate after the first official draft.
- The implementation time line of three agreements is proposed in 2009 by TTCB Overall Work Plan which is currently reviewed by each member state.

Remark: To accelerate the implementation of all the agreements, proactive approaches to concerned implementation body such as CPTFWG are recommended. Implementation of AFAFGIT also addressed in action No. 9 of land transportation. It can be merged to this action. The three agreements have to be fully implemented by 2015.

(2) Action-No.2

Operationalise / enhance capacity for the National Transit Transport Coordinating Committees (NTTCCs) in all Member States.

- All AMS has established NTTCCs or identified an organization which undertakes a role of NTTCCs currently.
- The activation of the NTTCCs and the TTCB meeting will provide a mechanism to ensure that future progress is accelerated and harmonized.
- NTTCCs have not yet functioned well.

Remarks: Nevertheless the NTTCCs and TTCB have just started so far. Further enhancement of the committees is expected. This action needs to be continued to follow the three agreements enhancing the capacity of NTTCCs but can be merged to No.3.

(3) Action-No.3

Regular implementation evaluation/monitoring meetings of regional Transit Transport Coordinating Board (TTCB).

- An inaugural TTCB meeting has been held on November 2009 and proposed an overall work plan 2010-2015 under reviewing by the TTCB members. The TTCB shall meet once a year.
- The overall work plan table by the TTCB currently contains 55 main deliverables and 144 measures in total.

Remarks: Updating the overall work plan annually before the TTCB meetings and this action is necessary to be continued for ASTP to follow the implementation of three agreements.

(4) Action-No.4

Simplify/harmonize trade/transport procedures and documentation.

- ASEAN Customs Transit System (ACTS), which is specified by protocol 7 of AFAFGIT, is under development with support by APRIS.
- Under measures in II (a) Trade and Customs facilitation of Roadmap for the Integration of Logistics Services, the action above is mainly tasked to CPTFWG, CCC, CCS and TELSOM.
- The development status of protocol 7 (ACTS) of the AFAFGT was discussed in the first joint TFWG and CPTFWG Coordination Meeting in October 2009.

Remarks: Simplified/harmonized procedures and documentation is very critical to introduce multimodal transport but it necessitates cooperation with authorities managing customs. This action above, however, can not easily measure the progress with any indicator. It is necessary to clarify and specify the target of the action to ASTP

(5) Action-No.5

Formulate uniform guidelines and requirements for the registration of Multimodal Transport Operators (MTOs) .

- AFAMT set the minimum requirement, for example, article 29 describes “A multimodal transport operator of any member country shall be registered with the competent national body of his country” and article 30 defined “minimum requirements for registration of multimodal transport operators,” i.e. minimum asset equivalent to 8,000 SDR.

- Thailand has already initiated its Multimodal Transport Operator's license. Singapore has issued MTO certification through the Singapore Logistics Association.
- Brunei Darussalam has prepared the draft guidelines and requirements. She would like to share them with AMS once it is endorsed.
- Viet Nam has promulgated a new decree on multimodal transport. It is includes provisions on requirements for the registration of MOTs.

Remark: Minimum requirement for multimodal operators has been set by AFAMT. While AFAMT were mainly derived from UN Convention on Multimodal Transport and the UNCTAD / ICC Rules, neither action above nor signed AFAMT can not satisfy the requirement of issues. ASEAN Logistics Development study proposed an action, as such, "Develop a practical, simple, and uniform liability framework for multimodal transport through regional operation in line with global MT regime development." That liability framework will greatly help to clarify the definition and function of MTO and enhance the AFAMT.

(6) Action-No.6

Promote the usage of trade terms and practices related to multimodal transport, including the lNCOTERMS (International Commercial Terms).

- This action is ongoing.
- This action is corresponded to measure No. 44 of Roadmap for the Integration of Logistics Services. Those measures are asked to STOM and AFFA and targeted by 2013.

Remark: These trade terms are important to achieve seamless multimodal transport operation and necessary to be continued in ASTP. Viet Nam addressed her needs to more seminars and trainings to give information about trade terms. Training and seminars about trade terms might be very helpful.

(7) Action-No.7

Conduct training/skills upgrading programs (e.g., Seminars, workshops, etc) to enhance institutional and human capacity in the implementation of the ASEAN transport facilitation agreements.

- AFFA proposed capacity building programs under the Roadmap of the Integration of Logistics Services.
- Under A-JTLIP, national transport logistics seminars and workshops were held in each AMS from 2007-2009.
- UNESCAP has conducted surveys of logistics HRD needs and provided training manuals to enhance the professional competence and skills of LSPs and freight forwarders in ASEAN from 2000 to today
- In IAI work Plan Phase II, there is an action to provide training by 2011 in multimodal transport, logistics, and supply chain management.

Remark: The detailed progress of HRD was explained in section 5.2 in Chapter 3. Actions for capacity building are still highly demanded especially from CLMV countries. This development requires continuous and long-term approach, which needs to be accelerated in the next plan. As partially mentioned in section 5.2 in Chapter 3, the Roadmap of the Integration of Logistics Services has measures related to capacity building in No.36 – 42. Those are essential for the capacity building and need more effort on it with detailed plan.

(8) Action-No.8

Promote ASEAN transport intermediaries such as freight forwarders, MTOs, logistics service providers, truck/haulage operators.

- Capacity building for transport intermediaries has been conducted shown in (7) above.
- ASEAN Logistics Development Study has been conducted by Japan-ASEAN General Exchange Fund (JAGEF) on 2008. The study proposed policy and development framework plan for logistics in ASEAN
- The MoU among BIMP-EAGA countries on transit and transport of goods has been signed and the Standard Operating Procedure (SOP) has been discussed.
- Number of AFFA council member has increased year by year and currently consist of 10 countries and 11 Associations; Brunei Freight Forwarders Association (BRUFA), Cambodian Freight Forwarders Association (CAMFFA), Indonesian Freight Forwarders Association (INFA), Lao International Freight Forwarders Association (LIFFA), Federation of Malaysian Freight Forwarders (FMFF), Myanmar International Freight Forwarders Association (MIFFA), Federation of Freight Forwarders Associations of Philippines (FEDFAP), Singapore Air cargo Agents Association (SAAA), Singapore Logistics Association (SLA), Thailand International Freight Forwarders Association (TIFFA), Viet Nam International Freight Forwarders Association (VIFFAS).
- AFFA is surveying the location with Singapore and/or Thailand as possible locations in establishing the logistic centre.
- MIFFA conducted in-house training to promote Freight Forwarders and MTOs.[6]
- Brunei will have industry training on multimodal transport by fourth quarter 2010.[7]

Remark: Varied intermediaries are rapidly growing now. More concrete and measurable action is required to achieve the promotion whole of freight forwarders, MTOs, logistics service providers, and truck/haulage operators.

(9) Action-No.9

Promote strategic logistics centres, e.g. inland clearance depots, regional warehouse and distribution centres linking the major regional trade centres.

- Each country has developed their training centres, sometimes with dialogue partners or ASEAN cooperation framework.

Remark: It is necessary to consider the board-based infrastructure development for efficient and integrated logistics. Logistics centres are not enough for the infrastructure development in logistics. More concrete and measurable actions with strategically comprehensive view are required.

(10) Action-No.10

Promote ICT applications for seamless cargo transportation through the integration of surface, maritime and air cargo information systems and related information networks such as customs and trade-related systems.

- The status of ICT application varies a great deal in ASEAN.

[6] Answer from the questionnaire for EG meeting on February 2010
[7] Answer from the questionnaire for EG meeting on February 2010

- Each AMS has progress on this action respectively. As of 2007, only Malaysia and Singapore have achieved paperless customs clearance.
- This action corresponds to measure No. 13, 15, 22, 23 of Roadmap for the Integration of Logistics Services. These measures shall be implemented under the CCC, CPWG, TELSOM and/or ASW-SC.

Remark: In terms of trade/transport procedure and documentation in action No.4, application of electronic documentation and electronic signature remarkably contributes to efficient multimodal transport operation and will be important challenges for the next plan. To establish safety, secure and efficient logistics network in ASEAN, this will be proposed as a new action in the next plan.

(11) Action-No.11

Exchange of experiences/update of developments on multimodal transport operations in Member States.

- It is a continuous process and a regular feature of TFWG, where member states also share their best practices.

4.7 SUMMARY

4.7.1 SUMMARY OF TRANSPORT SECTOR RELATED ON-GOING INITIATIVES OF ASEAN COOPERATION

The chapter reviewed the earlier transport action plans and highlighted the general trend and linkages between the specific actions especially between the last two transport action plans i.e. between the Transport Action Plan,1999-2004 and ATAP, 2005-2010. The trend highlighted that most of actions were carried forward. In addition to earlier actions ATAP also gave importance to Human, Institutional and Technical Capacity building and Public Private Partnership (PPP). Though not much progress has been made in PPP initiative but considering the financial constraint in AMSs especially among CLMV nations, such initiative need a more focused approach.

The three roadmaps for Air, Maritime and Logistics highlighted the measures with specified deadline that has been adopted by AMSs. It was observed that some measures have already crossed the specified time limit without much significant progress and some are even not initiated or just started. The ASEAN leaders will have to take a note of this and it is suggested to review the measures and revise the target time limit.

Among the dialogue partners, Japan is the most active partner and has initiated many transport related program and projects in AMSs. China, Republic of Korea, India and European Union (EU) are also supporting in the form of program/projects in improving the transport sector performance in the ASEAN region.

In addition to the ongoing program and actions under ASEAN, there are certain sub-regional initiatives like BIMP-EAGA, GMS and IMT-GT that have contributed significantly in improving the transport infrastructure in AMSs at sub-regional level. The Asian Development Bank (ADB) made an immense contribution especially under GMS program and BIMP-EAGA program, in improving the highways, roads, ports and airports in AMSs.

4.7.2 SUMMARY OF REVIEW OF IMPLEMENTATION OF ATAP

In ATAP 2005-2010, 48 action measures have been adopted and executed, with 13 measures for land transport, 10 for air transport, 14 for maritime transport and 11 for transport

facilitation. Table 4-7-1 summarizes the progress of the action measures, and it is observed that 3 action measures have been "Completed", 42 are "On-Going" and 3 are "In Preparation".

It is deemed that most of the On-Going action measures will be carried over to the ASTP 2011-2015, considering the issues of each action, current transportation thrust, economic circumstances and various conditions of the transport sector.

Table 4-7-1 Summary of Progress of Action Measures

Action	Land Transport	Air Transport	Maritime Transport	Transport Facilitation
No.1	**On-Going**	**On-Going**	**On-Going**	**On-Going**
No.2	**On-Going**	**On-Going**	**On-Going**	**On-Going**
No.3	**On-Going**	**On-Going**	**On-Going**	**On-Going**
No.4	**On-Going**	**On-Going**	**On-Going**	**On-Going**
No.5	**On-Going**	**On-Going**	**On-Going**	**On-Going**
No.6	**Completed** [1)]	**On-Going**	**Completed** [4)]	**On-Going**
No.7	**In Preparation** [2)]	**On-Going**	**On-Going**	**On-Going**
No.8	**On-Going**	**On-Going**	**On-Going**	**On-Going**
No.9	**On-Going**	**On-Going**	**In Preparation** [5)]	**On-Going**
No.10	**On-Going**	**On-Going**	**On-Going**	**On-Going**
No.11	**On-Going**		**Completed** [6)]	**On-Going**
No.12	**In Preparation** [3)]		**On-Going**	
No.13	**On-Going**		**On-Going**	
No.14			**On-Going**	

Source: ERIA Study Team

Note:

1) Study on 'ASEAN ITS Policy Framework' has been completed and needs to be carried forward to ASTP for effective results.

2) The study on "Formulation of Regional Plan for Cross Border Movement" has not been initiated during ATAP and needs to be taken up in ASTP.

3) The study on "Formulation of Regional Policy Framework for IWT" has not been initiated during ATAP and needs to be taken up in ASTP.

4) The study has been completed, and the result of evaluation was unfeasible.

5) It waits funding support from Denmark

6) The project has been completed, and other purpose project has started by same partner, APA

(1) Trend analysis of Action Measure

In order to analyze the trend of the 48 action measures, they are categorized into ten by sub-sector from the viewpoint of the key elements shown in Table 4-7-1. Regarding land transport, it was further divided into three, namely: Road, Railway and Waterway. The key elements are: 1) Liberalization of agreements, policies and protocols; 2) Promotion of PPP and private sector participation; 3) Deregulation and integration of logistics law/system (CIQ, Traffic); 4) Cooperation with dialogue partners, international and regional organizations; 5) Promotion for involvement of stakeholders association; 6) Institutional enhancement and human resources development; 7) Improvement and creation of transport network/infrastructure; 8) Enhancement of transport safety and security; 9) Transport service and technology improvement; and 10) Environmental and social consideration.

In the table, for example, "L-1" means "Land Transport-Action No. 1". Moreover, some measures belong to two categories as indicated by a bold sign, due to the characteristics of their contents and scope.

Table 4-7-2 Trend of Action Measures

Key Elements	Land Transport			Air Transport	Maritime Transport	Transport Facilitation
	Road	Railway	Waterway			
Liberalization of agreements, policies and protocols	L-9			A-1, A-2, A-7	M-3	**F-1,** F-2, F-3
Promotion of PPP and private sector participation	L-10			A-6		
Deregulation and integration of logistic law/system (CIQ, Traffic)						**F-1**, F-4, F-5, F-6
Cooperation with dialogue partners, international and regional organizations				**A-3**, **A-10**	M-7,	**F-7**, **F-8**
Promotion for involvement of stakeholders association.						**F-8**
Institutional enhancement and human resources development	L-8			**A-5**, **A-8**, **A-9**	**M-5**, **M-8**, **M-10**, **M-11**, **M-12**, M-13, M-14	**F-7**, F-11
Improvement and creation of transport network/infrastructure	L-2, **L-3, L-4**	L-1	L-11, L-12	**A-10**	M-1, M-2, M-6	F-9
Enhancement of transport safety and security	**L-3, L-4**, L-5, **L-6, L-7**			**A-3**, A-4, **A-9**	**M-5, M-8, M-10, M-11, M-12**	
Transport service and technology improvement	**L-6, L-7, L-13**			**A-5**, **A-8**	M-4	F-10
Environmental and social consideration	**L-13**				**M-8**, M-9, **M-11**	

Source: ERIA Study Team
Note: L: Land Transport, A: Air Transport, M: Maritime Transport, F: Transport Facilitation,
Bold sign: belonging to two categories

As observed from the results of analysis in the above table, the following tendencies and characteristics are outstanding:

- Road sector major thrust is to establish the ASEAN Highway by Action No. 2. To achieve the target as set for the completion of ASEAN Highways by 2020, the efforts need to be accelerated. The actions related to road safety, technology improvement, cross-border movement, and capacity enhancement are weighted. The action (No 7) related to formulation of regional plan for cross border movement is still at preparatory stage and could not be initiated during ATAP duration.
- Rail sector emphasis is on the accomplishment of Singapore-Kunming Rail Link (SKRL) project and is being addressed by Action No 1. To achieve the target as set for the completion of SKRL by 2015, the financial constraint needs to be overcome.
- Inland Waterway sector emphasis is on formulating a regional policy on Inland Waterways network and connecting highways through ferry links. However, the related actions are still at preparatory stages and could not be initiated during ATAP duration.
- Air transport puts special emphasis on Open Sky Policy, thus three measures are counted in Category 1) Liberalization of agreements, policies and protocols. It

emphasizes the improvement of transport services and technology and enhancement of safety and security through institutional and human development. It does not take into account environmental matters.

- Maritime transport heavily considers institutional and human development, which has seven categories. Through these measures, it is aimed to enhance safety/security and to preserve the environment.
- Transport facilitation involves well-balanced measures. While it does not take measures specially focused on the environment, shortening the lead-time for freight transportation by the adopted measures could still contribute to environmental preservation, which is the so-called “Green Logistics”.

CHAPTER 5 EMERGING DEVELOPMENT TRENDS AND CHALLENGES

5.1 EMERGING DEVELOPMENT TRENDS AND CHALLENGES

Subsequent to the implementation of ATAP 2005-2010, there are new development trends and issues emerging which were not considered in its formulation. These emerging development trends generate new issues and pose new challenges to the ASEAN transport sector and have to be taken into consideration in the formulation of ASTP 2011-2015. These new development trends are described in five different perspectives as follows:

1) Intra-ASEAN development trends such as national development plans, new ASEAN initiatives, and non-ASEAN initiated developments;
2) Regional perspectives covering cooperation programmes of ASEAN and its dialogue partners, as well as bilateral or multilateral cooperation between ASEAN Member States and non-ASEAN countries;
3) Global perspective of new development trends due to the accelerated pace of globalization in recent years, resulting in increased worldwide trade growth, economic integration and competition;
4) Environmental and climate change perspective that reflects the increased international consensus of the need to implement both adaptive and preventive measures to mitigate adverse environmental and climate change impacts; and
5) Safety and security perspective to ensure safe and secure transport operations against the acts of terrorism, piracy and armed robbery.

Significance of considering of emerging trends and challenges in formulation of ASTP 2011-2015:

- To propose adjustments, if necessary, of ATAP action items to be continued under ASTP;
- To recommend new action items to meet requirements of new ASEAN initiatives such as ASEAN Economic Community Blueprint and ASEAN Connectivity Master Plan;
- To recommend new action items in response to regional and global emerging development trends.
- To recommend new action items in response to current and expected international requirements of environmental and climate change measures, and to meet internationally accepted levels of transportation safety performance and security standards.
- To recommend possible key elements for the formulation of the vision of ASEAN transport cooperation beyond 2015

5.1.1 INTRA-ASEAN DEVELOPMENT TRENDS

In AEC, correction of economic disparity and poverty among the developed member countries and new member states is essential, especially in GMS countries. The intra-ASEAN development trends in the AEC, ASEAN Connectivity Master Plan, national development plans of individual ASEAN Member States as well as GMS regional cooperation framework and bilateral cooperation between ASEAN Member States, should be towards fully addressing socio-economic disparities and poverty. Against such background, the developments of GMS economic corridors are expected to become the main artery of the region's people, money, and goods in the GMS region and bring economic revitalization to the community.

(1) ASEAN Economic Community Blueprint and ASEAN Connectivity Master Plan

ASEAN Leaders declared at the 9th ASEAN Summit in October 2003, that the ASEAN Economic Community (AEC) shall be the goal of regional economic integration by the year 2020. Furthermore the Leaders agreed to accelerate the establishment of ASEAN Community from 2020-2015. The ASEAN Economic Community (AEC) Blueprint was adopted at the 13th ASEAN Summit in November 2007. The AEC Blueprint is a very significant development in ASEAN's efforts toward deepening regional economic integration and instructs ASEAN Member States the target date of 2015 for achieving ASEAN Economic Community. 'Single market' as of the one of characteristics of AEC is a key statement of transport sector, such as single aviation market, single shipping market, ASEAN Highways, SKRL, cross-border linkages, transport facilitation measures.

The Leaders issued a statement on ASEAN Connectivity at the 15th ASEAN Summit in October 2009 and an ASEAN High Level Task Force was established to draft the ASEAN Connectivity Master Plan, which would address the regional issues of infrastructure development, trade facilitation, and people's mobility as key elements, taking into account the work done and planned to ensure optimum synergy rather than duplication of work. ASEAN Connectivity Master Plan is expected to serve as the umbrella master plan to integrate existing initiatives in order to facilitate the on-time establishment of the ASEAN Community.

Enhanced participation in global supply networks will contribute to leverage on ASEAN's strategic geographical location in regional and global supply routes and to enhance ASEAN competitiveness by improving connectivity.

(2) Further Opening up of ASEAN Skies [1)]

At the 15th ATM on December 2009, in the Joint Ministerial Statement, ASEAN Transport Ministers welcomed the entry into force in October 2009 of the ASEAN Multilateral Agreement on Air Services and the ASEAN Multilateral Agreement on the Full Liberalisation of Air Freight Services. And also the Ministers expected that the implementation of these Agreements and their implementing protocols will provide the competitive space and opportunities for greater expansion of air travel within the ASEAN region, in terms of more destinations, increased capacities and lower fares. The business community and travelling public would greatly benefit from unrestricted access to all ASEAN cities for cargo services and to all ASEAN capital cities for passenger services.

The Ministers endorsed in principle the text of the ASEAN Multilateral Agreement on the Full Liberalisation of Passenger Air Services (MAFLPAS) and its Protocols, and encouraged all Member States to complete the domestic procedures for its signing by 2010.

(3) ASEAN Single Shipping Market [2)]

The Roadmap towards an Integrated and Competitive Maritime Transport in ASEA was adopted at the 13th ATM Meeting on November 2007 and at the 19th ASEAN MTWG Meeting, a paper entitled "Toward the Integration of ASEAN Single Shipping Market" was discussed. It lists the strategies for an ASEAN Single Shipping Market to include the following:

1) Harmonize regulatory requirements and commercial practices, to ensure that competition takes place on equitable terms and conditions;

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1) Joint Ministerial Statement of the 15th ASEAN Transport Ministers Meeting Ha Noi, 10 December 2009

2) (1) Joint Ministerial Statement of the 15th ASEAN Transport Ministers Meeting Ha Noi, 10 December 2009, (2) Toward the Integration of ASEAN Single Shipping Market, Revised paper, 19th ASEAN MTWG Meeting, 20-22 April 2010, Kuala Lumpur

2) Enhance human resources and capacity and technologies required to manage shipping and port operations safely, efficiently and in environmentally acceptable manner in the ASEAN region;

3) Develop guiding principles for the pricing of port services based on the cost of service and infrastructure provision;

4) Intensify infrastructure development to support the effective and efficient operation of intra-ASEAN shipping services;

5) Carry out liberalisation of maritime transport services through rounds of negotiation in the ASEAN Maritime Transport Sectoral Working Group under the ASEAN Coordinating Committee on Services (CCS);

6) Carry out liberalisation of "Services Auxiliary to all Modes of Transport" including Maritime Cargo handling Services (CPC 741), Storage and Warehouse Services (CPC472) and Freight Transport Agency Services (CPC 748) sub sectors under the Roadmap for the Integration of Logistics Services through rounds of negotiation in the ASEAN Logistics and Transport Sectoral Working Group under the ASEAN Coordinating Committee on Services (CCS);

7) Conduct negotiations by two or more Member States and agree to liberalize trade in services for specific sectors or sub sectors (ASEAN minus X). Any extension of such preferential treatment to the remaining Member States on an MFN basis shall be voluntary on the part of the participating Member States;

8) Undertake maritime transport liberalisation through consecutive rounds of every two years until 2015; and

9) Follow and comply with the schedule packages of commitments for every round according to the following parameters:

- No restrictions for Modes 1 and 2, with exceptions due to bona fide regulatory reasons (such as public safety) which are subject to agreement by all Member Countries on a case-by-case basis;
- Allow for foreign (ASEAN) equity participation of not less than 49% by 2008, 51% by 2010, and 70% by 2015 for maritime transport services sectors; and
- Progressively remove other Mode 3 market access limitations by 2015.

(4) Green ASEAN Transport [3)]

At the 15th ATM on December 2009, in the Joint Ministerial Statement, the Ministers affirmed the importance of pursuing sustainable transport programmes to increase energy efficiency and reducing consumption and emissions in the transport sector. In this regard, the Ministers agreed to implement measures to mitigate climate change especially in the land transport sector and promotion of energy efficiency and sustainable urban transport in ASEAN cities.

(5) Road Safety [4)]

At the 15th ATM on December 2009, in the Joint Ministerial Statement, the Ministers emphasized the importance of addressing the pressing road safety issues experienced by most ASEAN Member States and lauded the establishment of the ASEAN Multi Sector Road Safety Special Working Group that would further strengthen the institutional capacity in ASEAN Member States to tackle road safety issues more effectively by developing

[3)] Joint Ministerial Statement of the 15th ASEAN Transport Ministers Meeting Ha Noi, 10 December 2009
[4)] Joint Ministerial Statement of the 15th ASEAN Transport Ministers Meeting Ha Noi, 10 December 2009

appropriate activities, systems and coordination mechanisms, including training key professionals skills and techniques across the region. The Ministers noted the ASEAN Road Safety Declaration in support of the Global Decade of Action on Road Safety 2011-2020 issued on 18 November 2009 in Moscow, Russia.

(6) GMS Economic Corridors [5)]

Since 1992, the countries of the Greater Mekong Subregion (GMS), Cambodia, Lao PDR, Myanmar, Thailand, Viet Nam and China, have actively participated in a comprehensive programme of economic cooperation named 'the GMS Program' with the support of ADB and other development partners. The GMS program covers nine priority sectors: transport, energy, telecommunications, human resource development, environment, natural resources management, trade facilitation, private investment, tourism and agriculture, and is helping the participating countries achieve the Millennium Development Goals (MDGs) through increased connectivity, improved competitiveness and a greater sense of community.

In line with the GMS Program, as cross-border trade is highly dependent on road transportation, the GMS Program highlights the following three corridors. The three economic corridors as shown in Figure 5-5-1 were formally launched during the eighth Ministerial Meeting of GMS in 2000 and the corridors composed of the East-West Economic Corridor, the North-South Economic Corridor, and the Southern Economic Corridor are:

- North-South Economic Corridor-1

  Main city: China (Kunming - Hekou) - Viet Nam (Lao Cai - Hanoi - Haiphong)

- North-South Economic Corridor-2

  Main city: China (Kunming - Yuanjiang - Jinghong) - Myanmar (Kengtung - Mae sai)

  - Lao PDR (Nateul- Houayxay) - Thailand (Chang Rai - Phitsanulok - Bangkok)

- East-West Economic Corridor

  Main city: Myanmar (Mawlamyine - Myawaddy) - Thailand (Mae Sot - Phitsanulok - Khon Kaen - Mukdahan) - Lao PDR (Savannakhet - Dansavanh) - Viet Nam (Lao Bao - Dong Ha - Hue - Da Nang)

- Southern Economic Corridor-1

  Main city: Thailand (Bangkok - Kabin Buri - Aranvaprathet) - Cambodia (Sisophon - Siem Reap - Phnom Penh) - Viet Nam (Moc Bai - Ho Chi Minh - Vung Tau)

- Southern Economic Corridor-2

  Main city: Thailand (Bangkok - Kabin Buri - Aranvaprathet) - Cambodia (Sisophon - Siem Reap - Phnom Penh - Stung Treng) - Viet Nam (Quy Nhor)

[5)] Greater Mekong Subregion Economic Cooperation Program, ADB, http://www.adb.org/GMS/Publications/Overview.pdf

Source: GMS Development Matrix, ADB web site
http://www.adb.org/GMS/Projects/1-flagship-summary-north-south.pdf

Figure 5-1-1 GMS Economic Corridors

5.1.2 REGIONAL PERSPECTIVE

As ASEAN is aiming to acquire more investment and support from foreign countries through ASEAN plus 3, East Asian Summit as well as ASEAN plus 1, which are the primary means of cooperation in East Asia, the regional initiatives proposed by dialogue partners in East Asia such as China, Japan, Republic of Korea and European Union regarding regional transport cooperation are very important and should be continued for the further development of the AEC. In this sense, the projects under the cooperation of China have to be considered in the actions on ASTP.

(1) ASEAN plus Three Cooperation [1)]

At the 11th ASEAN Plus Three Summit consists of the countries People's Republic of China, Japan and the Republic of Korea (ROK) held on November 2007, the ASEAN Leaders welcomed the Plus Three countries' continued contribution to ASEAN integration in order to realize the ASEAN Community and their commitment to an open and inclusive approach to regional community building efforts. The ASEAN Leaders expressed their appreciation to the Plus Three countries for their assistance in narrowing the development gap in ASEAN through, among others, support in implementing projects under the Vientiane Action Programme, Initiative for ASEAN Integration and sub-regional growth initiatives in ASEAN.

1) The ASEAN-China [2)]

The ASEAN-China FTA – the world's third largest free-trade area – came into effect on 1 January 2010. The FTA has a combined GDP of US$ 6.6 trillion and 1.9 billion people. The total trade between ASEAN and China reached US$ 192.7 billion in 2008. This growth

[1)] Chairman's Statement of the 11th ASEAN plus Three Summit, Singapore, 20 Nov 2007
[2)] ASEAN web site "ASEAN plus Three Cooperation) http://www.aseansec.org/16580.htm

placed China as ASEAN's third largest trading partner in 2008, accounting for 11.3 per cent of ASEAN's total trade. With the Investment Agreement coming into effect in February 2010, China's FDI inflows into ASEAN is expected to increase dramatically. Timeline for the establishment of FTA in goods between ASEAN and China: 2010 for ASEAN-6 (Brunei Darussalam, Indonesia, Malaysia, Philippines, Singapore and Thailand) and China, and 2015 for Cambodia, Lao PDR, Myanmar and Viet Nam (CLMV). The Agreements on Trade in Goods and Dispute Settlement Mechanism between ASEAN and China were signed in November 2004 in Vientiane. The Agreement on Trade in Goods is being implemented since July 2005. The Agreement on Trade in Services was signed at the sidelines of the 10th ASEAN-China Summit in January 2007 in Cebu and entered into force on 1 July 2007. Negotiations on the Investment Agreement have been completed and the Agreement was signed in August 2009 in Bangkok, Thailand.

2) ASEAN and Japan [2)]

ASEAN and Japan completed signing of the ASEAN-Japan Comprehensive Economic Partnership (AJCEP) in April 2008. The AJCEP Agreement is comprehensive in scope, covering trade in goods, trade in services, investment and economic cooperation. The AJCEP would strengthen the economic ties between ASEAN and Japan and would create a larger and more efficient market with greater opportunities in this region. Lao PDR, Myanmar, Singapore, Viet Nam and Japan have been implementing the Agreement since 1 December 2008, while Brunei Darussalam and Malaysia since 1 January and 1 February 2009, respectively.

3) ASEAN and ROK [2)]

ASEAN and ROK agreed on the timeline for their FTA as follows:

- 2008 for ROK (with flexibility to 2010),
- 2010 for ASEAN-6 (with flexibility to 2012),
- 2016 for Viet Nam and 2018 for CLM.

The Framework Agreement on Comprehensive Economic Cooperation and Agreement on Dispute Settlement Mechanism between ASEAN and ROK were signed in December 2005. The Agreement on Trade in Goods with ROK was signed by nine ASEAN Member States and ROK in August 2006. The Trade in Goods Agreement is being implemented since 1 June 2007. The Trade in Services Agreement was signed by also nine ASEAN Member States and ROK at the sidelines of 11th ASEAN-ROK Summit in November 2007. Thailand signed the Protocols on the accession to the Trade in Goods and Trade in Services Agreements at the sidelines of the 14th ASEAN Summit on in February 2009. The Trade in Services Agreement entered into force on May 2009. The ASEAN-ROK Investment Agreement was signed in June 2009 at the sidelines of the ASEAN-ROK Commemorative Summit in ROK.

(2) ASEAN-China Transport Cooperation Plan

The Memorandum of Understanding on ASEAN-China Transport Cooperation [3)] was signed at the ASEAN-China Summit on 27th November 2004, which stated that both sides would carry out cooperation in the fields of planning, design, construction and maintenance of coastal and inland ports, transport facilitation, maritime safety, maritime security and maritime environment protection, among others. In the Joint Statement[3)] on ASEAN-China Port Development, made on 28th -29th October 2007 in China, it was recognized that maritime transport is an important channel for the communication between ASEAN Member Countries

[3)] Joint Statement on ASEAN-China Port Development, 28th-29th October 2007, Nanning, China. ASEAN website http://www.aseansec.org/21000.htm

and China, and the most important transport means for trade and tourism between ASEAN and China.

The Transport Ministers of ASEAN and China[4)] signed the ASEAN-China Maritime Transport Agreement on 2 November 2007 in Singapore, to further advance cooperation and facilitation of international maritime passenger and cargo transportation in support of increasing trade and economic relations.

1) ASEAN-China Transport Corridors[5)]

In the Joint Ministerial Statement of the 8th ASEAN and China Transport Minister Meeting held on 11 December 2009 in Hanoi, the Ministers underscored the importance of enhancing ASEAN - China transport cooperation to enhance international and cross-border transportation and facilitation in key ASEAN-China Transport Corridors, namely:

- China - Myanmar - Andaman Sea,
- China - Lao PDR/Myanmar - Thailand - Malaysia-Singapore,
- China - Viet Nam - Laos - Cambodia,
- China - Viet Nam - Cambodia - Thailand - Myanmar, and
- China -Viet Nam - Myanmar - Bengal-India.

The Ministers agreed to initiate the implementation of ASEAN-China priority projects in 2010. The Ministers tasked their Senior Officials to conclude the ASEAN-China Air Transport Agreement (AC-ATA) in 2010 for signing at the 9th ASEAN-China Transport Ministers Meeting. The AC-ATA will play an important role in supporting and facilitating traffic and movement of passengers and cargo to strengthen the trade and economic relationship between ASEAN and China, in support of the establishment of the ASEAN-China Free Trade Area in 2010.

2) ASEAN-China Port Cooperation

China is enhancing its archipelagic ASEAN maritime corridors, which involve three ports in Beibu Gulf, Beihai Port, Fangcheng Port and Qinzhou Port for cooperation with ASEAN. This will intensify the economic cooperation between China and its neighbouring countries such as the Philippines, Viet Nam, Singapore and Indonesia.

3) SKRL Project Connecting with China

Singapore-Kunming Rail Network (SKRL) project as described in Chapter 3.2.10 will facilitate trade and economic activity among the ASEAN Member States with the establishment of such railway linkages. Especially, the alternative route links with China will bring dramatic results in terms of economic cooperation among ASEAN.

1) Singapore - Malaysia - Bangkok - Aranyaprathet - Cambodia – Viet Nam- China
2) Singapore - Malaysia - Bangkok - Three Pagodas Pass - Myanmar - China
3) Singapore - Malaysia - Bangkok - Nong Khai - Lao PDR – Viet Nam - China

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[4)] Joint Ministerial Statement, 6th ASEAN and China Transport Ministers Meeting (ATM+China) Singapore, 2 November 2007, ASEAN website http://www.aseansec.org/21024.htm

[5)] Joint Ministerial Statement, The 8th ASEAN and China Transport Minister Meeting, 11 Dec 2009, Hanoi. ASEAN web site http://www.aseansec.org/24104.htm

4) Singapore - Malaysia - Bangkok - Nong Khai - Lao PDR - China

5) Singapore - Malaysia - Bangkok - Ubon Ratchathani - Lao PDR - Viet Nam - China

6) Singapore - Malaysia - Bangkok - Bua Yai - Mukdaharn - Lao PDR - Viet Nam - China

7) Singapore - Malaysia - Bangkok - Chiang Rai - Chiang Khong - Houy Sai - Lao PDR - China

(3) ASEAN-India Cooperation[6)]

ASEAN and India signed the ASEAN-India Trade in Goods (TIG) Agreement in Bangkok on 13 August 2009. The signing of the ASEAN-India Trade in Goods Agreement paves the way for the creation of one of the world's largest free trade areas (FTA), a market of almost 1.8 billion people with a combined GDP of US$ 2.75 trillion. The ASEAN-India FTA will see tariff liberalisation of over 90% of products traded between the two, including the so-called "special products," such as palm oil (crude and refined), coffee, black tea and pepper. Tariffs on over 4,000 product lines will be eliminated by 2016, at the earliest. The ASEAN-India TIG Agreement entered into force on 1 January 2010. ASEAN and India are currently working towards the early conclusion of the ASEAN-India Trade in Services and Investment Agreements.

(4) ASEAN-Australia Cooperation[7)]

The ASEAN - Australia Development Cooperation Program (AADCP) is an Australian Government-funded program implemented in close collaboration with the ASEAN Secretariat. It aims to promote cooperation among ASEAN Member States and between ASEAN and Australia in agreed areas. The programme worked as an umbrella agreement, providing Australian funds and expertise to a range of activities implemented through ASEAN working groups and committees that had a sectoral focus. Bilateral assistance to individual ASEAN countries has always been the largest part of Australia's development cooperation in South-East Asia. It has complemented ASEAN's capacity-building role and reinforced Australia's policy dialogue in the region.

5.1.3 GLOBAL PERSPECTIVE

Due to the increasing globalization and competition for markets and investment in the global economy, the projection for Europe-East Asia trade will significantly grow and develop in the near future. China is now the second largest non-European trading partner in EU after the United States and the EU is the second largest export market for China. Also, trade between China and Africa rose sevenfold from 2000-2007. In competition with non-ASEAN alternative routes to Malacca Straits, the China-Europe land bridge, as an artic shipping route, should be considered.

(1) Global Competitiveness

The increased globalization and competition for markets and investment, and the continuous high growth of China's economy in the last 30 years or so, has led to the shift of world trade and economic activities towards the Asia-Pacific region, particularly the East Asian region. This trend will gain further momentum with the establishment of the ASEAN Economic Community and the East Asia Free Trade Area.

6) ASEAN web site http://www.aseansec.org/5738.htm
7) ASEAN website http://www.aseansec.org/asean_australia.pdf

(2) Strategic Link of Global Supply Route[1)]

According to the 2005 UNESCAP study, East Asia including China, Japan and Korea will enhance its role as the leader of the global container trade with an increased share of 40 per cent of the total. The shares of Europe and North America are expected to be 18 per cent and 13 per cent, respectively, while ASEAN's share will be about 10 per cent. The potential of ASEAN as a market and a gateway to the rest of the Asia Pacific is an important dimension of the global container trade. The realization of the ASEAN Economic Community and a single shipping market would help to further reinforce ASEAN's global competitiveness.

China is expected to continue to serve as the main driver of global trade. It is now the second largest non-European trading partner in EU after the United States, and the EU is the second largest export market for China. Besides, trade between China and Africa rose sevenfold from 2000 to 2007. In addition, trade of China with South Asia and Middle East will also grow. The geographically strategic location of ASEAN makes it a vital link of the global supply route between Asia Pacific and Europe, Africa and the Middle East. In this vital link, the Strait of Malacca is a key waterway connecting the Indian and Pacific Oceans, offering a convenient shipping passage for sea freight.

A land bridge plan for global maritime shipping in GMS will have new connections toward India, Europe, China and East Asia and will significantly result to economic benefits, logistics cost impacts, shipping route implications, infrastructure development strategies, regional cooperation and multimodal corridors. Land bridges either across the mainland ASEAN or through Myanmar to Kunming of China would become viable if suitable deep-water gateway ports supported by efficient land transport infrastructural links could be developed. There are also the non-ASEAN alternative routes such as the China - Europe land bridge and the artic shipping route.

The Strait of Malacca is one of the world's most important and busiest international waterways. It is the energy, trade and logistics gateway to the world's most populous regions of East Asia, South Asia, and Southeast Asia. About 70,000 ships carrying one-quarter of the world's commerce and half of the world's oil pass through the Straits each year. A disruption of the Straits by either man-made or natural hazards would have wide ranging economic impacts of a global scale. To most East Asian countries, it is also a serious energy security issue. Developing alternative supply routes to the Strait of Malacca are of global strategic and economic importance, to East Asian and mainland ASEAN countries in particular.

(3) Port Klang - Bangkok Land bridge Rail Service

Malaysia-Thailand containerized land bridge railway link with a capacity of 50 TEU per trip which grew over 300% since it was launched in June 1999. Currently, the track of the 179 km section was upgraded to increase the capacity by five times. Moreover, the shipment time was shortened around 8 hours between Port Klang and Bangkok. This land bridge rail link will continuously develop and contribute to the transport facilitation in the region.

(4) New Land bridge through Myanmar and Bangladesh to Indian Ocean

New land bridges between Kunming and Yangon and between Kunming and Chittagong should be created for energy security and alternative access to Indian Ocean from China. These will contribute to shortening the time and raising cost competitiveness as well as economic and logistics potentials for India, Africa and Europe. Also, the new land bridges will relieve the congestion in the Malacca Straits and lead to inter-modal infrastructure development in the West ASEAN region.

[1)] "Regional Shipping and Port Development Strategies (Container Traffic Forecast)" UNESCAP Monograph Series on Managing Globalization, 2005

5.1.4 ENVIRONMENTAL PERSPECTIVE

(1) Environment and Climate Change Considerations

As a result of the global move towards low carbon policies and measures, ASEAN Member States are strictly required to implement adaptive and preventive measures. As mentioned in Chapter 2.3.2, the total carbon emission per capita by sector from fuel combustion in 2007 in ASEAN is 39,139 and 20% of it comes from the transport sector.

According to an IMO Study[1)], transportation produces roughly 27.7% of the world's carbon emissions. Roughly 21.3% of those emissions are from road transportation (trucks and cars), 2.6 % from aviation, 0.5% from rail, and 3.3% from all marine transportation. 2.7% comes from international maritime shipping and 0.6% from domestic shipping and fishing.

Table 5-1-1 shows that the ship transportation mode has the least influence on the environment in terms of energy consumption and carbon emission per freight ton.

Table 5-1-1 Comparison of Transport Mode

Transport mode	Approx. relative energy consumed per freight ton	Approx. relative carbon (CO_2) emission per freight ton
Ship	1	1
Railway	3	2.5
Truck	3	6
Aircraft	120	60

(2) Multimodal Transportation Development

There are four big rivers, namely, Irrawaddy River and Salween River in Myanmar, Mekong River across borders, and Red River in Viet Nam as shown in Figure 5-1-2. The development of inland waterway network in the region is expected to bring energy-efficient and environmentally-friendly transportation mode, relieve road and railway infrastructure constraints, lower transport costs and lower infrastructure development costs.

Source: ERIA Study Team

Figure 5-1-2 Inland Waterway Network

[1)] Second IMO GHG Study, 2009 (MEPC 59/INF.10) 9 April 2009, International Maritime Organization, London)

(3) Sustainable Urban Transportation Development[2)]

At the 15th ASEAN Transport Ministers Meeting held in Ha Noi, 10 December 2009, the ASEAN Transport Ministers affirmed the importance of pursuing sustainable transport programmes to increase energy efficiency and reducing consumption and emissions in the transport sector. In this regard, the Ministers agreed to implement measures to mitigate climate change especially in the land transport sector and promotion of energy efficiency and sustainable urban transport in ASEAN cities.

The increased urban population and economic activities in ASEAN have led to steady increase in travel demand within the city, resulting in traffic congestion as traffic growth out-paces the upgrading of transportation infrastructure and implementation of effective traffic management measures. Increased effort is necessary to encourage the use of public transportation in major cities.

(4) Green Freight Transportation

Air pollution and carbon emission caused by traffic using fossil fuels is a leading cause to the problem. Goods vehicle and heavy trucks, many of which run on diesel fuel, are known to be a major factor of the pollution problem. There is a need to study how the use of fossil fuels for freight transportation could be minimized, and how environmentally-friendly low-carbon or zero-carbon technologies and alternative fuels could be implemented or enforced. There is also the need to promote the use of environmentally more sustainable modes of transport such as rail and water transport as compared with road transport.

(5) Environmental Concerns in Air Transport[3)]

In 2001, the ICAO Assembly requested the Council to continue to develop guidance for States on the application of market-based measures aimed at reducing or limiting the environmental impact of aircraft engine emissions, particularly with respect to mitigating the impact of aviation on climate change. The Assembly consequently endorsed the development of an open emissions trading system for international aviation. It requested the Council to develop as a matter of priority the guidelines for open emissions trading, focusing on establishing the structural and legal basis for aviation's participation in an open trading system, and including key elements such as reporting, monitoring, and compliance, while providing flexibility to the maximum extent possible consistent with the UNFCCC process. Draft guidance on the use of emissions trading has been published by ICAO. [Draft Guidance on the use of Emissions Trading for Aviation (Doc 9885)].

ICAO has published guidance on emission-related levies [Guidance on Aircraft Emission Charges Related to Local Air Quality (Doc 9884)], that is, charges or taxes. It also has long-standing policies covering charges in general (ICAO's Policies on Charges for Airports and Air Navigation Services, Doc 9082/6). ICAO has also developed separate policy guidance to States on taxation (ICAO's Policies on Taxation in the Field of International Air Transport, Doc 8632), which recommends the reciprocal exemption from all taxes levied on fuel purchased for international flights, a policy implemented in practice in the vast majority of bilateral air services agreements, and also calls on States to reduce or eliminate taxes related to the sale or use of international air transport.

[2)] Joint Ministerial Statement of the 15th ASEAN Transport Ministers Meeting Ha Noi, 10 December 2009
[3)] ICAO web site, http://www.icao.int/icao/en/env/aee.htm

(6) Environmental Concerns in Maritime Transport[4)]

Considering the outcome of the UNFCCC discussions in Copenhagen, as well as recent discussions at the IMO to address carbon (GHG) emissions from marine shipping, the World Shipping Council submitted a paper in January 2010 to IMO to offer views on the question of establishing an emissions "cap" for maritime shipping. It addressed the issue of the IMO's consideration of an international emissions "cap" or reduction target for shipping from the perspective of broader transportation and environmental policy practices..

5.1.5 SAFETY AND SECURITY PERSPECTIVE

(1) Road Safety[1)]

Based on 2003 statistics, there were over 75,000 deaths, 4.7 million injuries and economic losses amounting to over $15 billion per year (2.2% of annual total GDP) now occurring annually in the ASEAN region. Unless action is taken, over the next 5 years a further 385,000 people will die and a further 24 million will be injured. This will cost ASEAN countries over US$88 billion in property damage, medical costs and lost productivity. At the current stage of motorization, road deaths and injuries are likely to continue their existing upward trends but efforts can and need to be made to reduce the annual growth rate and thereby reduce the number of deaths and injuries that will otherwise occur. This requires effective implementation of a coordinated multi-sector action plan to improve safety for those at greatest risk.

(2) Transport Security

ASEAN Regional Forum (ARF) Statement[2)] on Cooperation against Piracy and Other Threats to Security 17 June 2003 recognized that piracy and armed robbery against ships and the potential for terrorist attacks on vulnerable sea shipping threaten the growth of the Asia-Pacific region and disrupt the stability of global commerce, particularly as these have become tools of trans-national organized crime. To deal with this increasingly violent international crime, it is necessary to step up broad-based regional cooperative efforts to combat trans-national organized crime, including through cooperation and coordination among all institutions concerned, such as naval units, coastal patrol and law enforcement agencies, shipping companies, crews, and port authorities. Effective responses to maritime crime require regional maritime security strategies and multilateral cooperation in their implementation.

The establishment of ASEAN Maritime Forum[3)] is being finalized, with the aim to

- Discuss maritime security within ASEAN; and
- Discuss steps to response to maritime security threats such as piracy, armed robbery, marine environment, illegal fishing, smuggling of goods, people, weapons and drug trafficking.

[4)] IMO web site, http://www.worldshipping.org/industry-issues/environment/airemissions/WSC_Emissions_Policy_Paper_to_IMO.pdf: PREVENTION OF AIR POLLUTION FROM SHIPS - Emission "Caps" and Reduction Targets. Submitted by the World Shipping Council

[1)] ADB-ASEAN Road Safety Program, by Charles M. Melhuish, Expert Group Meeting on the Development of the Asian Highway Network: Regional Experiences and Lessons in Financing Highway Infrastructure and Improving Road Safety, Bangkok, Thailand, 9 May 2006) UNESCAP web site: http://www.unescap.org/ttdw/common/TIS/AH/files/egm06/roadsafety_adb.pdf

[2)] ASEAN website http://www.aseansec.org/14837.htm

[3)] "ASEAN and ARF Maritime Security Dialogue and Cooperation. Information paper by ASEAN Secretariat, 4 Oct 2007. UN website: http://www.un.org/Depts/los/consultative_process/mar_sec_submissions/asean.pdf

At the ASEAN Roundtable Forum (ARF) Discussion on Maritime Security Issues on 24-25 August 2007 in Bali, the meeting agreed that the main threats to maritime security includes sea piracy, armed robberies, over-lapping claims and territorial disputes, terrorism, environmental degradation and the smuggling of goods and persons.

5.2 SUMMARY

New development trends and issues emerging generate new issues and pose new challenges to the ASEAN transport sector and have to be taken into consideration in the formulation of ASTP 2011-2015. New action items proposed in previous chapter for ASTP 2011-2015 have to be derived from these considerations which were described in five different perspectives, Intra-ASEAN development trends, Regional perspectives, Global perspectives, Environment and climate change, and Safety and Security perspectives.

From Intra-ASEAN development trends, ASTP should be designed in consistent with other overriding initiatives such as AEC Blueprint and ASEAN Connectivity Master Plan. The key initiatives are the ASEAN Multilateral Agreement on the Full Liberalisation of Passenger Air Services (MAFLPAS), Toward the Integration of ASEAN Single Shipping Market, Green ASEAN Transport, the ASEAN Road Safety Declaration, and GMS Economic Corridors.

From Regional perspectives, the dialogue partners in East Asia such as China, Japan, Republic of Korea, India, Australia and European Union regarding regional transport cooperation are very important and should be continued for the further development of the AEC.

From Global perspectives, it is essential for ASTP to take into consideration that the continuous high growth of China's economy has led to the shift of world trade and economic activities towards the Asia-Pacific region, particularly the East Asian region and in competition with non-ASEAN alternative routes to Malacca Straits, the China-Europe land bridge, as an arctic shipping route, should be considered.

From Environment and climate change, it is important for pursuing sustainable transport programmes to increase energy efficiency and reducing consumption and carbon emissions in the transport sector. And ASEAN should enhance to implement measures to mitigate climate change especially in the land transport sector and promotion of energy efficiency and sustainable urban transport in ASEAN cities. There is also the need to promote the use of environmentally more sustainable modes of transport such as rail and water transport as compared with road transport.

From Safety and Security perspectives, road deaths and injuries are likely to continue their existing upward trends but efforts can and need to be made to reduce the annual growth rate and thereby reduce the number of deaths and injuries. ASTP requires effective implementation of a coordinated multi-sector action plans to improve safety for those at greatest risk. Also same time, to deal with increasingly violent international crime, such as piracy and armed robbery against ships, the potential for terrorist attacks on vulnerable sea shipping threaten the growth of the Asia-Pacific region, and disrupt the stability of global commerce, it is necessary to step up broad-based regional cooperative efforts to combat trans-national organized crime. Effective responses to maritime crime require regional maritime security strategies and multilateral cooperation in their implementation.

CHAPTER 6 STRATEGIC GOALS, ACTIONS, AND MILESTONES FOR ASTP

6.1 INTRODUCTION

The objective of this chapter is to suggest the proposal for the ASEAN Strategic Transport Plan (ASTP) 2011-2015. Based on the review and description of trend, roadmaps, current status, issues, missing links/gaps and emerging development trend and challenges in transport sector as discussed in earlier chapters, this chapter will describe proposed policy directions, specific goals and actions for ASTP. The proposed goals and actions are based on the progress review of ATAP's actions, analysis of the current and future transportation requirements in ASEAN Member States (AMSs). For easy understating, the chapter also highlighted the inter-linkages between the proposed goals and actions. To facilitate the monitoring and implementation, each action was further sub-divided into measurable components/milestones and allotted general time-frame for implementation purpose. In addition, trends and linkages of proposed actions for ASTP and those in the last two ASEAN transport plans are summarized, and presented in the Appendix of this Draft Final Report.

6.2 VISION, OBJECTIVES AND POLICY DIRECTIONS

Figure 6-2-1 shows a scheme identifying specific actions for ASTP.

(1) Vision

Visions for ASEAN Economic Community (AEC) had been stated in AEC Blueprint as shown below;

(i) Single Market and Production Base

(ii) Competitive Economic Region

(iii) Equitable Economic Development; and

(iv) Integration into the Global Economy

Source: ERIA Study Team

Figure 6-2-1 Scheme for Actions

(2) Objectives

The ultimate objective of ASEAN transport cooperation is to develop an efficient, secure and integrated transport system to support the realization of the ASEAN Economic Community (AEC) and regional connectivity through improving its competitiveness and attractiveness to investments, facilitating the flow of goods, services and people, and integrating with the global economy.

The specific objectives of ASTP were agreed in STOM as follows:

- To undertake a comprehensive assessment of the current transport situation in ASEAN and of the implementation of the current action plan with a view to identifying the gaps and priorities for the period 2011-2015 and beyond;
- To identify strategic actions to support the establishment of AEC by 2015, that will also compliment existing transport undertaking; and
- To identify long-term vision of ASEAN transport cooperation beyond 2015.

(3) Policy directions

The following are the policy directions to serve as guiding principles in identifying the ASTP goals and actions:

1) Maintain continuity of actions for the implementation of AEC Blueprint to develop an integrated and harmonized trans-ASEAN transportation network.
2) Enhance connectivity of intra-ASEAN transport networks to support the Master Plan on ASEAN Connectivity (MPAC).
3) Leverage on the strong Asian economic growth and increased external ASEAN cooperation by strengthening transport connectivity with Dialogue Partners and other regional partners.
4) Capitalize on the strategic geographical location of ASEAN and accelerated pace of globalization to upgrade selected transport infrastructure components and services, which serve as vital links to international supply routes.
5) Incorporate environmental and climate change considerations in planning, development, operations and management of ASEAN transport networks in line with relevant global initiatives.
6) Enhance regional capability to further improve the level of safety and security in the provision of transport services.

6.3 LAND TRANSPORT

6.3.1 LAND TRANSPORT GOALS

The main goal for land transport is to establish a safe, efficient, environmentally-friendly and integrated regional land transport system for the promotion of trade and tourism within ASEAN and with neighbouring countries, with the following specific goals:

1. Accomplish the implementation of SKRL project;
2. Complete the ASEAN Highway network (AHN);
3. Reduce road fatalities by 50% in AMSs by 2020;
4. Establish efficient and integrated inland waterways network;
5. Develop 'Intelligent Transport System' (ITS);
6. Enhance human, technical and institutional capacity in AMSs; and,
7. Establish a sustainable, energy efficient and environmentally-friendly transport system.

6.3.2 LAND TRANSPORT ACTIONS

In order to achieve above defined goals for land transport, ten specific actions are proposed as below, along with brief explanation specifying the rationale for their inclusion in ASTP.

LT-Action 1: Construct the missing link sections of SKRL project.

Though as per AEC Blue Print, the target completion year for SKRL project is 2015 but considering the current progress and the concerned issues, it is unlikely that this can be accomplished by 2015. It will take another 5 years or so for the completion. However, despite this, it is one of the prime priority projects. In a broader sense, SKRL can be divided into two lines, an "Eastern line "through Thailand, Cambodia and Viet Nam, with a spur line between Laos and Viet Nam, and a "Western line" through Thailand and Myanmar. In view of the

greater challenges in establishing the Western line, it is preferable to first complete the Eastern line in order to have an operational railway link between Singapore and China (via Kunming) as soon as possible. The following are details with timeline of the missing links and spur lines for SKRL:

- Thailand: Aranyaprathet – Klongluk (6km) by 2014;
- Cambodia: Poipet – Sisophon (48km) by 2013;
- Cambodia: Phnom Penh – Loc Ninh (255km) by 2015;
- Viet Nam: Loc Ninh – Ho Chi Minh (129km) by 2020;
- Viet Nam: Mu Gia – Tan Ap – Vung Ang (119km) by 2020;
- Lao PDR: Vientiane – Thakek – Mu Gia (466km) by 2020;
- Myanmar: Thanbyuzayat – Three Pagoda Pass (111 km) by 2020; and
- Thailand: Three Pagoda Pass – Nam Tok (153km) by 2020.

In Cambodia, due to financial constraints, the implementation of the missing links is going at very slow pace. However, it is expected that the implementation of missing link, Phnom Penh – Loc Ninh section, 255 km will be completed by 2015 and Poipet – Sisophon section by 2013.

In Viet Nam, the single-track construction on two (2) links of length 129 km and 119 km respectively are planned for completion by 2020. However, in future, there is also a plan to convert this track to double-track. Currently, Viet Nam is looking forward to ROK for technical assistance (TA).

In Lao PDR, the implementation of the two (2) spur lines of length 330 km and 136 km respectively will go beyond the target year of 2015 and is likely to be completed by 2020. Lao PDR is also facing financial constraints for the implementations of these spur lines.

In Myanmar, the feasibility study of the Thanbyuzayat – Three Pagoda Pass (111 km) section has been completed. However, Myanmar is currently facing financial constraints for its implementation. Considering such constraints, it will likely exceed the target year of 2015 and is likely to be completed by 2020.

In Thailand, the implementation of the missing link between Three Pagoda Pass and Nam Tok of length 153 km is planned for completion by 2020. This is one of the major sections and should be given a prime importance for its completion. In addition, the Aranyaprathet – Klongluk (6 km) section is planned for completion by 2014.

In addition to the above missing links and spur lines as mentioned above, the measures also include the upgrading of the other sections to support SKRL project. The following sections are planned for upgrading or new construction:

- Cambodia (Rehabilitation/Upgrading): Sisophen – Phnom Penh (338 km) by 2013.
- Thailand (Track Rehabilitation): Kaeng Khoi – Kaeng Suaten & Suranarai – Bua Yai & Jira – Bua Yai (308 km) by 2013.
- Thailand (Track Rehabilitation): Bua Yai – Nong Khai (278 km) by 2013.
- Thailand (New Line): Bua Yai - Mukdahan – Nakhon Phanom (368 km) by 2030.
- Malaysia (Double Track Construction): Ipoh – Padang Besar (329 km) by 2013.
- Malaysia (Double Track Construction): Seremban – Gemas (98 km) by 2012.

In addition, the following two key measures that will facilitate the seamless operation of SKRL and will facilitate in mobilization of resources are:

- Formulate a strategy for a seamless operation of SKRL by 2013
- Mobilise financial resources and technical assistance from external partners, either on a bilateral basis or with the coordination of ADB, to support the completion of SKRL in accordance with the agreed deadline.
- To improve and enhance the linkages of railway connectivity with other AMSs, it is proposed to conduct the study about the possibility of extending SKRL to Indonesia and an additional spur line connecting Thailand and Myanmar. Considering this, the following study is to be initiated.
- Study the possibility of extending SKRL to Surabaya, Indonesia.
- Feasibility study and preliminary design for the railway spur line between Kanchanaburi (Thailand) and Dawei (Myanmar).

LT-Action 2: Upgrade all 'below Class 3' sections of the ASEAN Highway Network into at least 'Class 3', with highest priority to the 'below class 3' sections of the Transit Transport Routes

Considering the importance of Transit Transport Routes (TTR) in enhancing the trade and economic growth in AMSs, the top priority is given to the existing 'below Class 3' TTR roads for the upgrading by 2012. This will require upgrading of total road length of 1999.55 km in Lao PDR, Myanmar and Indonesia. The details are as follows:

- Lao PDR : AH12, 293 km
- Lao PDR : AH 15, 98 km
- Myanmar : AH1, 781 km
- Myanmar : AH 2, 593 km
- Myanmar : AH3, 93 km
- Indonesia : AH25, 141.55 km

The second priority is given to the implementation of the missing links and upgrading of 'other below Class 3' roads, which in total are 201 km and 4536.7 km respectively. Such sections exist in Myanmar, Indonesia, Lao PDR, Viet Nam and Malaysia. It is to be noted that as 'below Class 3' TTR roads doesn't exist in Indonesia, Viet Nam and Malaysia, these three countries may execute the upgrading of 'Other below Class 3 roads' from 2011 onwards. In other words, there is no need to wait for the upgrading completion of 'below Class 3' roads on TTR sections in Lao PDR and Myanmar. Though, Lao PDR and Myanmar may also execute the implementation of these sections in parallel with TTR routes considering financial and other administrative issues allows for it. Otherwise, the 'below Class 3' roads can be executed after the upgrading completion of TTR roads. It is anticipated that the implementation of such sections will go beyond the year 2015. Below are the details of the highway 'Other below Class 3' sections and missing links that need to be upgraded/constructed are:

- Indonesia : AH150, 1762.3 km
- Indonesia : AH151, 611.9 km
- Lao PDR : AH131, 96 km
- Lao PDR : AH 132, 126 km

- Myanmar : AH111, 239 km
- Myanmar : AH 112, 1085 km
- Myanmar : AH 112, 60 km (missing link)
- Myanmar :AH 123, 141 km (missing link)
- Viet Nam : AH13, 215.5 km (by 2011)
- Viet Nam : AH 132, 160 km (by 2012)
- Malaysia : AH 150, 40 km

Other existing 'Class 2 or 3' roads with high traffic volume can be upgraded to 'Class 1' in parallel to the above. However, this will depend on the availability of financial and other resources in the respective country. Otherwise, these may be upgraded after the completion of the above two priority task as stated in the Table 6-3-1.

Considering the growing trade of AMSs with other Asian nations particularly with India and China, it is suggested to upgrade the extension of AHN to China and India, particularly sections from Hanoi via northern Lao PDR through Myanmar to the border with India, by 2015. Such initiative will facilitate in enhancing the trade with Asian nations.

Taking advantage of the strategic location of ASEAN as the geographic center of the emerging global center of production and demand such as South Asia, Southeast Asia, Northeast Asia, Australia and New Zealand, need is to strategise ASEAN as the transport hub in the region and to promote corridors, which will facilitate in economic development. It is thus recommended to promote East West Economic Corridor (EWEC) by constructing a missing link in Myanmar and to promote the Mekong – India Economic Corridor (MIEC) by constructing the Mekong Bridge in Neak Loung (National road No.1 in Cambodia) and building the highway between Kanchanaburi and Dawei.

Considering that transport cooperation in ASEAN has been formulated and implemented separately by various modes of transportation, it is important that ASEAN streamline the sectoral strategies with reference to the concept of multimodal transport systems and dry ports in order to enhance intra- and extra ASEAN connectivity. Thus, it is suggested to identify and develop a network of ASEAN dry ports in accordance with existing ASEAN initiatives such as the ASEAN Highway Network and SKRL.

LT-Action 3: Install common road signs and the route numbering system in all designated routes with a specific priority on TTR routes.

Route numbering on ASEAN Highways is ongoing on certain sections. However, considering the large network, the priority for implementation are fixed with a top priority on Transit Transport Routes (TTR) followed by other AH sections. It is suggested to accomplish the target by 2013.

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

LT-Action 4: Conduct a feasibility study on bridging archipelagic countries and mainland ASEAN by 2015

To enhance the connectivity of intra-ASEAN transport networks particularly of ASEAN mainland with the archipelagic countries such as Philippines and Indonesia, it is important to

initiate a study to bridge the existing transportation connectivity gaps between the archipelagic countries and ASEAN mainland. Such study will facilitate in strengthening the vital transport links by suggesting the improvement areas for further development of intra-ASEAN transport network. It is suggested to first conduct a feasibility study on bridging archipelagic countries and mainland ASEAN by 2015 and thereafter, follows the recommendations made by the study for the improvement of transport connectivity in ASEAN.

LT-Action 5: Formulate the 'ASEAN Regional Road Safety Strategy Plan 2011-2020' and 'National Road Safety Action Plan 2011-2020' by the year 2012 and its implementation.

In line with the 'UN declaration on the Global Decade of Action on Road Safety 2011-2020' and strategic framework identified in the 2005-2010 Draft ASEAN Road Safety Action Plan, it is suggested to first formulate the policy /guidelines for the regional road safety in ASEAN. Thereafter, the respective AMSs will formulate a 'National Road Safety Action Plan 2020' for their respective nation. The above two task are planned for completion by 2012. Later, based on the recommendations of 'National Road Safety Action Plan', the projects or programme need to be initiated and implemented.

LT-Action 6: Formulate a 'Regional Plan for developing inland waterways transport in ASEAN' by 2012 and begin implementation thereafter.

With an objective to establish the efficient Inland Waterways Transport system in ASEAN, it is essential to conduct a study and formulate 'Regional Plan' for developing Inland Waterways Transport (IWT) services in ASEAN region'. This study after identification of inland waterways routes, their status and related issues, will propose the long, mid and short-term measures to utilize and develop the IWT to its potential in ASEAN region. Later, based on the recommendations from this study, the projects/program need to be implemented. Considering the large scope of the work, the implementation of projects and programmes will require additional number of years and will be continued beyond 2015.

LT-Action 7: Formulate the "Intelligent Transport System Master Plan" by 2013 and its implementation.

Following the recommendations from the 'ASEAN ITS Policy Framework, Plan of Action', it is suggested to formulate the 'Intelligent Transport System (ITS) Master Plan for ASEAN' by 2012, addressing the goals, design of IT system architecture, determination of standards for ASEAN, implementation and monitoring measures among others. In addition, the master plan should also highlight the development and application of ITS on the existing ASEAN Highways. Later, following this, respective AMSs will first need to formulate "National ITS Policy and Master Plan' and later, implementation based on study recommendations.

LT-Action 8: Implement the 'ITS Capacity Building Program' in order to develop ITS.

In order to facilitate the establishment of ITS system in AMSs, it is suggested to enhance the capacity by implementing number of workshops, programme, training session etc. in AMSs. Considering the socio-economic status in AMSs, the top priority for capacity building will be given to nations that are lagging behind. This is continuous and ongoing measures and will need to be implemented throughout the ASTP duration as well as beyond it.

LT-Action 9: Implement programmes/seminars to enhance the 'Technical, Institutional & Human Capacity' for safer, secured & efficient transport system

In order to facilitate the establishment of efficient and integrated transport system in ASEAN, it is suggested to enhance the technical, institutional & human capacity by implementing

number of workshops, programmes, training sessions, security awareness etc. in AMSs. Considering the socio-economic status and existing capability to manage and implement transport projects/programmes in AMSs, the top priority for capacity building will be given to the nations that are lagging behind. This is continuous and ongoing measures and will need to be implemented throughout the ASTP duration as well as beyond it.

LT-Action 10: Exchange & adoption of experiences, projects & knowledge related to 'Environment Friendly Transport System, Vehicles and Fuels'.

The practice of exchange and adoption of experiences, projects and knowledge related to 'Environmentally-friendly Transport System, Vehicles and Fuels' during specially organized seminars/workshops need to be continued. As per the nation's demand and requirement, the feasible projects may be adopted and implemented, first on pilot basis and than later at larger scale. This is continuous and ongoing measures and will need to be implemented throughout the ASTP duration as well as beyond it.

Considering the ASEAN Ministers affirmation on increasing energy efficiency, reducing consumption and carbon emissions in the transport sector, there is a need to initiate actions to mitigate climatic changes and global warming. To improve the public transport share in the selected capital cities in AMSs that are currently coping with poor public transportation, the study on Green Public Transport (Bus Rapid Transport) will be the first step to achieve this goal. Later, based on the recommendations of this study the suggested projects/programme needs to be implemented. However, considering the large scope of the work, the suggested projects will require additional number of years for implementation and will be continued beyond 2015.

Figure 6-3-1 shows the inter-linkages between the specific goals and actions, which are not always one-to-one. For simple presentation, we identified one goal, which has the most significant linkage with each action, and indicated the relationship with bold lines in Figure 6-3-1. Table 6-3-1 provides a summary of land transport goals, actions, and milestones. In Table 6-3-1, actions are related to one goal as indicated in Figure 6-3-1.

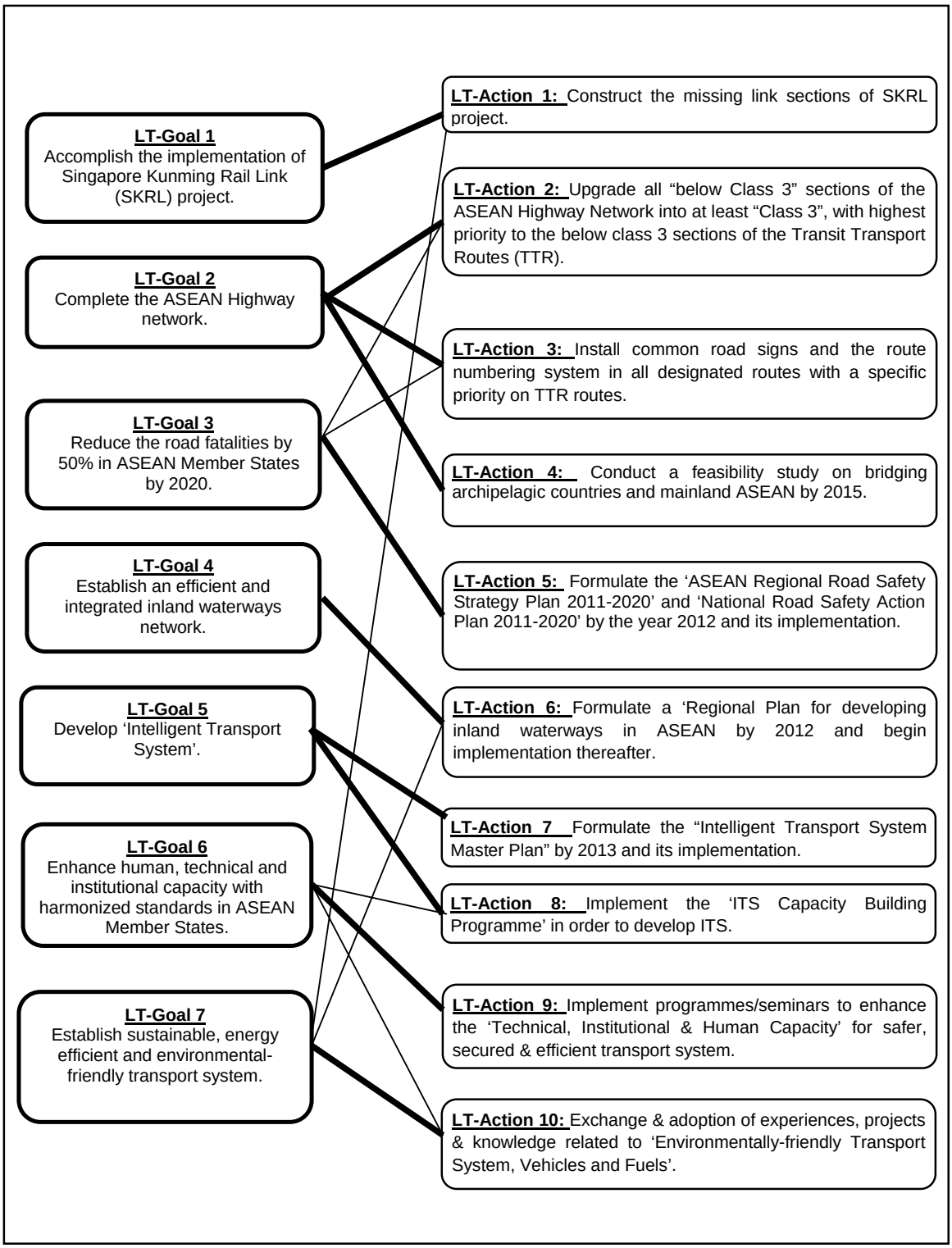


Figure 6-3-1 Linkages between Land Transport Goals and Actions

Table 6-3-1 Land Transport Goals, Actions, and Milestones

LTG-1: **Accomplish the implementation of Singapore Kunming Rail Link (SKRL) project.**	Timelines						Remarks
LTA-1: Construct the missing link sections of SKRL.	2011	2012	2013	2014	2015	Beyond	
1. Construct the missing link sections /spur lines.							
Thailand: Aranyaprathet – Klongluk (6km) by 2014							
Cambodia: Poipet – Sisophon (48km) by 2013							
Cambodia: Phnom Penh – Loc Ninh (255km) by 2015							
Viet Nam: Loc Ninh – Ho Chi Minh (129km) by 2020							MPAC
Viet Nam: Mu Gia – Tan Ap – Vung Ang (119km) by 2020							
Lao PDR: Vientiane – Thakek – Mu Gia (466km) by 2020							
Myanmar: Thanbyuzayat – Three Pagoda Pass (111 km) by 2020							
Thailand: Three Pagoda Pass - Nam Tok (153km) by 2020							
2. Supplementary up gradation work in AMSs to support SKRL.							
Cambodia (Rehabilitation/Up gradation) : Sisophen-Phnom Penh (338 km) by 2013							
Thailand (Track Rehabilitation) : Kaeng Khoi – Kaeng Suaten & Suranarai – Bua Yai & Jira – Bua Yai (308 km) by 2013							
Thailand (Track Rehabilitation) : Bua Yai – Nong Khai (278 km) by 2013							AMS Feedback
Thailand (New Line) ; Bua Yai - Mukdahan - Nakhon Phanom (368 km) by 2030							
Malaysia (Double Track Construction) ; Ipoh-Padang Besar (329 km) by 2013							
Malaysia (Double Track Construction) ; Seremban-Gemas (98 km) by 2012							
3. Formulate a strategy for a seamless operation of SKRL by 2013.							
4. Mobilise financial resources and technical assistance from external partners, either on a bilateral basis or with the coordination of ADB, to support the completion of SKRL in accordance with the agreed deadline.							MPAC
5. Study the possibility of extending the SKRL to Surabaya, Indonesia.							
6. Conduct a feasibility study and preliminary design for the railway spur line between Kanchanaburi and Dawei.							

LTG-2: Complete the ASEAN Highway network.	Timelines						Remarks
LTA-2: Upgrade all "below Class 3" sections of the ASEAN Highway Network into at least "Class 3", with highest priority to the below class 3 sections of the Transit Transport Routes (TTR).	2011	2012	2013	2014	2015	Beyond	
1. Implement the up gradation of 'below Class 3' roads on Transit Transport Routes (TTR) by 2012. Lao PDR : AH12; 293 km, AH 15; 98 km Myanmar : AH1; 781 km, AH 2 ; 593 km, AH3; 93 km Indonesia : AH25; 141.55 km	—	—					MAPC, 17th LTWG & 2nd EG-STOM
2. Implement the other missing links on ASEAN Highway. Myanmar : AH 112; 60 km (missing link) Myanmar :AH 123; 141 km (missing link)			—	—	—	—	
3. Implement the up gradation of other 'below Class 3' roads. Indonesia : AH150; 1762.3 km, AH151; 611.9 km Lao PDR : AH131; 96 km, AH 132; 126 km Myanmar : AH111; 239 km, AH 112; 1085 km Viet Nam : AH13; 215.5 km (by 2011) Viet Nam : AH 132; 160 km (by 2012) Malaysia : AH 150; 40 km	—	—	—	—	—	—	
4. Upgrade 'Class 2 or 3' sections with high traffic volume to 'Class 1' by 2020.						—	MPAC
5. Upgrade the extension of AHN to China and India, particularly sections from Ha Noi via northern Lao PDR through Myanmar to the border with India, by 2015.	—	—	—	—	—		
6. Construct the Mekong Bridge in Neak Loung (National road No.1 in Cambodia).	—	—	—	—	—		
7. Build the highway between Kanchanaburi and Dawei (by 2020).	—	—	—	—	—	—	
8. Construct the missing link of East West Economic Corridor (EWEC) in Myanmar.	—	—	—	—	—	—	
9. Identify and develop a network of ASEAN dry ports in accordance with existing ASEAN initiatives such as the ASEAN Highway Network and the SKRL.	—	—	—	—	—	—	
LTA-3: Install common road signs and the route numbering system in all designated routes with a specific priority on TTR routes.	2011	2012	2013	2014	2015	Beyond	
Install common road signs in all designated routes with a specific priority on TTR routes by 2013.	—	—	—				MPAC
Install common road signs on other ASEAN Highways.				—	—		
Install common road signs on any additional ASEAN Highways that will be newly implemented after 2015.						—	
Install route numbering system in all designated routes with a specific priority on TTR routes by 2013.	—	—	—				
Install route numbering system on other ASEAN Highways.				—	—		
Install route numbering system on any additional ASEAN Highways that will be newly implemented after 2015.						—	
LTA-4: Conduct a feasibility study on bridging archipelagic countries and mainland ASEAN by 2015.	2011	2012	2013	2014	2015	Beyond	
Conduct a feasibility study on bridging archipelagic countries and mainland ASEAN by 2015.	—	—	—	—	—		MPAC
Implement the suggestions/projects by the above feasibility study on bridging archipelagic countries and mainland ASEAN.						—	

		Timelines						Remarks
LTG-3:	**Reduce the road fatalities by 50% in ASEAN Member States by 2020.**							
LTA-5:	Formulate the 'ASEAN Regional Road Safety Strategy Plan 2011-2020' and 'National Road Safety Action Plan 2011-2020' by the year 2012 and its implementation.	2011	2012	2013	2014	2015	Beyond	
	Formulate the 'ASEAN Regional Road Safety Strategy Plan 2011-2020' by 2012.							1st MSRSSWG
	Formulate the 'National Road Safety Action Plan 2011-2020' by all AMSs by 2012.							
	Implement the prepared 'Road Safety Action Plan' in AMSs.							
LTG-4:	**Establish an efficient and integrated inland waterways network.**	Timelines						Remarks
LTA-6:	Formulate a 'Regional Plan for developing inland waterways transport in ASEAN' by 2012 and begin implementation thereafter.	2011	2012	2013	2014	2015	Beyond	
	Formulate the 'Regional Plan for developing IWT in ASEAN' by 2012.							MPAC
	Implement the suggestions/projects by the above study on 'Regional Plan for developing IWT in ASEAN'.							
LTG-5:	**Develop 'Intelligent Transport System'.**	Timelines						Remarks
LTA-7:	Formulate the "Intelligent Transport System Master Plan" by 2013 and its implementation.	2011	2012	2013	2014	2015	Beyond	
	Formulate the "Intelligent Transport System Master Plan' for ASEAN addressing the goals, design of IT system architecture, determination of standards for ASEAN and developing implementation and monitoring mechanism.							ASEAN ITS Policy Framework (Plan of Action)
	Formulate the "National ITS Policy & Master Plan' for AMSs addressing the policy, standards, ITS system development, operation & maintenance, and monitoring mechanism.							
	Implement the recommendations/projects suggested by above study on "Intelligent Transport System Master Plan for ASEAN" & 'National ITS Plan'.							
LTA-8:	Implement the 'ITS Capacity Building Program' in order to develop ITS.	2011	2012	2013	2014	2015	Beyond	
	Organize and implement number (as many) of ITS Capacity Building program in lagging nations.							
	Organize and implement the ITS Capacity Building program in other AMSs.							
LTG-6:	**Enhance human, technical and institutional capacity with harmonized standards in ASEAN Member States.**	Timelines						Remarks
LTA-9:	Implement programs/seminars to enhance the 'Technical, Institutional & Human Capacity' for safer, secured & efficient transport system.	2011	2012	2013	2014	2015	Beyond	
	Organize and implement number (as many) of Seminar/Workshop/Program for 'Technical, Institutional & Human Capacity Building' in lagging nations.							
	Organize and implement Seminar/Workshop/Program for 'Technical, Institutional & Human Capacity Building' in AMSs.							

LTG-7:	**Establish sustainable, energy efficient and environmentally-friendly transport system.**	Timelines						Remarks
LTA-10:	Exchange & adoption of experiences, projects & knowledge related to 'Environmentally-Friendly Transport System, Vehicles and Fuels'.	2011	2012	2013	2014	2015	Beyond	
	Exchange of experiences, projects & knowledge related to 'Environmentally-Friendly Transport System, Vehicles and Fuels'.							
	Adoption and implementation of pilot projects based on the successful experiences and projects related to 'Environmentally-Friendly Transport System, Vehicles and Fuels'.							
	Conduct studies on 'Promotion of Green Public Transportation System' to improve and establish energy efficient green public transport (bus rapid transport/LRT) in the capital cities of AMSs, as per requirement by 2013.							
	Implement the suggestions/projects by the above study on 'Promotion of Green Public Transportation System'.							

6.4 AIR TRANSPORT

6.4.1 AIR TRANSPORT GOALS

An ASEAN Single Aviation Market (ASAM) and open sky policy are undoubtedly necessary to achieve the economic development for AMSs. However, the initiatives should not only be convenience-oriented, but should also pay enough attention to the issues related to safety, security, and environmentally-friendly aviation in accordance with the globally acceptable standards.

Considering the above and the review of earlier plans, current situation and regional issues, and emerging trend & challenges, the specific goals for air transport are proposed as below.

1. Establish an ASEAN Single Aviation Market (ASAM)
2. Promote environmentally-friendly aviation
3. Enhance engagement with Dialogue Partners to promote greater connectivity

6.4.2 AIR TRANSPORT ACTIONS

In order to pursue three (3) specific goals for air transport sector, six actions are proposed. These actions are based on the review of ATAP 2005-2010 actions, the Master Plan on ASEAN Connectivity (MPAC), and the recommendations from the 22nd ATWG meeting held in August 2010 in Singapore and the 2nd STOM Expert Group meeting held in August 2010in Jakarta.

The implementation of the proposed six (6) actions will facilitate the development of a harmonized and integrated air transport system in ASEAN. Actions No. 1 to 3 are the leading actions to realize the implementation of ASAM, while actions No. 4 and 6 are actions in support of the development of an ASAM. To achieve a sustainable future for air transport sector, action No 5 will explicitly consider the environmental measures, which are highly necessary to reduce carbon emissions and mitigate negative environmental impacts. The proposed six actions are shown below:

AT-Action 1: Formulate an ASEAN Single Aviation Market (ASAM) Roadmap and implementation strategy by 2011 and develop ASAM by 2015.

This is the most significant action in the air transport sector to promote the implementation of an ASEAN Single Aviation Market (ASAM). Airline industry liberalisation, aviation safety, aviation security, civil aviation technology, air transport regulatory framework and human resource development (HRD) are elements of an ASAM, and the details will be specified in the Roadmap for the Establishment of ASAM by 2011.

AT-Action 2: Ratify and implement the RIATS Agreements and MAFLPAS.

Under this action, all AMSs are to:

- ratify and implement the Multilateral Agreement on the Full Liberalisation of Air Freight Services (MAFLAFS) and its Protocols 1 and 2 as soon as possible, in support of the establishment of the AEC by 2015, noting that the implementation timeline of the MAFLAFS and its Protocols 1 and 2 as agreed by ASEAN Transport Ministers (ATM) is 31 December 2008;
- ratify and implement the Multilateral Agreement on Air Services (MAAS) and its Protocols 1 to 6 as soon as possible, in support of the establishment of the AEC by 2015,

noting that the implementation timelines of the MAAS as agreed by ATM are 31 December 2008 for Protocol 5 and 31 December 2010 for Protocol 6; and

- sign the ASEAN Multilateral Agreement on the Full Liberalisation of Passenger Air Services (MAFLPAS) by 2010 and ratify and implement the MAFLPAS and its Protocols 1 and 2 as soon as possible, in support of the establishment of the AEC by 2015, noting that the implementation timelines of the MAFLPAS as agreed by ASEAN Transport Ministers are 30 June 2010 for Protocol 1 and 30 June for Protocol 2.

AT-Action 3: Implement the liberalisation of the ASEAN Air Transport Ancillary Services by 2015.

Liberalisation of the air transport ancillary services is also an important component to fundamentally promote an ASAM. Guidelines for liberalisation of the air transport ancillary services set out sub-sectors and their timeline to pursue freer trade in the ASEAN air transport ancillary services.

Table 6-4-1 Timeline of the ASEAN Air Transport Ancillary Services

No	Sub-sector	Timeline
Phase 1		
1	Aircraft repair and maintenance services	**Dec. 2010**
2	Selling and marketing of air transport services	**Dec. 2010**
3	Computer reservation system (CRS) services	**Dec. 2010**
4	Aircraft leasing without crew	**Dec. 2010**
5	Aircraft leasing with crew	**Dec. 2010**
6	Air freight forwarding services	**Dec. 2010**
Phase 2		**Dec. 2015**
7	Cargo handling	**Dec. 2015**
8	Aircraft catering services	**Dec. 2015**
9	Refuelling services	**Dec. 2015**
10	Aircraft line maintenance	**Dec. 2015**
11	Ramp handling	**Dec. 2015**
12	Baggage handling	**Dec. 2015**
13	Passenger handling	**Dec. 2015**

Source: 22nd ATWG

AT-Action 4: Enhance the involvement of the private sectors/airlines.

Presently, air transport sector collaborate with public and private including airlines partially. In order to enhance the rapid increase of air traffic movements, air transport sector will expand the business activity. Therefore, more strengthening of involvement will be absolutely imperative.

AT-Action 5: Develop programmes to improve environmentally-friendly aviation.

AMSs are encouraged to work towards the ICAO Programme of Action to reduce aviation emissions viz. the goals set out and endorsed by the ICAO High Level Meeting on International Aviation and Climate Change (HLM-ENV).

AT-Action 6: Conclude the Air Transport Agreement (ATA) with China by 2010, India, ROK and possibly other dialogue partners, not later than 2015, and thereafter consider the possible expansion to other partners.

The ATA with China is scheduled to be signed in November 2010, and those with India and the Republic of Korea (ROK) are in progress. It is important for ASEAN to maintain this momentum and to consider the expansion of the scope of ATAs to other dialogue partners and other partners. The establishment of an ASAM and ATAs will be important elements of AEC**.**

The Figure 6-4-1 shows the linkages between the proposed goals and actions.

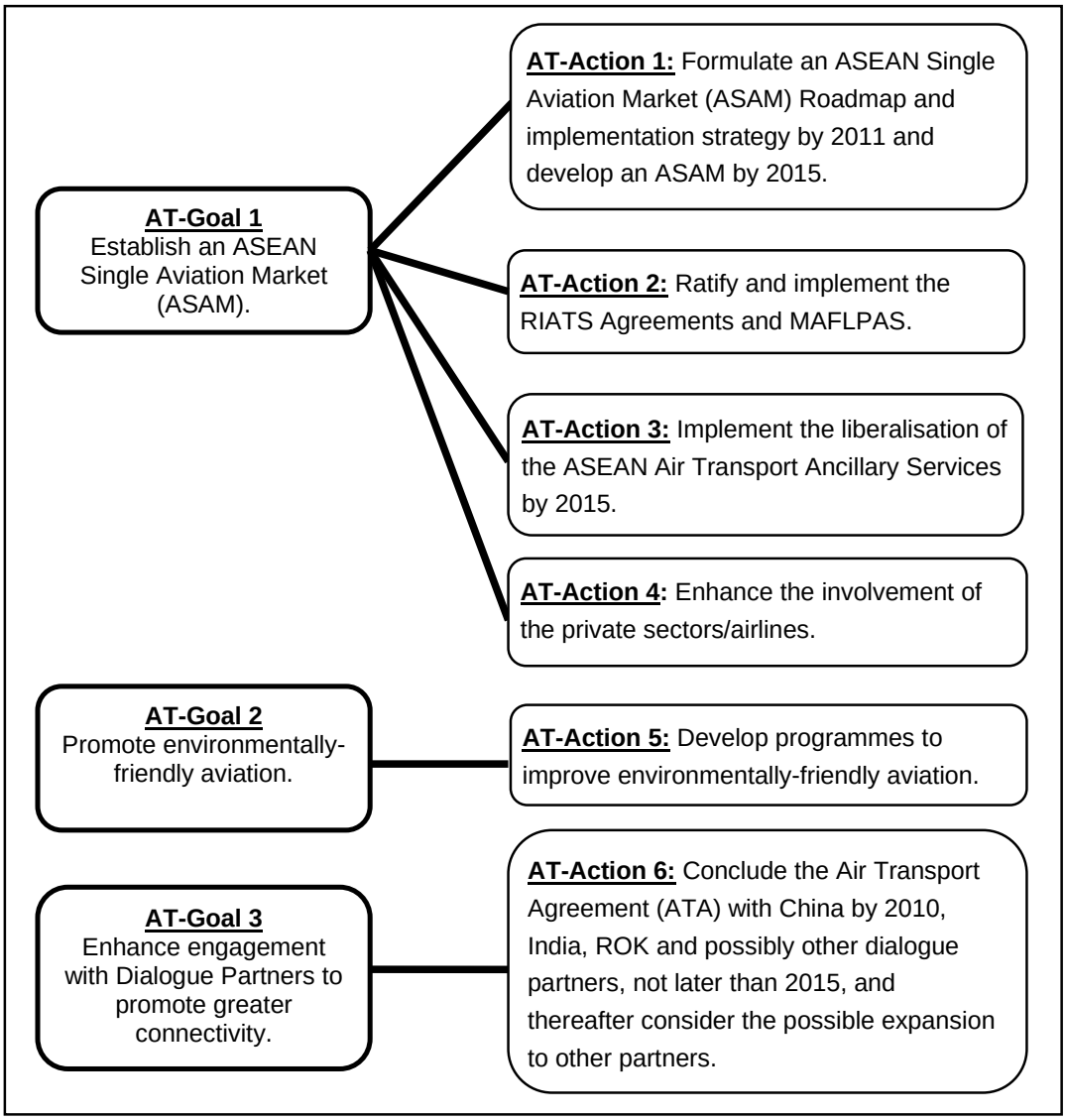


Figure 6-4-1 Linkages between Air Transport Goals and Actions

Table 6-4-2 Air Transport Goals, Actions, and Milestones

ATG-1: Establish an ASEAN Single Aviation Market (ASAM).	**Timelines**						**Remarks**
ATA-1: Formulate an ASEAN Single Aviation Market (ASAM) Roadmap and implementation strategy by 2011 and develop an ASEAN by 2015.	2011	2012	2013	2014	2015	Beyond	
Formulate ASAM Roadmap and implementation strategy by 2011.							
Develop an ASAM by 2015.							
Enhance Search and rescue (SAR) capacity and capability through combined air and maritime SAR exercises (SAREX) by 2015.							
Develop programs for SAREX by 2012.							
Inplement regular SAREX by 2015.							
Cooperation in the area of aviation safety, aviation security and Air Traffic Management (ATM).							
Human resource development for the implementation of an ASAM.							
ATA-2: Ratify and implement the RIATS Agreements and MAFLPAS.	2011	2012	2013	2014	2015	Beyond	
Ratify and implement the Multilateral Agreement on the Full Liberalization of Air Freight Services (MAFLAFS) and its Protocols 1 and 2 as soon as possible, in support of the establishment of the AEC by 2015, noting that the implementation timelines of the MADLAFS and its Protocols 1 and 2 as agreed by ASEAN Transport Ministry is 31 December 2008.							
Ratify and implement the Multilateral Agreement on Air Services (MAAS) and its Protocols 1 to 6 as soon as possible, in support of the establishment of the AEC by 2015, noting that the implementation timelines of the MAAS as agreed by ASEAN Transport Ministers are 31 December 2008 for Protocol 5 and 31 December 2010 for Protocol 6.							
Sign the ASEAN Multilateral Agreement on the Full Liberalization of Passenger Air Services (MAFLPAS) by 2010 and ratify and implement MAFLPAS and its Protocols as soon as possible, in support of the establishment of the AEC by 2015, noting that the implementation timeline of Protocol 1 is 30 June 2010; and Protocol 2 is 30 June 2013.							
Ratify and implement Protocol 1 of MAFLPAS.							
Ratify and implement Protocol 2 of MAFLPAS.							
ATA-3: Implement the liberalisation of the ASEAN Air Transport Ancillary Services by 2015.	2011	2012	2013	2014	2015	Beyond	
Continue liberalisation of Phase I sub-sectors as agreed in the "Guidelines for liberalisation of the air transport ancillary services".							
Liberalisation of Phase II sub-sectors as agreed in the "Guidelines for liberalisation of the air transport ancillary services".							
ATA-4: Enhance the involvement of the private sectors/ airlines.	2011	2012	2013	2014	2015	Beyond	
Continue cooperation with ASEAN airlines companies by holding ATWG meetings back-to-back with the ASEAN Airlines Meeting (AAM).							

ATG-2:	**Promote environmentally-friendly aviation.**	**Timelines**						**Remarks**
ATA-5:	Develop programmes to improve environmentally-friendly aviation.	2011	2012	2013	2014	2015	Beyond	
	Implement "ICAO Programme of Action on International Aviation and Climate" to reduce aviation emissions.							
	Conduct a pilot study for the development of environmentally-friendly AMS airports by 2015.							

ATG-3:	**Enhance engagement with Dialogue Partners to promote greater connectivity.**	**Timelines**						**Remarks**
ATA-6:	Conclude the Air Transport Agreement (ATA) with China by 2010, India, ROK and possibly other dialogue partners, not later than 2015, and thereafter consider the possible expansion to other partner.	2011	2012	2013	2014	2015	Beyond	
	Conclude the ATA with China by 2010.							
	Conclude the ATA with India by 2015.							
	Conclude the ATA with ROK by 2015.							
	Consider ATAs with other dialogue partners and other partner.							

6.5 MARITIME TRANSPORT

6.5.1 MARITIME TRANSPORT GOALS

The main goal for maritime transport is to establish an integrated, competitive and seamless maritime transport network, paying explicit attention to promote maritime safety and security, and environmental- and user-friendly ports. Specific goals for maritime transport are proposed as below.

1. Accomplish an integrated, efficient, and competitive maritime transport system.
2. Develop safety navigation system and establish advanced maritime security system in line with international standards.
3. Accomplish the Eco-Port and environmentally-friendly shipping

6.5.2 MARITIME TRANSPORT ACTIONS

As mentioned in Chapter 4.9, contents of Action No.1, No.2 (consists of three Sub Actions), No.3 and No.4 of ATAP 2005-2010 are comprehensive and abstract measures, and focuses on efficient and competitive maritime transport to succeed in AEC.

Additionally "Roadmap towards an Integrated and Competitive Maritime Transport in ASEAN" was developed and adopted at the 13th ATM Meeting in Singapore in November 2008. The objective of the Roadmap is to promote the progressive Liberalisation on maritime transport services in ASEAN, and twenty concrete measures are adopted from the viewpoint of i) developing a single ASEAN voice, ii) development of infrastructure, iii) market integration, iv) harmonization, and v) human resources and capacity development.

Twenty measures of the Roadmap are deemed to specific measures to execute Actions No.1 to 4 of ATAP 2005-2010. Most measures have been implemented and reported at every MTWG Meeting by lead coordinator countries. Accordingly, key milestones of Action No.1, No.2, No.3 and No.4 shall extend to ASTP 2011-2015.

Among remaining Action No.5 to No.14 of ATAP 2005-2010, No.6 and No.11 were completed. Regarding Action No.11, APA proposed and executed the project "Sustainable Port Development in the ASEAN Region" which is a three-year extension of the Action No.11. Thus, Action No.5-No.14 except for No.6 and No.11 shall basically extend to ASTP 2011-2015 in consideration of current conditions.

Based on the review of Actions in ATAP 2005-2010 as mentioned above, the concept of MPAC, following eight actions are proposed for ASTP 2011-2015. Regarding MT-Action 4, ASEAN Cruise Working Group (CWG) proposed to MTWG to nominate "the Cruise Transport" as an Action in ASTP 2011-2015.

MT-Action1: Realize an ASEAN Single Shipping Market by 2015

- Measure: Develop the strategies for an ASEAN Single Shipping Market through completing a study by the end of 2011, and agree on the strategies for an ASEAN Single Shipping Market by 2012.

It has started as Measure No.12 in "Roadmap towards an Integrated and Competitive Maritime Transport in ASEAN". On the other hand, development of strategies of an ASEAN Single Shipping Market is scheduled to be finalized by 2012, according to MPAC.

- Measure: Develop the relevant framework for implementation of an ASEAN Single Shipping Market by 2015.

It is planned to be implemented in MPAC.

- Measure: Develop guidelines on acceptable practices in the provision of fiscal support for shipping operations by 2011.

This Action focuses on harmonization. It has been implemented as Measure No.14 in the Roadmap.

- Measure: Formulate the directory of ship registration by 2011.

It has started as Measure No.15 in the Roadmap.

- Measure: Develop guidelines for the structure of port tariffs in ASEAN transport network ports by 2011.

It has started as Measure No.16 in the Roadmap.

- Measure: Formulate a strategy for the implementation of a single labor market for ASEAN seafarers by 2013, and implement the strategy by 2015.

It is planned to be implemented as Measure No.20.

- Measure: Support the Privatization/Commercialization of port operation by 2014.

It has started by APA 5-Year Work Programme.

- Measure: Support Simplification and Harmonization of Port Documentation by 2014.

It has started by APA 5-Year Work Programme.

MT-Action 2: Enhance the performance and the capacity of the 47 designated ports by 2015.

- Measure: Develop project priorities based on the guidelines for assessing port development by 2011.

It is planned to be implemented as Measure No.8 in the Roadmap in cooperation with Japan.

- Measure: Explore funding mechanisms to support the implementation of identified projects by 2012.

It is planned to be implemented as Measure No.9 in the Roadmap.

- Measure: Ensure the 47 designated ports to meet the acceptable performance and capacity levels by 2015.

It is planned to be implemented as Measure No.10 in the Roadmap.

- Measure: Identify and support Electronic Transmission of Information by 2014.

It has started by APA 5-Year Work Programme.

- Measure: Develop Port Technology (construction and maintenance of port facilities) by 2015.

It has been supported by ASEAN-Japan Transport Partnership (AJTP).

MT-Action 3: Establish efficient and reliable shipping routes, including RORO, connections between mainland and archipelagic Southeast Asia, and strengthen the linkages with global and domestic routes by 2015.

- Measure: Conduct a Master Plan Study and Feasibility Study on Global/Domestic Shipping together with a Feasibility Study on an ASEAN RORO Network by 2012.

In order to achieve the action, as a first step, it will be required to conduct the Master Plan Study and Feasibility Study. The Studies will especially focus on shipping network in archipelago countries, as well as an ASEAN RORO network. The Studies will also examine the shipping routes and linkages between global and domestic, which are composed of existing and new proposed shipping routes.

- Measure: Implement the proposed measures of the Master Plan and Feasibility Study by 2015.

Based on the result of the said Master Plan Study and Feasibility Study, appropriate measure should be implemented.

MT-Action 4: Establish and enhance the Cruise Corridors.

- Measure: Conduct the Study on ASEAN cruise infrastructure development by 2011.

Comprehensive development study is required to thrive the cruising tourism, the Study includes 1) identify the importance of cruise shipping, ii) construct or upgrade the port infrastructure, iii) facilitation measure for cruise transport and iv)simplifying cruise regulations and procedures in sailing in the region is proposed.

Measure: Implement the proposed measures of the Study on ASEAN cruise infrastructure development by 2015.

MT-Action 5: Review ASEAN Near Coastal Voyage (NCV) Limits as per the requirements of Standards of Training, Certification and Watch-keeping (STCW) Convention by 2012.

- Measure: Review current arrangements for STCW in ASEAN NCV Limits by 2012.

IMO has reviewed NCV Limits as per STCW Convention, and if necessary, develop a framework for NCV Limits.

MT-Action 6: Enhance Search and Rescue (SAR) capacity and capability through combined air and maritime SAR Exercises (SAREX) by 2015.

- Measure: Develop the programme for SAREX by 2012.

An ASEAN SAR Directory has been completed and uploaded on the ASEAN website. On the other hand, the existing programme on SAREX do not involve participation of both air and maritime SAR agencies, the SAR activities usually come under the responsibility of a single SAR agency of individual Member States and are not implemented. Thus, it is required to enhance and activate the SAREX in keeping a relationship with air transport sector.

- Measure: Implement regular SAREX by 2015.

Based on several primary SAREX, its contents and method will be implemented, and it is better to regularly hold SAREX every year.

MT-Action 7: Develop human resources to strengthen port and shipping operations, including the introduction of advanced technologies for navigation safety, maritime security and environment preservation.

- Measure: Formulate training programme to enhance capability of port personnel by 2012.

In order to enhance the capability of port personnel in cargo handling operation, navigation control, security management and environment management, training programme for port personnel is required to be formulated and implemented.

- Measure: Exchange information of navigation system.

Member states have presented their latest situation of navigation system, i.e., Long-Range Identification and Tracking System (LRIT) and Automatic Identification System (AIS) during MTWG meetings.

- Measure: Enforcement of cooperation relating to maritime casualty and marine incident investigation by 2013.

It has started under the scheme of ASEAN MOU on Cooperation Relating to Marine Casualty and Marine Incident Investigation, and ASEAN-China Maritime Consultation Mechanism (ACMCM) plans to support it.

- Measure: Establish logistics education and training centers at selected tertiary institutions within ASEAN by 2012.

It has started under Measure No.17 of the Roadmap and need to be continued.

- Measure: Establish regional centers for training advanced maritime technology by 2013.

It has started under Measure No.19 of the Roadmap and need to be continued.

- Measure: Formulate the programme for seafarers training and implementation.

It shall be supported by ACMCM and ASEAN-Japan Transport Partnership.

- Measure: Improve maritime security level and train security officer in accordance with ISPS code.

It shall be supported by ACMCM and ASEAN-Japan Transport Partnership.

- Measure: Develop strategy for enhanced shipboard placements by 2011.

It has started under Measure No.18 of the Roadmap and need to be continued.

- Measure: Hold the workshop and formulate the programme for realizing environmentally-friendly maritime transport system by 2015.

ASEAN-Japan Action Plan on Environment Improvement in the Transport Sector (AJ-APEIT) shall support it.

- Measure: Develop and implement the programme of port management system as to health and environment by 2015.

It has started under ASEAN/APA/GTZ Project; furthermore, ASEAN-Japan Action Plan on Environment Improvement in the Transport Sector (AJ-APEIT) and ACMCM shall support it.

MT-Action 8: Enhance the activity in cooperation with IMO, and promote to sign and implement the relevant IMO initiative Conventions.

- Measure: Support formulation and implementation of ASEAN Oil Spill Response Action Plan (OSRAP) by 2011.

It is planned to be implemented as IMO Integrated Technical Cooperation Programme (ITCP) for 2010-2011.

- Measure: Hold the regional workshop for maritime issues and sign and implement the relevant IMO initiative Conventions.

Under IMO-ASEAN MOU and ITCP, Workshop on HNS (Hazardous/Noxious/Substances) incidents, maritime casualty investigation and the international Convention on the control of Harmful Anti-fouling Systems on ships are planned. Furthermore, IMO-ASEAN partnership, which supports activities of member states, is under consideration by IMO.

Figure 6-5-1 below highlights the linkage between maritime transport goals and actions.

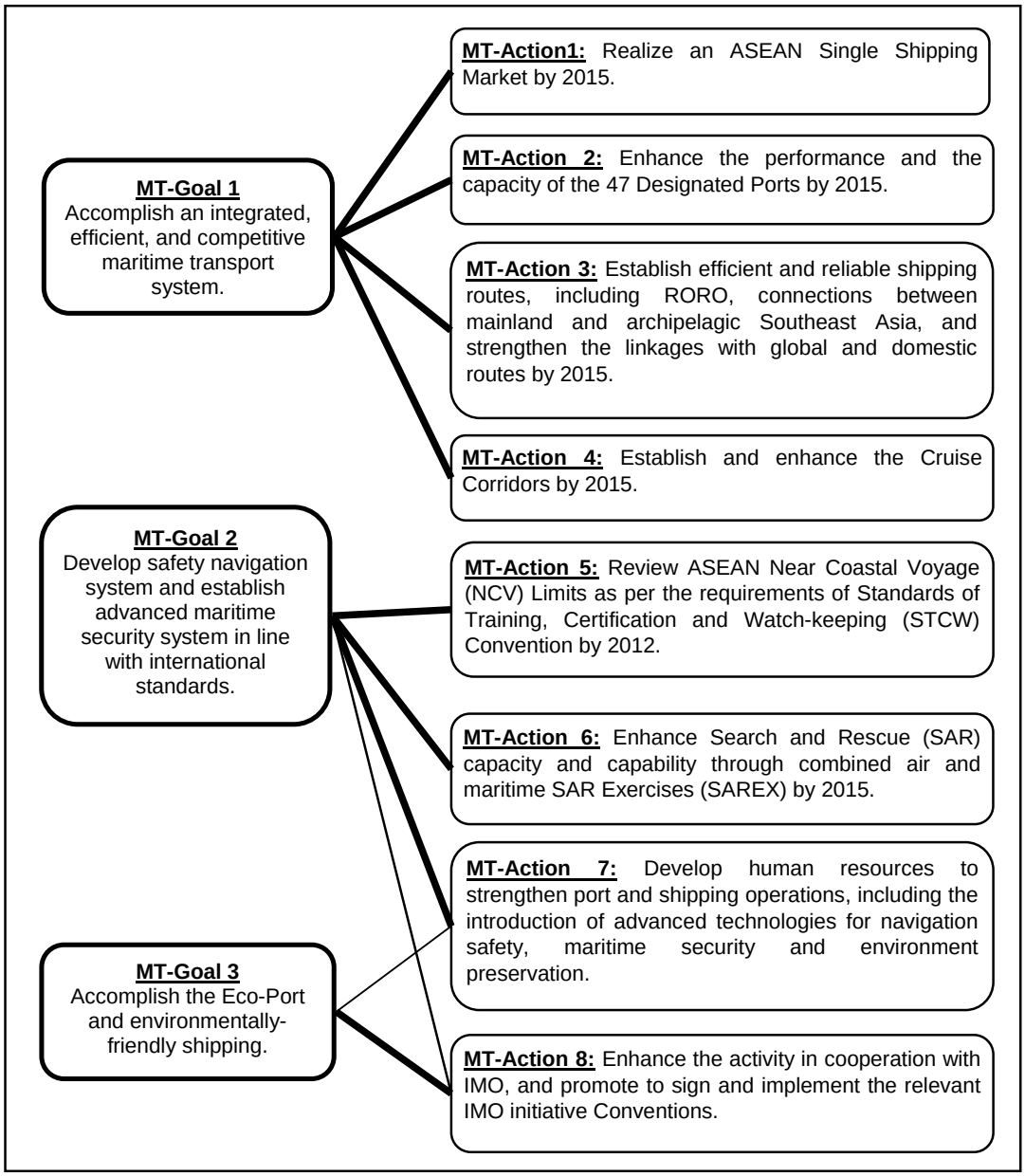


Figure 6-5-1 Linkages between Maritime Transport Goals and Actions

Table 6-5-1 Maritime Transport Goals, Actions, and Milestones

MTG-1: Accomplish integrated, efficient, and competitive maritime transport system.	**Timelines**						**Remarks**
MTA-1: Realize an ASEAN Single Shipping Market by 2015.	2011	2012	2013	2014	2015	Beyond	
Develop the strategies for an ASEAN Single Shipping Market through completing a study by the end of 2011, and agree on the strategies for an ASEAN Single Shipping Market by 2012.							Roadmap MPAC
Develop the relevant framework for implementation of an ASEAN Single Shipping Market by 2015.							MPAC
Develop guidelines on acceptable practices in the provision of fiscal support for shipping operations by 2011.							Roadmap
Formulate the directory of ship registration by 2011.							Roadmap
Develop guidelines for structure of port tariffs in ASEAN transport network ports by 2011.							Roadmap
Formulate a strategy for Implementation of a single labor market for ASEAN seafarers by 2013 and implement the strategy by 2015.							Roadmap
Support Privatization/Commercialization of port operation by 2014.							APA
Support Simplification and Harmonization of Port Documentation by 2014.							APA
MTA-2: Enhance the capacity of the 47 Designated Ports by 2015.	2011	2012	2013	2014	2015	Beyond	
Develop project priorities based on the guidelines for assessing port development by 2011.							Roadmap
Explore funding mechanisms to support the implementation of identified projects by 2012.							Roadmap
Ensure the 47 designated ports to meet the acceptable performance and capacity levels by 2015.							Roadmap
Identify and support Electronic Transmission of Information by 2014.							APA
Develop Port Technology (construction and maintenance of port facilities) by 2015.							ASEAN-Japan
MTA-3: Establish efficient and reliable shipping routes, including RORO, connections between mainland and archipelagic Southeast Asia, and strengthen the linkages with global and domestic routes by 2015.	2011	2012	2013	2014	2015	Beyond	
Conduct Master Plan Study and Feasibility Study on Global/Domestic Shipping together with a Feasibility Study on an ASEAN RORO Network by 2012.							MPAC
Implement the proposed measures of Master Plan and Feasibility Study by 2015.							MPAC
MTA-4: Establish and enhance the Cruise Corridors by 2015.	2011	2012	2013	2014	2015	Beyond	
Conduct a Study on ASEAN cruise infrastructure development by 2011.							ASEAN CWG
Implement the proposed measures of the Study on ASEAN cruise infrastructure development by 2015.							ASEAN CWG

MTG-2:	**Develop safety navigation system and establish advanced maritime security system in line with international standards.**	**Timelines**						**Remarks**
MTA-5:	Review ASEAN Near Coastal Voyage (NCV) Limits as per the requirements of Standards of Training, Certification and Watch-keeping (STCW) Convention by 2012.	2011	2012	2013	2014	2015	Beyond	
	Review current arrangements for STCW in ASEAN NCV Limits by 2012.							
MTA-6:	Enhance Search and Rescue (SAR) capacity and capability through combined air and maritime SAR Exercises (SAREX) by 2015.	2011	2012	2013	2014	2015	Beyond	
	Develop the program for SAREX by 2012.							
	Implement regular SAREX by 2015.							
MTA-7:	Develop human resources to strengthen port and shipping operations, including the introduction of advanced technologies for navigation safety, maritime security and environment preservation.	2011	2012	2013	2014	2015	Beyond	
	Formulate training program to enhance capability of port personnel by 2012.							
	Exchange information of navigation system.							
	Enforcement of cooperation relating to maritime casualty and marine incident investigation by 2013.							ASEAN MOU ASEAN-China
	Establish logistics education and training centers at selected tertiary institutions within ASEAN by 2012.							Roadmap
	Establish regional centers for training advanced maritime technology by 2013.							Roadmap
	Formulate the program for seafarers training and implementation.							ASEAN-China ASEAN-Japan
	Improve maritime security level and train security officer in accordance with ISPS code.							ASEAN-China ASEAN-Japan
	Develop strategy for enhanced shipboard placements by 2011.							Roadmap
	Hold the workshop and formulate the program for realizing environmentally-friendly maritime transport system by 2015.							ASEAN-Japan
	Develop and implement the program of port management system as to health and environment by 2015.							ASEA/APA/GTZ ASEAN-Japan ASEAN-China

MTG-3:	**Accomplish the Eco-Port and environmentally-friendly shipping.**	**Timelines**						**Remarks**
MTA-8:	Enhance the activity in cooperation with IMO, and promote to sign and implement the relevant IMO initiative Conventions.	2011	2012	2013	2014	2015	Beyond	
	Support formulation and implementation of ASEAN Oil Spill Response Action Plan (OSRAP) by 2011.							IMO
	Hold the regional workshop for maritime issues and sign and implement the relevant IMO initiative Conventions.							IMO

6.6 TRANSPORT FACILITATION

6.6.1 TRANSPORT FACILITATION GOALS

The main goal for transport facilitation is to establish an integrated, efficient and globally competitive logistics and seamless multimodal transport system to enhance the connectivity within ASEAN and with the world, as well as pursuing green logistics for global environment preservation

The following four specific goals were given prime importance on the framework of transport facilitation in ASTP by the review of ATAP actions, emerging trend analysis and issues covering three transport sectors, land, air and maritime transport. This follows MPAC as well.

1. Establish integrated and seamless multimodal transport system.
2. Enhance the competitiveness of ASEAN Logistics Industry
3. Establish safe and secure inter-state transport system
4. Develop environmentally-friendly logistics

6.6.2 TRANSPORT FACILITATION ACTIONS

In order to achieve above defined goals for land transport, ten specific actions are proposed as below, along with brief explanation specifying the rationale for their inclusion in ASTP.

TF-Action 1: Fully operationalise the three Framework Agreements on Transport Facilitation.

A transport network is only as strong as the weakest link. In addition, the weakest links can be found behind the national borders. In order to realise the vision of "single market and production base" as envisaged in the AEC Blueprint, ASEAN's connectivity should be enhanced through transport facilitation initiatives to minimise (and eventually eliminate) the frictions at national borders that increase the transactions cost of moving goods between countries in the region. These agreements have been signed on by all AMSs respectively and under ratification process. There are many steps to implement them fully. Protocol 6 of AFAFGT will start after SKRL is completed but it is necessary to accelerate the conclusion by 2011. Protocol 2 and 7 are neither signed nor finalized yet under other implement bodies but it is also necessary to be expedited under ASTP aiming at full operationalisation. For the smooth and swift implementation of these agreements, this action needs to be promoted with improved coordination. TTCB and NTTCCs will lead by following and implementing the TTCB overall work plan.

All AMSs has established their respective NTTCCs or formed an organization that will undertake the latter's corresponding roles. However, as the NTTCCs and TTCB have just started and further active enhancement of their function is expected. Evaluate/monitor regularly the implementation of the three framework agreements by TTCB and NTTCCs will be necessary and TTCB has to develop and implement work plan 2010-2015 to accomplish those actions by 2015, conducting regular meetings to implement three agreements.

TF-Action 2: Implement initiatives to facilitate Inter-State Passenger Land Transportation

This action will also be listed as one of the key strategies to enhance institutional connectivity in the Master Plan on ASEAN Connectivity.

The expansion of road and rail connections within ASEAN would certainly help to facilitate land travel between AMSs (by private vehicles, tour buses and coaches) which could likely to result in the development of new tour packages comprising of different Member States tourism products.

However there are a number of challenges which will impede the free movement of vehicles, goods, and people across international borders that includes: (i) restrictions on the entry of motor vehicles; (ii) different standards requirements (vehicle size, weight and safety requirements, and driver qualifications); (iii) inconsistent procedures related to customs inspections, customs clearances, and assessment of duties; and (iv) restrictive visa requirements.

In addressing these concerns, GMS signed the CBTA to facilitate cross border transport for both goods and people and BIMP-EAGA signed and implemented the Memorandum of Understanding on Cross Border Movement for Buses and Coaches. Several AMSs have entered into bilateral agreements to cater for greater cross-border mobility of passenger vehicles.

ASEAN should capitalise on the existing sub-regional agreements with the view to develop it into an ASEAN-wide agreement to facilitate inter-state passenger land transportation in the region.

TF-Action 3: Conduct studies on potential multimodal transport corridors to empower parts of ASEAN to function as land bridges in global supply routes.

For this action, three measures are i) Study on the 'Land Bridges' connecting the ports (dry and sea ports) in ASEAN mainland and its implementation, ii) Study on Mekong-India Economic Corridor as a land bridge and its implementation, and iii) Conduct development studies of the intra-ASEAN ferry links connecting ASEAN Highways and other priority routes by 2012 and its implementation.

With the purpose to integrate transport in an efficient way specially land and maritime transport and to decongest and reduce the disruption (man-made or natural hazards) from the Strait of Malacca, which is currently the busiest international waterways, it is proposed to conduct the 'Land Bridge' studies connecting the ports (sea and dry ports) at the eastern and western cost of ASEAN mainland via land transport (road/highways or rail). With such development, it is likely that transportation will be more economical, time saving and safer and will provide access to Indian Ocean. This will also be able to set up a perfect example of "Multi-Modal Transportation" as has been propagated by ASEAN leaders.

Varied intermediaries are rapidly growing in AMSs at present. More concrete and measurable action is required to achieve the promotion of the entire group of freight forwarders, MTOs, LSPs, and truck/haulage operators. Currently, the minimum requirement for MTOs has been set by AFAMT. While AFAMT were mainly derived from the UN Convention on Multimodal Transport and the UNCTAD / ICC Rules, APRIS report stated that signed AFAMT cannot satisfy the requirement of issues. The ASEAN Logistics Development Study proposed an action, i.e., "Develop a practical, simple, and uniform liability framework for multimodal transport through regional operation in line with global MT regime development." Such kind of liability framework will greatly help to clarify the definition and function of MTO and enhance the AFAMT.

TF-Action 4: Complete the East West Economic Corridor (EWEC)

To take advantage of the strategic location of ASEAN as the geographic center of the emerging global center of production and demand, it is necessary to strategise ASEAN as the

transport hub in the region. East West Economic Corridor (EWEC) will facilitate in economic development connecting ASEAN region and other countries. It is thus recommended to complete East West Economic Corridor (EWEC) by constructing a missing link in Myanmar and develop or upgrade terminal ports, Yangon and Da Nang

TF-Action 5: Promote the Mekong – India Economic Corridor (MIEC) as a land bridge.

The AEC blueprint states "ASEAN transport is also critical in linking ASEAN with the neighboring northeast and south Asian countries' and the draft statement of 'Comprehensive Asia Development Plan' also suggest for MIEC study to link ASEAN region with the rapidly growing South Asian region. ERIA has conducted an initial research on MIEC and the need is to further build on it. The development of such linkages by roads, bridges, ports, and railways will likely open multiple economic and trade related opportunities for ASEAN region.

TF-Action 6: Comparative study between EU & ASEAN region for the development of efficient transport system by 2013 and its adoption.

During the various discussions, report review and working group meetings, it was observed that ASEAN region is still not very well familiar with the details of integrated transport network and its facilitation system of European Union which is considered best among the comparative regions in the world. As there are many lessons that can be learnt and adopted for ASEAN region from EU system, the comparative transport study between these two regions will be the first step in this direction. Such study will bear fruits in long term and will be the ready reference material for any improvement or modification in the transportation system in ASEAN region.

TF-Action 7: Promote the usage of trade terms and practices related to multimodal transport, including the INCOTERMS.

This action is continued from ATAP and corresponding to measure No. 44 of RILS, which is requested to STOM and AFFA targeting 2013. These trade terms are important to achieve seamless multimodal transport operation and necessary to be continued in ASTP. Training and seminars about trade terms following new INCOTERMS 2010 might be very helpful.

TF-Action 8: Develop and upgrade skills and build capacity for MTO and Logistics Service Providers (LSPs) through joint training and workshops.

Capacity building is still highly demanded in AMSs. This requires continuous and long-term approach and efforts need to be accelerated in ASTP. As partially mentioned in section 3.2 of Chapter 3, No.39 to 42 of the RILS measures are intended for capacity building under which the AFFA proposed and implemented related programmes. In addition, there is an action to provide training on multimodal transportation, logistics, and supply chain management in IAI Work Plan Phase II. It is important to develop a policy and a plan on capacity development for MTOs and LSPs and conduct related joint training and workshops, including training for international driving, with the support of dialogue partners and AFFA. It is also necessary to promote logistics regional cooperation to assist CLMV countries as shown in RILS measure No.39 with AFFA as well.

TF-Action 9: Establish national/regional centres of excellence (training centers), national skills certification systems for LSPs, and a common core curriculum.

Each country has developed or planned to develop their training centres for logistics management, sometimes in assistance with dialogue partners or ASEAN cooperation framework. To achieve improved capacity development for logistics, each country needs to i) develop a national skills certification system for LSPs, ii) develop a common ASEAN core

curriculum for logistics management, and iii) establishment of national/sub-regional centers of excellence (training centres) in each AMSs. These are also stated in the RILS measures No. 40, 41, and 42.

TF-Action 10: Identify and develop the ASEAN logistics network and formulate the necessary infrastructure development requirements.

It is necessary to consider infrastructure development for efficient and integrated logistics more than just establishing logistic centres, which was the focus of ATAP. This action above is based on measure No. 43 of RILS. As stated in said measure, the followings should be the focus of such action; improving inland transport network infrastructure and the inter-modal linkages of connecting transport, matching inland and maritime transport infrastructure and developing connectivity between ASEAN logistics gateways. Also, it is important to identify infrastructure requirement by private sectors and to address private sector involvement and/or public-private partnership in the development of transport logistics infrastructure. Conducting monitoring of corridor performance would help to keep their corridor performance. The RILS stated "Develop and update an ASEAN database on logistics services providers" in measure No. 38. The outcome and benefit of database will enhance the development of networking and is expected to return to each country especially for other private service providers. The implementing bodies are stated by the ASEAN Secretariat with inputs from STOM and AFFA. However, these processes require discussions and cooperation during TFWG. The primary study and monitoring of the database are required as well.

TF-Action 11: Share and apply appropriate technologies of information systems for the promotion of supply chain security initiatives.

In terms of trade/transport procedure and documentation in ATAP Action No.4, application of technologies including but not limited to electronic documentation and signature remarkably contributes to efficient multimodal transport operation. Application of such appropriate technologies is important to establish safe, secure and efficient logistics network among ASEAN. To implement these technologies, capacity building and other knowledge sharing are essential. However, these systems are to be introduced gradually and carefully as per requirement as some of these advanced technologies may not be appropriate to some countries for time-being.

TF-Action 12: Develop green logistics through increase in logistics management efficiency and utilization of environmentally-friendly transport modes, fuel, fleets, and supporting logistics facilities.

To achieve efficient and environmentally-friendly transport in the region, green logistics is an essential concept to be introduced in ASTP. At the same time, LSPs can gain intangible benefits in the form of meeting the social responsibility and reducing the costs by adopting green logistics approach. The best practices and new ideas derived from the discussions and exchange of experiences about green logistics should be shared and applied to other AMSs. This action can be covered by the proposed three measures in the ASEAN Logistics Development Study, (1) encouraging energy saving, (2) decreasing carbon emissions, and (3) environmentally-friendly reverse logistics. These approaches necessitate a great deal of effort from forwarders, accordingly further cooperation from AFFA and Environment-WG.

The Figure 6-6-1 shows the inter-linkages between the specific goals and proposed actions. Following are the thirteen (13) proposed transport facilitation actions based on MPAC and the review of ATAP. Table 6-6-1 provides a summary of transport facilitation goals, actions, and milestones.

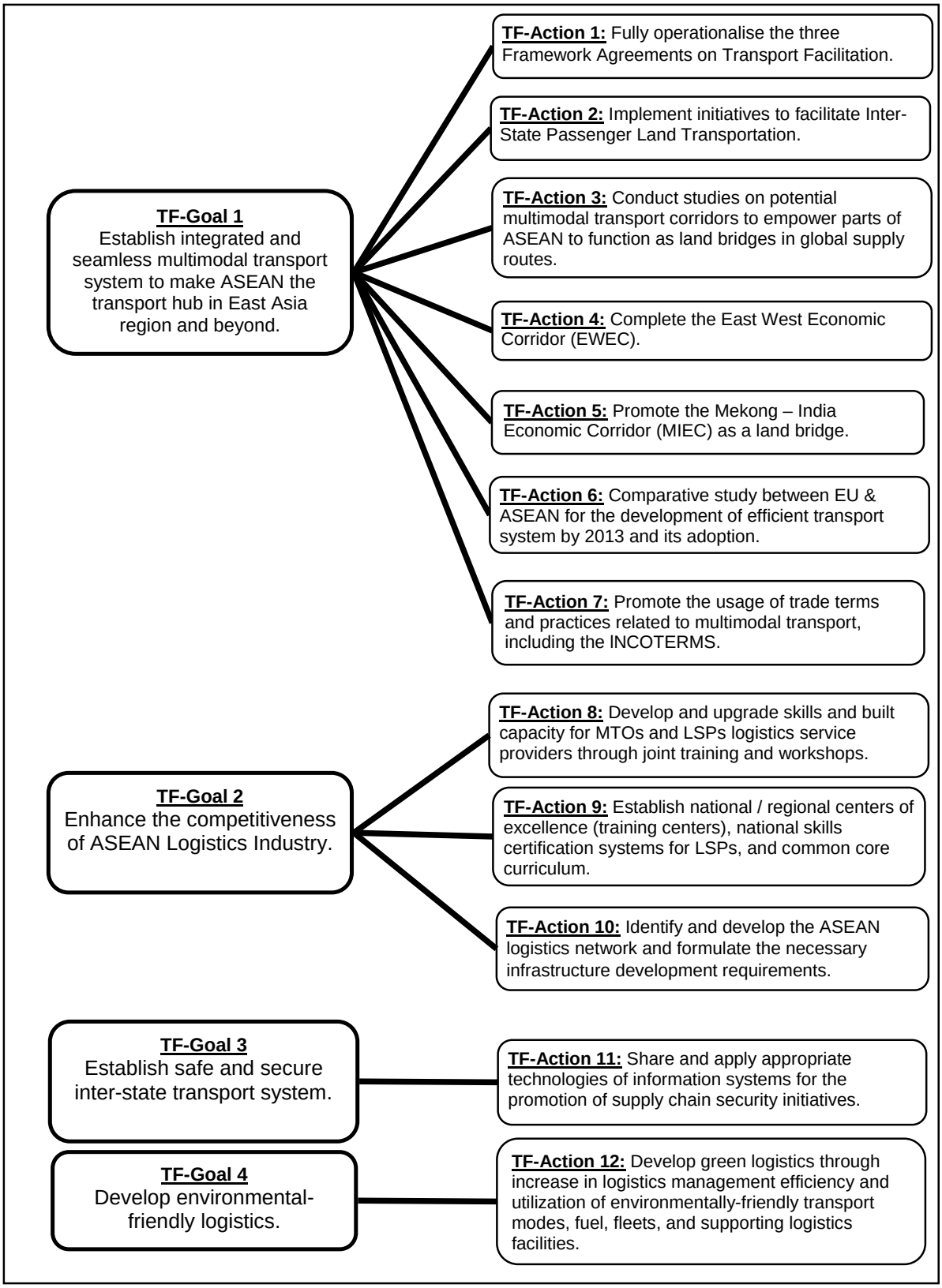


Figure 6-6-1 Linkages between Transport Facilitation Goals and Actions

Table 6-6-1 Transport Facilitation Goals, Actions, and Milestones

TFG-1: **Establish integrated and seamless multimodal transport systems to make ASEAN the transport hub in East Asia region and beyond.**	**Timelines**						**Remarks**
TFA-1: Fully operationalise the three Framework Agreements on Transport Facilitation.	2011	2012	2013	2014	2015	Beyond	MPAC
1. Expedite the ratification of the Agreements so as to start their operationalisation in the region.							
Accelerate the conclusion of Protocol 6 (Railway borders and interchange stations) under AFAFGIT for eventual signing by ASEAN Member States by 2011.	—						MPAC
Expedite the finalisation of Protocol 2 (Frontier Posts) and Protocol 7 (Customs Transit) under AFAFGIT for eventual signing by ASEAN Member States by 2011.	—						
AFAFGT Protocol 1 - Conclusion of Annex 1 and ratification by all Member States.	—						
AFAFGT Protocol 3 - Formally increase maximum number of vehicles to be registered per Member State from 60 to 500 revise and increase notify on ASEAN web site.	—						
AFAFGT Protocol 4 - Implementation of guidelines, registration and certification procedures and begin registration of road transit transport vehicles.	—						
AFAFGT Protocol 5 - Establishment of national and council of bureaus, review and amend national laws.	—						
AFAFGT Protocol 5 - Fix content and form and administer Blue Cards Insurance Scheme.	—						
AFAFGT Protocol 5 - Control of accidents and investigation and settlement of claims including issuing of Blue Cards.	—	—	—	—	—	—	TTCB Overall Work Plan
AFAFGT Protocol 8 - Establish bilateral, multilateral or ASEAN SPS arrangements and inspection procedures.	—						
AFAFGT Protocol 9 - Ratification by all Member States and adoption of international standards.	—						
AFAFGT Protocol 9 - Develop permit scheme.	—						
AFAMT -Ratification by all Member States.	—	—					
AFAIST - Ratification by all Member States.	—	—					
2. Closely monitor the progress of implementation of AFAFGIT, AFAFIST and AFAMT in order to ensure that the three agreements would be implemented by the ASEAN Member States by 2014-2015.	—	—	—	—	—		MPAC
Develop and implement work plan 2010 - 2015 initiated by TTCB.	—	—	—	—	—		
Conduct regular TTCB meetings to operationalize the three framework agreements.	—	—	—	—	—	—	
Evaluate/monitor regularly the implementation of the three framework agreements by TTCB and NTTCCs.	—	—	—	—	—	—	

TFG-1: **Establish integrated and seamless multimodal transport systems to make ASEAN the transport hub in East Asia region and beyond.**	**Timelines**						**Remarks**
TFA-2: Implement initiatives to facilitate Inter-State Passenger Land Transportation.	2011	2012	2013	2014	2015	Beyond	MPAC
Expedite the implementation of the existing bilateral and sub-regional arrangements on facilitation of inter-state passenger land transportation in the region by 2013.							MPAC
Develop a regional ASEAN arrangement on facilitation of inter-state passenger land transportation, based on the assessment of the implementation of the bilateral and sub-regional arrangements by 2015.							
TFA-3: Conduct studies on potential multimodal transport corridors to empower parts of ASEAN to function as land bridges in global supply routes.	2011	2012	2013	2014	2015	Beyond	MPAC
1. Study on the 'Land Bridge' connecting the ports (dry and sea ports) in ASEAN mainland by 2013 and its implementation.							
Identification study of potential land bridges that may be taken up for further detail study by 2011.							
Study on the identified and suggested "Land Bridge" connecting the ports in ASEAN mainland by 2013.							
Implementation of the suggestions/projects by the above study on 'Land Bridge'. (from 2013 onwards)							
2. Study on Mekong-India Economic Corridor (MIEC) as a land bridge by 2013 and its implementation.							MPAC
Conduct study on Mekong-India Economic Corridor utilizing the research conducted by ERIA by 2013.							MPAC
Implementation of the suggestions/projects by the above study on 'Mekong-India Economic Corridor (MIEC)'. (2013 onwards)							MPAC
3. Conduct development studies of the intra-ASEAN ferry links connecting ASEAN Highways and other priorty routes by 2012 and its implementation.							MPAC
Conduct the following along with other development studies for the ferry links by 2012: Cambodia 1. Stung treng - Thalaboriwat (2 km) on AH-11 Indonesia 2. Gilimanuk Terminal -Banyuwangi Terminal (8 km) on AH-2 3. Bakauheni Ferry Terminal -Merak Ferry Terminal (26 Km) on AH-25 Philippines 4. Matnog Terminal - Allen Terminal (25 km) on AH-26 5. Ormoc Terminal - Cebu Terminal (65 km) on AH-26 6. Liloan Ferry Terminal -San Francisco Madilao Port (60 km) on AH-26							
Implement the projects/recommendation made in above studies. (2012 onwards)							
4. Develop a practical, simple, and uniform liability framework for multimodal transport through regional operation in line with global multimodal transport regime development .							
Conduct comparison study between actual regional practices and global and other regional initiatives to develop the most effective liability regime by 2012.							
Develop a liability framework for multimodal transport through regional operation in line with global multimodal transport regime development by 2012 onward.							

TFG-1:	**Establish integrated and seamless multimodal transport systems to make ASEAN the transport hub in East Asia region and beyond.**	**Timelines**						**Remarks**
TFA-4:	Complete the East West Economic Corridor (EWEC).	2011	2012	2013	2014	2015	Beyond	MPAC
	Construct the missing link in Myanmar.							
	Develop/upgrade terminal ports: Yangon, Da Nang.							
TFA-5:	Promote the Mekong – India Economic Corridor (MIEC) as a land bridge.	2011	2012	2013	2014	2015	Beyond	
	Construct the Mekong Bridge in Neak Loung (National road No.1 in Cambodia).							
	Develop the Dawei deep sea port (by 2020).	—	—	—	—	—	—	
	Build the highway between Kanchanaburi and Dawei (by 2020).	—	—	—	—	—	—	
	Conduct a feasibility study and preliminary design for the railway spur line between Kanchanaburi and Dawei.							
TFA-6:	Comparative study between EU & ASEAN region for the development of efficient transport system by 2013 and its adoption.	2011	2012	2013	2014	2015	Beyond	
	Conduct comparative study between EU & ASEAN region for the development of efficient transport system by 2013.	—	—	—				
	Adoption and implementation of suggestions made by the above study 'Conduct comparative study between EU & ASEAN region for the development of efficient transport system'. (2013 onwards)				—	—	—	
TFA-7:	Promote the usage of trade terms and practices related to multimodal transport, including the INCOTERMS.	2011	2012	2013	2014	2015	Beyond	RILS 44
	Promote the usage of trade terms and practices related to multimodal transport, including the INCOTERMS.	—	—	—	—	—		RILS 44
TFG-2:	**Enhance the competitiveness of ASEAN Logistics Industry.**	**Timelines**						**Remarks**
TFA-8:	Develop and upgrade skills and built capacity for MTOs and LSPs logistics service providers through joint training and workshops.	2011	2012	2013	2014	2015	Beyond	
	Develop a plan/ a policy of capacity building for MTOs and LSPs with the support of dialogue partners and AFFA.	—						
	Conduct capacity building through joint training and workshops, including training international driving, for multimodal operators and LSPs with the support of dialogue partners and AFFA.		—	—	—	—	—	
	Promote logistics regional cooperation in AMSs.	—	—	—	—	—	—	
TFA-9:	Establish national / regional centers of excellence (training centers) , national skills certification systems for LSPs, and common core curriculum.	2011	2012	2013	2014	2015	Beyond	
	Develop national skills certification system for LSPs.	—	—	—	—	—	—	RILS 40
	Develop a common ASEAN core curriculum for logistics management.	—	—	—	—	—		RILS 41
	Establishment of national/sub-regional centers of excellence (training centers) in each AMSs.	—	—	—	—			RILS 42

TFG-2: Enhance the competitiveness of ASEAN Logistics Industry.	**Timelines**						**Remarks**
TFA-10: Identify and develop the ASEAN logistics network and formulate the necessary infrastructure development requirements.	2011	2012	2013	2014	2015	Beyond	
1. Develop and upgrade an ASEAN database on logistics service providers.							RILS 38
Study on developing an ASEAN database on logistics with a view on enhancing the development of networking services by 2011.							
Develop and update an ASEAN database on LSPs by 2014.							
Monitor and update the ASEAN database regulaty on logistics service providers 2013 onward.							
2. Identify and develop the ASEAN logistics network.							
Improve intermodal linkages between connecting modes of transport to improve connectivity between ASEAN logistics gateways.							RILS 32
Develop logistics centers with strong intermodal connectivity and facilities for storage and special logistics services as well as distribution and consolidation hubs.							
3. Formulate the necessary infrastructure development requirements.							
Establish enabling and conducive policy environment for increased private sector involvement and/or public-private partnerships in the development of transport logistics infrastructure and the provision and operation of transport logistics facilities.							RILS 34
Conduct periodic monitoring of regional corridor performance to gauge the progress of trade and transport facilitation, infrastructure development, and service improvement of LSPs.							
TFG-3: Establish safe and secure inter-state transport system.	**Timelines**						**Remarks**
TFA-11: Share and apply appropriate technologies of information systems for the promotion of supply chain security initiatives.	2011	2012	2013	2014	2015	Beyond	
Enhance cooperation and communication between TFWG and CPTFWG to facilitate cross-border electronic transactions, information sharing, electronic payment, and electronic signatures.							
Promote relevant technologies for advanced information systems to be shared among governmental agencies, shippers, and industry players in advancing supply chain security initiatives.							
Enhance transport security and safety in the regional supply chain networks through capacity building initiatives, technical networking, and regular exchange of relevant technologies, best practices, and information.							RILS 27
Support introduction of IT functions to logistics centers to enhance intra-ASEAN logistics.							
TFG-4: Develop environmentally-friendly logistics.	**Timelines**						**Remarks**
TFA-12: Develop green logistics through increase in logistics management efficiency and utilization of environmentally-friendly transport modes, fuel, fleets, and supporting logistics facilities.	2011	2012	2013	2014	2015	Beyond	
Encourage energy sa v ing in logistics services in all AMSs utilizing energy-efficient fleets, modal shift to less fuel-consuming modes, and increase freight load factors.							
Conduct studies to disclose CO2 emissions from transportation in AMSs and to develop environmentally-friendly logistics including reverse logistics by 2013.							
Encourage environmentally-friendly reverse logistics in line with the 3 Rs (Reduce, Reuse and Recycles) 2013 onward.							

6.7 SUMMARY

Based on the review of ATAP, current transport status in AMSs, the emerging trend & challenges, and the six policy directions as discussed in earlier chapters, the specific goals and actions were proposed for each transport sector.

With an objective to establish safe, sustainable, efficient and integrated transportation system in ASEAN region, the ASTP proposed 10 actions, 6 actions, 8 actions and 13 actions for land transport, air transport, maritime transport and transport facilitation respectively. These are summarised in the Figure 6-3-1, 6-4-1, 6-5-1 and 6-6-1, which also shows the linkages between goals and actions for respective transport sectors. These inter-linkages are vital to understand the importance and relevance of each specific actions and its contribution in achieving the overall set goals. However, it is to be noted that considering the importance or non-accomplishment of few ATAP actions, the actions were carried forward in ASTP with minor modifications, if necessary. This revision was done to have better understanding and clarity of actions.

With the purpose of better understanding of actions and easy monitoring, each proposed actions were further sub-divided into measurable components and are allotted with a specific time-frame for the accomplishment of task. Table 6-3-1, Table 6-4-1, Table 6-5-1 and Table 6-6-1 provides further details with measurable milestones/components and time-frame for each action. On reviewing the details, the number of action's components/milestones will likely to go beyond the ASTP target year i.e. 2015. It is mainly either due to the lack of finance availability for the action or due to the nature or scope of action. For example, the action, 'Technical, Institutional and Human Capacity Enhancement' is a continuous process and will take few more years to reach at highest level. Similarly, in ASTP, number of studies are suggested which will require additional years for the implementation purpose and will likely go beyond the ASTP target year.

It is also to be noted that some of the specific goals such as accomplishments of ASEAN Highway, establishment of ITS, reduction in number of fatalities by 50%, establish SKRL network, etc. cannot be fully achieved during the ASTP duration. Hence, considering ASTP as a linkage point, the following next five-year transport plan i.e. for 2016-2020 will need to consider these goals for continuation and will have to translate or modify the ongoing/completed actions into effective actions so as to meet the overall set goals of establishing safe, sustainable, efficient and integrated transportation system in ASEAN region.

CHAPTER 7 IMPLEMENTATION ARRANGEMENT

7.1 INTRODUCTION

Since its formation in 1967, ASEAN has made significant progress in forging major political accords that have contributed to regional peace and stability, and to its relations with other countries. Today, ASEAN has a total market of about 500 million people and a combined GDP of more than US$ 700 billion. It is among the top five largest trading entities in the world. Notwithstanding the economic achievements, it must be recognized that ASEAN Member States (AMSs) are very diverse in many aspects of their economic structures and level of development. Together with resource constraints and differences in prioritization, this has made the development of effective modalities of intra-ASEAN economic cooperation a major challenge. Through its various Working Groups, major transport initiatives have been formulated and implemented. In view of the increasing faster pace of globalization in recent years, and the rapid changing regional and global economic situations, it is timely to examine the current institutional structures and mechanisms within ASEAN, and make recommendations to effectively address the new challenges.

This chapter describes the current institutional structures and mechanisms for monitoring and implementation of transport actions. The chapter based on the review of implementation of ATAP actions as were discussed earlier in Chapter-4 and understanding of the existing monitoring mechanism, highlighted certain issues that are to be addressed and considered for the improvement of the monitoring mechanism. It is to be noted that almost all transport ATAP actions are running behind the scheduled target time-frame and not yet been accomplished. For example, in the SKRL project, still no progress has been made for certain sections, similarly the ASEAN Highway already missed the deadline of upgrading all existing 'below Class 3' road sections. It is unfortunate that due to various reasons, the major among them is financial constraint; few actions were still not initiated. For example, 'The study on formulation of regional plan for cross border movement**,** formulation of regional policy framework for IWT and pursue the ASEAN Clean Seas Strategy is still at preparatory stages. To avoid such delays, it is necessary to improve the monitoring mechanism and seek for the solutions to overcome such issues. Thus, based on the review and assessment of monitoring and implementation mechanism, the chapter makes proposals to improve the institutional structures, implementation arrangements, and a monitoring mechanism to enhance its effectiveness.

7.2 CURRENT MONITORING & IMPLEMENTATION MECHANISM

The following section will describe the role of the ASEAN Secretariat (ASec) and working groups that are responsible for monitoring and reviewing the progress of implementation of transport actions. In general, the implementation of actions is mainly done by the concerned AMSs.

7.2.1 THE ASEAN SECRETARIAT

ASec plays an important role in the development of transportation network in ASEAN region. ASec is responsible for the overall management and coordination of the activities related to transport in ASEAN region. Following are some of the major contributing areas for the improvement of transportation system:

1) Preparation of "Transport Action Plan" and seeking its approval.
2) Coordination with AMS for the implementation of suggested actions.
3) Monitoring the implementation of transport related actions.

4) Support STOM/ATM to monitor the progress of implementation by compiling the information from AMSs and facilitating the discussion in working groups.

7.2.2 WORKING/SUB-WORKING GROUP

To monitor and coordinate the progress of implementation of transport actions in ASEAN, four working groups have been established for each transport sector, i.e. land, air, maritime and transport facilitation. In addition to these, five sub-working groups have been formulated to monitor and coordinate the specific actions, which require elaborate discussion to review the progress and related issues for the implementation of sub-projects. Following is the list of working groups and sub working groups that are currently in force:

1. Land Transport Working Group (LTWG)
    a. ASEAN Highways sub-working group
    b. Special working group on Singapore-Kunming Rail Link (SKRL) Project
    c. Multi-sectoral Road Safety Special Working Group (MRSSWG)
2. Air Transport Working Group (ATWG)
    a. Air Transport Economic Cooperation Sub working group (ATEC)
    b. Air Transport Technical Cooperation Sub working group (ATTC)
3. Maritime Transport Working Group (MTWG)
    a. There is no Sub working group in MTWG
4. Transport Facilitation Working Group (TFWG)
    a. There is no Sub working group in TFWG

The below table provides a list of meetings held since 2008. It is to be noted that ASEAN Highways sub-working group didn't met since 2007 and Multi-sectoral Road Safety Special Working Group (MRSSWG), ATEC and ATTC has been newly constituted and met for the first time in 2010.

Table 7-2-1 Schedule of Meetings

Year	LTWG	ATWG	MTWG	TFWG	ASEAN Highway Sub WG	Special WG on SKRL	MRSSWG	ATEC	ATTC
2008	14th	17th, 18th	15th, 16th	15th, 16th		10th	NA	NA	NA
2009	15th, 16th	19th, 20th	17th, 18th	17th, 18th		11th	NA	NA	NA
2010	17th, (18th)	21th, 22th	19th, (20th)	19th, (20th)		(12th)	1st (2nd)	1st	1st

Note - the meetings in parenthesis are planned in second half of 2010. NA- Not Applicable

It is to be noted that for better management purpose, few working group and sub-working group meetings are held back to back. For example, MRSSWG meeting and LTWG meetings are held back to back.

7.3 ISSUES RELATED TO MONITORING & IMPLEMENTATION

As mentioned above, ASec is responsible for the overall coordination and monitoring the progress of transport actions. For review purpose, ASec works in close coordination with the various working groups/ sub working groups and AMSs. To facilitate better monitoring and coordination, four working groups for each transport sector have been established. In addition, five sub-working groups were also established to coordinate and monitor the special actions such as Singapore Kunming Rail Link project, ASEAN Highways etc. However, there are certain issues related to monitoring at working group meetings, ASec and AMSs were observed and analyzed while reviewing the meeting reports and participating in the meetings and are as follows:

7.3.1 REPORTING AND MONITORING MECHANISM

1) Lack of uniform format of monitoring

- While reviewing the working group meetings reports, it has been observed that during working group meetings there is not a practice of following a uniform system of reporting progress and issues related to particular transport actions by AMS. Such different form or format of reporting mechanism leads to lot of confusion and it becomes extremely difficult to assess the actual achievements or progress made to that particular action. Thus, in the absence of such specific uniform format of reporting, currently there is no consistency while describing the progress by AMS. As a result, it is difficult to compare the progress of actions and to analyze which member state is struggling and left behind.
- The scope of transport actions are not same for all actions, they differs in terms of scale, regional influence, nature (study or project etc.) etc. Some actions are soft in nature with limited number of sub-projects/programmes while others have a very wide scope involving many sub projects and huge data to manage. It is to be noted that actions with wider scope will require a detailed data along with spatial information to discuss and monitor the progress during working group meetings. However, the case is not the same while discussing the wider scope actions during working group meetings. The detail data and maps are often not presented by AMS. In the absence of such reliable and detail data along with maps especially for the project involving spatial information such as SKRL, ASEAN Highways etc., it becomes extremely difficult to have a common understanding among AMS and to monitor the actual progress in detail.
- As mentioned above, the transport actions include many soft actions, which will require an understanding of qualitative achievements. For such soft actions, the special format need to be constituted that can detail out the progress and issues in better way. It has also been observed that certain soft actions such as 'Exchange of Best Practices' is on volunteer basis and focuses on ‘information exchange’ without any specific steps to follow-up, adoption or measures to implement the ‘best practices’ in AMS. The progress of such soft actions needs to be discussed and reported in every working group meeting.

2) Absence of ‘Monitoring Guidelines’ for working groups

- In the absence of clear and descriptive guidelines for monitoring purpose to various working groups, the style of reporting, monitoring and progress assessment differs from one working group to another. As all transport actions are to be monitored and later, the progress along with issues needs to be reported to STOM and ATM, it is essential to establish a common monitoring and reporting system that can be followed by each working group.
- In addition to above, the absence of an appointment of “Lead Coordinator” country for transport actions, the reported data and progress by AMS is disintegrated and non-comparative in nature. There is no clarity of actual progress due to the non-availability of

complete set of data in a uniform format. With such disintegrated and unorganized data, it is difficult to assess the progress. Thus, it becomes necessary to nominate a nation for coordination and for clear and comparative understating of actual progress achieved. The ASec can play a major role in facilitating this and can nominate "Lead Coordinator Country" for at least priority actions or actions that involve wide scope of works and data.

3) Weak linkages (monitoring) at national level

- In the current monitoring system, the direct linkage for monitoring purpose doesn't exist between ASec and AMSs. Though each member state is having their own system of monitoring the progress of actions but the method and style differs among the member states. The member states differ in data collection system, capabilities, institutional arrangement and many others. As a result, the progress reporting system also differs during the working group meeting. Thus, the not a very strong linkages of monitoring system at country level resulted in weak coordination in progress reporting and implementation of actions. Such linkages need to be strengthened.

7.3.2 CONDUCT OF BUSINESS BY THE SECTORAL WORKING GROUPS

1) Incomplete /insufficient scope of monitoring

- It was a bit strange to notice that in many cases, not all actions as described in the transport plans were discussed in detail during working group meetings. In certain cases, some of the actions are not even discussed. Thus, the practice of not discussing all transport actions will definitely have a negative impact in realizing the actions within the stated time-frame. Considering that not all actions are discussed during meetings, it becomes extremely difficult to follow the progress and assess the current status of the missed out actions.

2) Irregular meetings of working groups/sub or special working group

- For the special actions, special or sub working group has been constituted to monitor and assess the progress. However, despite constitution of such special or sub-working group, some of them do not meet on regular basis. As this is the platform for a descriptive discussion of the issues and progress related to a particular action, it hinders the progress and its assessment. As a result, the prime objective of facilitating the priority projects is diluted. For example, the ASEAN Highways sub-working group did not meet on regular basis and met last time in 2007. This had a major impact on the implementation and currently, the AH project is behind the scheduled target, despite the efforts by Thailand to coordinate and compile the information related to ASEAN Highways. For better management purpose, ASec may need to formulate the guidelines or standardize the process of meetings schedule of the constituted working/sub/special working groups.

3) Duplication of discussions during WG meetings

- As integration of transportation system is of prime objective, it does involve certain actions that are relevant to two or three different working groups. It has been noted that the same reporting of progress and discussion takes place in both working groups. Thus to avoid such duplication and utilize the time and efforts in other activities, the action need to be included in the more relevant transport sector. For example, the actions related to agreements/protocols are discussed in both 'Land Transport' and 'Transport Facilitation' working group meetings. If the actions such as agreements, if are not directly linked to a particular sector, then report/discussion of the other working group that discussed the issues or progress may be communicated to working group members.

7.3.3 FINANCIAL MOBILIZATION EFFORTS TO IMPLEMENT THE TRANSPORT ACTION PLANS

1) Lack of financial mobilization efforts

- It has been observed that most of transport actions are not able to keep the prescribed time-frame and running behind target time schedule. In majority of the cases, it is mainly due to the financial constraints especially the actions that involve construction works. Such issue of financial constraint is not discussed in detail during the working group meeting. Thus, without any further discussion during working group meetings on important issues such as establishing financial linkages or exploring the possibility of financial assistance or mobilizing resources, it will be difficult to implement the actions and progress further. It is sad to state that due to financial constraint, some of the actions or sub-actions were not even initiated in AMS. Thus, financial constraints have been noticed as a major hurdle in implementation of actions in many AMS.

2) Low financial resources

- Lack of adequate financial resources were observed as a major barrier for the slow implementation of most of the ATAP's actions. For example, the action 'ASEAN Clean Seas Strategy' could not be initiated due to the financial constraint. Similarly, due to financial constraint the SKRL project will not be able to accomplish by the target year 2015. The ASEAN Highways also due to financial constraint is slow in implementation and currently running behind the target year. Apart from this, some studies also could not be initiated due to lack of financial resources. The lack of financial constraint is a major issue and without generation of adequate financial resources, the story of implementation of ASTP actions may be same as of ATAP. Thus, to ensure that ASTP actions will be implemented within the designated time-frame, it is deemed essential to strengthen the financial resource generation system. In addition, for the smooth implementation of ASTP actions, ASec will also need to enhance its capacity and will require further financial support for such institutional arrangements.

7.3.4 ENGAGEMENT WITH STAKEHOLDERS, INCLUDING THE PRIVATE SECTOR AND ACADEMIC RESEARCH INSTITUTIONS

1) Limited role of academic/research institutions

- During the implementation of ATAP actions, it has been observed that there has been a very limited role and involvement of academic and research institutions in the implementation of transport actions. To facilitate the implementation, it is vital to strengthen the knowledge link between the academic/research institutions and AMSs. The utilization of available knowledge, research findings and facilities within respective nations may have accelerated the implementation process and may have provided solutions to overcome the long delays.

2) Limited efforts for the synchronization with ongoing initiatives

- Considering that the synchronization of the actions with other ongoing initiatives, programmes and projects, the actions can be implemented with better outputs and optimum use of resources. However, during the ATAP duration, not much effort has been initiated or made to utilize the available resources in a optimal way. Such synchronization would have facilitated the implementation of ATAP actions and to certain extent may have also facilitated in mobilizing financial resources.

7.4 PROPOSED IMPLEMENTATION AND MONITORING MECHANISM

Based on the review of ATAP implementation and monitoring mechanism and assessment of issues, the following sections will propose the general recommendations to improve the implementation and monitoring mechanism.

7.4.1 REPORTING AND MONITORING MECHANISM

1) Develop a uniform reporting format and expand the AEC Scorecard

- For consistency and comparability, a 'uniform reporting format' for each Action needs to be developed and disseminated to all AMSs well in advance for the purpose of uniform reporting and easy understanding of each Action's progress. ASec may facilitate in developing such 'uniform reporting format'.
- It is suggested to formulate a "Monitoring Guidelines" to guide all working groups in monitoring and reporting progress of implementation. These guidelines may also be used by AMSs for monitoring and reporting at the national level.
- In addition to above, the practice of using a scorecard to assess the progress of implementation should continue. The existing AEC Scorecard will need to be expanded in accordance with the ASTP Actions.

2) Nominate 'Lead Country Coordinators' and establish 'Priority Centres', as appropriate

- 'Lead Country Coordinators' should be nominated to lead the coordination, monitoring and implementation of priority Actions. Although this is currently practiced for selected measures and in certain working groups, this can be further improved in terms of coordination and management.
- For the Actions and Measures which involve substantial processing data and spatial information and require significant monitoring at the regional level, it is suggested to establish dedicated centres or "Priority Action Centres". For example, it is suggested to establish an "ASEAN Highway Centre" with Geographic Information System (GIS) facilities for ASEAN Highways in Bangkok, Thailand, which will be responsible for overall coordination and data management, including spatial information related to ASEAN Highways. Similarly, a 'Road Safety Centre' may be established or a reputed institution may be made responsible for updating and managing road safety related data. Such priority centres should be established based on the scope of the action and its regional influence. As the operation of the Priority Centres require resources, the proposals from certain AMS to host and support the operation of these centres should be encouraged.

3) Enhance coordination at the national level

- AMSs need to enhance the monitoring linkages at the national level. For this purpose, it is suggested that 'National Workshops/Meetings' be held annually within each AMS to discuss in detail the progress and issues related to transport Actions. This will bridge the existing reporting missing link between the working group and AMSs. Such process in addition to strengthening the monitoring system will also accelerate the implementation and will assist in resolving implementation issues.

7.4.2 ROLES AND FUNCTIONS OF SECTORAL WORKING GROUPS

1) Active functioning of the Working Groups

- The Working Groups will need to actively and continuously pursue follow-up action in between their regular meetings in order to assist in progress evaluation and to facilitate

the implementation. This will complement the adoption of the suggested 'uniform reporting format' and will render meetings more effective and shorten the time of resolving implementation issues.

2) Better coordination and management

- Should similar issues require discussion in at least two working groups, the coordination and management of issues prior to the conduct of meetings can be improved through prior information sharing and consultation between working groups. A mechanism for coordination between the Chairs of the working groups can be explored and instituted accordingly.
- The regular activity involving sharing and implementation of best practices need to be better managed and organized. Currently, AMS present the best practices on a voluntary basis during working group meetings without much emphasis on implementation mechanism, which can facilitate other AMS to adopt these practices as a pilot projects in their respective countries. Thus, it is important that 'Best Practices' with a general implementation details need to be presented and planned in advance.
- All actions and implementation issues need to be thoroughly discussed by the members of the working groups. In the absence of such discussion, it becomes extremely difficult to assess, follow progress of implementation and resolve outstanding issues.

3) Review the roles and responsibilities of the Working Groups

- Considering the increasing complexity of the issues in all modes of transport and the emerging demand for collaborative action among these three sectors in the context of transport facilitation and an integrated transport system, the roles and responsibilities of the various transport working groups may need to be reviewed. This is with a view to streamlining and rationalizing the division of work among these working groups.
- One of the goals of the ASTP and the Master Plan on ASEAN Connectivity is to develop multimodal transport systems and corridors. The scope of the Transport Facilitation Working Group's (TFWG) will thus need be widened to cover the actions and measures related to the development of such system, such as the
  - (i) Conduct of studies on potential multimodal transport corridors to enable parts of ASEAN to function as land bridges in global supply routes, and
  - (ii) Conduct of a comparative study between EU & ASEAN for the development of efficient transport system by 2013 and its adoption.

7.4.3 FINANCIAL MOBILIZATION TO IMPLEMENT THE ASTP

1) Emphasis on mobilizing financial resources during WG meeting

- The working groups also need to discuss the resource requirements and funding options for the implementation of the actions and measures under the ASTP since this is a major issue that hinders implementation progress. Feasible options need to be discussed and be elevated to STOM and ATM for further decision and action. Currently, issues related to funding options and financial constraints are not discussed in detail at the working group level.

2) Mobilize and generate financial resources

- Enhancing linkages with private agencies and promotion of Public-Private Partnership (PPP) is essential for the realization of ASTP's actions. If required, respective country policies need to be reviewed and revised for the promotion of private sector involvement in the transportation projects. To overcome the financial

constraint, the private organizations and industries need to be mobilized to sponsor or assist in cash or kind for the implementation of transport actions.

- 'Special Fund Raising/Mobilizing Team' may be constituted within ASec to mobilize resources and raise funds for the implementation of the ASTP actions. The role of this team will be to mobilize resources by establishing linkages with industries and organization in AMSs. This team will also promote and encourage industries to sponsor or support in cash or kind for the implementation of at least national projects/programmes related to ASTP. In addition, the team will also be responsible for coordinating with dialogue partners, international agencies, financial institutions, donor agencies and others for financial mobilization.

- The need is to integrate the ongoing efforts of "Initiative for ASEAN Integration (IAI)" with ASTP actions. Under this framework, funds may be made available for the technical cooperation and implementation of ASTP actions. In consultation and coordination with AMSs, the ASec plays a major role in facilitating and directing IAI funds to AMSs that are financially struggling or finding difficult to implement the ASTP actions from their own resources. Such arrangements will provide a well-established regional platform to help and enhance the capacity of national government to implement ASTP actions.

- Similar to arrangements in other sectors (e.g., ASEAN ICT Fund, ASEAN Energy Endowment Fund), it is suggested to constitute an "ASEAN Transport Fund" to be administered by ASec for the purpose of assisting the implementation of priority regional actions. In addition, efforts may be initiated by AMS as well as by ASec to explore and further raise funds from Dialogue Partners and other International organisations.

7.4.4 ENGAGEMENT WITH STAKEHOLDERS, INCLUDING THE PRIVATE SECTOR AND RESEARCH INSTITUTIONS

1) Enhance linkages with academic/research institutions

- It is important to enhance the linkages between ASec, the AMS and academic and research institutions (in host AMS or neighbouring countries). The ASEAN University Network may be utilized to assist the AMS in the implementation of ASTP actions. An Institute/University may also be assigned to handle data management of few selected actions.

- In addition, linkages should also be established with academic and research institutions in Dialogue Partner countries. Special technical support may also be sought from these institutions. In addition, these institutions may also be invited to share best practices related to transport development.

2) Synchronizing ASTP with ongoing or planned initiatives and programmes /projects

- It is essential to synchronize and align the ASTP activities with the other ongoing initiatives, projects and programmes at regional and national level. This will help reduce resource constraints in implementation. For example, the Greater Mekong Sub region (GMS) is implementing many transport related projects and many of the actions/measures as proposed in ASTP will overlap with the projects/programmes in GMS. Two other examples are the GMS programmes supported by ADB on railway development and facilitation of cross-border traffic and passenger travel. Efforts need to be initiated to synchronize and align with such projects/programmes in the region to provide benefits in terms of cost reduction, time savings and synergy.

7.4.5 STRENGTHENING THE ASEAN SECRETARIAT TO MONITOR AND FACILITATE THE IMPLEMENTATION OF TRANSPORT COOPERATION

Considering the issues discussed in the earlier sections, it is of prime importance to strengthen the capacity of ASec to efficiently support the implementation of the ASTP, in terms of human and financial resources. The mandate of ASec in respect of supporting ASEAN transport cooperation includes: (i) providing strategic policy and technical advice and recommendations on sectoral activities; (ii) facilitating technical discussions and negotiations among Member States; (iii) developing, implementing and evaluating programmes in support of sectoral activities; (iv) monitoring progress against the ASTP and the AEC Blueprint; (v) managing, coordinating and assisting in project implementation by providing technical guidance and inputs into projects; (vi) assisting in resource mobilisation for project activities; (vii) monitoring and following-up on compliance with agreements; (viii) liaising with a wide range of international organisations and with Dialogue Partners; (ix) providing technical and advisory support to related ASEAN transport entities; and (x) servicing meetings of ASEAN transport bodies.

Clearly, the breadth of such mandate will require sufficient resources and significant effort to strengthen ASec. The following are some of the recommendations to implement this:

- Enhance the human resource capacity through the recruitment of competent professionals and personnel;
- Provide appropriate technical training to strengthen its advisory and analytical capability; and,

Provide adequate financial support to manage the coordination and monitoring of ASTP actions.

The Figure 7.4.1 highlights the schematic flow of activities and suggested coordination and implementation mechanism for ASec.

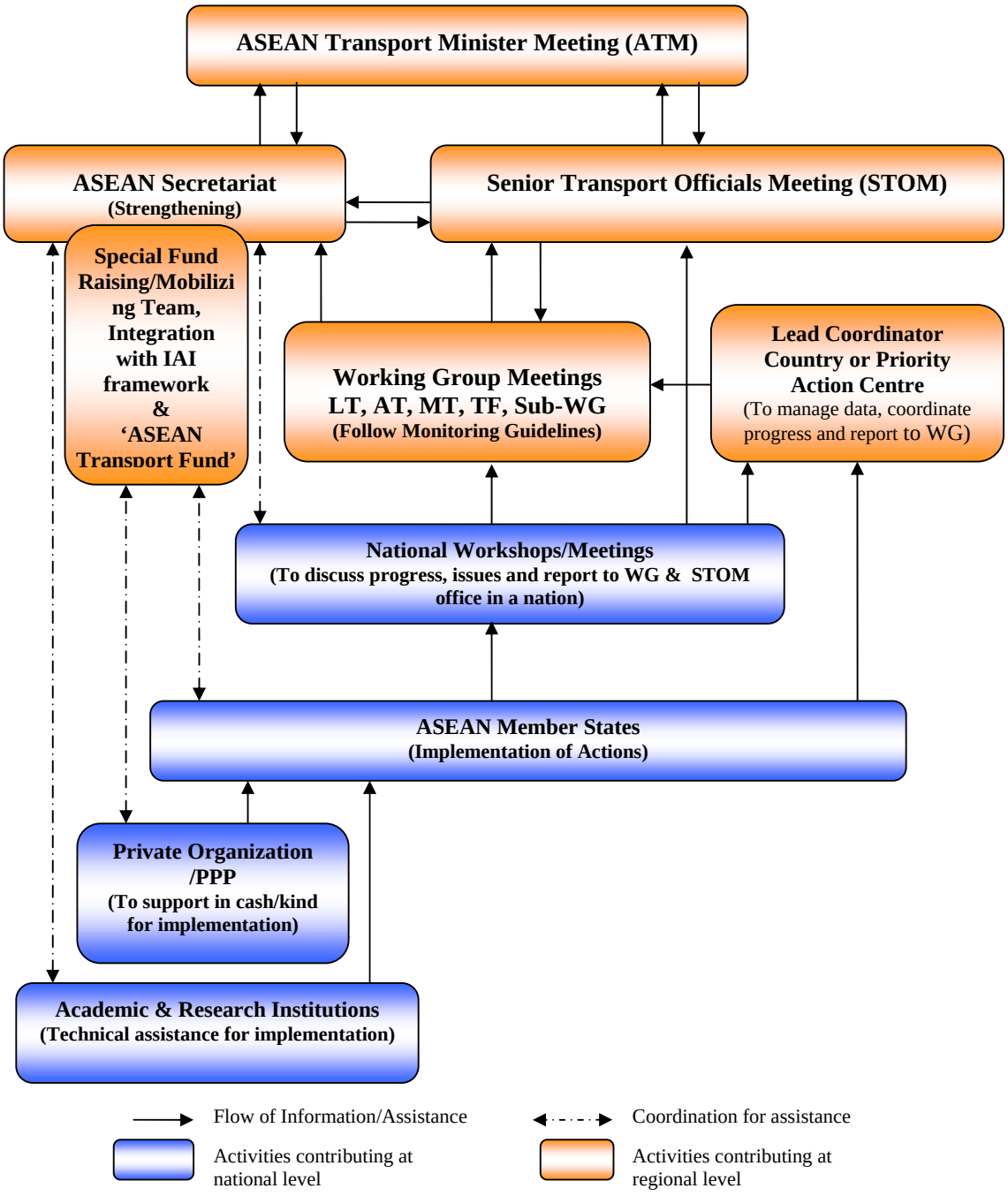


Figure 7-4-1 Proposed Implementation & Monitoring Mechanism for ASEAN Secretariat

7.5 SUMMARY

The general review of the current (ATAP actions) implementation and monitoring mechanism of transport related actions highlighted certain issues that were hindering the implementation and review process. The major among them are the absence of uniform reporting system, the financial constraint to implement the projects/programmes, weak reporting link between the ASec and AMSs and the limited involvement of national academic and research institutions.

To overcome these hurdles and to improve the monitoring and implementation mechanism, it is suggested to improve the reporting and monitoring mechanism at working group meetings by adopting a uniform reporting format for the purpose of progress reporting by AMS. In addition, for better understanding of issues and progress, it is suggested to organize national workshops/meetings in AMSs. This will provide an ideal platform to discuss the related issues in detail and later reporting the outcome to STOM office and WG meetings for further decision and actions. It has also been observed that the priority projects that involve lot of data and subprojects were not very well documented and monitored. It is thus suggested to establish "Priority Centres" or at least nominate "Lead Country Coordinators" for such priority actions/projects to coordinate and manage huge related data with AMSs.

To assist the Member States that are struggling to implement the projects due to technical or any other reasons other than financial and political reasons, it is suggested to enhance and establish the linkages with academic and research institutions. Such institutions during implementation can assist in overcoming the difficulties arising due to technical and other issues. In addition, with an objective of better output and optimum utilization of resources and efforts, it is suggested to synchronize the ASTP actions with other ongoing initiatives in ASEAN especially in Greater Mekong Subregion.

To overcome the financial constraints, which has been a major issue for slow implementation of actions during ATAP, it is suggested to further strengthen ASec by constituting a "Special Fund Raising Team" within ASec and integrating the "Initiative for ASEAN Integration (IAI)" framework with ASTP. In addition, learning from the example from other sectors like ICT, Energy and others, it is suggested to constitute a "ASEAN Transport Fund" in contribution from AMSs and others. With such institutional arrangements in place, it will facilitate ASec in facilitating and directing the funds to the financially struggling nations to implement the ASTP actions. In addition, the fund raising team will need to mobilize resources by establishing linkages with industries, organizations, donor agencies and financial institutions to ensure that actions are implemented within the ASTP time-frame.

Considering the emerging challenges and demands, it is suggested to expand the mandate of Transport Facilitation Working Group (TFWG). The actions such as 'To establish multimodal transport system' that will be integrating the other three modes of transport i.e. land, air and maritime transport need to be coordinated and monitored by TFWG.

To ensure that ASTP actions will be implemented smoothly and the actions will be accomplished within the specified time-frame, it is deemed necessary to further strengthen the ASec especially in terms of human and financial resources. It is suggested to strengthen ASec through further financial support, enhancing human resource capacity, constitution of special team within ASec for resource mobilization, integration of IAI framework and constitution of an 'ASEAN Transport Fund' for the implementation of ASTP actions.

CHAPTER 8 ASEAN TRANSPORT COOPERATION BEYOND 2015

8.1 INTRODUCTION

The ASEAN Strategic Transport Plan (ASTP) recommends actions in support of the enhancement of the ASEAN Connectivity and the establishment of the ASEAN Economic Community in 2015. It is noted that the target implementation date of 2015 was made by ASEAN Leaders in January 2007 to accelerate the establishment of the ASEAN Economic Community as originally envisioned in the ASEAN Vision 2020, in response to intensifying global and regional competitions. There is a need to look beyond 2015, and formulate a vision for continuing and strengthening ASEAN transport cooperation after ASTP 2011-2015. This chapter first highlights those ASTP actions that will have to be continued beyond 2015, and the rationale for their continuation. This is followed by identifying trends of developments globally, regionally and within ASEAN, and likely necessary actions required on the part of ASEAN Member States (AMSs).

8.2 ACTIONS BEYOND 2015

ASEAN Economic Community (AEC) Blueprint envisages four characteristics of the AEC:

(i) Single Market and Production Base

(ii) Competitive Economic Region

(iii) Equitable Economic Development; and

(iv) Integration into the Global Economy

And the ultimate objective of ASEAN transport cooperation is to realize a seamless, efficient and integrated transport system to support the realization of the ASEAN Economic Community and for ASEAN to integrate with the global economy, improve competitiveness and enhance the inflow of foreign direct investment. Thus it is required for ASEAN to achieve the ultimate objective within 2015 in accordance with the establishment of the ASEAN Economic Community in 2015.

However, some of the actions proposed in Chapter 6 will not be completed by 2015 and need to be continuously taken into consideration beyond 2015. In order to achieve truly ultimate objective of ASEAN transport cooperation, ASEAN needs to formulate a common transport policy, as the ultimate goal of ASEAN transport cooperation.

Prospects beyond 2015 in transport cooperation are closely related to uncompleted actions in ASTP as observed below.

(1) Land Transport in 2015 and Beyond

1) Major Challenges

Surely, the improvement of ASEAN Highways will facilitate economic growth but at the same time, if not planned, it will also generate more traffic volume, congestion, accidents and carbon emission. To avoid such situation key is to maintain a balance between the economic growth and transportation by promoting and improving the public transport system in AMSs. The development of integrated rail transport, LRT and bus rapid transportation will be the key sectors for future development.

The ASEAN Highways and SKRL network when completed will serve as the main skeleton of land transport for the region. Further development vertically at the national level is necessary for improved accessibility, as well as horizontally at the regional level to support

regional economic developments. In this process, efforts must also be directed at mitigating negative environmental and social impacts, controlling carbon emissions, promoting energy efficient multimodal transportation (including possible modal shifts), encouraging the use of public transportation, improving network level transportation service by appropriate utilization of ITS and ICT, and reducing traffic accidents.

The regional land transport network as will be developed during ASTP duration will gain in popularity, importance and will offer new business opportunities for the people, however, globalization is an irreversible trend and new challenges and demands will emerge in land transport sector. The reduction of private vehicles, reducing congestion and accidents, developing integrated multi-modal transport, utilization of ITS & ICT, enhancing capacity, strengthening financial system and controlling carbon emission will be the major challenge for land transport sector in 2015 and beyond.

2) Controlling the Carbon Emission

Considering the consequences of global warming specially on the existing islands and the regions next to sea, the challenge will be to reduce the carbon emission generated by land transport sector. Along with the development of public transport, the efficient rail network and inland waterways will be the key and will facilitate in controlling the carbon emission. However, the success of the rail transport and to certain extent inland waterway transport (IWT) will depend on 3 basic concepts i.e. 'comfortable', 'economical' and 'time-saving' and these concepts need to be addressed during the planning of projects to win the acceptability from the people. Being economical and energy efficient, IWT can play a more important role in freight transportation. For better and 'greener' future, the other alternatives like use of bio fuel, design of better mileage vehicles, use of renewable energy in transport also needs to be promoted and planned for.

3) Multimodal Transport and Land Bridge Corridors

The central role of regional initiatives will be to cooperate in the building of the trunk routes by road, rail and waterways, with feeder, local and distribution networks and interlinking them with other modes of transport which will provide access to intra, inter-regional and global networks. The development of 'Multimodal transport', including 'Land bridge Corridors', will be thrust area in future. For better accessibility with the rest of the world, the SKRL network and ASEAN Highways need to be fully developed and to be integrated with 'Trans-Asian Railways' and 'Asian Highways' respectively.

4) ITS and ICT

The 'Intelligent Transport System' (ITS) and 'Information and Communication Technology' (ICT) will surely play a major role in future. There are ample of evidences showing the significant improvement and gains due to usage of modern ICT and ITS services. However, currently their role in regional cooperation and sharing of resources within ASEAN is limited and are slowly being developed. The challenge ahead is to build capacity, infrastructure and facilities to utilize the latest available technologies to its maximum.

5) Capacity for the Maintenance

Currently, apart from economic status, AMSs also differ considerably in the quality and type of existing transport infrastructure and the capacity to manage and implement transport projects. The capacity for the maintenance of existing and developed infrastructure assets also differs and is a major issue, as future rehabilitation or reconstruction costs will far exceed the cost of timely maintenance. Thus, a challenge ahead will be to bridge this existing wide gap. It thus becomes increasingly important to develop competencies among the lagging nations by enhancing the technical, institutional and human capacity. This will enable them to assess and plan for future developments and to prepare themselves for the challenges of tomorrow.

6) Financing

In order to meet the large and increasing infrastructure financing needs in AMSs for the next 20 years or so, current means of financing must be strengthened and new innovative ways needs to be explored. Apart from funding and loans from international agencies and dialogue partners, need is also for leveraging more private financing and strengthening public private partnership (PPP) capacities, particularly from within the region.

(2) Air Transport in 2015 and Beyond

1) ASEAN Single Aviation Market (ASAM)

In view of the rapidly growing importance of air transportation as well as the accelerated restructuring of the global aviation market, ASEAN needs to strengthen its aviation industry by establishing ASEAN Single Aviation Market (ASAM).

For the successful implementation of ASAM, it is vital to develop and improve the wide range of activities such as liberalization of agreements and protocols, aviation safety, aviation security, aviation technology and human resource development. Particularly, the implementation of RIATS agreements and MAFLPAS will be the core engine for the development of air transportation in ASEAN.

With the implementation of ASAM, the inbound and outbound air traffic movements in ASEAN will be increased significantly. Considering this, it becomes essential for the AMS to enhance the airport infrastructure and implement projects with a special emphasis on the construction of regional terminals and low cost carriers (LCCs) terminals. Such development will facilitate in further expansion and improvement of airport facilities and services.

With the rapid increase of air traffic movements in future, it will be important for AMSs to enhance their capacity and capability to mitigate any impacts that may occur due to environmental, safety and security reasons.

2) Environmentally-friendly Aviation

The development of environmentally-friendly aviation will be the key element for further development in 2015 and beyond. To achieve this, the establishment of ASAM will be going to play a major role in future. As air transport sector will have a major impact on climate changes mainly through the emission from aircraft operation, it becomes vital to implement the 'Programme of Action (PoA)', which has already been endorsed by ICAO Council. Such programme will play major role in reducing the aviation emissions and facilitate in developing an environmentally-friendly aviation.

(3) Maritime Transport in 2015 and Beyond

1) ASEAN Single Shipping Market

According to the formulation of strategies to realize an ASEAN Single Shipping Market, rationalization, synchronization, liberalization and harmonization of shipping services and trade procedures are key requirements. Concrete actions will have to be formulated in these areas, taking the differences in the level of development among AMS into consideration.

It is envisaged that with expected developments in multimodal transport and land bridge corridors, and new developments in the neighbouring regions and beyond, it would be necessary to review and revise the list of 47 designated ports. To meet the increasing cargo demand in line with economic growth in AMS and neighbouring countries, especially on China, measures to enhance the performance and cargo handling capacity will be continuously necessary.

2) Efficient and Reliable Shipping Route

Efficient and reliable shipping services in the archipelagic regions of ASEAN constitute a critical component for intra-ASEAN connectivity. Linkages of global and domestic shipping routes will have to be strengthened. These linkages will help to narrow the economic gaps between urban areas and under-populated areas of the archipelagic regions, and to accelerate regional economy. The Philippine Nautical Highway utilizing the RoRo system appears to be a promising avenue in establishing such linkages.

3) Advanced Safety Navigation System and Maritime Security System

Malacca Strait is one of the most important shipping routes connecting East-Asia and India/Europe/Middle East, which support world trading. AMS locate along Malacca Strait have a significant role of keeping safety navigation for vessels passing the Strait. In order to reduce the number of incident and lives lost in whole ASEAN waters, navigation and security system should be upgraded to meet the international standards in cooperation with IMO, APA, FASA and the dialogue partners.

4) Eco-Port and Environmentally-friendly Shipping

In line with economic growth in AMS, cargo throughput and number of calling vessels are supposed to increase fairly. In spite of these situations, total volume of carbon emissions should be surely reduced for environmental preservation. Human resource development of port operating personnel and introduction of advanced environmental technology for cargo handling system/equipment and ocean-going vessels will be necessary.

(4) Transport Facilitation in 2015 and Beyond

1) Integrated, Efficient and Globally Competitive Logistics and Seamless Multimodal Transport System

There are still a lot of challenges that ASEAN have to address and to work on beyond 2015 for transport facilitation to enhance the competitiveness of ASEAN logistics industry. Establishment of safe and secure inter-state transport system is one of the most important challenges to improve ASEAN's competitiveness in the world. Full operationalisation of three ASEAN Framework Agreements on transport facilitation has to be accelerated following the strategy 1 in Master Plan on ASEAN Connectivity to minimize the frictions at national borders that increase the transactions cost of moving goods between countries in the region. This is an essential element to realize the vision of "single market and production base" as envisaged in the AEC Blueprint, and it is necessary to cooperate with the implementation bodies for trade facilitation.

It is important for ASEAN to streamline sectoral strategies with reference to the concept of multimodal transport system in order to enhance intra and extra ASEAN connectivity. Although the full implementation of the strategy will take a long time, it is nevertheless important to have a clear strategy of multimodal development in the ASEAN region in consonance with developments in the broader ASEAN + 6 region.

2) Green Logistics for Global Environment Preservation

Green logistics is relatively new concept and the approaches vary among AMSs. It is necessary to implement substantively identified approaches to develop environmentally-friendly logistics. Energy saving in logistics services has to be continuously conducted in all AMSs. This is a long-term approach, and furthermore, the requirement will definitely grow beyond 2015 for global environment preservation.

8.3 EFFORTS TO IMPROVE ASEAN TRANSPORT SYSTEM

8.3.1 DIRECTION OF TRANSPORT CONNECTIVITY

Economic behaviour of a country varies at different stages of demographic transition. Changes in age structure can significantly affect the economic performance of the country. Countries with a high proportion of youth dependents (age below 15) tend to devote a relatively high proportion of resources to the young before working age, often limiting economic growth. By contrast, countries with large share of the working age population (age between 15 and 64) may enjoy rapid economic growth, resulting from the increased economic activities and personal and national savings, accelerated accumulation of capital, and from reduced spending on dependents (age under 15 and age over 65). This phenomenon is known as the "demographic dividend." The combined effect of this opportunity and effective policies in other areas can stimulate economic growth. AMSs are currently enjoying rapid economic growth under demographic dividend period. Usually, the demographic dividend occurs only once during a demographic transition and lasts only for few decades. To prepare for the aging society, the member states need to strengthen their economies during the period of demographic dividend.

(1) Growing Numbers of Working Age Population during Demographic Dividend

The dividend period provide better change to realize sustainable economic growth. Most of East Asian such as South Korea: 1970-2015, Japan: 1950-1995, Hong Kong: 1965-2010 and China: 1965-2015 and South-east Asian countries such as Singapore, Malaysia, Thailand, and Viet Nam have been fully utilizing this opportunities.

Demographic dividend, however, is not always providing better opportunities for economic development. For example, Latin American countries have not capitalized on it due to a weak policy environment[1]. Without effective policies, countries miss opportunities for economic growth, or even worth. Demographic dividend may bring about higher risk of unemployment, increased crime rate, and political instability. When the window of opportunities closes, those that can not take advantage of the opportunity of demographic dividend will face difficulty.

AMSs have time limited opportunity to capitalize increasing working age population and increasing personal and national savings. The region should therefore act to implement the policies required to fully utilize this opportunities. With the right policies in place and with infrastructure investment, the region can create job opportunities for the growing numbers of working age population and secure high growth from the demographic dividend.

(2) Importance of Development of Transport Network and Transport Facilitation

East Asian and South-east Asian countries have been utilizing the opportunity of demographic dividend through open trade policy and well developed transport infrastructure connecting among them. On the contrary, Latin American countries can not capture the opportunity due to their closed trade policy and insufficient connectivity among them.

Acceleration of open trade policy and further developed transport infrastructure will be playing vital role for economic growth. Connecting diverse AMSs through well developed transport infrastructure and well organized trade facilitation system will help in achieving and sustaining an integrated and prosperous region.

However, as the World Bank's LPI indicated as shown in Chapter 2.4, while the region's trade network systems are generally above the global average, the part of it is substantially

[1] Bloom, Canning, and Sevilla estimated that if Latin American country's had been open as East Asia's were from 1965-1990, its per capita income might have grown to be one third higher.

below the global average. And the region's trade network will be increasingly strained from rising transport demand in the future. These problems can be obstacle in the way of economic development, and endanger the competitiveness of those all important production networks.

A joint study of the Asian Development Bank and the Asian Development Bank Institute "Infrastructure for a Seamless Asia" in 2009 also pointed out importance of development of transport network and transport facilitation. The lessons of the Asian financial crisis of 1997–1998 are clear: cuts in infrastructure investment that jeopardize future recovery should be avoided. Some economies, such as China, South Korea, have already adopted fiscal stimulus packages that accelerate and increase infrastructure investment. Wherever possible, other governments should undertake similar measures. While an economic downturn may reduce some of the increasing pressure on overburdened existing infrastructure, it does not obviate the need for upgrading and extending the network".

Thus, the region needs to invest hard infrastructure as well as soft infrastructure during the demographic dividend period; source of capital are increased personal, business and national saving as well as foreign investments and development assistance.

(3) Costs and Benefits of Pursuing ASEAN Connectivity

The estimates of capital cost for developing necessary transport infrastructure was made by ADB[2] in 2008. The estimate showed that AMSs will require infrastructure investments amounting to US$596 billion during 2006–2015, with an average investment of US$60 billion per year. Required average investment for transport sector during the same period was estimated to be about US$16 billion a year.

Enhancing economic connectivity within the region and beyond the region is expected to bring about enormous benefits. According to the ASEAN secretariat's estimate[3], following benefits are expected to be generated from transport connectivity in the region;

- Improved infrastructure connectivity directly supporting intra-ASEAN trade which as of the latest value amounts to about US$369 billion in 2009.
- Impact of implementing a logistics infrastructure blueprint that includes enhancing shipping modalities and improving land routes would basically reduce average logistics cost by 4% and logistics time by 9%. This is substantial- roughly about US$140 million dollars in logistics costs reduction a year.
- Improved intra-ASEAN connectivity will have spill-over impacts on presumably the economic distance to move goods and services which relates to about US$1.15 trillion of ASEAN trade with external markets.

Improvement of connectivity among the region will sustain economic development and deepens economic integration of the region. And this will eventually result in better connectivity with East Asia and with key global markets.

8.3.2 PROSPECTS BEYOND 2015

Emerging development trends as described in Chapter 5 have been posing new challenges to the ASEAN transport sector. The specific goals and actions of ASTP 2011-2015 had taken into consideration in the formulation of ASTP. The prospects beyond 2015 link closely with the new development trends which will have major impacts on the further development of

2

3 ASEAN Connectivity and the ASEAN Economic Community by S. Pushpanathan, Deputy Secretary-General of ASEAN for ASEAN Economic Community, presented at the 24th Asia-Pacific Roundtable, Kuala Lumpur, 7-9 June 2010

AEC. In formulating the long-term vision of ASEAN transport cooperation beyond 2015, ASEAN should pay special attention to the following five perspectives in the transport sector.

(1) Intra-ASEAN Development Trends

The effort to develop multimodal transport and land bridge corridors in the mainland ASEAN will benefit the inland and less-developed areas of this region, and can contribute to narrowing the development gap in ASEAN.

(2) Regional Perspectives

Traditionally, AMSs have prioritized export markets outside the region, especially in the US and Europe. However, taking the prospect of a prolonged downturn in those major markets into consideration, the region also need to emphasize more on economic relation within the region and within Asia. Moving towards that long term vision requires world class trans-ASEAN infrastructure networks with open connections to regional and global markets.

ASEAN is located at the center of an economically active and growing region bounded by India in the west, China, Japan and the Republic of Korea in the Northeast, and Australia and New Zealand in the South.

The regional initiatives proposed by the dialogue partners such as China, Japan, Republic of Korea and European Union regarding regional transport cooperation are very important and should be continued for further development. ASEAN should adopt a proactive approach and be an active partner in these economic integration efforts.

Source: Study Team

Figure 8-3-1 ASEAN's Strategic Location

(3) Global Perspective

The geographically strategic location of ASEAN makes it a vital link of the global supply route between Asia Pacific and Europe, Africa and the Middle East. In this regard, land bridges either across the mainland ASEAN or through Myanmar to Kunming of China will be viable route with suitable deep-water gateway ports in Myanmar supported by efficient land transport infrastructural links. And also new land bridges between Kunming and Yangon and between Kunming and Chittagong will be created for energy security and alternative access to Indian Ocean from China.

(4) Environmental and Climate Change Perspective

One of the goals of enhanced ASEAN Connectivity is to enhance regional efforts to address climate change by facilitating the reduction of carbon and other Green House Gases (GHGs) emissions, as well as promoting sustainable development. Environmental hazard poses a serious threat for human health and the transportation sector has been one of the main sources of rapidly increasing carbon emissions. Climate change should be regarded as a key area in ASEAN transport cooperation with a view to take initiatives in emission controls to ensure sustainable development in the region and beyond.

(5) Safety and Security Perspective

Road deaths and injuries are expected to continue their existing upward trends but efforts need to be made to reduce the annual growth rate and reduce the number of deaths and injuries by AMSs. ASEAN should continuously require effective implementation of coordinated actions to improve safety for those at serious risk.

8.3.3 MAJOR EFFORTS IN VISION BEYOND 2015

Based on the prospects beyond 2015 in transport cooperation, five perspectives in the transport sector and ASEAN economies during the period of demographic dividend, ASEAN will have to make their efforts in vision beyond 2015 as below;

1) To maintain the momentum of ASTP effort by continuing selected actions;
2) To carry on effort to narrow development gap among AMSs;
3) To promote multimodal transport and energy efficient transport systems;
4) To promote eco-port and eco aviation industry;
5) To enhance land transport connectivity vertically at national level and horizontally at regional level;
6) To implement single aviation market;
7) To implement single shipping market;
8) To engage regional and global dialogue partners; and
9) To leverage on strategic geographical location to further strengthen position as international transport hub.

8.4 SUMMARY

ASEAN Economic Community (AEC) Blueprint envisages four characteristics as of single market and production base, Competitive economic region, equitable economic developments and enhanced participation in global supply networks and it is required for ASEAN to achieve the ultimate objective in accordance with the establishment of the ASEAN Economic Community in 2015. However, the proposed actions will not be completed by 2015 and need to be continuously taken into consideration beyond 2015.

Prospects beyond 2015 of each transport sector as land, air, maritime and transport facilitation are closely related to uncompleted actions in ASTP. With land transport, the ASEAN Highways and SKRL network will serve as the main skeleton of land transport for the region. With air transport, it is vital to develop and improve the wide range of activities such as liberalization of agreements and protocols, aviation safety, aviation security, aviation technology and human resource development for the successful implementation of ASEAN Single Aviation Market (ASAM). With maritime transport, ASEAN Single Shipping Market, Linkages of global and domestic shipping routes, advanced safety navigation system and security system are key requirements. With transport facilitation, full operationalisation of three ASEAN Framework Agreements will enhance the competitiveness of ASEAN logistics industry. And development of environmentally-friendly logistics will also be necessary.

AMSs have time limited opportunity to capitalize increasing working age population and increasing personal and national savings. The region should therefore act to implement the right transport policies required to fully utilize this opportunities. In order to secure high growth from the demographic dividend, ASEAN needs to invest hard infrastructure as well as soft infrastructure; source of capital are increased personal, business and national saving as well as foreign investments and development assistance.

With regard to the efforts to improve ASEAN Transport system, ASEAN should pay special attention to the five perspectives in the transport sector such as Intra-ASEAN development trends, regional perspectives, global perspective, environmental and climate change perspective and safety and security perspective.

Based on the prospects beyond 2015 in transport cooperation, five perspectives in the transport sector and ASEAN economies during the period of demographic dividend, ASEAN will have to make their nine efforts which surely contribute in vision beyond 2015.

APPENDIX 1

Linkages of Actions: ASTP and Earlier Plans

Following four figures relates actions proposed in Chapter 6 to corresponding actions in the earlier plans, i.e., *ASEAN Transport Action Plan (ATAP): 2005-2010* and *Successor Plan of Action in Transport: 1999-2004.*

Successor Plan of Action in Transport 1999-2004	ATAP 2005-2010	ASTP 2011-2015
ASEAN Highway	**ASEAN Highway**	**ASEAN Highway**
LT-1 Adoption of a Ministerial understanding on the development of the ASEAN Highways. LT-2 Conduct of feasibility studies/analyses and /or detailed engineering studies of priority projects under the ASEAN Highway network project.	LT-2 Implement the priority road infrastructure projects for the ASEAN Highway including the Mawlamyine–Thanbyuzayat section in Myanmar; Attapeu–Phia Fai section in Lao PDR; and Quang Ngai–Kon Tum section in Viet Nam LT-3 Implement the ASEAN Highways route numbering system LT-4 Harmonize the ASEAN Highways' road signage system, to include the requirements for tourism purposes and road safety	LT-Action 2 Upgrade all "below Class 3" sections of the ASEAN Highway Network into at least "Class 3", with highest priority to the below class 3 sections of the Transit Transport Routes (TTR). LT-Action 3 Install common road signs and the route numbering system in all designated routes with a specific priority on TTR routes. LT-Action 4 Conduct a feasibility study on bridging archipelagic countries and mainland ASEAN by 2015
SKRL	**SKRL**	**SKRL**
LT-3 Conduct of feasibility studies/analyses and/or detailed engineering studies of the missing links under the Singapore Kunming Rail Link Project	LT-1 Implement the Singapore–Kunming Rail Link (SKRL) sections, as follows: Poipet-Sisophon Railway Link Project (Cambodia); Ho Chi Minh City – Loc Ninh Railway Link Project (Viet Nam); and Spur Lines between Three Pagoda Pass and Thanbyuzayat (Myanmar) and Vientiane – Mu Gia – Tan Ap – Vung Ang (Lao PDR/Viet Nam)	LT-Action 1 Construct the missing link sections of SKRL.
Road Safety	**Road Safety**	**Road Safety**
LT-12 Development of ASEAN Road Safety Audit system	LT-5 Implement the ASEAN Regional Road Safety Strategy and Action Plan	LT-Action 5 Formulate the 'ASEAN Regional Road Safety Strategy Plan 2011-2020' and 'National Road Safety Action Plan 2011-2020' by the year 2012 and its implementation.

ITS (Intelligent Transport System)	ITS (Intelligent Transport System)	ITS (Intelligent Transport System)
LT-9 Policy development for an ASEAN Intelligent Transport System	LT-6 Adopt and implement the ASEAN Intelligent Transport System (ITS) Decision Support Framework	LT-Action 7 Formulate the "Intelligent Transport System Master Plan" by 2013 and its implementation. LT-Action 8 Implement the 'ITS Capacity Building Program' in order to develop ITS.

Cross Border Movement	Cross Border Movement	Cross Border Movement
LT-4 Instituting a liberalized ASEAN wide policy for road transport services (for both passengers and cargoes) e.g., enhancing market access for transit and interstate transport services, tourist and/or chartered buses, etc. LT5- Expansion of inter-railway agreements to facilitate cross-border movement of goods and peoples and provide opportunities for multi modal transport operations, by way of access and transit rights to railway infrastructure. LT8- Awareness and accession to international conventions relating to land transport cross-border facilitation.	LT-7 Formulate regional plan to guide cross-border movement of tourist, chartered and scheduled bus transport services, including the harmonization/standardization of technical and safety requirements	This will be taken care by Transport Facilitation sector.

Inland Waterways Transport	Inland Waterways Transport	Inland Waterways Transport
LT-11 Adoption of common guidelines and procedures for the inland transport of dangerous goods.	LT-11 Conduct development studies on intra-ASEAN ferry links to connect the major ASEAN land transport/highways/corridors LT12- Formulate regional policy framework for developing Inland Waterways Transport (IWT) services.	LT-Action 6 Formulate a 'Regional Plan for developing inland waterways transport in ASEAN' by 2012 and begin implementation thereafter.

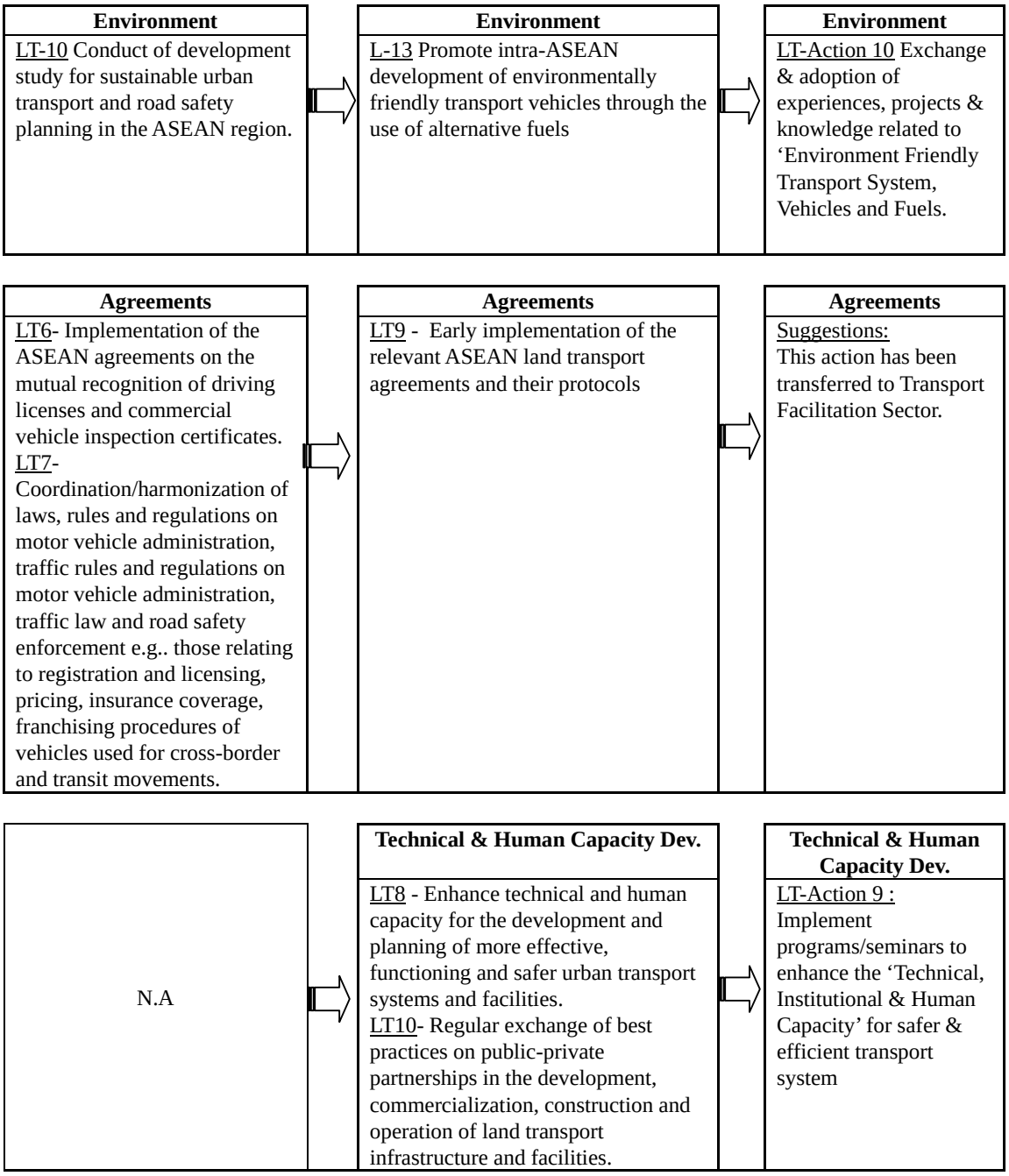


Figure A1-1 Land Transport Actions: ASTP and Earlier Plans

Successor Plan of Action in Transport 1999-2004	ATAP 2005-2010	ASTP 2011-2015
Open sky AT-1 Development of the priority ASEAN-wide airports system to cater to the expanded opportunities in inter-regional trade, investment and tourism. AT-3 Development of the liberalization policy for air freight services. AT-4 Adoption of more liberal and flexible air services arrangements in ASEAN, initially for ASEAN's sub regional groupings like BIMP-EAGA and the CLMV Countries.	**Open sky** AT-1 Adopt and implement the ASEAN open sky policy, for both passenger and cargo services by building on the approved Roadmap for Integration of ASEAN (RIA) for ASEAN Competitive Air Services Policy through plurilateral, multilateral or inter-sub-regional.	**Open sky** AT-Action 1: Formulate an ASEAN Single Aviation Market (ASAM) Roadmap and implementation strategy by 2011 and develop an ASAM by 2015. AT-Action 2: Ratify and implement the RIATS Agreements and MAFLPAS AT-Action 3: Implement the liberalisation of the ASEAN Air Transport Ancillary Services by 2015
Aviation safety AT-8 Development of a detailed and coordinated plan for the implementation of the CNS/ATM system within ASEAN. AT-9 Monitoring implement-action of the reduced vertical separation minimum (RVSM) above FL2900, with the end in view of achieving a coordinated regulatory framework for regional implementation in ASEAN.	**Aviation safety** AT-3 Promote safe, efficient and effective Air Traffic Management (ATM) through enhanced integrity and interoperability of ASEAN Communications, Navigation and Surveillance (CNS) System. AT-9 Enhance regional capacity for combined air and maritime search and rescue (SAR) operations.	**Aviation safety** AT-Action 1: Formulate an ASEAN Single Aviation Market (ASAM) Roadmap and implementation strategy by 2011 and develop an ASAM by 2015. .
Aviation security AT-7 Strengthening regional cooperation in the implementation of the ASEAN Multilateral Aeronautical Search and Rescue Agreement.	**Aviation security** AT-4 Intensify aviation and airport security through HRD and application of IT.	**Aviation security** AT-Action 1: Formulate an ASEAN Single Aviation Market (ASAM) Roadmap and implementation strategy by 2011 and develop an ASAM by 2015.

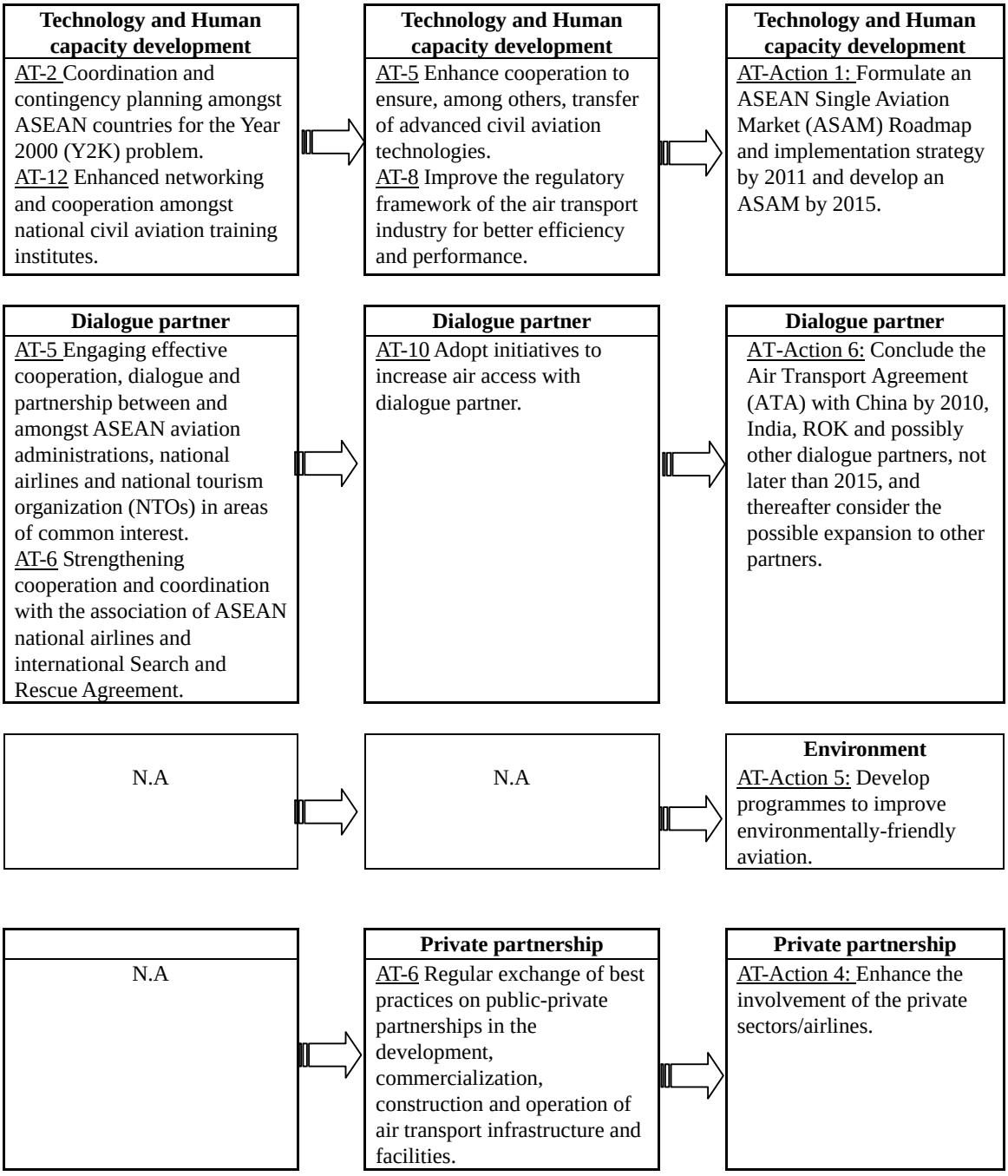
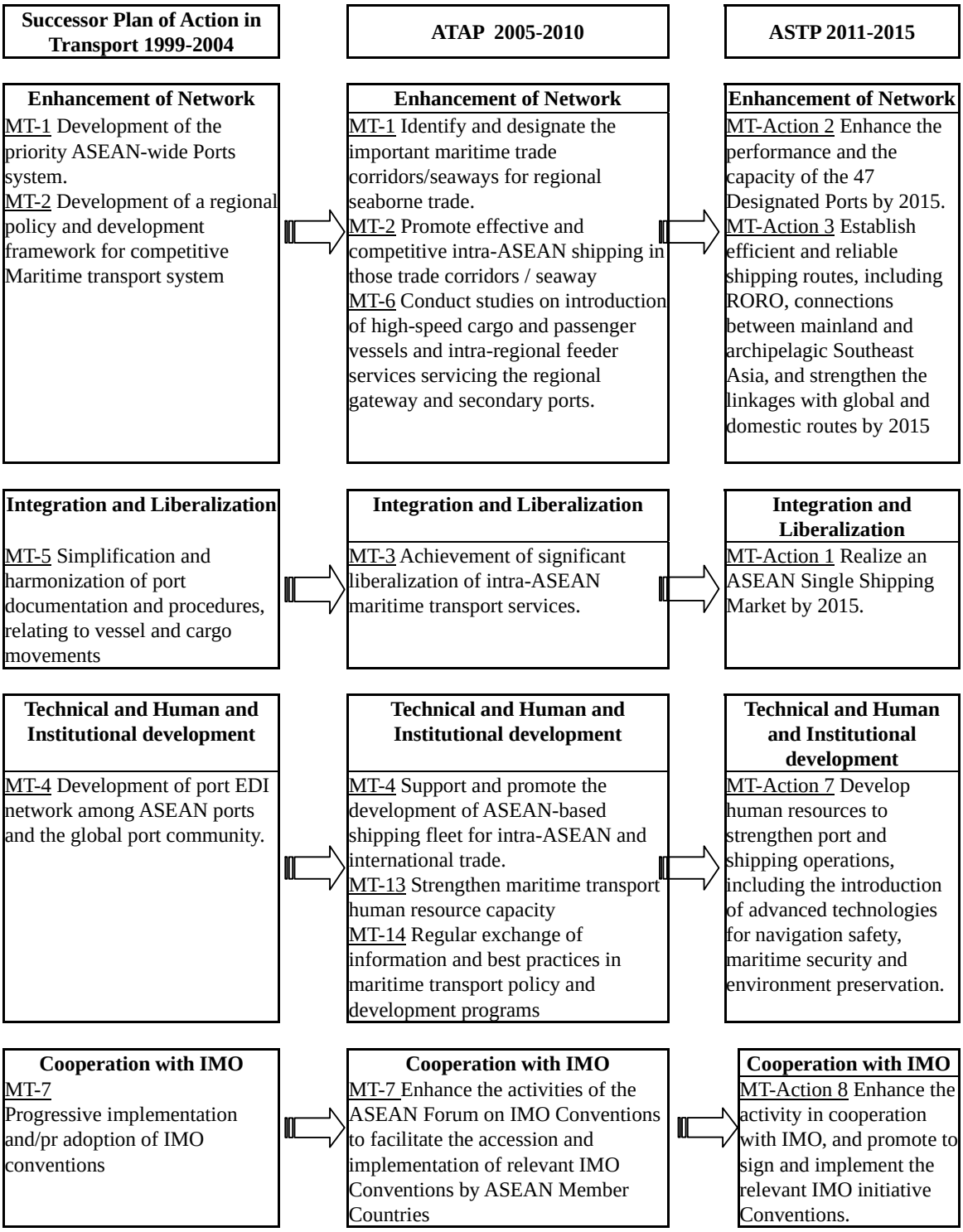


Figure A1-2 Air Transport Actions: ASTP and Earlier Plans


Successor Plan of Action in Transport 1999-2004
ATAP 2005-2010
ASTP 2011-2015
Enhancement of Network
MT-1 Development of the priority ASEAN-wide Ports system.
MT-2 Development of a regional policy and development framework for competitive Maritime transport system
Enhancement of Network
MT-1 Identify and designate the important maritime trade corridors/seaways for regional seaborne trade.
MT-2 Promote effective and competitive intra-ASEAN shipping in those trade corridors / seaway
MT-6 Conduct studies on introduction of high-speed cargo and passenger vessels and intra-regional feeder services servicing the regional gateway and secondary ports.
Enhancement of Network
MT-Action 2 Enhance the performance and the capacity of the 47 Designated Ports by 2015.
MT-Action 3 Establish efficient and reliable shipping routes, including RORO, connections between mainland and archipelagic Southeast Asia, and strengthen the linkages with global and domestic routes by 2015
Integration and Liberalization
MT-5 Simplification and harmonization of port documentation and procedures, relating to vessel and cargo movements
Integration and Liberalization
MT-3 Achievement of significant liberalization of intra-ASEAN maritime transport services.
Integration and Liberalization
MT-Action 1 Realize an ASEAN Single Shipping Market by 2015.
Technical and Human and Institutional development
MT-4 Development of port EDI network among ASEAN ports and the global port community.
Technical and Human and Institutional development
MT-4 Support and promote the development of ASEAN-based shipping fleet for intra-ASEAN and international trade.
MT-13 Strengthen maritime transport human resource capacity
MT-14 Regular exchange of information and best practices in maritime transport policy and development programs
Technical and Human and Institutional development
MT-Action 7 Develop human resources to strengthen port and shipping operations, including the introduction of advanced technologies for navigation safety, maritime security and environment preservation.
Cooperation with IMO
MT-7
Progressive implementation and/pr adoption of IMO conventions
Cooperation with IMO
MT-7 Enhance the activities of the ASEAN Forum on IMO Conventions to facilitate the accession and implementation of relevant IMO Conventions by ASEAN Member Countries
Cooperation with IMO
MT-Action 8 Enhance the activity in cooperation with IMO, and promote to sign and implement the relevant IMO initiative Conventions.

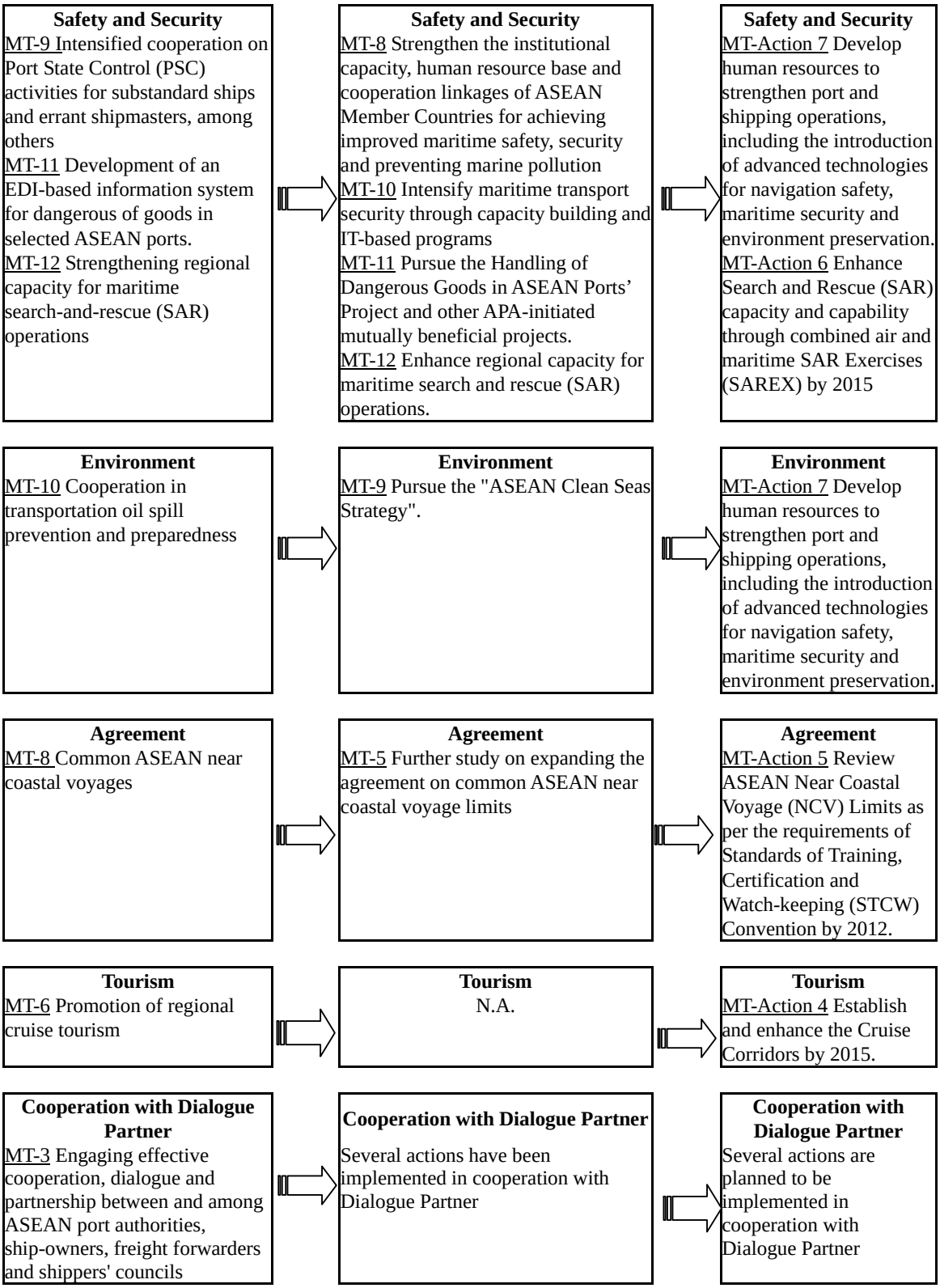
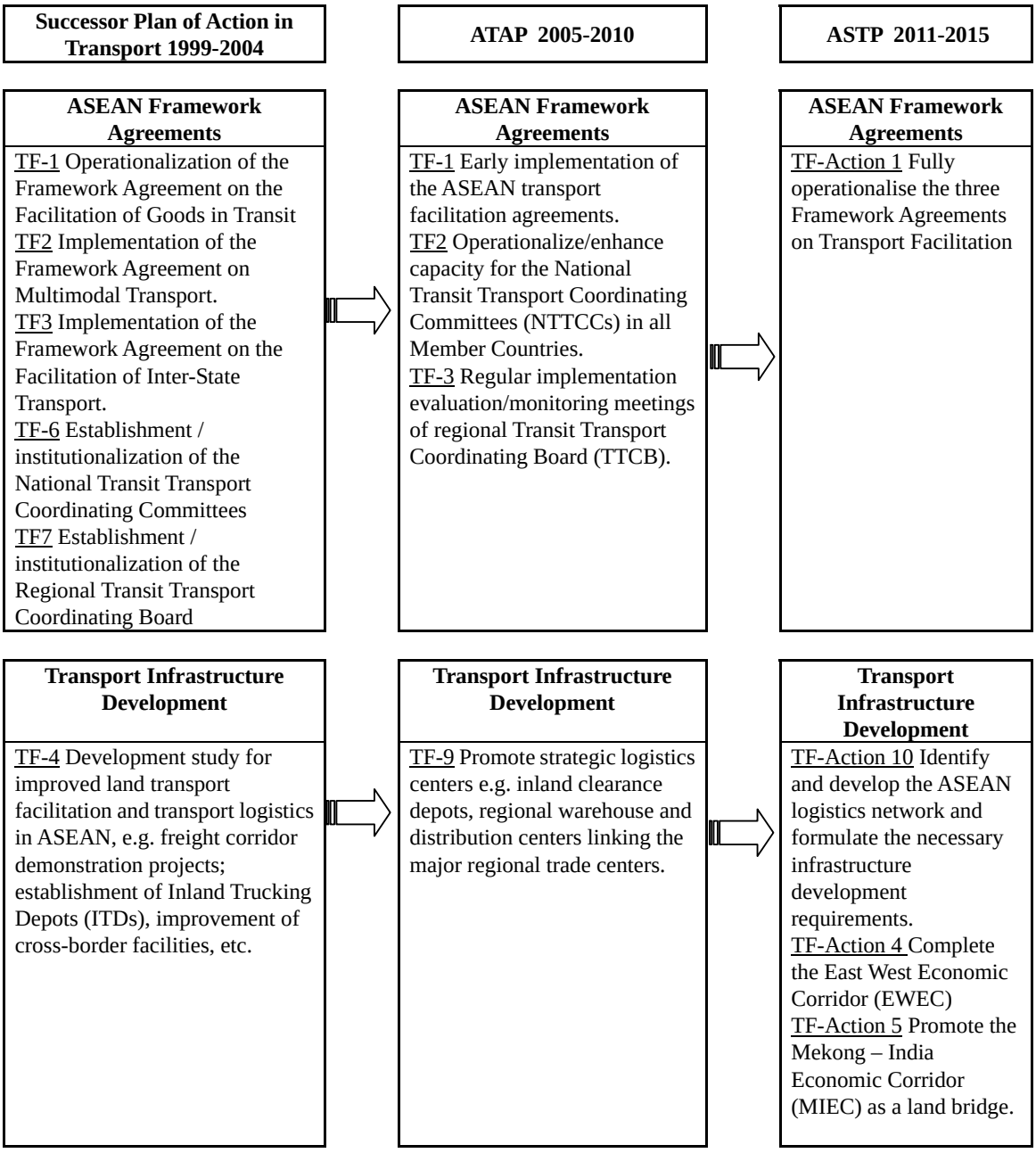
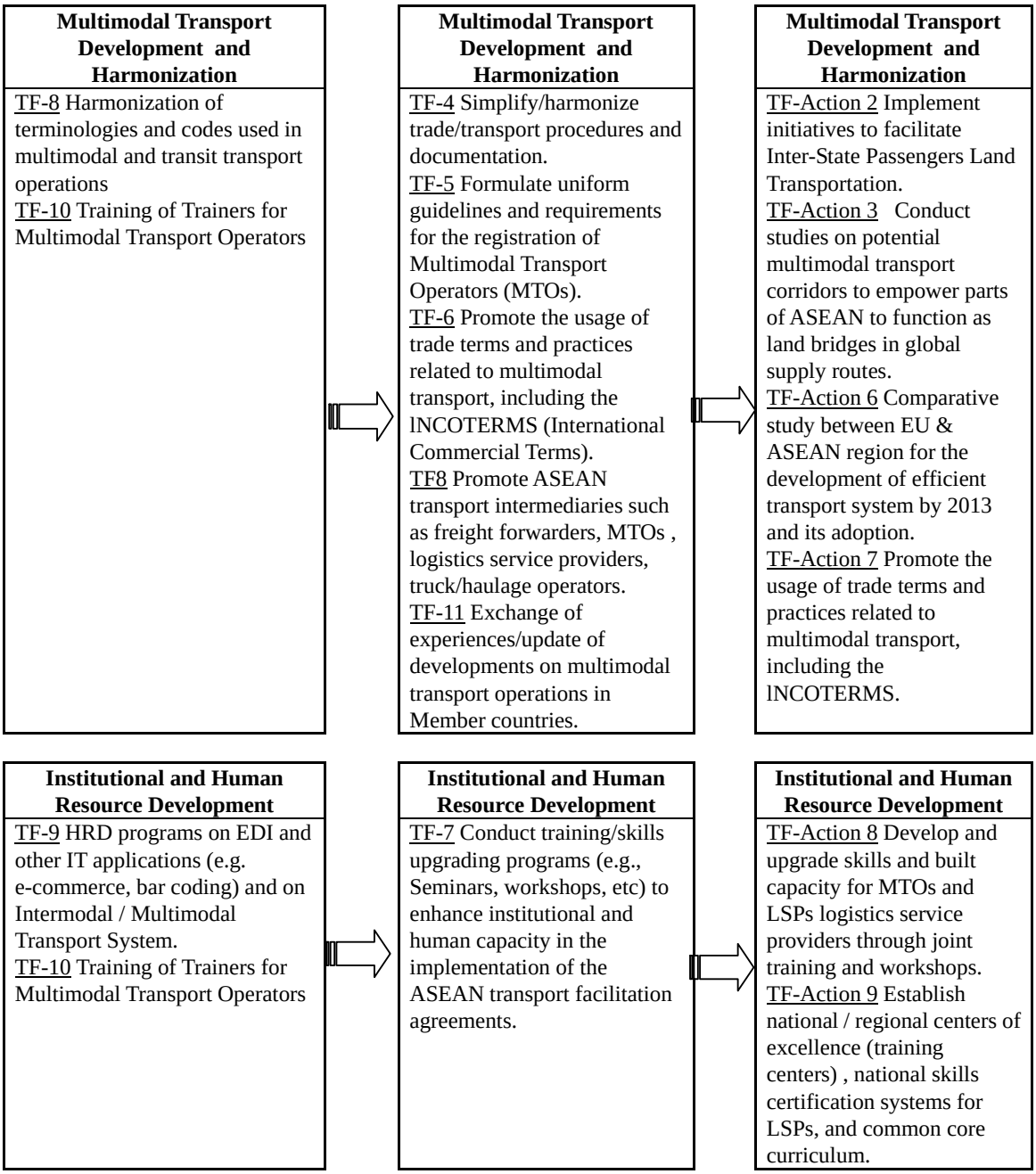


Figure A1-3 Maritime Transport Actions: ASTP and Earlier Plans


Successor Plan of Action in Transport 1999-2004
ATAP 2005-2010
ASTP 2011-2015
ASEAN Framework Agreements
TF-1 Operationalization of the Framework Agreement on the Facilitation of Goods in Transit
TF2 Implementation of the Framework Agreement on Multimodal Transport.
TF3 Implementation of the Framework Agreement on the Facilitation of Inter-State Transport.
TF-6 Establishment / institutionalization of the National Transit Transport Coordinating Committees
TF7 Establishment / institutionalization of the Regional Transit Transport Coordinating Board
ASEAN Framework Agreements
TF-1 Early implementation of the ASEAN transport facilitation agreements.
TF2 Operationalize/enhance capacity for the National Transit Transport Coordinating Committees (NTTCCs) in all Member Countries.
TF-3 Regular implementation evaluation/monitoring meetings of regional Transit Transport Coordinating Board (TTCB).
ASEAN Framework Agreements
TF-Action 1 Fully operationalise the three Framework Agreements on Transport Facilitation
Transport Infrastructure Development
TF-4 Development study for improved land transport facilitation and transport logistics in ASEAN, e.g. freight corridor demonstration projects; establishment of Inland Trucking Depots (ITDs), improvement of cross-border facilities, etc.
Transport Infrastructure Development
TF-9 Promote strategic logistics centers e.g. inland clearance depots, regional warehouse and distribution centers linking the major regional trade centers.
Transport Infrastructure Development
TF-Action 10 Identify and develop the ASEAN logistics network and formulate the necessary infrastructure development requirements.
TF-Action 4 Complete the East West Economic Corridor (EWEC)
TF-Action 5 Promote the Mekong – India Economic Corridor (MIEC) as a land bridge.


Multimodal Transport Development and Harmonization
TF-8 Harmonization of terminologies and codes used in multimodal and transit transport operations
TF-10 Training of Trainers for Multimodal Transport Operators
Multimodal Transport Development and Harmonization
TF-4 Simplify/harmonize trade/transport procedures and documentation.
TF-5 Formulate uniform guidelines and requirements for the registration of Multimodal Transport Operators (MTOs).
TF-6 Promote the usage of trade terms and practices related to multimodal transport, including the lNCOTERMS (International Commercial Terms).
TF8 Promote ASEAN transport intermediaries such as freight forwarders, MTOs , logistics service providers, truck/haulage operators.
TF-11 Exchange of experiences/update of developments on multimodal transport operations in Member countries.
Multimodal Transport Development and Harmonization
TF-Action 2 Implement initiatives to facilitate Inter-State Passengers Land Transportation.
TF-Action 3 Conduct studies on potential multimodal transport corridors to empower parts of ASEAN to function as land bridges in global supply routes.
TF-Action 6 Comparative study between EU & ASEAN region for the development of efficient transport system by 2013 and its adoption.
TF-Action 7 Promote the usage of trade terms and practices related to multimodal transport, including the lNCOTERMS.
Institutional and Human Resource Development
TF-9 HRD programs on EDI and other IT applications (e.g. e-commerce, bar coding) and on Intermodal / Multimodal Transport System.
TF-10 Training of Trainers for Multimodal Transport Operators
Institutional and Human Resource Development
TF-7 Conduct training/skills upgrading programs (e.g., Seminars, workshops, etc) to enhance institutional and human capacity in the implementation of the ASEAN transport facilitation agreements.
Institutional and Human Resource Development
TF-Action 8 Develop and upgrade skills and built capacity for MTOs and LSPs logistics service providers through joint training and workshops.
TF-Action 9 Establish national / regional centers of excellence (training centers) , national skills certification systems for LSPs, and common core curriculum.

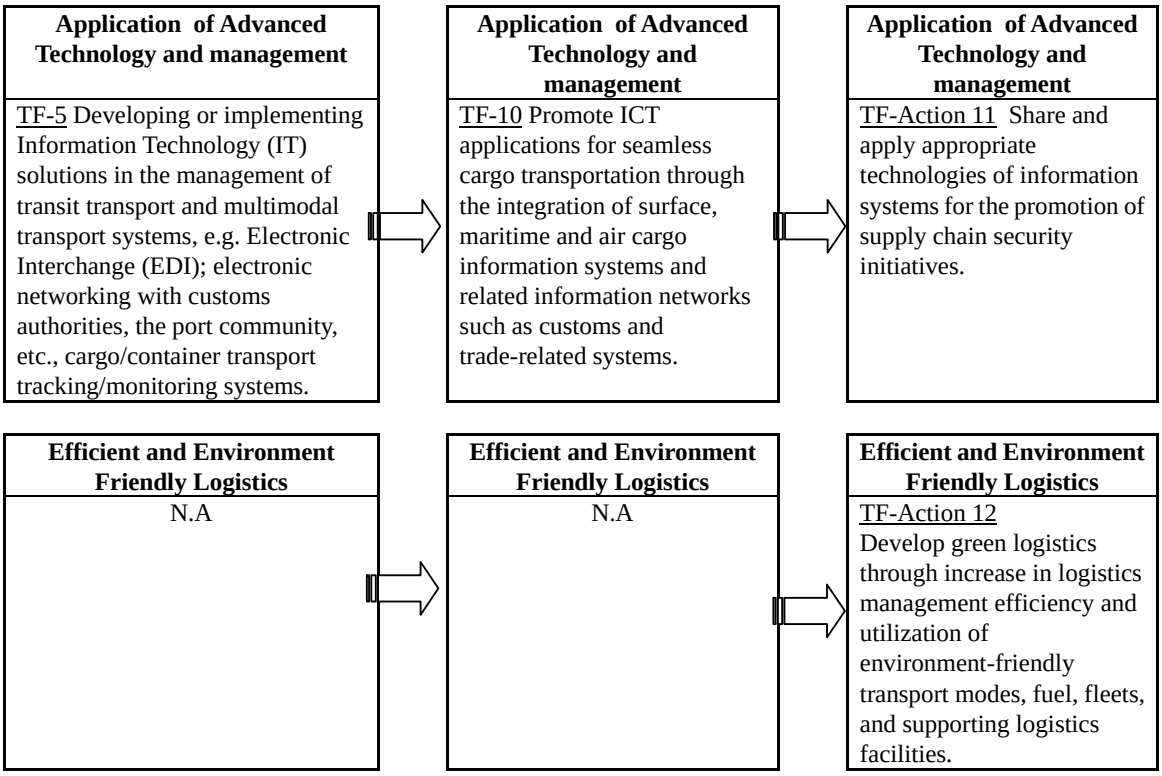
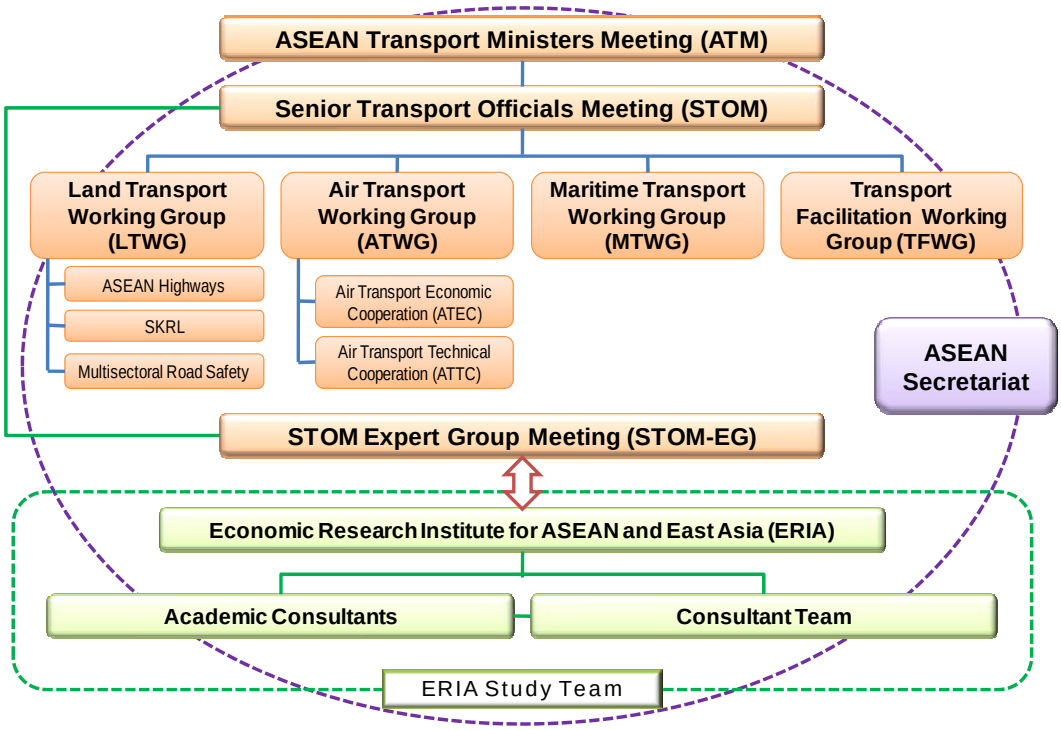


Figure A1-4 Transport Facilitation Actions: ASTP and Earlier Plans

APPENDIX 2

Organizational Structure of the ASTP Project and the List of Contributors

The ASTP Project has been conducted by the ASEAN Secretariat and the ERIA Study Team including the Project Coordinator (ERIA), a Consultant Team, and Academic consultants. The ERIA Study Team has been working closely with the STOM Expert Group (EG), and four Working Groups (Land Transport, Maritime Transport, Air Transport, and Transport Facilitation) under the Senior Transport Officials Meeting (STOM). In particular, the STOM-EG has been supporting the ERIA Study Team as a single window to enable the ERIA Study Team to access to the official information from ASEAN Member States.



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APPENDIX 3

Record of Activities and the Schedule Ahead

Date	Events	Remarks
2009		
9 December	28th ASEAN Senior Transport Officials Meeting (STOM) *Hanoi, Vietnam*	Inception Report.
2010		
8 February	1st ERIA Workshop on ASTP *Jakarta, Indonesia*	Preparation for 1st ASEAN-STOM Expert Group Meeting.
9-10 February	1st ASEAN-STOM Expert Group Meeting *Jakarta, Indonesia*	Preliminary Report. Country reports from STOM-EG members.
17-19 March	19th ASEAN Transport Facilitation Working Group Meeting (TFWG) *Boracay Island, the Philippines*	Progress Report (Transport Facilitation).
22-25 March	21st ASEAN Air Transport Working Group Meeting (ATWG) *Singapore*	Progress Report (Air Transport).
1 April	2nd ERIA Workshop on ASTP *Singapore*	Preliminary discussion on the Draft Midterm Report.
6-8 April	17th ASEAN Land Transport Working Group Meeting (LTWG) *Siem Reap, Cambodia*	Progress Report (Land Transport).
18-19 April	3rd ERIA Workshop on ASTP *Tokyo, Japan*	Intensive discussion on the Draft Midterm Report.
20-22 April	19th ASEAN Maritime Transport Working Group Meeting (MTWG) *Kuala Lumpur, Malaysia*	Progress Report (Maritime Transport).
30 April	Submission of the Midterm Report	From ERIA to ASEAN Secretariat.
May	Circulating the Midterm Report to AMSs for comments and suggestions.	
1-3 June	29th ASEAN Senior Transport Officials Meeting (STOM) *Bandar Sri Begawan, Brunei Darussalam*	Midterm Report and proposal from ASTP to HLTF on ASEAN Connectivity.
17 June	National Workshop in Cambodia *Phnom Penh, Cambodia*	Midterm Report and national consultation.
21 June	National Workshop in Malaysia *Putrajaya, Malaysia*	Midterm Report and national consultation.
23 June	National Workshop in Lao PDR *Vientiane, Lao PDR*	Midterm Report and national consultation.

25 June	National Workshop in Viet Nam *Hanoi, Viet Nam*	Midterm Report and national consultation.
29 June	National Workshop in Brunei Darussalam *Bandar Sri Begawan, Brunei Darussalam*	Midterm Report and national consultation.
14 July	National Workshop in the Philippines *Manila, the Philippines*	Midterm Report and national consultation.
19 July	National Workshop in Thailand *Bangkok, Thailand*	Midterm Report and national consultation.
21 July	National Workshop in Indonesia *Jakarta, Indonesia*	Midterm Report and national consultation.
23 July	National Workshop in Myanmar *Yangon, Myanmar*	Midterm Report and national consultation.
29 July	National Workshop in Singapore *Singapore*	Midterm Report and national consultation.
2-6 August	22nd ASEAN Air Transport Working Group Meeting (ATWG) *Singapore*	Progress Report (Air Transport) and a strategy proposed to HLTF on ASEAN Connectivity.
18 August	4th ERIA Workshop on ASTP *Jakarta, Indonesia*	Preparation for 2nd ASEAN-STOM Expert Group Meeting.
19-20 August	2nd ASEAN-STOM Expert Group Meeting *Jakarta, Indonesia*.	Draft Final Report
25 August	Circulating the Revised Draft Final Report to AMSs for final comments.	
15 September	Deadline for final comments from AMSs.	
30 September	Submission of the Final Report (soft copy)	From ERIA to ASEAN Secretariat.
SCHEDULE AHEAD		
8 October	Finalizing the ASTP as the official document for consideration in STOM/ATM.	
1 November	Submission of the Final Report (hard copy)	From ERIA to ASEAN Secretariat.
8-12 November	30th ASEAN Senior Transport Officials Meeting (STOM), and 16th ASEAN Transport Ministers Meeting (ATM) *Bandar Sri Begawan, Brunei Darussalam*.	Final Report for endorsement