Chapter 5

Emerging Development Trends and Challenges

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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;

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.

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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.