

Data Collection Survey on ASEAN 2025 Final Report (Summary)

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Chapter 1 Overview of this Research

1. Objectives of this Research

The Association of South-East Asian Nations (ASEAN) has achieved strong economic growth amid the worldwide climate of economic stagnation. ASEAN’s total GDP, which was US\$2 trillion 305.5 billion in 2012 (IMF statistics), is forecast to double to US\$4 trillion 628.2 billion by 2025 (study team prediction).

On another front, ASEAN is faced by structural challenges. The challenges common to all ASEAN countries include improving the trade and investment environment, transforming industrial structures, improving productivity, raising education standards, securing energy and food, addressing declining birth rates and the aging populations, and correcting disparities. For ASEAN to achieve sustainable prosperity in the rapidly changing global economy, it needs to become more competitive as an integrated market.

Based on this awareness, the end of 2015 will see the formation of the ASEAN Community, itself composed of three communities – economic, political and security, and sociocultural. One of these, the ASEAN Economic Community (AEC), is a planned comprehensive economic community that will have a large impact in and beyond the region, including a free trade area created by removing intra-regional tariffs, the free flow of services, people, investment, and capital, regional collaboration in the transport and energy fields, and the resolution of disparities.

The 24th ASEAN Summit held on May 11, 2014 at Naypyidaw, capital city of Myanmar, adopted the Naypyidaw Declaration, which emphasizes the importance of realizing the ASEAN Community by 2015 and establishing a strategic approach from 2015 onward.

Against the above background, this report sets the following two points as its objectives.

Figure 1-1: Objectives of this research

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| <ol style="list-style-type: none">1. Present an overall picture of the AEC as of 2015 in order to analyze changes concerning the future of ASEAN and predict the status of the region in 2025.2. Identify the challenges that are likely to arise between the establishment of the AEC and 2025 and present proposed measures that ASEAN should take in order to overcome them. |
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Chapter 2 AEC Progress Report

1. Overall Progress

This chapter reviews the progress towards establishing the ASEAN Economic Community (AEC), whose deadline is set at the end of 2015 based on the information available as of May 15, 2014.

AEC economic integration has been moving forward based on a plan called the AEC Blueprint, which was adopted in November 2007. This economic integration plan puts forth four strategic targets, subdivided into 17 core elements and 77 detailed measures (policy plans). The ASEAN monitors its own progress using the AEC Scorecard, which lists the completion rate for each measure that must be implemented in order to achieve the AEC Blueprint strategic targets as well as key actions that have and have not been carried out (accomplishments and challenges). It also clearly lists the actions required to address outstanding issues. The AEC Scorecard has been published twice so far, once for Phase I (2008–2009) and once for Phase II (2010–2011). Phase III (2012–2013) evaluation results had not been published at the time of this writing (May 15, 2014); the figure below indicates that the combined completion rate for the four strategic targets was 67.5% for phases I and II (2008–2011).

Figure 2-1: AEC Scorecard

	Phase I	Phase II	Phases I & II
Single market and production base	93.8%	49.1%	65.9%
Competitive economic region	68.7%	67.4%	67.9%
Equitable economic development	100.0%	55.5%	66.7%
Integration into the global economy	100.0%	77.8%	85.7%
Total for all measures	86.7%	55.8%	67.5%

(Source: ASEAN (2012). "ASEAN Economic Community Scorecard: Charting Progress Towards Regional Economic Integration, Phase I (2008-2009) and Phase II (2010-2011)")

The latest published completion rate for the AEC Scorecard is 79.4% (calculated at the end of July 2013), as announced at the 45th ASEAN Economic Ministers Meeting held in August 2013 in Brunei.

Looking at the AEC Scorecard values, it would seem that economic integration is proceeding quite well on the whole towards the 2015 target date; however, there are several issues that prevent this document from offering a definitive picture of AEC progress. For this reason, we must consult multiple information sources in order to gain a fuller understanding of AEC development as a whole.

Figure 2-2: Issues with the AEC Scorecard

- 1) Because the AEC Scorecard represents self-evaluations by ASEAN member states, it does not include third-party assessments.
- 2) Self-reported evaluations submitted by individual countries simply indicate whether plans have been implemented, and do not necessarily reflect the extent to which each strategic target has actually been achieved.
- 3) Although progress is indicated for each strategic target, the scorecard does not give a clear picture of the degree of overall progress towards ASEAN economic integration as a whole.
- 4) The values published by the ASEAN Secretariat are progress totals for all ten ASEAN member states, and do not provide details on progress rates in individual countries.

In light of the above, this report seeks to provide a more realistic grasp of AEC progress by increasing the variety and accuracy of information sources consulted. In addition to reviewing the AEC Scorecard itself, we consulted various forms of documentation published domestically and internationally, conducted interviews with experts, and confirmed the completion rates given for each for the four AEC strategic targets. This allowed us to predict more realistic progress for each of the strategic targets by 2015, clearly indicating the areas in which targets will be met and those where completion will be delayed. A list of our primary sources is given below.

Figure 2-3: Primary sources used to track AEC progress

Publisher and date	Title
Economic Research Institute for ASEAN and East Asia (ERIA) October 2012	ASEAN Economic Community Blueprint Mid-Term Review of the Implementation of AEC Blueprint: Executive Summary (Revised Version)
Institute of Southeast Asian Studies (ISEAS) 2013	ASEAN Economic Community Scorecard: Performance and Perception
Asian Development Bank (ADB)/ Institute of Southeast Asian Studies (ISEAS) 2013	The ASEAN Economic Community – A Work in Progress
ASEAN Secretariat August 2013	Written agreements from the 45th ASEAN Economic Ministers Meeting
ASEAN Secretariat May 2014	Written agreements from the 24th ASEAN Summit

AEC Blueprint strategic targets can be divided into four major categories: (1) creating a single market and production base (2) becoming a competitive economic region, (3) achieving equitable economic development, and (4) successfully integrating into the global economy. Specific policy plans are then given under these four targets. This chapter opens by listing written agreements, committee frameworks, and other documents associated with each of the four targets. We then seek to identify the level of overall progress towards the AEC by looking at enactment status, relevant documentation, and insights collected from expert interviews; this is followed by a detailed progress evaluation for each individual strategic target (assessments are current as of May 15, 2014).

Figure 2-4: List of items described for each AEC strategic target

- 1) **Goal**
Clarifies goals that must be achieved for each plan. Based primarily on the AEC Blueprint with supplementary and updated information from the Master Plan on ASEAN Connectivity, the Brunei Action Plan, the ASEAN Plan of Action for Energy Cooperation, and similar plans.
- 2) **Expected progress by the end of 2015**
Indicates whether member states are expected to achieve the strategic target before the official establishment of the AEC at the end of 2015, or whether achievement will be in progress by that point.
- 3) **Evaluation standards**
Evaluation standards used to make the determinations in (2) above.
- 4) **Planned vs. actual progress**
 - **Plans**
Action plans designed to achieve the targets described in the AEC Blueprint (note that this reflects the most recent action plans when those plans or their schedules have been updated since the AEC Blueprint was published)
 - **Key achievements and remaining issues**
The Mid-Term Review of the Implementation of AEC Blueprint: Executive Summary (Revised Version) and other relevant documents have been consulted in order to produce an evaluation of strategic target progress based not only on the Scorecard but on multiple other information sources as well. Assessments cover two categories: key achievements and remaining issues.
- 5) **Remarks**
Any other important considerations or other information related to the strategic target.
- 6) **Excerpts from related documents**
Excerpts related to strategic target progress from documents other than those used to identify the key achievements and remaining issues above.

2. Progress on individual AEC strategic targets (list)

Having outlined the action plans for the AEC strategic targets as well as key achievements and remaining issues for each, we can identify some areas (mainly the elimination of regional tariffs—particularly in FTA sectors—and rules of origin) where we expect full achievement by the end of 2015. At the same time, we expect that progress towards many of the other strategic targets will still be underway at that point.

The establishment of the AEC has been derided as sluggish with limited progress, but some Blueprint goals are being solidly achieved despite expected delays in the schedule. This is because the association has stuck with the ASEAN Way principle of obtaining full consensus before issuing approvals.

Individual ASEAN member states are at vastly different stages of economic development compared to those in the European Union and other economic communities, making regional integration extremely difficult. When seen in this light, the region deserves some recognition for its efforts towards establishing the AEC—particularly its solid progress towards integrating the region not only across FTA sectors, but also in a wide variety of other areas spanning from infrastructure development to the narrowing of development gaps.

Strategic target	Policy plan (scheme)		Status of written agreements			Expected progress by the end of 2015
			Agreement or protocol		Status	
(1) Single market and production base	1. Free flow of goods	a. Elimination of intra-ASEAN tariffs	• ASEAN Trade in Goods Agreement (ATIGA)	Concluded	Signed: Feb 2009 Enacted: Aug 2010	Achieved (CLMV by 2018)
			• Common Effective Preferential Tariff (CEPT) agreement for the ASEAN Free Trade Area (AFTA)	Concluded	Signed: Jan 1992 Enacted: 1993	
			• Protocol on the Special Arrangement for Sensitive (SL) and Highly Sensitive (HSL) Products	Concluded	Signed: Sept 1999 Enacted: In stages	
			• ASEAN Industrial Cooperation (AICO) Scheme	Concluded	Signed: Apr 1996 Enacted: Nov 1996	
		b. Elimination of non-tariff barriers	• ASEAN Trade in Goods Agreement (ATIGA)	Concluded	Signed: Feb 2009 Enacted: Aug 2010	In progress

			• Common Effective Preferential Tariff (CEPT) agreement for the ASEAN Free Trade Area (AFTA)	Concluded	Signed: Jan 1992 Enacted: 1993	
			• ASEAN Framework Agreement for the Integration of Priority Sectors (PIS)	Concluded	Signed: Nov 2004 Enacted: 2004	
		c. Rules of Origin	• ASEAN Trade in Goods Agreement (ATIGA)	Concluded	Signed: Feb 2009 Enacted: Aug 2010	Achieved
			• ASEAN-China Free Trade Area (ACFTA)	Concluded	Signed: Nov 2004 Enacted: :2005.7	
			• ASEAN-Korea Free Trade Area (AKFTA)	Concluded	Signed: Aug 2006 Enacted: Jun 2007	
			• ASEAN-Japan Comprehensive Economic Partnership (AJCEP)	Concluded	Signed: :2008.4 Enacted: :2008.8	
			• ASEAN-Australia-New Zealand Free Trade Area (AANZFTA)	Concluded	Signed: Feb 2009 Enacted: Jan 2010	
			• ASEAN- India Free Trade Area (AIFTA)	Concluded	Signed: Aug 2009 Enacted: Jan 2010	
		d. Trade facilitation and ASEAN single window	• Agreement to Establish and Implement the ASEAN Single Window	Concluded	Signed: Dec 2005 Enacted: Dec 2006	In progress
		e. Standardization and mutual recognition	• ASEAN Mutual Recognition Arrangement (MRA) Framework	Concluded	Signed: Dec 1998 Enacted: In stages	
	2. Free flow of services		• ASEAN Framework Agreement on Services (AFAS)	Concluded	Signed: Dec 1995 Enacted: Dec 1995	In progress

	3. Free flow of investment	• ASEAN Free Trade Area (AFTA) Agreement	Concluded	Signed: Jan 1992 Enacted: Jan 1992	In progress
		• ASEAN Trade in Goods Agreement (ATIGA)	Concluded	Signed: Dec 1987 Enacted: 1998	
		• ASEAN Comprehensive Investment Agreement (ACIA)	Concluded	Signed: Feb 2009 Enacted: Mar 2012	
	4. Freer flow of capital (freer financial services)	• ASEAN Swap Arrangement (ASA)	Concluded	Signed: Dec 2009 Enacted: Mar 2010	In progress
	5. Free flow of skilled labour	• Mutual Recognition Agreement (MRA) on Engineering Services	Concluded	Signed: Dec 2005 Enacted: Pending	In progress
		• Mutual Recognition Agreement (MRA) on Nursing Services	Concluded	Signed: Dec 2006 Enacted: Pending	
		• Mutual Recognition Agreement (MRA) on Architectural Services	Concluded	Signed: Nov 2007 Enacted: Pending	
		• Mutual Recognition Agreement (MRA) on Surveying Services	Concluded	Signed: Nov 2007 Enacted: Pending	
		• Mutual Recognition Framework Agreement (MRA) on Accountancy Services	Concluded	Signed: Feb 2009 Enacted: Pending	
		• Mutual Recognition Agreement (MRA) on Medical Services	Concluded	Signed: Feb 2009 Enacted: Pending	
		• Mutual Recognition Agreement (MRA) on Dental Services	Concluded	Signed: Feb 2009 Enacted: Pending	

			• Mutual Recognition Agreement (MRA) on Tourism Professionals	Concluded	Signed: Nov 2012 Enacted: Pending	
			• ASEAN Agreement on the Movement of Natural Persons (AMNP)	Concluded	Signed: Nov 2012 Enacted: Pending	
	6. Priority integration sectors		• Framework Agreement for the Integration of Priority Sectors	Concluded	Signed: Nov 2004 Enacted: In stages	In progress
	7. Food, agriculture, and forestry		• ASEAN Food Security Information System (AFSIS)	Concluded	Signed: Enacted: 2003	In progress
			• ASEAN Plus Three Emergency Rice Reserve (APTERR)	Concluded	Signed: Nov 2011 Enacted: Jul 2012	
(2) Competitive economic region	1. Competition policy		• ASEAN Experts Group on Competition (AEGC)	Established	Established: Aug 2007 Enactment in progress	In progress
	2. Consumer protection		• ASEAN Coordinating Committee on Consumer Protection (ACCP)	Established	Established: Aug 2007 Enactment in progress	In progress
	3. Intellectual property rights		• ASEAN Framework Agreement on Intellectual Property Cooperation	Concluded	Signed: Dec 1995 Enacted: In stages	In progress
	4. Infrastructure development	a. Transport and logistics	• ASEAN Framework Agreement on the Facilitation of Goods in Transit (AFAFGIT)	Concluded	Signed: Dec 1998 Enacted: Oct 2000 (partially)	In progress
			• ASEAN Framework Agreement on Multimodal Transport (AFAMT)	Concluded	Signed: Nov 2005 Enacted: Aug 2008 (partially)	
			• ASEAN Framework Agreement on the Facilitation of Inter-state Transport (AFAFIST)	Concluded	Signed: Dec 2009 Enacted: Pending	

	b. Land transport	• Cross-border Transportation Agreement CBTA)	Concluded	Signed: 2004 Enacted: 2007	In progress
	c. Maritime transport	• Roadmap towards an Integrated and Competitive Maritime Transport in ASEAN (RICMTA)	Formulated	Formulated: Oct 2010 Introduction in progress	In progress
	d. Air transport	• ASEAN Multilateral Agreement on the Full Liberalisation of Passenger Air Services (MAFLPAS)	Concluded	Signed: Nov 2010 Enacted: In stages (5 member states)	In progress
		• Multilateral Agreement on the Full Liberalisation of Air Freight Services (MAFLAFS)	Concluded	Signed: May 2009 Enacted: In stages (9 member states)	
		• Multilateral Agreement on Air Services (MAAS)	Concluded	Signed: May 2009 Enacted: In stages (9 member states)	
	e. Energy	• Memorandum of Understanding on the ASEAN Power Grid (APG)	Concluded	Signed: Aug 2007 Enacted: Dec 2008	In progress
		• Trans-ASEAN Gas Pipeline (TAGP)	Concluded	Signed: Jul 2002 Enacted: Jul 2002	
	f. Information and communication Technology (ICT)	• ASEAN Technical Architecture Framework for e-Commerce Interoperability	Formulated	Formulated: Nov 2000 Inquiries complete	In progress
	5. Taxation	-	-	-	In progress
	6. E-Commerce	• ASEAN Technical Architecture Framework for e-Commerce Interoperability	Formulated	Formulated: Nov 2000 Inquiries complete	In progress
(3) Equitable economic development	1. SME development	• ASEAN Strategic Action Plan for SEM Development	Formulated	Formulated: Mar 2009 Enactment in progress	In progress

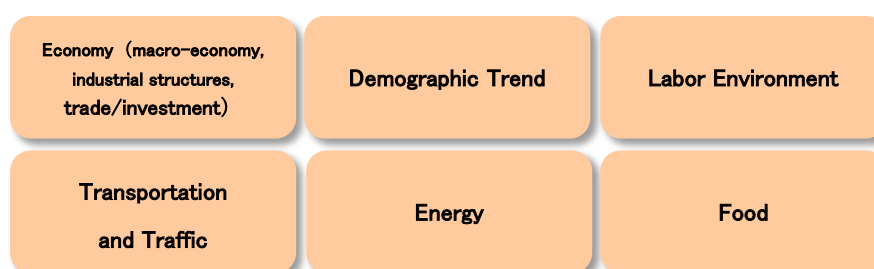
		• ASEAN SME Advisory Council	Established	Established: Jun 2011 Enactment in progress	
	2. Initiative for Asian Integration (IAI)	• ASEAN Framework for Equitable Economic Development (AFEED)	Formulated	Formulated: Nov 2011 Enactment in progress	In progress
(4) Integration into the global economy	1. External economic relations	• ASEAN-China Free Trade Area (ACFTA)	Concluded	Signed: Nov 2004 Enacted: Jul 2005	Achieved
		• ASEAN-Korea Free Trade Area (AKFTA)	Concluded	Signed: Aug 2006 Enacted: Jun 2007	
		• ASEAN-Japan Comprehensive Economic Partnership (AJCEP)	Concluded	Signed: Apr 2008 Enacted: Aug 2008	
		• ASEAN-Australia-New Zealand Free Trade Area (AANZFTA)	Concluded	Signed: Feb 2009 Enacted: Jan 2010	
		• ASEAN- India Free Trade Area (AIFTA)	Concluded	Signed: Aug 2009 Enacted: Jan 2010	

Chapter 3 Scenarios for ASEAN in 2025

In this section we prepared three scenarios (optimistic, realistic, and pessimistic) by major sectors for ASEAN in 2025, ten years after the realization of an ASEAN Economic Community (AEC).

These scenarios are based on quantitative (actual results, forecasts) and qualitative data from international organizations and various research organizations, as well as plans, policies and other information from the individual governments. That said, the "macro-economy" within the economic sector, presents the calculated values for ASEAN10 GDP (2013-2015) taking into consideration effects from the launch of AEC. However, scenarios for other sectors are not linked to GDP forecasts from research organizations, but are based on the abovementioned quantitative and qualitative data, as well as information from each government.

Figure 3-1: Main Sector



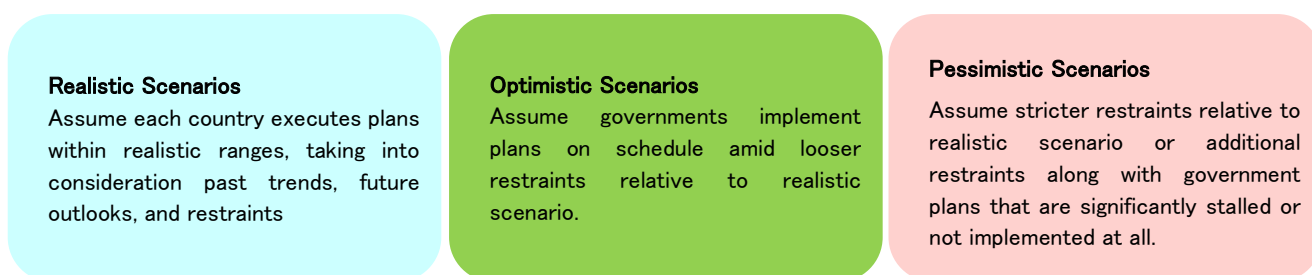
Our scenarios assume the following phenomenon regarding financial markets, political situations, natural disasters, energy markets, and the scope of the ASEAN member countries will not occur.

Figure 3-2: Precondition for creatinf of scenarios

Financial Markets	Financial crisis like Asian currency crisis or Financial crisis in 2008 will not happen
Political Situation	Political situation in ASEAN is considered as stable and terrorist attack or coup d' état will not happen
Natural Disasters	Natural disasters like a massive earthquake or flood will not happen
Energy Markets	The restricted supply of crude oil or speculation will not cause worldwide confusion like sudden rise in the oil price
ASEAN Country Members Bounds	East Timor has asked to be part of the ASEAN countries, but member countries have not approved yet, so East Timor will not be involved as part of the subject

In creating our three scenarios we first created "realistic" scenarios to serve as the base scenario, and then incorporated positive and negative factors to create the "optimistic" and "pessimistic" scenarios. The realistic scenarios assume each country executes their plans within the ranges seen as realistic, while taking into consideration past trends, future outlooks, and various restraints. The optimistic scenarios were set assuming (1) the mitigation of the restraints, and (2) the governments are more successful in implementing their plans than expected. Conversely, the pessimistic scenarios were set assuming more stringent restrictions than in the realistic scenarios and/or government plans that are significantly delayed or not implemented at all.

Figure 3-3: Definition of each scenarios



For the analytical use, the ASEAN10 countries were classified into the following country groups based on nominal per capita GDP levels as of 2012 based on International Monetary Fund (IMF) statistics. However, this does not apply to those sectors for which applying nominal per capita GDP is not appropriate. In this report, the ordering of countries within the country groups is based on 2012 nominal per capita GDP.

Figure 3-4: Grouping of ASEAN member countries

Country Group	Sub-Group	Member countries	GDP per capita (2012)
CLMV	—	Cambodia, Lao PDR, Myanmar, Viet Nam	\$800~1,800
ASEAN 4	Group 1	Indonesia, the Philippines	\$2,000~4,000
	Group 2	Malaysia, Thailand	\$5,000~11,000
BS	—	Brunei, Singapore	Above\$40,000

(Source: Created by study team based on IMF World Economic Outlook 2013 October)

(1) Economy (macro-economy, industrial structures, trade / investment)

When analyzing how industrial development and trade / investment expansion are tied to economic growth in the ASEAN region, we must also grasp the challenges and root causes behind potential disparities that could emerge from the growth process and consider countermeasures.

For that purpose we analyzed "economic growth," "industrial structures," "trade & investment," "gross net income boosts from TPP, RCEP, and FTAAP," "disparities within region," and "disparities within countries" and projected key economic challenges up to 2025.

① Realistic Scenario

< Summary >

【Economic growth】

- The ASEAN economy continues growing at a pace of around 5.5%-6% between 2012 and 2025. Overall GDP roughly doubles from the 2012 level to \$4,628.2 billion, which is still only equivalent to just 4% global GDP. ASEAN needs to bolster its competitiveness and realize further growth as an integrated market in order to raise its global profile amid the ascension of China, India, African nations and other emerging markets.
- CLMV enjoys growth of 7%-9% with continued contributions from robust investment and growing workforces. ASEAN4 (Group 1) sees growth of 6%-7% with contributions from increased consumption in addition to investment and growing workforces. For ASEAN4 (Group 2) and BS, however, there are concerns about slowing economic growth amid the issues of labor shortages, the need to foster industries offering added value, and the need develop human resources.

【Industrial structures】

- For all except BS and ASEAN4 (Group 2), there is the strong likelihood of declining ratios of agriculture to GDP along with increasing ratios of manufacturing/service industries to GDP. On the other hand, the ratio of agriculture to GDP trends higher for ASEAN4 (Group 1).
- Consumption is expected to grow in Viet Nam, ASEAN4 (Group 1), and Thailand along with increased disposable income. As such, service industry growth is expected, mainly in urban areas.

【Expansion of trade and investment】

- Trade inside and outside the region grows owing to expanded FTA's with surrounding countries in addition to approaches taken by each country to eliminate tariffs based on the AEC strategic goals.
- Investment in the manufacturing sectors continues. Meanwhile, service fields are expected to be targeted as new growth fields amid the easing of restrictions on foreign capital and the growing middle class.
- Myanmar, Lao PDR, Cambodia, and Indonesia could lose some competitiveness in attracting overseas direct investment if major improvements are not made in preparing systems supporting better investment environments.

【Economic impacts of TPP, RCEP, and FTAAP】

- ASEAN gross net income (GNI) grows 2.2% on increased trade and investment, provided 12 countries agree to TPP (Trans-Pacific Partnership) by 2015. Within ASEAN the GNI boosting effect is the strongest for Viet Nam at 10.5%, followed by Malaysia at 5.6%. However, 0.4% negative growth is projected for Thailand and the CLM nations that choose not to participate in TPP.
- TPP participation increases exports to North America, but makes it more difficult to enact policies protecting domestic industries. As such, the conditions for developing industry differ for the TPP-participant and non-participant countries.
- ASEAN gross net income (GNI) grows 2.9% and all ASEAN members see positive growth on increased trade and investment, provided RCEP (Regional Comprehensive Economic Partnership) is concluded by 2016¹. Within ASEAN, the GNI boosting effect is the strongest for Brunei at 5.8%, followed by Viet Nam at 5.1%.
- Furthermore, production networks for parts and semi-finished goods are projected to expand within the region and positively impact the economies of each country in the region.

【Disparities within region】

- Singapore has the highest per capita GDP among ASEAN members at 61.3 times that for Myanmar, which has the lowest per capita GDP (as of 2012). However, Myanmar maintains sharp economic growth outpacing that for Singapore and in 2025 Singapore's per capita GDP narrows to 36.3 times that for Myanmar. Still, this represents a significant gap between the two nations.

【Disparities within countries】

- Disparities (GINI coefficient) within Lao PDR, Indonesia, and Malaysia widen, while those in Cambodia, Viet Nam, Philippines, and Thailand narrow. Furthermore, the income gaps between rural and urban societies widen in Indonesia, Thailand, and the Philippines. In the future there could be temporary widening of disparities between rural communities, where the main industry is agriculture with low labor productivity, and the rural societies, where growth is expected for the manufacturing and service sectors.

¹ China, Japan, ASEAN10, Australia, India and New Zealand sign by 2016 (scenario created by Professor Peter A. Petri's study team)

② Optimistic Scenario

	Scenario
Optimistic Scenario	<ul style="list-style-type: none"> • FTAAP is established and the importance of ASEAN as a manufacturing sector production base within the Asia-Pacific region increases. Furthermore, the preparation of infrastructure and regulatory systems to attract manufacturing helps to accelerate the formation of manufacturing cluster and drive economic growth. • TPP is realized in 2015, RCEP in 2016, and FTAAP by 2020. The CLM countries not participating in TPP are adversely impacted until the realization of FTAAP. However, from 2020 they enjoy positive growth similar to other ASEAN members. • Assuming RCEP is realized by 2016, income for ASEAN overall increases 2.9% on the benefits of expanded trade and investment. Positive growth is realized for all ASEAN members, but the impacts are smaller compared to those from TPP16 (2015) and FTAAP (2020). • With realization of RCEP (2016) and FTAAP (2020), CLM countries enjoy growth rates faster than that for Singapore, promoting a narrowing of disparities within the region. • Assuming educational levels and academic skills rise, allowing for systems to develop human resources needed by the markets, CLMV and ASEAN4 (Group 1) have sufficient managers for production sites, while ASEAN4 (Group 2) and BS see an increase in managers and researchers needed for more sophisticated work. These human resources help accelerate economic growth. • In CLMV and ASEAN4 (Group 1), the share of the industrial structure held by manufacturing easily increases, while that of agriculture decreases due to the preparation of infrastructure / regulatory frameworks and the cultivation of human resources. In ASEAN4 (Group 2) labor shortages are addressed by improved labor productivity, while increased sophistication of consumption lowers the share of the industrial structure held by agriculture and increase that of the service industry. • In the rural regions, infrastructure is prepared and human resources that can run agricultural and tourism industries in accordance with demand are developed. This results in more active industry in rural areas and narrower disparities within countries.

③ Pessimistic Scenario

	Scenario
Pessimistic Scenario	<ul style="list-style-type: none"> • TPP12 and RCEP are realized in 2020. • Income increase for ASEAN overall due to RCEP (2020) is only 0.3%. Realization of TPP12 negatively influences Indonesia, the Philippines, Thailand and CLM nations not participating in TPP. • Progress is made liberalizing trade, but the competitiveness of domestic industries in some of the lesser developed countries is weak so the opening of market results in an inflow of industrial products from advanced nations. As such, there is no hope for further sophistication of local industry. Consequently, there is the fear that the currently advantageous structure favoring the exporting of labor-intensive industrial and agricultural products will become entrenched. • Once industry becomes concentrated, economies of scale are realized and spreading of the industry becomes more difficult. As such, ASEAN continues to become an important manufacturing base for ASEAN. That said, further concentration becomes difficult for not only manufacturing, but also for service industries, assuming there are delays in preparing regulatory frameworks / regional infrastructure, and labor shortages result in steep wage increases. • Even though higher wages drive internal demand, the economic growth rate declines due to sluggish investment and the wage increase rate slackens. • The declining employment opportunities in urban areas result in unemployed people returning to rural areas and fewer people moving to cities. Consequently, the population of those involved in farming increases and changes to the industrial structure stagnate. • At the same time labor productivity in rural areas declines, resulting in bigger disparities with urban area and concerns about increase social security burdens and social instability.

④ Challenges in Economic Sector

The Realistic Scenario for this sector (economy) raises the challenges of "delays in preparing trade / investment environments," "industrial structure solidification," and "domestic income disparities."

Fig. 3-40 classifies the current status of these challenges in each country and provides a list of the key challenges (refer to Legend for explanation of classifications).

Delays in preparing trade / investment environments: The red classification was applied to Myanmar, Cambodia, Lao PDR, Viet Nam, the Philippines, and Indonesia, which are all below than ASEAN (average) rank of 89 in the global ranking of 189 countries in terms of preparing investment environments.

Industrial structure solidification: The red classification was applied to Thailand, for which the movement of people from agriculture to manufacturing and service sectors has stalled and where agricultural productivity remains at low levels.

Domestic income disparities: The red classification was applied to the Philippines and Malaysia, which have GINI coefficients of more than 40, suggesting a high risk of social instability. The red classification was also used for Indonesia, Thailand, and the Philippines due to widening disparities between regions.

The various challenges for the countries classified as red in this chapter will be covered in greater detail in the next chapter.

Figure 3-1: List of challenges in economic sector

	CLMV				ASEAN4 (Group1)		ASEAN4 (Group2)		BS	
	Myanmar	Cambodia	Lao PDR	Viet Nam	Philippines	Indonesia	Thailand	Malaysia	Brunei	Singapore
Delays in Preparing Trade / Investment Environments										
Industrial Structure Solidification										
Domestic Income Disparities	-								-	-

Legend

	Challenges already emerged or expected to emerge by 2025
	Likely to be a challenge by 2025
	Low likelihood of becoming a challenge by 2025
-	Unable to verify due to insufficient data

(2) Demographic Trends

In terms of demographic trends, impacts on society and the economy will vary depending on the youth population (ages 0 to 14), the working-age population (15 to 64), and the elderly population (65 and older), as well as urban/rural population compositions, population scale and composition by income bracket. As such, for this sector (demographic trends) we projected how demographic trends in 2025 will impact ASEAN, considering the above elements and with a focus on declining birth rates / growing elderly populations, growing urbanization, and potential of consumer market growth.

① Realistic Scenario

<Summary>

【Declining birth rates / growing elderly populations】

- For many ASEAN countries, the total fertility rate declines or levels off, and for some countries the elderly population grows at a pace even faster than in Japan. The working-age populations in Singapore and Thailand decline until 2025 and these countries become aged societies². Viet Nam and Brunei also transition to aging societies³. Amid this falling birthrate / growing elderly population, enhancing social welfare systems becomes an urgent issue for developing countries Thailand and Viet Nam, which become aging societies.
- The so-called "demographic bonus" period comes to an end around 2025 for the seven ASEAN countries other than Laos, Philippines and Cambodia. In order to mitigate the economic burdens resulting the declining birthrate / growing elderly population trend, these countries must fully utilize their labor forces during the demographic bonus period and prepare for the future societal changes.

【Growing urbanization】

- ASEAN urban populations grow by roughly 99 million people (38%) between 2010 and 2025. During this period, urban populations swell by 44 million in Indonesia and 18 million in the Philippines. The urban population grows 1.73 fold.
- ASEAN cities are now confronted with traffic congestion and other problems. Urban functions will need to be enhanced in order to handle this future population growth.

【Potential of consumer market growth】

- The overall ASEAN population reaches roughly 694 million people. As income levels increase, the percentage of the population held by those in the middle and high income brackets increases from 56.4% to 76.5% between 2010 and 2025.⁴
- The ASEAN consumer market grows 3.96 fold between 2010 and 2025. By country, the consumer market

² Aged society: Those aged 65 and older account for more than 14% of the population.

³ Aging society: Those aged 65 and older account for more than 7% of the population.

⁴ Period in which economic growth is supported by faster growth in the working population compared to the youth and elderly populations (dependent population)

grows 7.7 fold in Viet Nam, 6.6 fold in Laos, 4.8 fold in Indonesia and 3.5 fold in the Philippines. This consumer market growth encourages overseas direct investment and the fostering of domestic industries.

② Optimistic Scenario

Optimistic Scenario
<ul style="list-style-type: none"> • Demand for health care and nursing services increases due to the aging society trend. Developing human resources for the relevant fields, attracting investment and developing systems all support the creation of markets targeting the elderly and help some nations escape the "middle income trap." • Progress in preparing social security systems reduces the burdens during working lives associated with aging of society and stimulates consumption. • Consumption becomes more sophisticated with the provision of products and services to meet the demands of the growing middle class.

③ Pessimistic Scenario

Pessimistic Scenario
<ul style="list-style-type: none"> • Unable to fully utilize labor forces during demographic bonus period: Fiscal burdens associated with declining birthrate / growing elderly population hold back economic growth. • Unable to prepare solid social security systems: More severe poverty for the aging low-income and non-permanent worker brackets, leading to greater income disparities and social instability. Declining birth rate trend also leads to increase in elderly without relatives. • Infrastructure building does not keep pace with rapid urbanization: Economic development held back by insufficient urban infrastructure (electric power, waterworks) and provision of administrative services, traffic congestion, pollution, and inadequate housing (slums), even in countries other than Indonesia and the Philippines.

④ Challenges in demographic trends sector

The Realistic Scenario for this sector (demographic trends) raises challenges in the declining birthrate / growing elderly population trend⁵. Declining birth rates can reduce the working-age population, while a growing elderly population can slow economic growth through increased fiscal burdens. Fig. 3-62 classifies the current status of the declining birthrate / growing elderly demographic trends in each country and provides a list of the key challenges (refer to Legend for explanation of classifications). In the list of challenges, the "red" classification was applied to Singapore and Thailand, for which their working-age populations will start declining before 2025, and Viet Nam, which will see its demographic bonus period end in 2014 and will shift to an aging society from 2016. In order to mitigate the economic burdens associated with the declining birthrate / aging population trend, countries must

⁵ Urbanization issue covered in "Chapter 3. (4) Transportation & Traffic."

sufficiently utilize labor forces during the demographic bonus period and make preparations for future changes in the society. The various challenges for the countries classified as red in this chapter will be covered in greater detail in the next chapter.

Figure 3-2: List of challenges in demographic trends sector

	CLMV				ASESN4 (Group1)		ASESN4 (Group2)		BS	
Decline of Birth Rates and Aging Population	Myanmar	Cambodia	Lao PDR	Viet Nam	Philippines	Indonesia	Thailand	Malaysia	Brunei	Singapore

Legend

	Challenges already emerged or expected to emerge by 2025
	Likely to be a challenge by 2025
	Low likelihood of becoming a challenge by 2025
–	Unable to verify due to insufficient data

(3) Labor Environment

The labor environment elements of "worker increase/decrease," "labor supply/demand," "wage level," and "education" all impact the economic growth elements of each country.

For this sector we analyzed each element and projected labor environment challenges towards 2025.

① Realistic Scenario

< Summary >

【Increase/decrease of labors】

- Even though the overall ASEAN working-age population continues growing until 2025, the rate of increase slows. By specific country, the working-age populations in Thailand and Singapore start declining from 2018 and 2022, respectively. Furthermore, Viet Nam's working-age population growth rate is only 0.37% in 2025, and there is a high likelihood that this population will start declining from 2034.
- Discussions are held for liberalizing the cross-border movement of skilled workers for eight professional fields including construction, health care and accounting, but each country is slow to ratify specific agreements. Furthermore, as restrictions on the movement of unskilled workers remain in place, it becomes hard to use labor mobility to offset declining working-age populations.

【Labor supply/demand】

- Cambodia, the Philippines, and Brunei, countries expected to see job shortages in the future, develop industries effective in creating employment. Conversely, there is the likelihood of labor shortages in Thailand, Viet Nam, Malaysia and Singapore. As such, these countries take steps to raise labor productivity, stop "brain drains" (human resource outflows), and build systems supporting international divisions of labor.

【Wage level】

- Sharp wage increases are seen in Myanmar, Viet Nam, Indonesia, and Thailand. There are also concerns that wage increases will progress sooner than expected in Viet Nam, Thailand, Malaysia, and Singapore where labor shortages are anticipated.

【Education】

- Education levels need to be further elevated, particularly in Cambodia and Indonesia. There is room for improving the quality of education for all ASEAN members other than Singapore.

【Economic growth factors】

- Economic growth factors shift from labor input to capital input and total factor productivity (TFP). In order to realize this shift, there will need to be policies for raising the level and quality of education, increasing R&D investment and protecting intellectual properties.

② Optimistic Scenario

Optimistic Scenario
<ul style="list-style-type: none">• Even though working-age populations begin to decline or their growth rates begin to slow, needed workers can be obtained thanks to the enactment of MRA's for skilled workers and the easing of restrictions on the acceptance of non-skilled workers, which in turn eases upward pressure on wages.• Meanwhile, countries such as Cambodia and Lao PDR, which have surplus labor, see an increase in citizens working overseas. Money sent back to these countries by citizens working overseas increases and technology transfers progress through the acceptance of skilled workers.• In addition to stable wage levels, manufacturing sector R&D progresses and the supply of researchers, engineers and managers increases due to improvements in education levels and quality, increased R&D investment, and progress in protecting intellectual property rights. As a result, improved investment input and total factor productivity accelerate the shift to economic growth and offset labor input-related drags on economic growth.

③ Pessimistic Scenario

Pessimistic Scenario
<ul style="list-style-type: none">• Not only do the working-age populations decline / growth rates slow in Thailand, Singapore and Viet Nam, but securing adequate worker levels becomes difficult due to delays in enacting MRA's for skilled workers and tougher restrictions on accepting non-skilled workers.• Upward pressure on wages in countries with labor shortages increases due to delays in preparing infrastructure needed for smoother trade within the region and poor progress in preparing systems for international divisions of labor.• Investment in mechanization (capital input) increases as private corporations try to offset higher wages with improved worker productivity. However, there is not a shift in workers to knowledge-intensive industries and the unemployment rate increases as policies for raising the level and quality of education, increasing R&D investment and protecting intellectual property rights are insufficiently implemented. Furthermore, the growth rate for total factor productivity declines. As a result, the overall economic growth rate declines along with a drop in the labor input growth rate.• Countries with robust working-age populations and surplus workers see an increase in citizens working in other countries (including illegally). Furthermore, the economic growth rate declines as capital inputs and total factor productivity do not improve.

④ Challenges in Labor Environment Sector

The Realistic Scenario points to "insufficient employment opportunities," "worker shortages," "sharp wage increases," "low education levels "and" domestic education disparities" as challenges for this sector (labor environment).

We prepared a list of challenges and classified the current conditions for each challenge in each country (Fig. 3-79) (classifications explained in legend).

For the issue of "insufficient employment opportunities" we assigned the color red to those countries where employment is projected to be insufficient to meet the growing number of workers (Cambodia, the Philippines, Brunei).

For the challenge of "worker shortages" we assigned the color red to those countries where the number of workers is expected to not keep pace with increasing job opportunities (Viet Nam, Thailand, Malaysia, and Singapore). For the challenge of "sharp wage increases" we assigned the color red to those countries where there have recently been indications of high wage increase rates (Myanmar, Viet Nam, Indonesia, Thailand), as well as those countries where labor shortages could easily increase upward pressure on wages (Malaysia, Singapore, Thailand, Viet Nam). For the challenge of "low education level" we assigned the color red to those countries with high percentages of workers with no or only elementary education (Cambodia, Lao PDR, Viet Nam, Indonesia). Finally, for the challenge of "domestic education disparities" we assigned the color red to those countries with low percentages of workers with secondary education, but high percentages of workers with elementary and higher educations, resulting in a high/low education polarization (Lao PDR, Thailand).

Challenges for the countries classified as red in this chapter are explained in greater detail in the next chapter.

Figure 3-5: List of challenges in labor environment sector

	CLMV				ASESN4 (Group1)		ASESN4 (Group2)		BS	
	Myanmar	Cambodia	Lao PDR	Viet Nam	Philippines	Indonesia	Thailand	Malaysia	Brunei	Singapore
Insufficient Employment Opportunities										
Worker Shortages										
Sharp Wage Increases									-	
Low Education Level									-	
Domestic Education Disparities									-	

Legend	
	Challenges already emerged or expected to emerge by 2025
	Likely to be a challenge by 2025
	Low likelihood of becoming a challenge by 2025
-	Unable to verify due to insufficient data

(4) Transportation and Traffic

In order to improve ASEAN's investment environment, it must improve its infrastructure to increase the physical and institutional connectivity within the region, while at the same time, it must also improve its infrastructure to respond to the urbanization that is advancing in each country.

Toward this, in this sector, "physical infrastructure improvements," "institutional infrastructure improvements," and "city traffic" are analyzed, and transportation- and traffic-related trends heading toward 2025 are forecast.

① Realistic Scenario

<Summary>

【Physical infrastructure improvement】

- According to a forecast by Professor Peter A. Petri's research group, the volume of trade in ASEAN in 2025 will have increased by about 2.3 times compared with 2010. As it is difficult to envisage realizing a trade volume of 2.3 times the 2010 level while using the existing physical infrastructure, it will be necessary to improve the infrastructure, including constructing new ports and airports and upgrading existing ones, and laying more roads and railway lines. In addition, we can see that a certain level of infrastructure improvement is going to be required to create the business environment required by companies engaged in trade.
- The economic effects from the improvements to the physical infrastructure that are being planned for the ASEAN region will be considerable, and according to a forecast by the Economic Research Institute for ASEAN and East Asia (ERIA) on the effects they will have in terms of pushing up Gross Regional Domestic Product (GRDP) between 2010 and 2020, there will be positive economic impacts in most areas.
- However, according to an Asian Development Bank (ADB) forecast, the demand for infrastructure between 2010 and 2020 as a percentage of GDP will be extremely high—for example, 23.8% in Laos and 12.4% in Cambodia – and it predicts there will be delays to projects due to difficulties in securing budget.
- In addition to eliminating the problem of insufficient budgets, it is considered that there will be an increase in the use of Public Private Partnership (PPP) schemes for infrastructure improvements, such as for airports, ports, or railways, with the objectives of improving service quality and creating business opportunities for private-sector companies. On the other hand, it will also be necessary to solve a range of problems, including an incomplete regulatory environment, the inability of governments to form projects, and the lack of transparency about who will undertake risk in the public and private sectors.
- For the ASEAN Highway Network (AHN), it is possible that the completion of the plan to upgrade class II and III roads to class I roads and above by 2020 will be delayed until 2025 or beyond.
- The Singapore-Kunming Rail Link (SKRL) is being targeted for completion in 2020, but there have been difficulties securing budget and it is unclear whether it will be completed even by 2025.
- Improvements to international ports have been planned and executed in each country, centered on the 10 priority ports, and this plan will be further progressed in the future.
- For marine transportation over short distances using roll on/roll off (Ro-Ro) vessels, it is thought that

improvements have been made between Dumai (Indonesia) and Malacca (Malaysia), and between Belawan (Indonesia) and Penang (Malaysia), which were judged to have a high priority level from an F/S by the Japan International Cooperation Agency (JICA).

- Regarding the liberalization of air travel, the liberalization of service routes provided by airline carriers within the region is difficult to accept for those countries whose own flagship airline carriers are competitively weak, and the possibility is low that the airline carriers within the region, including within each country, will be allowed to liberalize routes.

【Improvement of institutional infrastructure】

- Regarding agreements on traffic facilitation, there are countries that are going to require time to coordinate with their domestic operators and to make the required legal revisions, and so the signing and ratification of the agreements will be delayed. Therefore, it will be difficult to implement these agreements in the entire ASEAN region.
- On the other hand, through the Cross Border Transportation Agreement (CBTA), the number of border points implementing single stop and single window measures are expected to increase.
- Connectivity tests for the ASEAN Single Window (ASW) structure, which is an AEC initiative, have been successfully carried out in seven countries, excluding Myanmar, Cambodia, and Laos, and ASW will be operational at the main ports by 2025. Time will be required in the future to construct and manage the National Single Window (NSW) and for ASW connectivity tests in Myanmar, Cambodia, and Laos, and consequently it will be difficult to have the structure operational in these countries by 2025.

【Urban traffic】

- The urbanization of ASEAN is expected to further advance in the future and the urban population for the entire region will increase by 1.4 times between 2010 and 2025, meaning it will constitute approximately 52% of the total ASEAN population by 2025⁶. Apart from Singapore and Cambodia, the urban populations will increase by between 8% and 11% in the other countries and they will become further urbanized.
- In ASEAN, it is forecast that vehicle ownership will increase from 8.6 million vehicles to 14 million vehicles between 2011 and 2025. According to city, there will be 550,000 extra vehicles in Jakarta and it will become the most motorized of all the ASEAN cities.
- In conjunction with urbanization, the population density of each urban area will increase. The increase in Manila will be particularly remarkable; its 2011 population density of 18,650 people per km² (which is higher than Tokyo) will have further increased by 1.3 times by 2025, to 23,453 people per km², giving it the highest population density of any ASEAN city.
- From the perspectives of the increases in urbanization, vehicle ownership, and population density, particularly in Jakarta and Manila, it can be said that is highly likely that traffic congestion will worsen in the future. Traffic

⁶ United Nations Department of Economic and Social Affairs, Population Division; “World Population Prospects: The 2012 Revision” medium-range estimates

congestion in other cities will also become an urban problem. But including in Jakarta and Manila, progress is being made in creating mass transit networks using trains and other methods to replace existing road traffic networks, while some cities are planning to construct additional road networks and to introduce intelligent transport systems (ITS). Even if the completions of these projects are delayed by 5 years, they will still be ready by 2025, and so we can expect progress to be made in the shift to the use of public transport, such as trains and buses.

- However, traffic congestion is even a problem in advanced countries that have well-developed urban traffic infrastructures and it is difficult to control increases in urbanization, the percentage of people owning vehicles, and population density, so this problem is not one that can be completely eliminated. However, by increasing the volume of traffic that roads can tolerate and by advancing the shift to public transport, it is expected that chronic traffic congestion can be gradually ameliorated.

② Optimistic Scenario

Optimistic scenario

- Through the progress made in introducing PPP schemes for physical infrastructure, infrastructure improvements accelerate even in Laos, Indonesia, and Cambodia, for which there had been particular concerns about delays due to difficulties in securing budget.
- Especially, progress is made in improving infrastructure such as airports, ports, and railways through PPP schemes. When there is a budget surplus, it is allocated to infrastructure improvements and institutional infrastructure improvements in farming and island communities, which helps to improve the investment environment of the country as a whole and to reducing disparities within the country,
- Further, in terms of institutional infrastructure, the items prescribed in AFAFGIT, etc., and CBTA are put into practice in each ASEAN country and China, reducing the time and cost required for exports. As a result, companies find it easier to build production networks that span country borders and within the region, trade of finished products, semi-finished products, and parts increase, and the ASEAN industrial agglomeration further expands. This has the effect of pushing up GRDP across a wide region.
- Through the progress made in improvements to railways and other public transportation, the extent of the reliance on road traffic decreases and steps are taken toward eliminating the chronic traffic congestion. This results in the region's increased competitiveness as a destination for investment. But in Jakarta, Indonesia, where the scale of the increase of the population living in cities will be the greatest and where the middle class is expanding, the number of vehicles owned is forecast to increase by 550,000, the largest in ASEAN, and traffic management must be executed efficiently.

③ Pessimistic Scenario

Pessimistic scenario
<ul style="list-style-type: none">• Not only in Myanmar, Cambodia, and Laos, but also in Vietnam, Indonesia, and the Philippines, where the demand for physical-infrastructure improvements is high, there will be delays in securing capital and launching PPP schemes, and there will also be delays in improving infrastructure even on the routes prioritized for improvements.• Moreover, in the event of delays to the improvements to institutional infrastructure (particularly CBTA, NSW, and ASW), the time and financial cost to cross country borders will not decrease and it will become difficult to expand the production network centered on the GMS countries over border crossings into other countries. As a result, production bases will be concentrated in the existing industrial- agglomeration regions, and while the effect of pushing-up GRDP will be high in these regions, it will be low in regions where industry is not located. As a result, disparities within the region and within countries will increase.• If improvements to city-traffic infrastructure do not keep pace with the increase in the volume of road traffic, not only domestic distribution functions, but also the investment efficiency of companies located in cities will decline, causing them to become less competitive as destinations for investment. This trend will be seen particularly in Indonesia and the Philippines, whose urban populations are increasing remarkably, and it will become a factor behind their inability to escape from the traps imposed by being countries with middle-income groups that shackle their economic growth.

④ Challenges in Transportation and Traffic Sector

From the realistic scenario for this sector (transportation and traffic), its challenges include “incomplete distribution infrastructure,” “the complexity of trade procedures,” and “urban traffic congestion.”

For each challenge, the situation in each country has been color coded and the problems are shown as a list (Fig. 3-100) (please refer to the legend for each color code).

For “incomplete distribution infrastructure,” Myanmar is color coded red as it has many roads of AHN class III and below.

For the “complexity of trade procedures,” Myanmar, Laos, and Cambodia are color coded red, as both the number of documents and the number of days they require for exports are above the ASEAN average.

For “urban traffic congestion,” Indonesia and the Philippines are color coded red, as they already have chronic traffic congestion in their cities and both vehicle-ownership numbers and population densities are increasing at remarkable rates.

For the countries color coded red in this chapter, their challenges will be considered in more detail in the next chapter.

Figure 3-6: List of challenges in transportation and traffic sector

	CLMV				ASESN4 (Group1)		ASESN4 (Group2)		BS	
	Myanmar	Cambodia	Lao PDR	Viet Nam	Philippines	Indonesia	Thailand	Malaysia	Brunei	Singapore
Incomplete Distribution Infrastructure										
Complexity of Trade Procedures										
Urban Traffic Congestion										

Legend

	Challenges already emerged or expected to emerge by 2025
	Likely to be a challenge by 2025
	Low likelihood of becoming a challenge by 2025
–	Unable to verify due to insufficient data

(5) Energy

Energy supply/demand, energy procurement costs, and electric power supply/demand are all important elements for economic activities.

For this sector we analyzed these elements and forecasted the key energy-related challenges toward 2025.

① Realistic Scenario

< Summary >

【Energy supply demand】

- Primary energy consumption between 2011 and 2030 increases roughly 34% globally and 86% in ASEAN. Production of unconventional resources⁷, mainly in North America, allows for the affordable procurement of petroleum and natural gas in the surrounding regions, however does not extend to the lowering of international petroleum and natural gas prices. Rather the international prices of petroleum, natural gas, and coal increase. As such, the use of coal, which offers relatively affordable prices and stable procurement, increases in ASEAN.

【Energy procurement】

- Up to 2025 the biggest price increases are for coal, natural gas, and petroleum, in that order. Malaysia, Thailand, and the Philippines become net importers of coal, Thailand and Singapore become net importers of natural gas, and Indonesia, Viet Nam, Singapore, the Philippines, Cambodia, Myanmar, Brunei, and Laos all become net importers of petroleum. As such, energy procurement costs increase. Higher energy procurement prices result in increased fiscal burdens for the governments of Indonesia, Thailand, Viet Nam, and Malaysia, which provide energy subsidies.

【Electric power supply/demand】

- Viet Nam, the Philippines, Thailand and Singapore, are all expected to become net importers of electric power in 2030 as their electric power supply fails to keep pace with growing demand. As such, there will need to be measures for building more power generating facilities and preparing power grids within the ASEAN region.

⁷ Examples include shale oil/gas, oil sand, tight sand gas and coal bed methane (CBM) through petroleum and natural gas developed from other than conventional oil and gas fields (from JOGMEC website).

② Optimistic Scenario

Optimistic Scenario
<ul style="list-style-type: none">• The production of unconventional resources, particularly in North America, Central/South America, China and Australia, is quickly commercialized (from 2020 at the earliest), the global prices for petroleum and natural gas fall and their consumption increases, but the consumption of coal declines.• In ASEAN, Indonesia becomes a producer of unconventional resources (mainly shale gas), and economic growth is accelerated through resource exporting and the development of related industries. The other ASEAN members are not producers of unconventional resources, but their economic growth accelerates on lower prices for imported energy and benefits of increased demand on economic development for countries producing unconventional resources.• Lower energy prices reduce fiscal burdens for those countries where energy subsidies are equivalent to 2-3% of GDP (mainly Indonesia, Malaysia, Philippines, and Thailand).• More petroleum and natural gas used for thermal power due to lower prices. This in turn eases burdens place on the environment by lowering the percentage of power produced using coal, which produces more greenhouse gases.

③ Pessimistic Scenario

Pessimistic Scenario
<ul style="list-style-type: none">• Energy demand increases due to development of the global economy. However, US shale oil production peaks around 2020 and other countries are slow in commercializing unconventional resources. As a result, petroleum and natural gas prices increase more than in the Realistic Scenario.• Asia's primary energy consumption, which continued increasing since 2000, accounts for more 70% of the global share. Slow progress is made in adopting high energy efficient technologies (highly efficient power generation, public transportation) and competition from Asia for resources intensifies, driving up prices even for coal, which had maintained comparatively affordable prices.• As a result, energy subsidies provided by each country grow to levels equivalent to 2.5-3% of GDP, placing increased pressure on government finances.• Costs for the power generation options of petroleum, natural gas and coal all increase. However, the use of relatively cheaper coal increases further, placing greater burdens on the environment.

④ Challenges in Energy Sector

The Realistic Scenario points to "burdens from energy subsidiaries" and "electric power supply shortages" as challenges for this sector (energy).

We prepared a list of challenges and classified the current conditions for each challenge in each country (Fig.3-118) (classifications explained in legend).

For the challenge of "burdens from energy subsidies" we assigned the color red to Viet Nam, Indonesia, Thailand and Malaysia as trends suggest these countries will import more petroleum, natural gas, and coal, for which prices are expected to increase, and energy subsidies will likely place more pressure on government finances.

For the challenge of "electric power supply shortages" we assigned the color red to Viet Nam, the Philippines, and Singapore as these countries will need to import electric power or construct more power generation plants.

Challenges for the countries classified as red in this chapter are explained in detail in the next chapter.

Figure 3-7: List of challenges in energy sector

	CLMV				ASEAN4 (Group1)		ASEAN4 (Group2)		BS	
	Myanmar	Cambodia	Lao PDR	Viet Nam	Philippines	Indonesia	Thailand	Malaysia	Brunei	Singapore
Burdens from Energy Subsidies	–	–	–						–	–
Electric Power Supply Shortages										

Legend

	Challenges already emerged or expected to emerge by 2025
	Likely to be a challenge by 2025
	Low likelihood of becoming a challenge by 2025
–	Unable to verify due to insufficient data

(6) Food

In order for ASEAN to stably secure food in the future, it will need to produce food in the context of limited resources and also based on changes to the supply and demand of food in the world and in each ASEAN country.

Therefore, in this sector, “the supply and demand of food in the world,” “the supply and demand of food in each ASEAN country” and “agricultural productivity in ASEAN” will be analyzed and food-related difficulties heading toward 2025 will be predicted.

① Realistic Scenario

< Summary >

【Food supply and demand in the world】

- It is forecast that imports of food will increase to China and ASEAN, which will constitute approximately 26.5% of the total world population in 2025.
- Demand-supply conditions will be tight, particularly for produce for which global demand will increase, such as seafood, dairy products (cheese, skimmed milk, butter, etc.), and meat (especially mutton, pork, and poultry). As a result, international prices are forecast to increase.
- Demand for grains, such as rice and wheat, will be stable, and because their production is expected to increase in emerging countries, their international prices are forecast to decline.

【Food supply and demand in ASEAN】

- ASEAN’s food self-sufficiency rate is forecast to fall from 97% in 2004 to 85% in 2030, and consequently it will become more susceptible to the impact of higher intentional prices. The background to this is that changes to production will not keep pace with changes to demand that will accompanying increases in income (greater demand for oils and fats, sugar, meat and poultry, fruit, vegetables, etc.)
- Each ASEAN country will maintain a high self-sufficiency rate for rice and beef, but for dairy products and other meats and poultry, the production in many countries will not be able to keep pace with the rapid increase in demand.
- It will be necessary to increase the production of those items whose demand is set to rise, such as by introducing production technologies, expanding business scale, and improving seeds and species. Also, with the goal of maintaining the self-sufficiency rate for ASEAN as a unit, there remains room to investigate establishing and improving large-scale production facilities and a trade system in which each item is produced by the optimal country to do so.

【ASEAN agricultural productivity】

- Rice constitutes approximately 72% of ASEAN’s land under cultivation and is its main crop, but in Myanmar, Thailand, Cambodia, and Laos, where productivity is low, agricultural capital (stock) per capita also tends to be

low. These countries must promote the improvement of their agricultural capital (improvements to agricultural infrastructure, mechanization, etc.) and the utilization of high-quality seeds that are appropriate for mechanization, and moreover they must shift the surplus labor force and land generated by productivity gains to the production of other items.

② Optimistic Scenario

Optimistic scenario

- Demand for meat and dairy products is rising and currently imports of them are increasing, but gradually each ASEAN country starts to increase its investment in the production of dairy products and meat, and they come to produce food by responding to the changes to demand.
- As farmers come to be able to produce items for which there is high demand, this has the effect of improving agricultural productivity and also increasing the incomes of agricultural workers.
- Also, according to ADBI, if there is greater investment in agriculture and the total factor productivity growth rate for agriculture in ASEAN increases 0.5% above the realistic scenario, it forecasts that this would push up ASEAN's food self-sufficiency rate by 3% by 2030.
- Further, should the productivity gap between the agriculture industry and the manufacturing and service industries and the income gap between urban and agricultural communities shrink, this would result in a decrease in government spending, which is typically used to purchase agricultural produce, and this would contribute to the soundness of government finances.

③ Pessimistic Scenario

Pessimistic scenario

- If in countries and regions such as China and ASEAN, the volume of food imports increase not only for dairy products and meat, but also for rice, fruits and vegetables, it is highly likely that international food prices for a wide variety of items will also increase.
- According to ADB, the rise in the price of food will result in an increase in the poor population⁸. In its 2011 trial calculations, it forecasts that in the event of a 10% increase in food prices, the poor population will increase as follows; by 4.46 million people in Indonesia, 1.55 million people in Vietnam, 1.37 million people in the Philippines, 310,000 people in Cambodia, 140,000 people in Laos, 50,000 people in Thailand, and 30,000 people in Malaysia.
- Even if food prices are reduced, such as by government subsidies, this may put pressure on government finances.
- In addition, centered on countries that are highly dependent on imports, like Singapore and Brunei, the increase in food prices will result in an increase in consumer prices and a slump in personal consumption

⁸ ADB (2011), "Global Food Price Inflation and Developing Asia"

expenditure, which will become a factor behind the slowdown of economic growth rates.

④ Challenges in the Food Sector

From the realistic scenario for this sector (food), we can see the challenges in it are “food shortages” and “low agricultural productivity.”

For each challenges, the situation in each country is color coded and the challenges are shown as a list (Fig.3-128) (please refer to the legend for each color code).

For “food shortages,” as the global balance in the supply and demand of food is being maintained, it is difficult to envisage that some countries are already facing a food crisis. But for items for which demand is expected to increase, should countries’ dependence on imports rise, they would become susceptible to the effects of price spikes and sudden reductions in supply. Therefore, each country must try to convert its production structure so that it reflects demand.

For “low agricultural productivity,” Myanmar, Thailand, Cambodia, and Laos are color coded red, as the productivity of their rice production, which is the staple crop in ASEAN and accounts for about 72% of its cultivated land, is below the ASEAN average, and moreover their per capita agricultural capital is low.

For the countries color coded red in this chapter, their challenges will be considered in more detail in the next chapter.

Figure 3-8: List of the challenges in the food sector

	CLMV				ASESN4 (Group1)		ASESN4 (Group2)		BS	
	Myanmar	Cambodia	Lao PDR	Viet Nam	Philippines	Indonesia	Thailand	Malaysia	Brunei	Singapore
Food Shortages	-	-	-							
Low Agricultural Productivity										

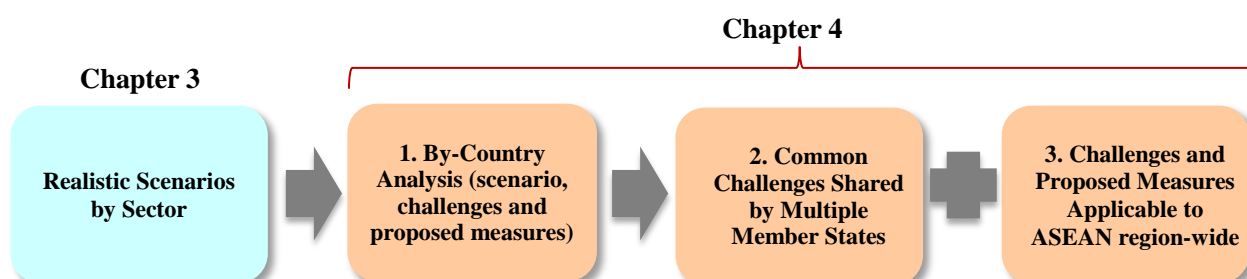
Legend	
	Challenges already emerged or expected to emerge by 2025
	Likely to be a challenge by 2025
	Low likelihood of becoming a challenge by 2025
-	Unable to verify due to insufficient data

Chapter 4 ASEAN's Most Realistic Scenarios, Challenges and Proposed Measures

Section 1 (By-Country Analysis) of this chapter presents the Most Realistic Scenarios for individual member states, constructed on the basis of the Realistic Scenarios by sector discussed in Chapter 3. It also identifies the challenges that each member state faces.

Section 2 (Common Challenges Shared by Multiple Member States) presents groupings of member states based on how they share the challenges discussed in Section 1. It also discusses proposed measures that can be taken to address those challenges.

Section 3 (Challenges and Proposed Measures Applicable to ASEAN Region-wide) is focused on issues that should be tackled by ASEAN as a whole and the overall goals of measures to be taken to address those challenges.



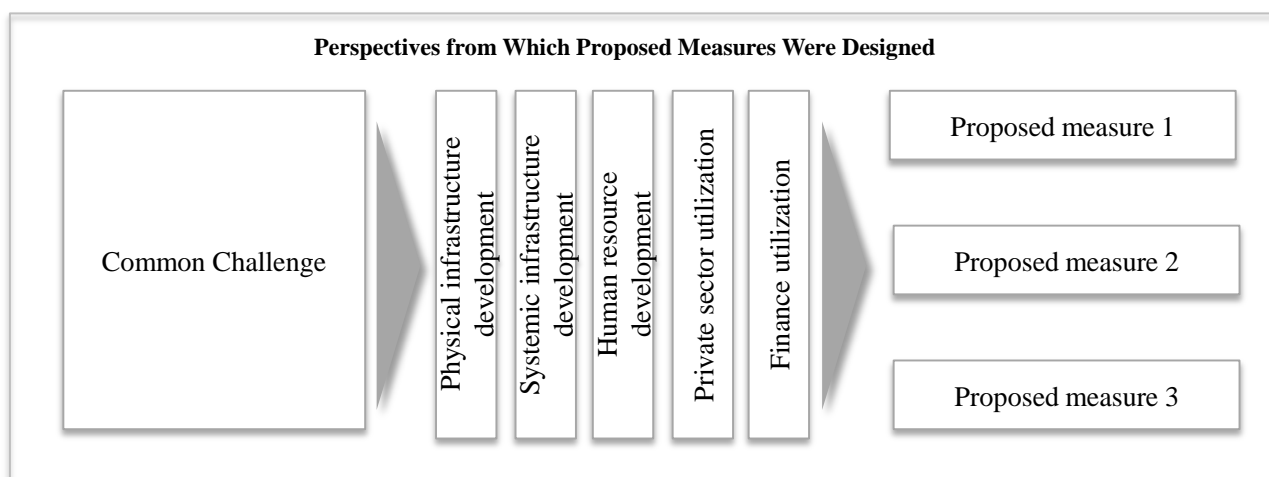
1. By-Country Analysis

■ Most Realistic Scenarios for 2025

- The most realistic scenarios for individual member states are given. The scenarios are based on the realistic scenarios by sector identified earlier, together with various information concerning the applicable country's economy-driving sectors and their characteristics, including past trends, government policies, and future estimates.

■ Challenges and Proposed Measures Related to the Most Realistic Scenarios

- Challenges categorized in the list of by-sector challenges (see Chapter 3) as either already existing or likely to emerge as a hindrance to economic growth, as indicated by projections for 2025, are reviewed as to their causes, and improvement measures needed to address those challenges are presented.
- The proposed measures are aligned to the five perspectives shown below for each challenge. Measures designed from different perspectives are given for some issues. In addition to conventional developmental measures—physical infrastructure development, institutional infrastructure development, human resource development, and finance facilitation—private sector utilization was also considered in view of its increase in recent years.



2. Common Challenges Shared by Multiple Member States

Groupings of member states based on common challenges are presented from the results of the most realistic scenario of each member state. Two methods were used for the groupings: (1) classification based on the level of per capita GDP and (2) classification based on the closing of the demographic bonus.

This analysis is a pre-requisite for the consideration of the proposed measures for addressing these common challenges.

3. Challenges and Proposed Measures Applicable to ASEAN region-wide

Finally, based on the analysis of common challenges of multiple member states, we identify the most important challenges that ASEAN should address region-wide.

The discussion here focuses on the following: (1) challenges that should be tackled by ASEAN as an economic community (from the view point of regional integration) and (2) challenges that must be resolved to strengthen ASEAN's international competitiveness (from the view point of global economy).

We consider proposed measures that could be effective in dealing with each common challenge, and then divide them into five categories above.

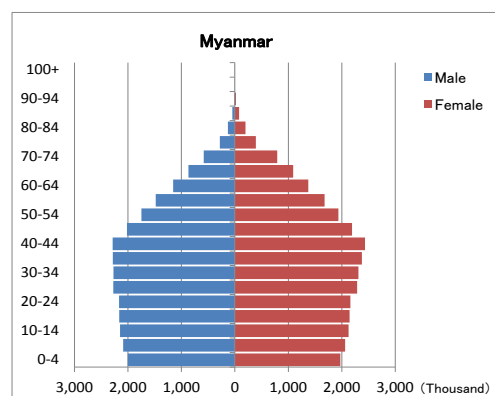
We also paid attention that the proposed measures could contribute to the attainment of the AEC's strategic goals in the light of the changing environment around ASEAN after 2015.

1. By-Country Analysis

(1) CLMV: Myanmar

【Basic information: Projection for 2025】

- **Total GDP:** \$104.307 billion (6th in the region)
- **GDP per Capita:** \$1,918 (10th in the region)
- **Total population:** 57.65 million (5th in the region)
- **Working-age population rate:** 71%
- **Population aging rate:** 7.8% (Aging society)



■ Realistic Scenarios and its Challenges and Proposed Measures

As realistic scenarios of Myanmar in 2025, “Growth in resource industries”, “Development of labor-intensive manufacturing industries” are expected; however, in order to further enhance its development, following proposed measures are considered to be essential.

Challenge ①: Resource Dependency of Exports

Proposed Measures

- Utilization of profits from the exports of natural gas resources as a source of funds for the diversification of industry.
- Development of a plan for the diversification of industry and prepare the legal environment required to encourage foreign direct investment into the targeted fields.

Challenge ②: Lack of Adequate Physical and Systematic Infrastructure

Proposed Measures

- Promotion of accepting overseas experts with the aim of establishing legal systems and guidelines related to PPP.
- Promotion of accepting technology and personnel from overseas and train personnel who can build, manage and supervise domestic infrastructure.

Challenge ③: Sharp Increase of Wages

Proposed Measures

- Setting wages at an appropriate level with regard to wages in surrounding countries and living costs of contractors and laborers living in the industrial areas.

Challenge ④: Low Agricultural Productivity

Proposed Measures

- Improvement the quality of roads and bridges linking agricultural villages to the market and improve farmers' market access.
- Establishment of organizations, systems and frameworks for providing farmers with information on market prices and supply and demand trends for agricultural products.
- Provision of facilities for on-grid electric power supply and off-grid electric power generation to provide a stable source of power to agricultural villages.
- Promotion of importing overseas technology for the production of high-value-added crops (such as organic crops or fruit with a high sugar content) and work to increase production of products targeting the region's expanding middle class.
- Implementation of standards and systems for the shipment of rice and other agricultural products that achieve high safety standards, with the aim of expanding exports of these products (expertise related to plant quarantine and testing for residual agrochemicals).

Challenge ⑤: Delay in the Development of Social Infrastructure in Minority Areas

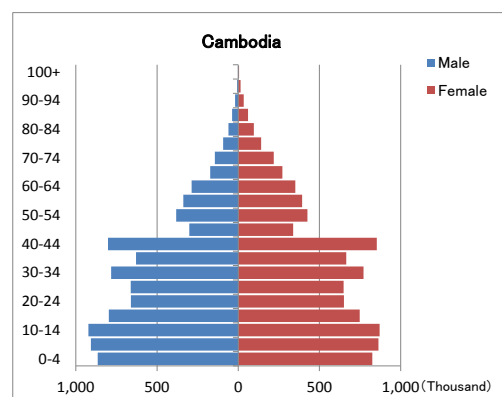
Proposed Measures

- Promotion of the providing training programs for local government officials and stationing of overseas experts in order to increase local administrative bodies' capability to take action.
- Implementation of social security systems to ensure the redistribution of income.
- Construction of roads in the mountainous areas inhabited by minority groups in order to link the areas to Metropolitan areas.
- Provision of job training and employment support for members of ethnic minorities.

(2) CLMV: Cambodia

【Basic information: Projection for 2025】

- **Total GDP:** \$38.33328 billion (8th in the region)
- **GDP per Capita:** \$2,172 (9th in the region)
- **Total population:** 18 million (7th in the region)
- **Working-age population rate:** 63%
- **Population aging rate:** 7.6% (Aging society)



■ Realistic Scenarios and its Challenges and Proposed Measures

As realistic scenarios of Cambodia in 2025, “Participation in production networks of neighboring countries”, “Increasing growth potential of agriculture”, and “Growth potential of service industry” are expected; however, in order to further enhance its development, following proposed measures are considered to be essential.

Challenge ①: Low Agricultural Productivity

Proposed Measures

- By encouraging the building of irrigation facilities and shifting from rain-water-based agriculture to primarily irrigation-based agriculture in rice production, damage caused by climatic conditions can be reduced.
- In order to improve technology and acquire capital in the postharvest processes (in particular storage and milling), strengthen cooperation with foreign experts and companies and undertake efforts to attract foreign direct investment.

Challenge ②: Low Levels of Education

Proposed Measures

- In order to improve access to education for those living in poverty and those in rural areas, establish a scholarship system⁹ using not only public funds but also funds from private businesspeople, and create incentives for corporate participation (tax deductions or other tax incentives).
- In order to improve the limited instructional time and content, work to attract the educational service industry and expand educational choices and opportunities. In addition, an assistance program specifically designed to promote education should be implemented (a World Bank financial assistance

⁹ A similar initiative by a private company is the Aeon Scholarship. That program targets students at national universities and offers them financial assistance during a four-year period. It is already being carried out in Cambodia, as well as its ASEAN neighbors of Thailand, Vietnam, and Indonesia, <http://prtimes.jp/main/html/rd/p/000000088.000007505.html>, November 13, 2013.

program for poor farmers, similar to the Bolsa Familia program in Brazil).

- Expand and improve teacher-training programs to improve the number and quality of teachers.

Challenge ③: Lack of Employment Opportunities

Proposed Measures

- Establishment of an institution or organizational framework to promote the matching of local and foreign businesses as a way to expand employment.
- Promotion of welcoming foreign experts on management methods and financial management to train Cambodian SMEs and help them internationalize as a way to create long-term employment.

Challenge ④: Lagging in the Creation of an Environment Conducive to Trade and Investment

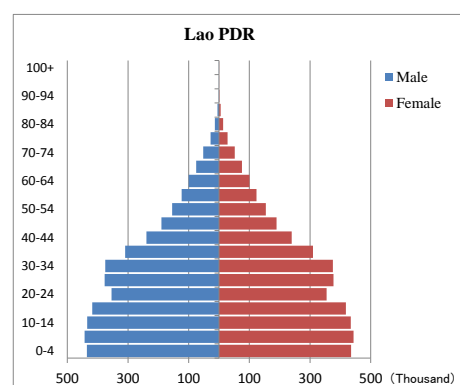
Proposed Measures

- In order to simplify the procedures related to starting up and conducting business in Cambodia, invite the involvement of foreign experts in preparing the system and carry out training for Cambodian experts.

(3) CLMV: Lao PDR

【Basic information: Projection for 2025】

- **Total GDP:** US\$24.5 billion (10th in the region)
- **GDP per Capita:** US\$3,088 (8th in the region)
- **Total population:** 8.25 million (8th in the region)
- **Working-age population rate:** 64.1%
- **Population aging rate:** 4.8%



■ Realistic Scenarios and its Challenges and Proposed Measures

As realistic scenarios of Lao PDR in 2025, “Economic development led by mineral and power exports”, “Development of manufacturing and service industry in urban areas close to SEZ” are expected; however, in order to further enhance its development, following proposed measures are considered to be essential.

Challenge ①: Delay in Development of Trade and Investment Climate

Proposed Measures

- Establishment of a special body to supervise the creation of single stop windows and the maintenance of national single windows (NSW) at borders.
- Extending opening times of trade procedure counters at borders, or keep them open 24 hours.

Challenge ②: Low Agricultural Productivity

Proposed Measures

- Improvement of road environment connecting farm communities to consumer markets.
- Implementation of a system (wholesale markets, IT systems, etc.) in which agricultural produce is efficiently collected, traded, distributed, and exported.
- Provision of the financial support required for spreading strong breed cultivation methods, seed purchasing, etc.
- Development of agricultural land to support mechanization by farmland consolidation and irrigation maintenance.
- Promotion of contract farming between private businesses (food processors, retailers, restaurants) and farmers

Challenge ③: Domestic Income Disparity and Domestic Educational Disparity

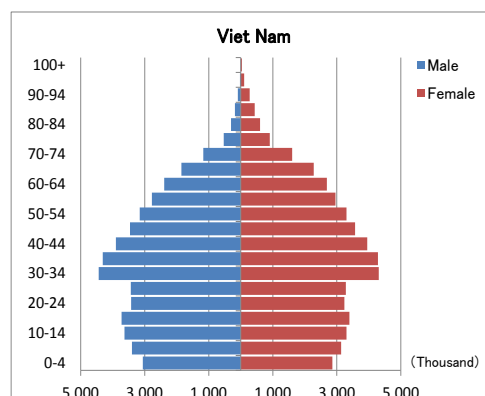
Proposed Measures

- Development of roads connecting economic corridors to surrounding farming villages.
- Promotion of large up-scaling and mechanization in order to streamline production in the agriculture, forestry and fisheries industry and food processing industry.
- Development of tourism resources and upgrade transport networks in the southern and northern areas of Lao PDR.
- Implementation of the development of education institutions in agricultural areas.
- Implementation of an IT environment in primary schools in regions where access to secondary schools is difficult, to enable students to study and graduate online.

(4) CLMV: Viet Nam

【Basic information: Projections for 2025】

- **Total GDP:** US\$346.4 billion (6th in the region)
- **GDP per Capita:** US\$3,509 (7th in the region)
- **Total population:** 99.8 million (3rd in the region)
- **Working-age population rate:** 70%
- **Population aging rate:** 10.4% (Aging society)



■ Realistic Scenarios and its Challenges and Proposed Measures

As realistic scenarios of Viet Nam in 2025, “Expansion of consumer market due to growing middle-income tier and increased purchasing power” and “Development of electrical and electronic machinery industry” are expected; however, in order to further enhance its development, following proposed measures are considered to be essential.

Challenge ①: Lack of Workers

Proposed Measures

- Promotion of mechanization in the manufacturing industry by developing a preferential treatment system for companies that introduce mechanization.
- Development of a work support system for women and the elderly, and offer incentives to private companies.

Challenge ②: Sharp Wage Rises and Low Educational Standards

Proposed Measures

- Building of ties outside the ASEAN region and aim to raise the quality of university education to that of top-level educational institutions worldwide.
- Aiming to set wage levels that maintain Vietnam’s competitiveness as well as the livelihood of its workforce.

Challenge ③: Lack of Job Opportunities

Proposed Measures

- Facilitation and development of knowledge-based industry that will take on people with an advanced education.

Challenge ④: Delay in Development of Trade and Investment Climate

Proposed Measures

- Streamlining work by simplifying business-related procedures, and develop the appropriate human resources
- Prioritization of the development of supporting industries, select the areas to be developed, and offer incentives to lure investment.
- Enhancement of collaboration between foreign and regional companies in order to develop regional companies into a supporting industry and promote the self-reliance of their manufacturing and sales.
- Promotion of the deregulation of domestic industry and the reform of state-owned companies through the TPP, and create an environment of equal competition among private and state-run companies.
- Promotion of the discovery and development of industries that could have a comparative advantage, and reinforce the international competitiveness of manufactured goods.

Challenge ⑤: Slowdown in Economic Growth due to Demographic Aging

Proposed Measures

- Formulation of protective policy for the elderly population not covered by insurance or social security and prevention of the elderly from falling into poverty.
- Promotion of employment support for women and the elderly, and increase of the utilization and earnings of the workforce.

Challenge ⑥: Financial Burden of Energy Subsidies

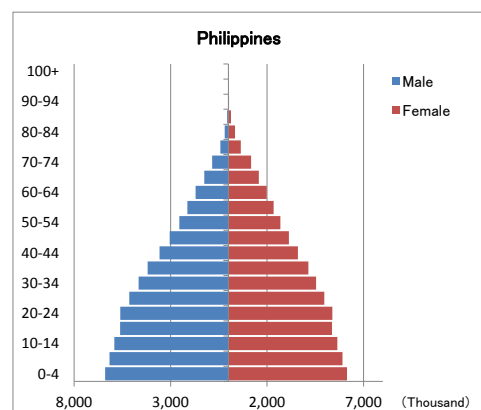
Proposed Measures

- Promotion of investment in the power development field and conduct a systematic revision of electricity charges in order to faithfully implement the Power Development Master Plan (PDP7).
- Encouragement and offer of incentives for the installation of energy-saving mechanical equipment in power-intensive industries.
- Promotion of the modernization and upgrade of equipment and develop engineers and supervisors in order to reduce costs in the fields of power generation, transmission, and distribution.

(5) ASEAN4 (Group1): the Philippines

【Basic information: Projections for 2025】

- **Total GDP:** 535.2 billion dollars (3rd in the region)
- **GDP per Capita:** 4,493 dollars (6th in the region)
- **Total population:** 119.22 million people (2nd in the region)
- **Working-age population rate:** 64.0%
- **Population aging rate:** 5.6%



■ Realistic Scenarios and its Challenges and Proposed Measures

As realistic scenarios of the Philippines in 2025, “Expansion of the electric and electronics industry agglomerations”, “Expansion of the IT/BPO industry” and “Expansion of consumer market” are expected; however, in order to further enhance its development, following proposed measures are considered to be essential.

Challenge ①: Lack of Employment Opportunities

Proposed Measures

- Development and training of human resources capable of creating and implementing infrastructure improvement plans.
- Implementation of system reforms in order to carry out infrastructure improvements that utilize private-sector capital (PPP schemes, etc.)

Challenge ②: Traffic Congestion in Urban Areas

Proposed Measures

- Promotion of improvements to Manila’s mass transit (LRT, monorail, subway).
- Extension of railway lines to the suburbs and expand the sphere in which commuting is possible.
- Promotion of the mass transit use by developing commercial facilities and residential areas centered on their stations.

Challenge ③: Power Supply Shortage

Proposed Measures

- Promotion of increasing energy efficiency by newly constructing highly efficient thermal power plants and upgrading existing ones.

- Promotion of price reductions of retail power prices by creating a competitive environment.

Challenge ④: Domestic Income Disparities

Proposed Measures

- Attracting production bases for vehicles and consumer electronics industries, where demand is expected to increase due to the growth of the middle class, and employ workers flowing into urban areas from rural areas.
- Provision of incentives for cultivating agricultural products for which demand is increasing, and develop the food processing industry in order to create employment in rural areas.
- Ensuring the peace agreement on Mindanao Island in order to improve investment environment on the island for the regional development.

Challenge ⑤: Delays in Improving the Trade and Investment Environment.

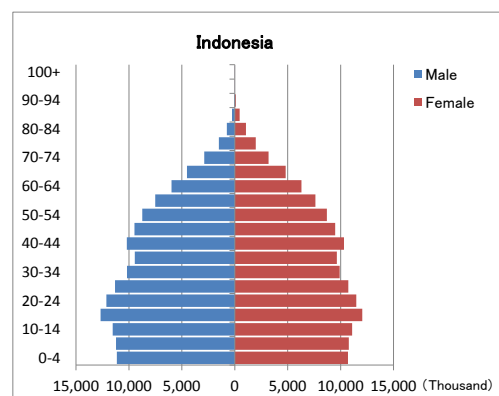
Proposed Measures

- Training of human resources who are able to simplify and improve government procedures and systems.
- Implementation of electronic administration process systems in order to increase the administration efficiency.

(6) ASEAN 4 (Group 1): Indonesia

【Basic information: Projections for 2025】

- **Total GDP:** \$1.8823 trillion (1st in the region)
- **GDP per Capita:** \$6,713 (5th in the region)
- **Total population:** 200.082011 million (1st in the region)
- **Working-age population rate:** 69%
- **Population aging rate:** 7.7% (Aging society)



■ Realistic Scenarios and its Challenges and Proposed Measures

As realistic scenarios of Indonesia in 2025, “Regional economic development through the growth of six economic corridors”, “Growth of service industry”, “Development as a center for the production and consumption of automobiles”, and “Transition to energy structure that prioritizes the low burden on the environment” are expected; however, in order to further enhance its development, following proposed measures are considered to be essential.

Challenge ①: Domestic Income Disparity

Proposed Measures

- Enhancement of connectivity between metropolitan areas and the regions. Incorporate the country’s regions into the production networks in metropolitan areas by constructing trunk roads between metropolitan and regional areas and improving other infrastructure (such as electric power infrastructure and encouraging the development of industrial parks).
- Utilization of expenses saved on energy subsidies to stimulate industry and construct infrastructure in regions with low GRDP per capita.

Challenge ②: Traffic Congestion in Urban Areas

Proposed Measures

- Introduction and expansion of the usage of traffic demand management and train appropriate personnel.
- Provision of alternative methods of transportation through measures such as an expanded public transportation network.

Challenge ③: Sharp Increase of Wage Level and Educational Standards

Proposed Measures

- Promotion of computer-enabled distance-learning and the necessary ICT infrastructure in order to improve access to education among less affluent communities, in rural villages and more isolated islands.
- Encouragement of the preparation and introduction of programs to raise the standard of basic education and accept domestic and overseas experts in order to boost overall educational standards.
- Promotion of coordination with overseas educational institutions in order to improve the quality of tertiary education.

Challenge ④: Delay in Development of Trade and Investment Infrastructure

Proposed Measures

- Encouragement of investment by foreign companies through the creation of a favorable investment environment that is more attractive than countries participating in the TPP.
- Modification of workflow processes to improve the efficiency of customs procedures, education of staff and building systems for monitoring the progress of work.

Challenge ⑤: Lack of Physical Infrastructure

Proposed Measures

- Improvement of the legal environment connected with land requisition.
- Creation of investment plans that can encourage private-sector investment, expansion of investment incentives and development of a favorable investment environment.
- Creation of operational guidelines and standardization of documentation for the sustainable procurement of capital that harnesses PPP.

Challenge ⑥: The Financial Burden on the Government of Energy Subsidies

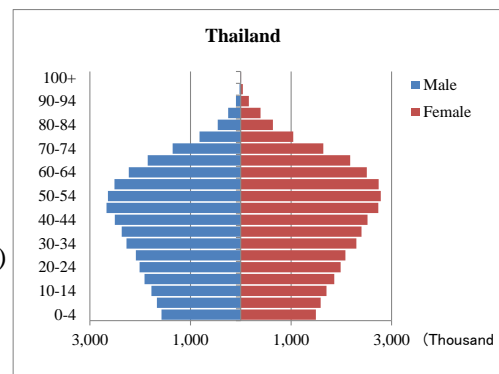
Proposed Measures

- Development of systems and introduction of incentive systems for investment in energy-saving and the introduction of energy-saving technology in industries consuming large amounts of energy (such as industrial production).
- Continuation of the policy of reducing funds spending on energy subsidies and utilization of the saving for public expenditure that will stimulate growth, such as infrastructure and education projects.
- Development of social insurance systems that will reduce the burden on lower income households of the reduction in energy subsidies.
- Encouragement of investment in facilities for diversification of the energy mix and putting systems in place to accept engineers from overseas in order to develop stable domestic electricity supply systems that can cope with increases in electricity demand.

(7) ASEAN4 (Group2): Thailand

【Basic information: Projections for 2025】

- **Total GDP:** 690.8 billion dollars (2nd in the region)
- **GDP per Capita:** 9,734 dollars (4th in the region)
- **Total population:** About 67.9 million people (4th in the region)
- **Working-age population rate:** 69.4%
- **Population aging rate:** 16.1% (Aged society)



■ Realistic Scenarios and its Challenges and Proposed Measures

As realistic scenarios of Thailand in 2025, “Expansion of industrial agglomerations into neighboring countries” and “Expansion of the consumer market” are expected; however, in order to further enhance its development, following proposed measures are considered to be essential.

Challenge ①: Immobilization of the Agricultural Structure and Low Agricultural Productivity

Proposed Measures

- Promotion of switching crops with high demand or expected to increase the demand, instead of providing financial support in agricultural sector through the purchase of agricultural products. It in effect encourages the shift of the resulting surplus labor force to growth sectors.

Challenge ②: Labor Shortage and Sudden Rise in Wages

Proposed Measures

- Promotion of collaborations between business and academia and create and manage facilities to educate and train professional human resources.
- Easing business regulation for foreign companies in the industries categorized as it would result in an improvement in TFP.
- Expansion and strengthening the Thai-Nichi Institute of Technology produce more graduates specializing in industrial technology.

Challenge ③: Burden on the Government's Finances from Energy Subsidies and Power-Supply Shortages

Proposed Measures

- Reducing dependency on natural gas and coal by promoting the introduction of energy-saving techniques and renewable energy.
- Introduction of guidelines and measures to obtain the citizens consensus for the construction of large-scale power plant and promotion of complying the guideline by providing construction permit when the all items are complied.

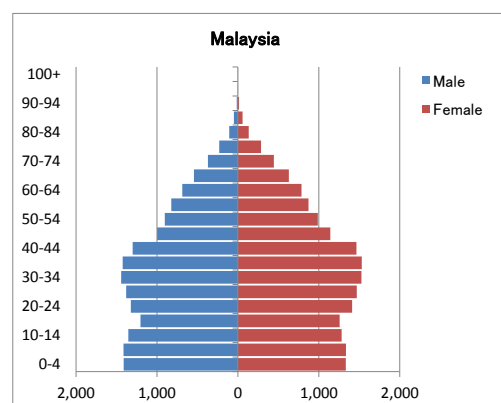
Challenge ④: Domestic Income Disparities and Domestic Educational Disparities

- Establishment and management of a system for redistributing income, such as through estate tax and property tax.
- Improvement of infrastructure in order to increase accessibility to the areas around Bangkok.
- Increasing value-added agricultural products to raise income of agricultural workers by promoting sixth-sector industrialization of agriculture
- Promotion of exports through the acquisition of international certification for agriculture and food processing.
- Establishment and improvement of the IT environment in elementary educational institutes in regions where it is difficult for students to access secondary educational institutions and enable them to take classes and to graduate online.

(8) ASEAN 4 (Group 2): Malaysia

【Basic information: Projections for 2025】

- **GDP total amount:** 530 billion dollars (3rd in the region)
- **Per capita GDP:** 15,056 dollars (3rd in the region)
- **Total population:** 34. 956 million people (6th in the region)
- **Productive age population rate:** 68%
- **Rate of aging:** 8.3% (Aging society)



■ Realistic Scenarios and its Challenges and Proposed Measures

As realistic scenarios of Malaysia in 2025, “The development of high-level consumption”, “Electric and electronics industry agglomerations will be sustained, and the shift to high value-added industries will be advanced”, and “The development of the Islamic financial market and the halal food industry in Asia” are expected; however, in order to further enhance its development, following proposed measures are considered to be essential.

Challenge①: Labor Shortage / Sharp Increase of Wages

Proposed Measures

- Promotion of foreign investment attraction into knowledge-intensive industries and create employment opportunities for people with a high academic qualifications, engineers, and professional human resources.
- Establishment of a system for accepting people with high academic qualifications, engineers, and professional human resources from overseas.
- Promotion of the development of industries that are not susceptible to the effects of rising wages (industries other than labor-intensive industries) and proactively attract FDI and human resources.

Challenge② : Income Disparities

Proposed Measures

- Utilization of the reduced costs from the decrease in energy subsidies to promote industry and improve infrastructure in regions with low per capital GDP
- Creation of the incentives to invest in regions with low per capita GDP and aim to promote their industries.

Challenges③: Burden on Government Finances from Energy Subsidies

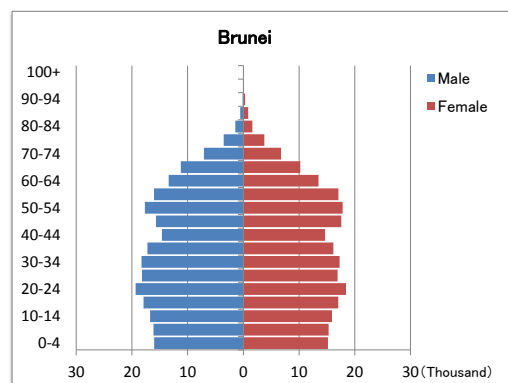
Proposed Measures

- Establishment of investment system for investment in energy saving and the introduction of technology, and create a system of preferential treatment measures for the introduction of technology, particularly for the energy-consuming sectors such as industrial sector.
- In the future, maintain the policy of reducing energy subsidies and allocate the funds obtained from the reduction of energy subsidies to R&D investment and infrastructure improvements in order to cultivate high-value-added industries.

(9) BS: Brunei

【Basic information: Projection for 2025】

- **Total GDP :** 27.7 billion dollars (9th in the region)
- **GDP per Capita:** 57,594 dollars (2nd in the region)
- **Total population:** about 480,000 people (10th in the region)
- **Working-age population rate:** 70.1%
- **Population aging rate:** 10.0% (Aged society)



■ Realistic Scenarios and its Challenges and Proposed Measures

As realistic scenarios of Brunei in 2025, “Diversification of the oil and gas-related industries” is expected; however, in order to further enhance its development, following proposed measures are considered to be essential.

Challenge①: Lack of Employment Opportunities

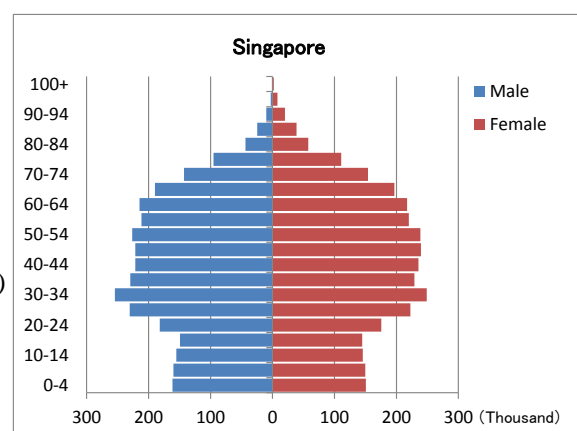
Proposed Measures

- Attraction of companies with the required technologies and expertise in order to further industrial diversification in the upstream and downstream of the oil and gas sectors.
- Establishment of educational environment to be able to train human resources capable of working in industries other than oil and gas (tourism, food, manufacture of pharmaceuticals, finance, etc.)
- Provision of incentives to encourage job seekers to find employment in industries other than oil and gas.

(10) BS: Singapore

【Basic information: Projection for 2025】

- **Total GDP:** 448.4 billion dollars (5th in the region)
- **GDP per Capita:** 70,350 dollars (1st in the region)
- **Total population:** 6.33 million people (9th in the region)
- **Working-age population rate:** 68.1%
- **Population aging rate:** 17.4% (Aged society)



■ Realistic Scenarios and its Challenges and Proposed Measures

As realistic scenarios of Singapore in 2025, “Strengthening its function as the business hub of ASEAN” is expected; however, in order to further enhance its development, following proposed measures are considered to be essential.

Challenge①: Labor Shortage

Proposed Measures

- Advancement of the human resources training that is required for professional, executive, management or technological positions.
- Increase of connectivity with manufacturing bases outside of the country, such as the joint development of SEZ with neighboring countries, and will offer incentives in order to promote the advance of Singapore companies.

Challenge②: Power Supply Shortage

Proposed Measures

- Establishment of a power grid with neighboring countries (Malaysia, Indonesia) that it will need in order to import electric power.
- Increasing the efficiency of existing power plants and building new power plants.

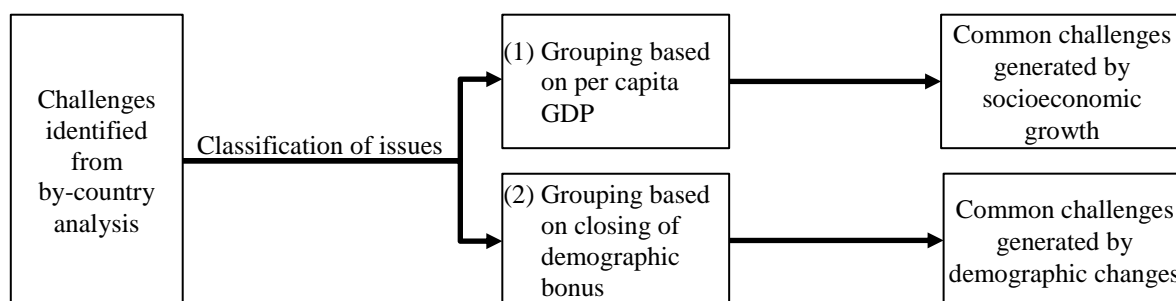
2. Common Challenges Shared by Multiple Member States

(1) Country groupings

Concerning the challenges discussed in Section 1 (By-Country Analysis) above, member states were grouped on the basis of common challenges. Two methods were used for the groupings: (1) classification based on the level of per capita GDP and (2) classification based on the closing of the demographic bonus.

As a result of the groupings, common challenges generated by socioeconomic growth were identified from (1) the GDP-based grouping and common challenges generated by demographic changes were identified from (2) the population-based grouping.

Figure 4-1: Groupings of Countries with Shared Issues



(2) Challenges Shared by Multiple Member States

The common challenges of member states grouped on the basis of the two criteria can be mapped as shown in the figures below.

Figure 4-2: Per Capita GDP Based Grouping and Common Issues

Challenges	CLMV				ASESN4 (Group 1)		ASESN4 (Group 2)		BS	
	Myanmar	Cambodia	Lao PDR	Viet Nam	Philippines	Indonesia	Thailand	Malaysia	Brunei	Singapore
Industrial Structure Solidification				①						
Low Agricultural Productivity										
Delays in Preparing Trade/Investment Environment			②							
Complexity of Trade Procedures										
Incomplete Infrastructure										
Low Education Level			③						-	
Domestic Education Disparities									-	
Domestic Income Disparities	-				④				-	-
Urban Traffic Congestion					⑤					
Burdens from Energy Cost	-	-	-							-
Electric Power Supply Shortages										
Food Shortages	-	-	-							

【Common challenges generated by socioeconomic growth】

No major challenges were seen in Group BS other than Singapore's power supply shortage. Challenges common to all eight of the remaining countries are rigid industrial structure and low agricultural productivity. Challenges common to CLMV are poor foreign trade and investment environments, complicated export/import procedures, low educational level, and domestic inequality. Challenges common to the ASEAN 4 are domestic income inequality, traffic congestion in urban areas, and increased energy costs.

Figure 4-3: Demographic Window-Based Grouping and Common Issues

Challenges	Closing Timing of Demographic Bonus									
	In or before 2015			2016-2025			2026-2035	In or after 2036		
	Thailand	Singapore	Viet Nam	Myanmar	Brunei	Malaysia	Indonesia	Cambodia	Philippines	Lao PDR
Sharp Wage Increase				⑥	-					
Aging Population and Declining Birthrate, Worker Shortage										
Insufficient Employment Opportunities										

Legend

	Challenges already emerged or expected to emerge by 2025
	Likely to be a challenge by 2025
	Low likelihood of becoming a challenge by 2025
-	Unable to verify due to insufficient data

【Common challenges generated by demographic changes】

Thailand, Singapore and Viet Nam will see their demographic bonus close in or before 2015. As their population ages, birthrates decline, and labor shortages increase, they will face various problems relating to the declining proportion of working age people.

A steep rise in wages is projected for many member states, and there are concerns that the competitive edge of labor-intensive industries will decline. Meanwhile, Cambodia, the Philippines, and Laos, whose demographic bonus will close in or after 2036, will need to create sufficient job opportunities for their large working age population.

Figure 4-4: Country Groups by Common Issue

Common Issue		Applicable Country Group
(1)	Common challenges generated by socioeconomic growth	
	①	<ul style="list-style-type: none"> Low agricultural productivity Rigid industrial structure CLMV、ASEAN4
	②	<ul style="list-style-type: none"> Delayed foreign trade and investment environment consideration Complicated export/import procedures CLMV
	③	<ul style="list-style-type: none"> Low educational level Domestic educational inequality CLMV
	④	<ul style="list-style-type: none"> Domestic income inequality ASEAN4
	⑤	<ul style="list-style-type: none"> Traffic congestion in urban areas Increased energy costs ASEAN4
(2)	Common challenges generated by demographic changes	
	⑥	<ul style="list-style-type: none"> Steep rise in wages Aging population coupled with declining birthrate Labor shortage Closing in or before 2015 (Thailand, Singapore, Viet Nam) Closing between 2016 and 2025 (Myanmar, Brunei, Malaysia) Closing between 2026 and 2035 (Indonesia)

3. Challenges and Proposed Measures Applicable to ASEAN Region-wide

To conclude this Report, the final section of this chapter discusses the key challenges that the study team believes should be tackled by ASEAN as a whole region-wide and by the respective member states acting as a single economic community. It also presents the study team's proposed measures to be implemented in response to those challenges.

(1) Challenges that should be tackled by ASEAN as an economic community

Further to the common challenges shared by multiple member states discussed in section two of this chapter, the challenges applicable to ASEAN region-wide focus on the following: (1) challenges that should be tackled by ASEAN as an economic community (from the view point of regional integration) and (2) challenges that must be resolved to strengthen ASEAN's international competitiveness (from the view point of global economy).

- (a) Challenges that should be tackled by ASEAN as an economic community owing to the fact that individual efforts of member states are likely to be limited in effectiveness (from the view point of regional integration)
- (b) Challenges that must be resolved to enable the achievement of the AEC's strategic goals and to strengthen ASEAN's international competitiveness in the face of the external environment projected for 2015 onwards (from the view point of global economy)

(2) Overall goals of proposed measures

【Improvement goals from the standpoint of regional integration】

①	Avoid huge disparities in economic development among member states, as such disparities can hinder regional integration
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Challenges	Overall Goal ①	Category					Proposed Measure
		Physical Infrastructure Development	Systemic Infrastructure Development	Human Resources Development	Private Sector Utilization	Finance Utilization	
Small scale of industrial development in outlying areas throughout ASEAN <i>Related country-group specific issue:</i>	Avoid huge disparities in economic development among member states; as such disparities can hinder regional		○				<ul style="list-style-type: none"> Create job opportunity by the liberalization of investment and elimination of barriers Develop capital market (financial system, governance, etc.) to induce foreign direct investment

① Low agricultural productivity / industrial structure solidification (common issue of CLMV and ASEAN-4)	integration.	○					<ul style="list-style-type: none"> Foster the creation of industrial clusters by developing transport infrastructure that connects outlying areas with industrial or population centers.
					○		<ul style="list-style-type: none"> Promote the development of local products and tourist resources and solicit investments from corporations within or outside of the region
						○	<ul style="list-style-type: none"> Improve financial access to help small and medium-sized enterprises (SMEs) procure funds more easily.
Lack of labor participation opportunities due to insufficient basic education coverage in low-income member states <i>Related country-group specific issue:</i> ③ Low educational level / domestic educational inequality (common issue of CLMV)				○			<ul style="list-style-type: none"> Educate the public (parents) on the importance of investing in education. Promote women's entry into the labor market by providing better education to young girls and women.
Lack of employment opportunities due to imbalances between labor supply and demand within ASEAN <i>Related country-group specific issue:</i> ⑥ Sharp wage increase / labor shortage (common issue of Thailand, Singapore, Viet Nam, Myanmar, Brunei, Malaysia, and Indonesia)			○				<ul style="list-style-type: none"> Introduce strategic deregulation on the free movement of people Extend the coverage of mutual recognition agreement (MRA) on professional qualifications, which is currently limited to 8 industries.
					○		<ul style="list-style-type: none"> Improve the efficiency and the quality of medical and welfare services through IT utilization
					○		<ul style="list-style-type: none"> Reduce burden of social security on both government and citizen by implementation of medical and life insurance through private sector utilization

②	Strengthen the ASEAN organization's operational capacity, which is necessary for advancing from a free trade area (FTA) to a high-functioning single market.
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Challenges	Overall Goal ②	Category					Proposed Measure
		Physical Infrastructure Development	Systemic Infrastructure Development	Human Resources Development	Private Sector Utilization	Finance Utilization	
Delays in ratification of AEC agreements and their integration into national laws due to individual circumstances of each member-state <i>Related country-group specific issue:</i> None (ASEAN issue)	Strengthen the ASEAN organization's operational capacity, which is necessary for advancing from a free trade area (FTA) to a high-functioning single market.		○				<ul style="list-style-type: none"> Clearly define the common benefits of ASEAN economic integration in AEC's Post-2015 Vision. Strengthen the function of key ministerial meetings in order to enhance the role of ASEAN in the rule making of RCEP
Over-reliance on a particular non-ASEAN country due to development assistance or long-term trade <i>Related country-group specific issue:</i> ② Poor foreign trade and investment environments / complicated export/import procedures (common issue of CLMV)			○				<ul style="list-style-type: none"> Diversify trading partners by joining wider-area economic partnerships (RCEP, TPP, etc.) and expanding economic partnerships with developing countries in India, the Middle East and Africa, etc. in the Western market. Enhance CLM's participation in the regional or global production network to improve the industrial competitiveness and self-reliance through regional economic cooperation
ASEAN's consensus based decision-making process underpinned by its founding principle of non-interference defined in the ASEAN Charter <i>Related country-group specific issue:</i> None (ASEAN issue)			○				<ul style="list-style-type: none"> Grant greater authority to the ASEAN Summit, the Committee of Permanent Representatives (CPR), and the Secretary-General based on a reinterpretation of the ASEAN Charter.

【Improvement goals from the standpoint of the global economy】

③	Create a competitive environment and achieve international competitiveness, which are necessary for ASEAN's sustainable growth as a production center, export hub, and consumer market
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Challenges	Overall Goal ③	Category					Proposed Measure
		Physical Infrastructure Development	Systemic Infrastructure Development	Human Resources Development	Private Sector Utilization	Finance Utilization	
Lack of policies on industrial competitiveness in several member-states <i>Related country-group specific issue:</i> ① Low agricultural productivity / industrial structure solidification (common issue of CLMV and ASEAN-4)	Create a competitive environment and achieve international competitiveness, which are necessary for ASEAN's sustainable growth as a production center, export hub, and consumer market		○				<ul style="list-style-type: none"> Formulate competitiveness strategies for ASEAN overall and establish an entity to manage the sharing of knowledge.
Lack of transport logistic systems necessary for building a supply chain <i>Related country-group specific issue:</i> ① Low agricultural productivity / industrial structure solidification (common issue of CLMV and ASEAN-4)		○					<ul style="list-style-type: none"> Build a logistics network linking sub-regions to strengthen connectivity within ASEAN.
② Poor foreign trade and investment environments / complicated export/import procedures (common issue of CLMV)			○				<ul style="list-style-type: none"> Accelerate the establishment of a legal framework for transport facilitation (ASEAN Framework Agreement on the Facilitation of Goods in Transit (AFAFGIT), ASEAN Framework Agreement on Multimodal Transport (AFAMT), ASEAN Framework Agreement on the Facilitation of Inter-State Transport (AFAFIST)).

<p>Lagging development of domestic industries due to an industrial growth model based on foreign investment</p> <p><i>Related country-group specific issue:</i></p> <p>① Low agricultural productivity / industrial structure solidification (common issue of CLMV and ASEAN-4)</p>						○	<ul style="list-style-type: none"> Develop supporting industries and have local SMEs participate in the production network.
<p>Persistently low level of personal consumption</p> <p><i>Related country-group specific issue:</i></p> <p>① Low agricultural productivity / industrial structure solidification (common issue of CLMV and ASEAN-4)</p>			○				<ul style="list-style-type: none"> Boost discretionary consumer spending by accelerating the liberalization of trade in services.
						○	<ul style="list-style-type: none"> Boost discretionary consumer spending by providing more accessible consumer finance (credit sales, electronic payment, etc.). Enhance consumption by implementing the financial tools such as leasing and insurance system.

④	Develop academic and business environments that can foster and retain within ASEAN laborers with world-class productivity and scholars, bureaucrat, and businessmen with outstanding expertise
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Challenges	Overall Goal ④	Category					Proposed Measure
		Physical Infrastructure Development	Systemic Infrastructure Development	Human Resources Development	Private Sector Utilization	Finance Utilization	
Lagging provision of higher education in the fields of technology, engineering, business management, finance, and the arts <i>Related country-group specific issue:</i> ④ Domestic income inequality (common issue of ASEAN-4)	Develop academic and business environments that can foster and retain within ASEAN laborers with world-class productivity and scholars and businessmen with outstanding expertise				○		<ul style="list-style-type: none"> Diversify and raise the quality of educational opportunities by forming partnerships with overseas higher education institutions (business schools, art academies, etc.).
					○		<ul style="list-style-type: none"> Increase education budgets and promote R&D through university-industry linkage.
Underdeveloped legal systems for promoting knowledge acquisition and knowledge-intensive industry development <i>Related country-group specific issue:</i> ① Low agricultural productivity / industrial structure solidification (common issue of CLMV and ASEAN-4)			○				<ul style="list-style-type: none"> Establish a government agency to manage the protection of intellectual properties.
				○			<ul style="list-style-type: none"> Educate public on the Intellectual Property Right (IPR) protection to foster enterprises to do R&D activities in the ASEAN region
				○			<ul style="list-style-type: none"> Produce legal experts with the capability to arbitrate intellectual property disputes.
Lack of systems for fostering SMEs and promoting entrepreneurship <i>Related country-group specific issue:</i> ④ Domestic income inequality (common issue of ASEAN-4)					○		<ul style="list-style-type: none"> Gather information and create a data base and credit rating system concerning ASEAN SMEs. Provide information to non-ASEAN investors and match partners.
						○	<ul style="list-style-type: none"> Improve access to funds by expanding financial tools for SMEs.

⑤	Achieve long-term economic growth and environmental conservation by coping effectively with increased energy consumption and environmental burdens
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Challenges	Overall Goal ⑤	Category					Proposed Measure
		Physical Infrastructure Development	Systemic Infrastructure Development	Human Resources Development	Private Sector Utilization	Finance Utilization	
Increased imports of primary energy and higher costs due to rise of international prices <i>Related country-group specific issue:</i> ⑤ Traffic congestion in urban areas / increased energy costs (common issue of ASEAN-4)	Achieve long-term economic growth and environmental conservation by coping effectively with increased energy consumption and environmental burdens	○					<ul style="list-style-type: none"> Reduce reliance on fossil fuels (petroleum and natural gas) and develop other energy sources (renewable energy, shale oil and gas, nuclear power, etc.).
Delay in achieving wide-area energy cooperation <i>Related country-group specific issue:</i> ⑤ Traffic congestion in urban areas / increased energy costs (common issue of ASEAN-4)			○				<ul style="list-style-type: none"> Promote the harmonization of legal systems and technological standards among member-states.
				○			<ul style="list-style-type: none"> Develop capacity of human resources dealing with infrastructure investment in public and private sector
					○	○	<ul style="list-style-type: none"> Take advantage of financial assistance, investment, and lending from private enterprises and international financial institutions.
Increase in carbon dioxide emission due to heightened use of coal <i>Related country-group specific issue:</i> ⑤ Traffic congestion in urban areas / increased energy costs (common issue of ASEAN-4)			○				<ul style="list-style-type: none"> Promote the development of clean coal technologies Conduct rehabilitation and enlargement of existing hydro power generation
			○				<ul style="list-style-type: none"> Promote energy conservation based on ICT such as the smart grid.

Deteriorated urban environment due to motorization <i>Related country-group specific issue:</i> ⑤ Traffic congestion in urban areas / increased energy costs (common issue of ASEAN-4)		○					<ul style="list-style-type: none"> Utilize the under-ground space for parking and commercial purposes
			○				<ul style="list-style-type: none"> Formulate and introduce transport regulations and action plans.
						○	<ul style="list-style-type: none"> Reduce complexity of fare collection by implementation of electronic payment system for public transportation