Phnom Penh Initiatives for Narrowing Development Gaps

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Economic Research Institute for ASEAN and East Asia (ERIA)

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1. Economic Growth, Regional Integration, and Development Gaps

Economic growth and economic integration do not necessarily have to widen development gaps. Rather, economic growth and economic integration can be pursued together with narrowing development gaps if proper economic policies are planned and implemented. The experience in ASEAN presents good examples of such achievements.

ASEAN and East Asian developing economies recently presented excellent growth performance (**Table 1**). Actually, the newer ASEAN member states, (AMSs), i.e., Cambodia, Lao PDR, Myanmar and Viet Nam (CLMV countries), grew faster than the ASEAN-6 countries during 1998-2010, thereby reducing somewhat the income gaps among AMSs.

Table 1: East Asian Macroeconomic Landscape

	GDP (constant 2000 million US$)			GDP per capita, PPP (constant 2005 international $)			Trade (% of GDP)	
	1998	2010	Growth (%)	1998	2010	Growth (%)	1998	2010
Brunei	5,662.1	6,871.5	21.4	47,910.2	45,506.6	-5.0	107.9	114.3
Cambodia	3,002.0	7,888.8	162.8	883.4	1,968.1	122.8	75.6	113.6
China	1,027,513.2	3,246,008.2	215.9	2,325.1	6,818.7	193.3	36.4	55.2
Indonesia	156,048.1	274,744.7	76.1	2,546.7	3,885.1	52.6	96.2	47.5
Japan	4,635,991.4	5,094,422.7	9.9	28,410.9	30,965.4	9.0	19.7	29.2
Korea, Rep.	449,061.3	801,400.0	78.5	16,015.0	26,774.0	67.2	79.5	102.0
Lao PDR	1,524.9	3,444.7	125.9	1,239.6	2,312.6	86.6	84.3	73.5
Malaysia	81,175.0	147,250.9	81.4	9,268.0	13,213.9	42.6	209.5	176.8
Myanmar		*N.A.*			*N.A.*		1.5	*N.A.*
Philippines	75,282.9	129,017.4	71.4	2,616.9	3,560.5	36.1	98.7	71.4
Singapore	82,834.7	165,707.0	100.0	33,712.5	52,170.0	54.7	316.4	385.9
Thailand	112,171.1	187,494.6	67.2	5,145.9	7,672.9	49.1	101.9	135.1
Vietnam	27,861.2	62,832.2	125.5	1,468.7	2,875.1	95.8	97.0	165.3
India	420,920.9	973,325.0	131.2	1,580.1	3,038.8	92.3	23.3	49.7

Source: World Bank - World Development Indicators (WDI), themselves from the International Monetary Fund and the Organisation for Economic Co-operation and Development.

Notes: Data is not always available for Myanmar. China, Japan, Korea, Rep. and India are given as references. *N.A.* = Not Available. Growth is expressed as a percentage of the 1998 value. The indicators were not available for Brunei in the year 1998; the year 2001 is used instead.

Although domestic income disparity worsened in some AMSs (**Table 2**), the reduction in population below the poverty line was substantial, especially in Viet Nam, Indonesia, and Cambodia (**Figure 1**).

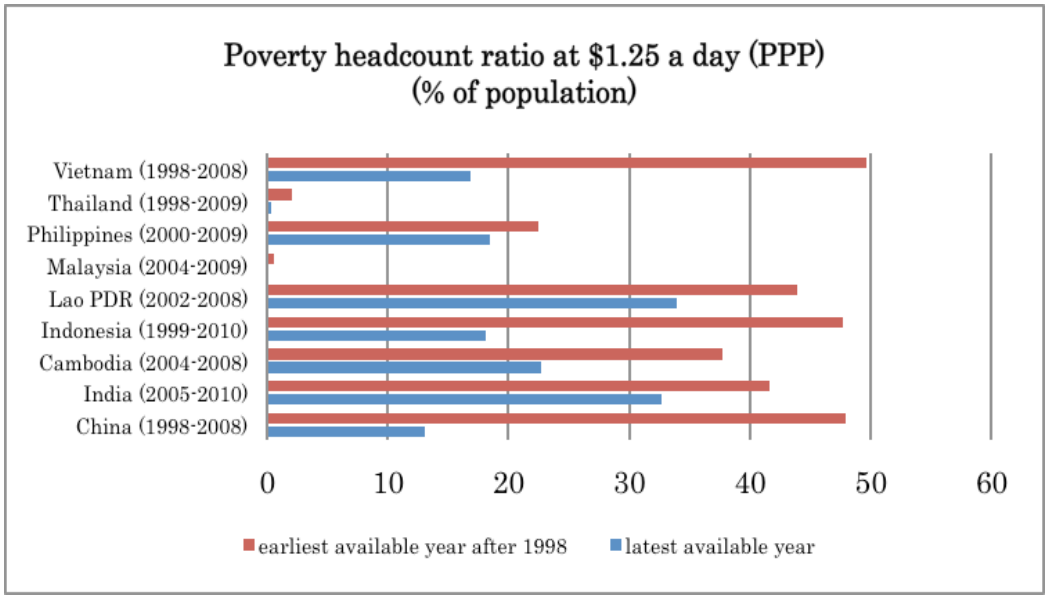
Table 2: Gini Indices of ASEAN, China and India

	Cambodia (1994-2008)	China (1996-2005)	Indonesia (1996-2005)	Lao PDR (1992-2008)	Malaysia (1995-2009)	Philippines (1994-2009)	Thailand (1996-2009)	Viet Nam (1993-2008)	India (1994-2005)
first year	38.3	35.7	31.3	30.4	48.5	42.9	42.9	35.7	30.8
last year	37.9	42.5	34.0	36.7	46.2	43.0	40.0	35.6	33.4

Source: World Bank - World Development Indicators (WDI).

Notes: No data for Brunei and Myanmar. Only one value for Japan (24.9 for 1993), Korea, Rep. (31.6 for 1998) and Singapore (42.5 for 1998). The couple of years compared is given for each country in parentheses beside the country name. China and India are given as references.

Figure 1: Poverty in ASEAN, China and India



Source: World Bank - World Development Indicators (WDI), themselves from the World Bank, and Development Research Group.

Notes: No data available for Brunei, Myanmar and Singapore. India and China are given as references.

Underpinning the ASEAN experience of narrowing development gaps among AMSs and substantial reduction in poverty incidence has been: (1) the strong resolve of the newer AMSs to open up to foreign investment and competition as well as undertaking domestic reforms and strengthening domestic capacities

in order for their economies to benefit more from deeper integration with the rest of ASEAN and the world, and (2) favorable global economic environment in commodities and labor-intensive manufactures where AMSs have comparative advantage. A key driver of the surge in ASEAN manufacturing and manufactured exports has been AMSs participation in regional and global production networks spearheaded by multinational companies (MNCs), many of which have been attracted into ASEAN because of favorable investment climates, good cost advantages, and improving infrastructures in a number of AMSs.

In the face of growing worldwide concern on income and wealth distribution, we should not mix up issues related to economic development with issues on addressing ex-post income and wealth disparity *per se*. ASEAN needs to focus much more on addressing development gaps that at the same time engenders dynamic growth as well as economic and social resiliency. A large part of inclusiveness in ASEAN can be achieved by economic dynamism rather than heavily depending on direct income redistribution based on social considerations.

ASEAN can pursue further inclusiveness with dynamic growth by even more aggressively taking advantage of the mechanics of a new type of international division of labor so-called the 2nd unbundling (international division of labor in terms of production processes and tasks) where latecomers can jump-start industrialization by participating in production networks. Once industrial agglomerations are formed for inter-firm division of labor, ample opportunities for local firms and small and medium enterprises (SMEs) are created for participating in production networks, enhancing productivity and competitiveness, and upgrading innovation.

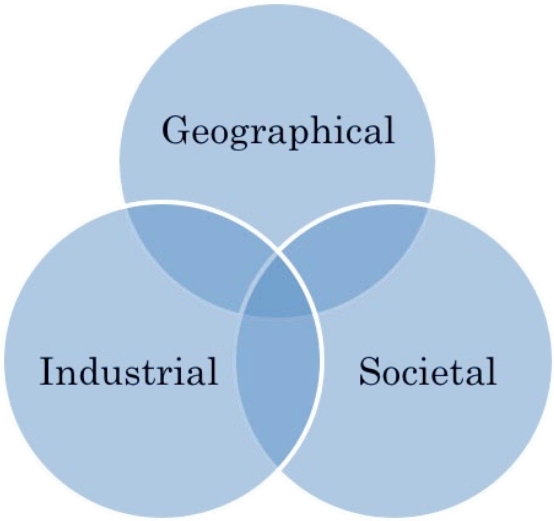
As being discussed in the following sections, the ASEAN strategy of narrowing the development gaps through dynamic growth involves the pursuit of geographic, industrial, and societal inclusiveness. We will show how far we can handle inclusiveness issues with economic policies.

2. Framework for Narrowing Development Gaps

2.1. Three Dimensions of Inclusiveness for Narrowing Development Gaps

There are three dimensions in the concept of inclusiveness: geographical, industrial, and societal (**Figure 2**). Proper economic policies can largely take care of the geographical and industrial inclusiveness while a part of the societal inclusiveness inevitably requires social value judgment beyond efficiency-based economic argument. The framework emphasizes engendering geographical, industrial and societal inclusiveness as the comprehensive approach to narrowing development gaps in ASEAN. Although the three dimensions are presented separately below, there is significant complementarity among the three dimensions of inclusiveness. This is best seen in terms of geographical and industrial inclusiveness. For example, agricultural development raises industrial inclusiveness; at the same time, improved connectivity through infrastructure development and better trade and transport facilitation contribute significantly toward much improved business and production environment for agriculture. Similarly, industrial inclusiveness relying on SMEs more deeply engaged in production networks would require improved quality of human capital especially in order for AMSs to move up further in the production and value chains.

Figure 2: Three-Dimensional Inclusiveness of Economic Growth



Source: ERIA (2011).

2.2. Geographical Inclusiveness

ASEAN still has substantial gaps in income and differences in development phases among countries as well as within each country. Engendering geographical inclusiveness is important not only for steady and balanced growth but also for keeping social stability and geographic integrity within a country and in ASEAN as a whole.

Much of geographical inclusiveness in ASEAN can be achieved by enhancing connectivity, both physical and institutional, within and between AMSs, together with supplementary enhancements of location advantages. Energy sector development can also be pursued to further enhance domestic and international connectivity.

2.3. Industrial Inclusiveness

In ASEAN, we also observe considerable development gaps in terms of industries: MNCs versus local firms, large firms versus SMEs, manufacturing versus agriculture and resource-based industries, and others. These development gaps may exist even in geographical proximity. Enhancing linkages beyond development gaps is the key to achieving industrial inclusiveness while we should not excessively worry about enhancing competition.

ASEAN has successfully accelerated industrialization by aggressively inviting MNCs and participating in international production networks but so far, the development of local firms and SMEs has been relatively slow. The development of SMEs and local firms in general will be the key to distributing more widely the benefits of economic growth and integration. Furthermore, inter-firm division of labor in production networks is mainly conducted in geographical proximity and works as a force of forming industrial agglomerations. In industrial agglomerations, SMEs and local firms gain ample opportunities to come into production networks where the capturing of positive agglomeration effects, technology transfers/spillovers, and the upgrading of innovation may occur. SMEs and local firms would become a

source of competitiveness and dynamism as well as paving the road from middle income to fully developed economies.

Gaps across industries are often serious. The manufacturing sector is surely an important sector, which provides high-wage jobs, establishes working discipline, and enhances innovation activities, and thus is naturally prioritized in industrial development. On the other hand, non-manufacturing sectors such as agriculture and food processing are sometimes treated simply as pre-modern, obsolete industries, simply supplying redundant labor to the manufacturing sector. However, there are a lot of potentials for developing resource-based industries in ASEAN by modestly investing in infrastructure and technological progress. Achieving industrial inclusiveness across industries would also contribute to competitiveness and resiliency in ASEAN.

2.4. Societal Inclusiveness

Societal inclusiveness consists of at least four elements: (1) education and human resource development, (2) economic and social resiliency, (3) social protection, and (4) other societal inclusiveness. The former three are particularly important in the context of economic and social development, although some consideration on social value judgment necessarily comes in.

The first is inclusiveness in education and human resource development. The ultimate source of economic/social development is human capital and innovation.

The second is to enhance economic and social resiliency. Keeping healthy macroeconomic fundamentals is the starting point. Then energy, resources, food security as well as environmental consideration must be taken care of. Upgrading resiliency against natural and man-made disasters is also important.

The third is social protection. As economic development and urbanization proceed, and people are gradually detached from traditional social protection mechanisms, there is a need to eventually introduce certain levels of formal

social protection measures such as pension system and health insurance.

The fourth element of societal inclusion involves issues related to gender, ethnicity, and other social classes as well as issues on ex post income and wealth inequality. These issues are important but not straightforward; social value judgment inevitably comes in play on what appropriate levels of equity should be achieved.

3. Mechanisms for the Three-Dimension Inclusiveness of Economic Growth in ASEAN

3.1. Engendering Geographical Inclusiveness

3.1.1. The 2nd Unbundling and Connectivity

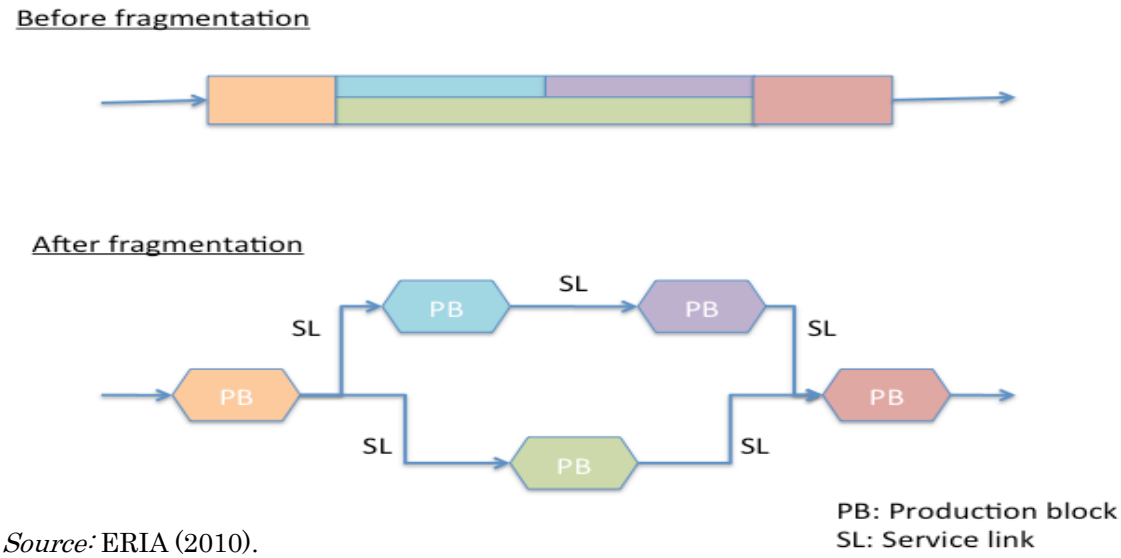
The strength of forerunners in ASEAN and East Asia is to aggressively take advantage of the mechanics of the 2nd unbundling, particularly in the manufacturing sector, and successfully accelerate industrialization. The 2nd unbundling is a novel way of organizing international division of labor in terms of production processes or tasks, rather than traditional industry-by-industry division of labor, i.e., the 1st unbundling, (Baldwin (2011)).

Figure 3 illustrates the mechanics of the 2nd unbundling according to the fragmentation theory. Fragmentation of production is primarily motivated by production cost saving in remotely located production blocks that exploit differences in location advantages such as inexpensive labor, swift logistics infrastructure, favorable business environment, and others. The mechanism generates forces of narrowing development gaps because some production blocks are attracted by location advantages of lagging behind countries/areas. From the viewpoint of developing countries, the initial stage of industrialization can be substantially accelerated because only a partial improvement of location advantages may be enough to attract the first wave of production blocks.

Two conditions are needed in order to participate in production networks.

First, there should have a substantial saving in production costs in production blocks. Second, costs of service link to connect remotely located production blocks must not be too high. The former relates to the improvement of investment climate, stable supply of infrastructure services such as electricity and industrial estate services. The latter consists of transport costs, telecommunication costs, and various coordination costs, which leads to the key word "Connectivity." Connectivity relies critically on physical connectivity such as hard logistics infrastructure as well as on institutional connectivity that consists of soft infrastructure including various trade facilitation measures. The Master Plan on ASEAN Connectivity (MPAC: ASEAN (2010)) brings out the importance of physical and institutional connectivity (as well as people to people connectivity).

Figure 3: The Mechanics of the 2nd unbundling: the Fragmentation Theory



Source: ERIA (2010).

Required levels of connectivity differ depending on whether a country/region tries to participate in quick and high-frequency production networks such as the ones in machinery industries or rather starts establishing slow and low-frequency production links. The former demands high-spec connectivity, particularly linking with neighboring industrial agglomerations. The latter is basic connectivity in rural areas such as rural access roads, which is also important to yield chances for remote areas to integrate into wider markets.

Both are important to address various levels of geographical inclusiveness. As a development strategy, industrial/economic corridor concept such as the Mekong-India Economic Corridor (MIEC) is often instrumental in connecting countries/regions at different degrees of participation in production networks.

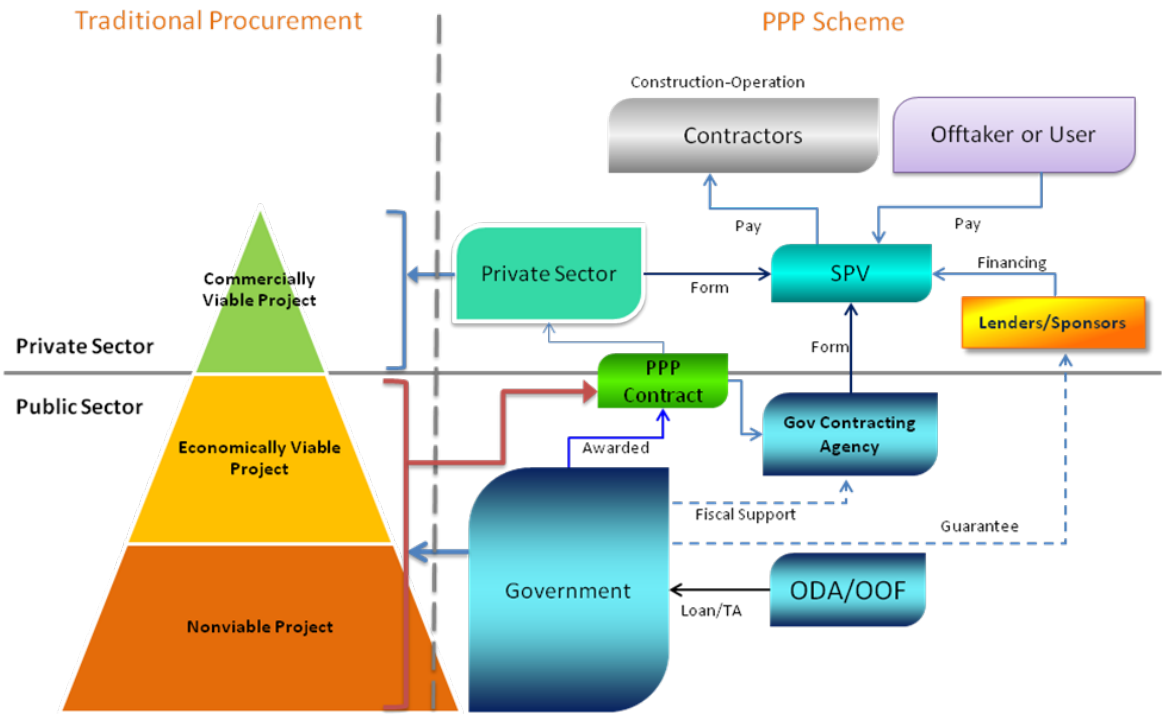
3.1.2. Physical Connectivity

As shown in MPAC, the key elements of physical connectivity are transport (e.g., air, road, rail, maritime, port facilities, logistics services facilities), information and communication technology (ICT) (e.g., optical fiber network), energy, and others. Addressing bottlenecks to participating in production networks often resides in improving physical connectivity backed up by logistics infrastructure development. Because infrastructure development typically requires large budgets, it is important to prioritize projects and set proper sequencing (see Comprehensive Asia Development Plan (CADP: ERIA (2010)).

Financing project can be done through the traditional way in which the public sector constructs commercially nonviable projects while private builds commercially viable ones. However, an alternative and creative way to build nonviable projects is by involving private sector under public private partnership (PPP) scheme (see **Figure 4**). To attract private participation, the government needs to increase the creditworthiness of the project by giving adequate guarantee and fiscal support or by the government funding defined and less viable components of the project. Where fiscal resources are inadequate, the government may secure official development assistance (ODA) or other official flows (OOF) as supplementary financing for the public component of the project. Such scheme provides opportunities for developing countries to accelerate infrastructure development by tapping all possible financial sources. Another benefit of PPP is to improve efficiency of the public sector by utilizing private sector expertise in public services provision or in public utilities management. Indonesia and Thailand tap private funds to build some large infrastructure projects, the Philippines exercises PPP to provide social infrastructure such as schools and hospitals, while Malaysia

focuses on efficiency improvement by shifting the private domain from the public sector. It is possible to adopt modified PPP schemes in emerging countries in ASEAN to fill infrastructure gaps.

Figure 4: Financing Infrastructure: an Illustration



Source: ERIA.

3.1.3. Institutional Connectivity

Institutional connectivity includes trade liberalization and facilitation, mutual recognition agreements and arrangements, regional transport agreements, cross-border procedures, and others.

As **Table 3** shows, there are huge gaps in the ranks of Doing Business among ASEAN countries. Lao PDR needs 26 days to export while Singapore needs only 5 days, even though Lao PDR as a landlocked country requires additional days of land transport between Lao-Thai border to the Laem Chabang Port in Thailand. Clearly, there is much room to reduce the number of documents to export and import the products. Furthermore, implementation of the ASEAN Framework Agreement of the Facilitation of Goods in Transit (AFAFGIT), the

ASEAN Framework Agreement of the Facilitation of Inter-State Transport (AFAFIST), and the ASEAN Framework Agreement on Multimodal Transport (AFAMT) will significantly reduce the transaction time and costs at the borders, as MPAC has designated them as prioritized projects.

Table 3: Trade Costs Presented by Doing Business 2012

Country	Rank (out of 185 economies)	Documents to export (number)	Time to export (days)	Cost to export (US$ per container)	Documents to import (number)	Time to import (days)	Cost to import (US$ per container)
Brunei	40	6	19	680	6	15	745
Cambodia	118	9	22	755	10	26	900
Indonesia	37	4	17	644	7	23	660
Lao PDR	160	10	26	2,140	10	26	2,125
Malaysia	11	5	11	435	6	8	420
Philippines	53	7	15	585	8	14	660
Singapore	1	4	5	456	4	4	439
Thailand	20	5	14	585	5	13	750
Viet Nam	74	6	21	610	8	21	600

Source: World Bank.

Note: n.a. for Myanmar.

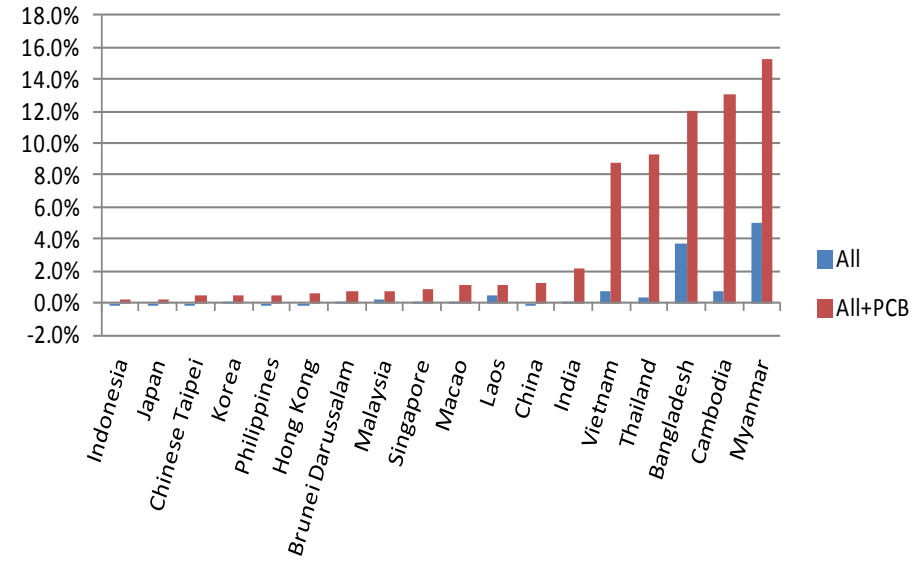
3.1.4. Balance between Agglomeration and Dispersion

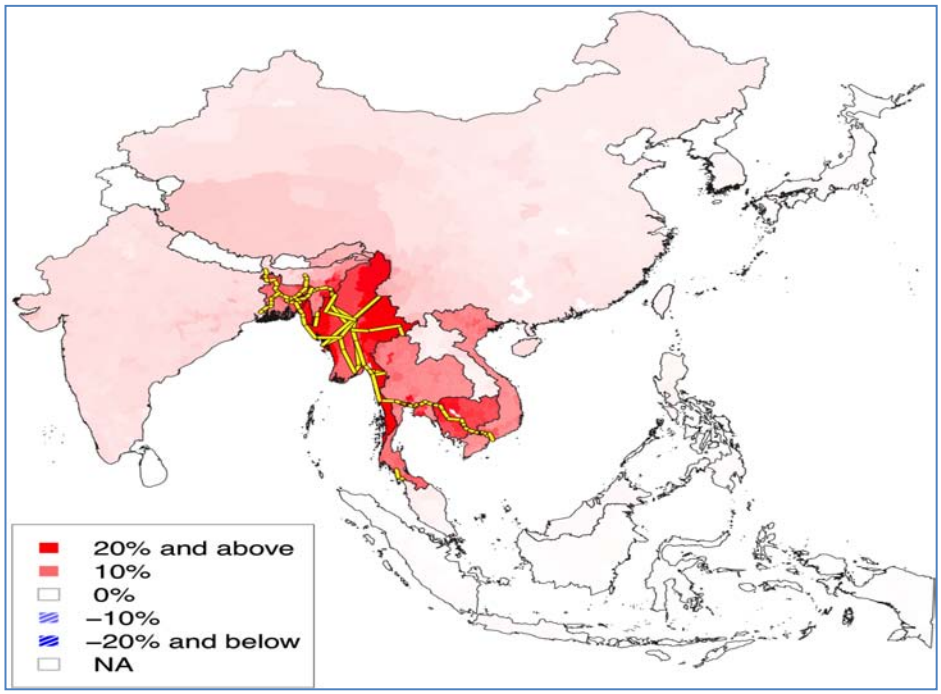
A reduction in trade costs generates both agglomeration forces and dispersion forces; to keep a proper balance, supplementary policies to improve location advantages such as securing electricity supply and upgrading services in industrial estates are often necessary.

The Geographical Simulation Model developed by ERIA and IDE-JETRO (IDE/ERIA-GSM) works as a powerful tool for simulating economic effects of enhancing physical connectivity as well as institutional connectivity. IDE/ERIA-GSM provides a theoretical basis for the CADP and MPAC to select, prioritize, and combine important infrastructure projects. Using a spatial economics model, we can illustrate how industries agglomerate and disperse, and how economic activities can be affected by the development of infrastructure. As **Figure 5** below suggests, it is important to keep a good

balance between agglomeration effects and dispersion effects of economic activities and population in infrastructure development by complementing with other policies and strategies.

Figure 5: Geographical Simulation Model: an Illustration





Source: Kumagai, S. and I. Isono (2011) - IDE/ERIA-GSM 5

Note: "All" scenario when several hard infrastructure projects related to ASEAN-India connectivity are implemented. In addition, soft-infrastructure-related barriers are reduced in Viet Nam, Cambodia, Thailand, Myanmar, Bangladesh, China, and India by reducing the documents to export and import, enhancing transparency of the procedures, and raising companies' capacities to trade.

Figure 5 also presents the results of several simulations or scenarios on ASEAN-India Connectivity, including road construction, port upgrading, border facilitation, and the reduction of behind-the-border barriers, are estimated. The result shows that hard and soft infrastructure developments benefit small countries such as Myanmar, Bangladesh, and Cambodia more than Thailand, Viet Nam, India, and China in terms of growth rates. It can be interpreted that connectivity enhancement will contribute to both high economic growth and narrowing development gaps.

3.1.5. Electricity Supply and Connectivity

Enhancing connectivity should be supplemented by the enhancement of location advantages. One of the typical bottlenecks for location advantages is electricity supply. Along the path of industrialization and urbanization, electricity supply must be expanded in a timely manner.

In the distribution of electricity, connectivity is also important. In the context of domestic connectivity, we must properly prioritize projects and set sequences in response to electricity supply for industries and urban areas as well as rural areas. Indeed, individuals' access to electricity is one of the most clear and undistorted indications of a country's energy poverty status (IEA (2011)). Thus, for example, access to electricity in the CLM countries remains low and the rural areas bear the brunt. Electrification rate in 2009 in Cambodia, Myanmar and Lao PDR was respectively 24%, 13% and 55% (IEA (2011)). Electricity access is increasingly at the forefront of governments' preoccupations; amongst its many objectives, Cambodia's Rural Electrification and Transmission Project will improve standards of living and foster economic growth in rural areas by expanding rural electricity supply.

Cross-border connectivity is also important in electricity distribution. Interconnection of grid-based electricity systems enables the CLMV countries to share their diverse energy resources, diversifies power sources, and optimizes power supply to meet their varying demand profiles. Savings from interconnection (which includes Thailand and the Southern China) are

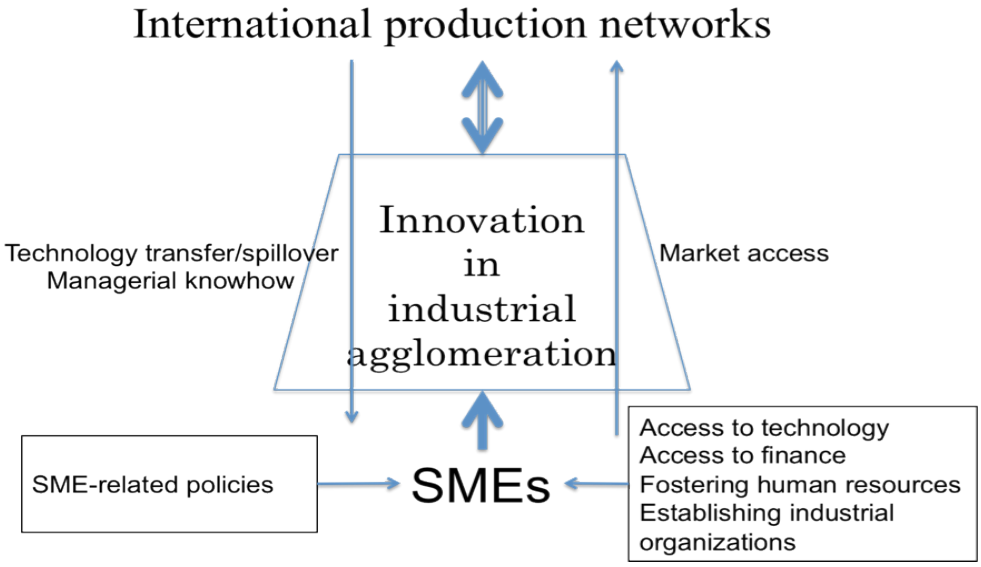
estimated at $US 14.3 billion (ADB (2012)). This is mainly due to the substitution of fossil fuel generation with hydropower, largely from Lao PDR.

3.2. Engendering Industrial Inclusiveness

3.2.1. SME Participation in Regional Production Networks

There are various kinds of SMEs in ASEAN, and one category is SMEs potentially coming into production networks managed by multinationals (**Figure 6**). Empirical studies conducted by ERIA (Thanh, Narjoko, and Oum (2010)) obtained findings on the determinants and constraints for SMEs participation in regional production networks. First, productivity, foreign ownership, financial characteristics, innovation efforts, and managerial/entrepreneurial attitude are key characteristics for SMEs to participate in production networks, backed up with sufficient technology capability.

Figure 6: SMEs' Participation in Production Networks



Second, as for the constraints on upgrading the positions of SMEs in production networks (i.e., moving up to higher quality tiers in production networks), the study indicates binding internal factors. The extent of foreign

participation in the ownership of SMEs, firm size, productivity, access to finance, and the capability of SMEs in servicing their debts determine whether or not SMEs that are participating in production networks are able to move to higher quality tiers in the networks.

Third, SMEs' participation in production networks varies by a country's stage of development. Findings from Cambodia indicate that firms outside production networks suffer substantially from a lack of financial and managerial capability, inability to compete with other firms, and difficulty in developing wide information/networks. All these weaknesses are also the case for Viet Nam and Lao PDR. In addition, the results from these country studies underline the barriers that SMEs face in acquiring advanced technology, or even just improving their technological capability. These weaknesses often lead SMEs in these countries to be unable to meet strict quality standards demanded by other firms in higher tiers of production networks. SMEs in more advanced ASEAN countries (i.e., Thailand, Indonesia, and to some extent the Philippines) do not consider their internal resources as their biggest weakness, or as posing the greatest barriers to their performance. Firms in these countries thus have the "internal" ability to engage in production networks. External conditions such as unfavorable business environments or the climate for direct investments are more important barriers for them. In other words, these SMEs care more about external than internal barriers.

Finally, access to finance poses a binding constraint for most SMEs. This finding confirms the popular view that access to finance is one of the factors that constrain SME growth.

Deeper participation in production networks by SMEs is facilitated by a 'matching' process to form business partnership with larger firms, some of which are multinationals, operating in cross-border production networks. While the process can occur naturally driven by market forces, it may as well be assisted by government or other institutions with an objective to have an efficient matching process.

3.2.2. SMEs Access to Finance

ERIA's research project on SMEs Access to Finance (Harvie, Oum, and Narjoko (2010)) conducted in 7 AMSs and China provides practical insights on SMEs access to finance, as follow.

First, although a significant number of SMEs still rely on their internal resources for start-up and business expansion, external finance is important for aspiring smaller domestically owned companies in less developed economies (Cambodia, Lao PDR, and Viet Nam) which make lower profits and which have insufficient access to funds. Moreover, the size of these firms and the stage of the country's development (reflecting the financial market conditions) also affect the diversity of choices of financial institutions and financial products that SMEs can get access.

Second, there is potential for credit rationing or high risk premiums, exercised by the financial institutions for SMEs. Firm size and the stage of country development (financial market development) do affect the conditions of external finance offered to SMEs, i.e., larger SMEs in more developed economies (Indonesia, Malaysia, the Philippines, and Thailand) tend to get bigger loans, with longer terms, and at a lower interest rate than otherwise.

Third, the results suggest that the owners' net worth, collateral, business plan, financial statement, and cash flow are critical for financial institutions in devising the financial conditions they extend to SMEs. In other words, financial institutions seem to assign higher risk premium on opaque SMEs by offering less favorable financial conditions.

Finally, financial access has a significant impact on SMEs' innovation capability and participation in the export market. Bigger SMEs with access to larger loans with longer terms and at a lower interest rate are more capable of conducting innovation and exporting activity, since these external finances with favorable conditions would provide SMEs enough time and resources to innovate and enter foreign markets.

Policy measures are required to deepen and broaden financial markets with

the aim of encouraging greater competition in terms of financial resource providers, reducing the cost of borrowing, and stimulating greater provision of finance that will enhance the provision of diversified products and services more in line with meeting the needs of the SMEs.

It is also crucial to introduce credit guarantee schemes subject to rigorous and viable business plans, credit ratings, and information systems. Also, establish specialized development financial institutions such as SME banks as well as provide business development services that can assist SMEs in embedding business training (e.g. management, business plan, book keeping and accounting, financial literacy) and network promotion.

3.2.3. Upgrading Firms' Innovation Capability

ERIA's research on innovation (Intarakumnerd and Ueki (2009)) confirms that the improvement of innovation capability of local firms in the region depends on how successfully they have leveraged their internal and external resources. The study shows how firms have improved their innovation capabilities through the university-industry linkages locally available to them. The role of universities has evolved from traditional activities of education and basic research to a third mission, technology transfer and commercialization. The external resources from universities, public research institutes, industrial associations, governmental and private-sector intermediaries and others can help local firms develop innovation capabilities, through a variety of technology transfer and knowledge sharing activities.

One major obstacle that prevents firms from doing innovations and building up absorptive capacity is their perception of the costs and risks being too high. Another obstacle for innovation is the lack of technological facilities like testing, quality assurance, and calibration centers. These facilities require a lot of investment, and market mechanism alone may not provide them sufficiently.

Strengthening the 'absorptive capacity' of local firms is a key success factor in gaining benefits both from within- and across-agglomeration linkages.

Governments can help firms mitigate this obstacle through several policy options, ranging from tax incentives to technical support for the provision of technical infrastructure.

Policies to invite the business operation of MNCs are also warranted. MNCs encourage the locally owned firms to gain technological knowledge and capability through various channels or ways connecting MNCs to the local firms. These policies fit very well with policy to create or strengthen the institutions to promote agglomeration/clustering effects. They can also screen particular clusters and identify bottlenecks, gaps and weaknesses to ease, address and ameliorate these problems. Such problems can take the form of critical basic infrastructure, high tech infrastructure, or supplier firms. Government can step in by creating testing, quality assurance, and calibration centers for the common uses of firms in the industry.

A comprehensive program should be developed to enhance the participation of local firms in production networks, strengthen their links to regional and global markets, improve their access to technology and finance, foster human resources, and establish forward-looking industrial organizations. Policies related to SMEs need be reviewed in a comprehensive manner; as a start, ERIA and the ASEAN SME Working Group are currently developing the ASEAN SME Policy Index.

ASEAN has depended heavily on MNCs for technology transfer into the region. The ratio of research and development expenditure (R&D) to GDP in ASEAN, except Singapore, has been extremely low compared with neighboring countries (**Table 4** and **Table 5**). More serious attention should be given to raise R&D capacity in the region. Effective technology transfer and adaptation involves investment in R&D itself. Moreover, ASEAN cannot expect to be a center of innovation unless the AMSs substantially raise R&D expenditures (and improve tremendously their scientific and engineering human capital).

Table 4: Research and Development Expenditure (% of GDP) in ASEAN

Indonesia (2001)	Malaysia (2002)	Singapore (2002)	Thailand (2002)	Philippines (2002)	Brunei (2002)	Cambodia (2002)	Lao PDR (2002)	Myanmar (2002)	Viet Nam (2002)
0.048	0.653	2.153	0.244	0.146	0.016	0.045	0.036	0.162	0.193

Source: World Bank - World Development Indicators (WDI), themselves from the United Nations Educational, Scientific, and Cultural Organization (UNESCO) Institute for Statistics.

Notes: Expenditures for research and development are current and capital expenditures (both public and private) on creative *work undertaken systematically to increase knowledge, including knowledge of humanity, culture, and society, and the use of knowledge for new applications. R&D covers basic research, applied research, and experimental development.*

Table 5: Research and Development Expenditure (% of GDP), Comparison with Selected Neighboring countries

China (2002)	Japan (2002)	Korea, Rep. (2002)	India (2002)
1.070	3.165	2.404	0.737

Source & Notes: c.f. previous table.

3.2.4. Agriculture and Other Resource-based Industries

Agricultural development and prudent management of natural resources are critical elements in narrowing development gaps in many AMSs. A large proportion of the poor in many AMSs resides in rural areas relying on agriculture and fishery resources. In addition, the poorer segments of the rural population live in areas with poor infrastructural access to major markets, and thereby preventing them to earn more from their agricultural lands and natural resources as well as discouraging them from investing in better technologies unless there is large government support.

Yet, many AMSs are rich in natural resources and agricultural lands and are net exporters of major agricultural and mineral products. Indeed, a number of AMSs still have a large share of agriculture and natural resource industries in their economies. ASEAN countries can build their strength in agriculture and natural resources further and thereby generate more balanced and robustly growing economies. This means the need to have robust growth in agricultural productivity as well as measured and managed development of natural resources.

The resulting much improved productivity of agriculture and resource-based sectors facilitates smoother transfer of needed resources toward the better-paying non-agriculture sectors like manufacturing without compromising food security of the country and growth of income of farm households, as the examples of Viet Nam in the 1990s and Indonesia in the early 1980s indicate.

This involves encouraging greater private investment into the sectors in tandem with greater government investment in rural infrastructures (e.g., roads, irrigation), agricultural research and development, and rural institutions. Rigorous studies show that government investments in rural roads, rural electricity, irrigation (for India), rural education, and agricultural research and development have been the most important determinants of robust growth in agricultural productivity and marked reduction in rural poverty in China and India. Numerous studies around the world including ASEAN countries show the importance of agricultural research and development to robust growth in agricultural productivity. Yet, investment in agricultural research and development as a ratio of agricultural output is very low in many AMSs with the exception of Malaysia and Thailand.

Improving productivity of agricultural lands and natural resources also involves more certain land ownership and land use rights, enforceable contractual arrangements, as well as better management of natural resources such as fishery grounds.

The challenge with respect to the more capital intensive mineral resources industry toward narrowing development gaps is to ensure that the communities and local governments where such mineral resources are located do benefit significantly from them, instead of much of the returns from such mineral resources exploitation and development accruing to the capitals and central governments.

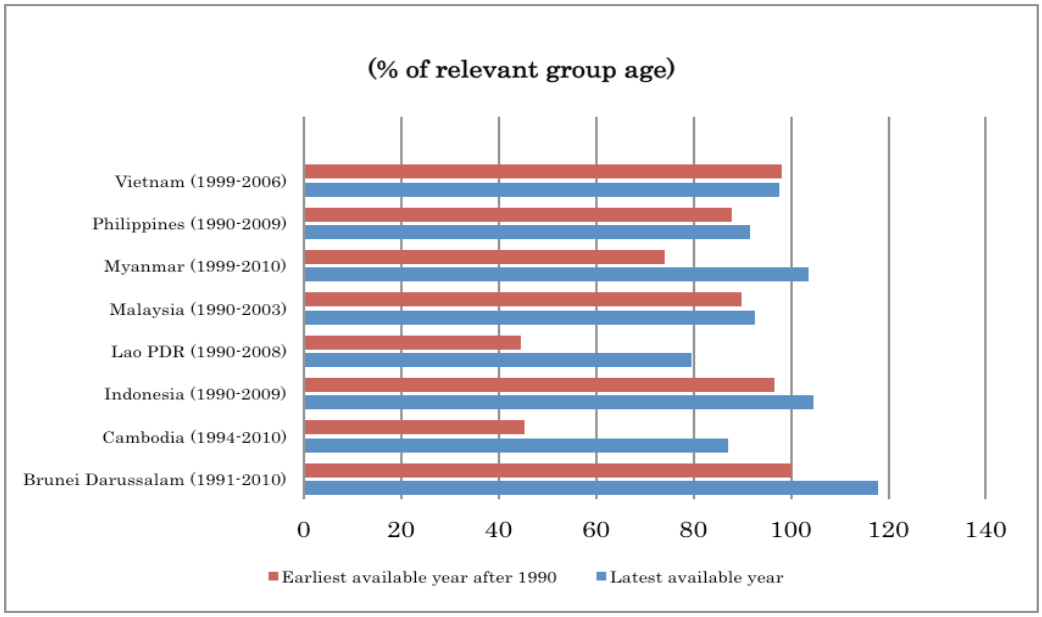
3.3. Engendering Societal inclusiveness

3.3.1. Education and Human Resource Development

The ultimate source of economic/social development is human capital and innovation. Upgrading the quality of education and guaranteeing opportunities for getting access to good quality education by everybody are essential. **Figures 7** and **Figure 8** present the completion rate of primary education and the graduation rate of lower secondary education in ASEAN.

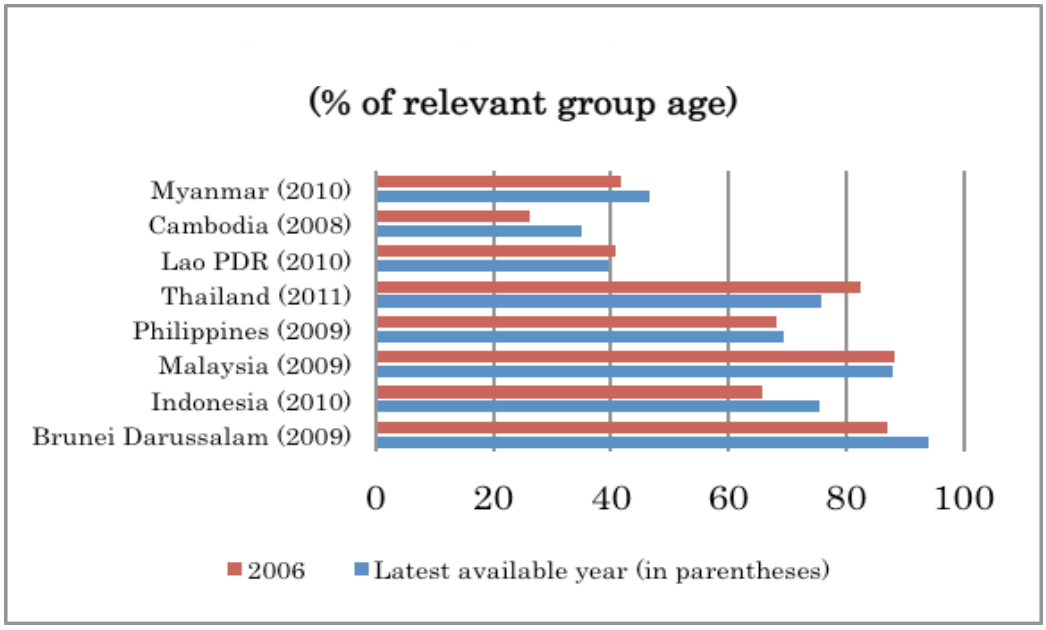
The two figures show significant improvements in the completion rates in the primary school in Cambodia and Lao PDR, but the completion rates in the lower secondary school are still modest in the two countries and Myanmar as compared to the other AMSs. Clearly, there remains significant challenge in improving basic education participation and performance in the CLM countries.

Figure 7: Primary Completion Rate in ASEAN



Source: World Bank - World Development Indicators (WDI), themselves from the United Nations Educational, Scientific, and Cultural Organization (UNESCO) Institute for Statistics.
Notes: There is no couple of years such as values are available for all the countries for both years, hence different years are compared. No data available for Singapore. Only one value available for Thailand (87.6% for 1999). It represents the number of graduates regardless of age in all primary education programmes expressed as a percentage of the population at the theoretical graduation age for primary education. Figures can excess 100% when the system allows for skipping grades or repeating years.

Figure 8: Lower Secondary Graduation Rate in ASEAN



Source: World Bank - World Development Indicators (WDI), themselves from the United Nations Educational, Scientific, and Cultural Organization (UNESCO) Institute for Statistics.

Notes: No data available for Viet Nam and Singapore. It represents the number of graduates regardless of age in all lower secondary education programmes expressed as a percentage of the population at the theoretical graduation age for lower secondary education.

Investment in human capital and ensuring the effective utilization of human talent are central to avoiding or moving out of a middle-income trap. **Table 6** presents other indicators of the quality of education especially at the higher education level. It is worth noting that the two countries in the sample that have avoided the middle income trap (Singapore and Korea, Rep.) and one another country that is on the verge of reaching high income country status (Malaysia) have much better indicators of quality of primary education and higher education than the other AMSs. The table also suggests that CLMV countries have a lot of work to do to substantially improve the quality of education. Other AMSs stand in the middle. It is worth noting the low quality indicators for primary education in both Brazil and Mexico, two countries that have had long periods of middle income trap (in the 1970s and 1980s especially). Arguably, the comparatively low quality of primary education in the two countries has hobbled the two countries to move up further in the technology ladder, such that Brazil relied heavily on commodity exports to drive much of its economic growth during the past decade especially.

Table 6: The Quality of Education System in ASEAN Member States and Other Selected Countries in 2012

Country	Quality of primary education system	Quality of the higher education system	Quality of math and science education	Quality of management schools	Internet access in school	Availability of research and training services	Extent of staff training
Brunei	5.1	4.7	4.9	4.3	5.3	3.5	4.1
Cambodia	3.4	3.9	3.7	3.8	3.8	4.0	3.9
Indonesia	4.1	4.1	4.4	4.2	4.5	4.3	4.3
Malaysia	4.9	5.1	5.0	5.0	5.1	5.4	5.2
Philippines	3.5	4.1	3.6	4.7	4.1	4.3	4.6
Singapore	6.1	5.8	6.3	5.7	6.3	5.4	5.3
Thailand	3.5	3.5	4.1	4.3	4.3	4.2	4.2
Viet Nam	3.5	3.6	4.1	3.2	5.0	3.1	3.3
Brazil	2.5	3.0	2.6	4.4	3.7	4.8	4.4
China	4.5	3.9	4.6	4.2	5.4	4.4	4.2
India	3.5	4.4	4.7	4.9	4.0	4.3	4.1
Mexico	2.8	3.2	2.8	4.4	3.8	4.6	4.0
Korea, Rep.	5.5	4.1	5.5	4.7	6.2	4.8	4.3

Source: Schwab (2012), World Economic Forum, the Global Competitiveness Report 2012-2013: Insight Report

Notes: Values are on a 1-to-7 scale, with 7 being the most desirable outcome

3.3.2. Economic and Social Resiliency

Keeping healthy macroeconomic fundamentals is the starting point to economic resiliency. Then energy, resources, food security as well as environmental consideration must be taken care of. The nexus across energy, water and food security should be carefully balanced, in particular in the case of bio-energy development, for which CLMV countries have great potential.

According to World Disasters Report (2010), Asia is the continent most prone to disasters in the world (**Table 7**). During the past decade, Asia experienced disasters more than 2,900 times (40% of the world total) that affected more than 2 million people (85%); killed more than 900,000 people (84%); and caused more than 386 billion USD in damage (39%).

Table 7: Distribution of Disasters by Continent, Total Number of Disasters, People Affected, Deaths, and Damage from 2000 - 2009

	Total number of reported disasters	Number of people affected	Number of people killed	Estimated damage (in millions of US dollars (2009 prices))
Africa	1,782	306,595	46,806	12,947
Americas	1,334	73,161	32,577	428,616
Asia	**2,903**	**2,159,715**	**933,250**	**386,102**
Europe	996	10,144	91,054	146,414
Oceania	169	658	1,665	12,612
Total	7,184	2,550,273	1,105,352	986,691

Source: The International Federation of Red Cross and Red Crescent Societies (2010).

Obviously, disasters pose threats to both short and long term development in the region, by disrupting production and flows of goods and services, worsening the balance of payments and government budgets, derailing economic growth, income distribution, and poverty reduction. Disasters also pose negative effects on social structures and the environment.

Upgrading resiliency against natural and man-made disasters is also important. The introduction of early-warning system and national/regional insurance scheme against disasters may be considered.

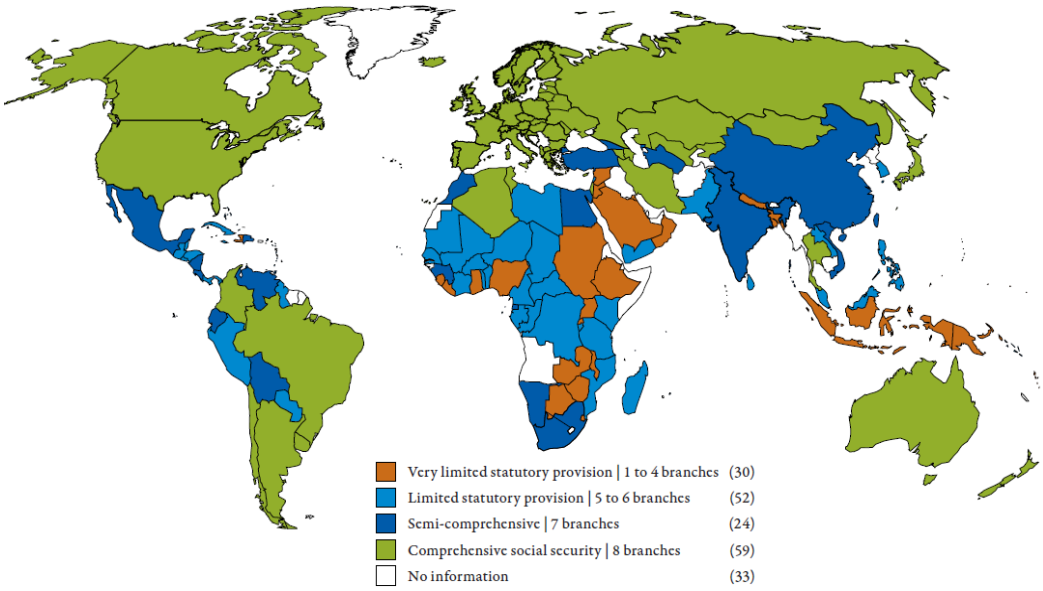
3.3.3. Social Protection

As economic development and urbanization proceed and people are gradually detached from traditional social protection mechanism, there is a need to eventually introduce certain levels of formal social protection measures such as pension system and health insurance. In addition, as the process of transforming industrial structures accelerates in industrializing economies, social protection schemes such as unemployment insurance may also become necessary.

Figure 9 presents the coverage of social security programs in the world. As the figure indicates, ASEAN social security system is still lagging behind the more

developed parts of the world in terms of extending the coverage, quality, and the adequacy of the benefits. However, what is critical here are proper prioritization, balance and designing of social protection schemes because formal social protection tends to generate large pressure on fiscal resources of countries.

Figure 9: Branches of Social Security: Number Covered by a Statutory Social Security Program, 2008-09



Link: http://www.socialsecurityextension.org/gimi/gess/RessFileDownload.do?ressourceId=15095

Sources: For identification of groups covered: SSA/ISSA, 2008 for Asia and Europe; 2009 for Africa and the Americas; quantification based on statistical databases: ILO, LABORSTA (ILO, 2009e) and KILM (ILO, 2008e); and national statistical offices. Numbers in brackets give the number of countries included in each group. See also ILO, GESS (ILO, 2009d). The nine branches of social security (Convention No. 102) are aggregated to eight through the merging of sickness and health benefits, It is furthermore assumed that countries that have all eight classical branches of social security in place also have functioning social assistance schemes in place.

Source: ILO (2010) - World Social Security Report: Providing coverage in times of crisis and beyond

3.3.4. Other Social Inclusiveness

The other elements of societal inclusiveness involve issues related to gender, ethnicity, and other social classes as well as issues on ex-post income and wealth inequality. These issues are important but not straightforward; social value judgment inevitably comes in play on what levels of equity should be achieved. Complicated politics also gets involved in taking care of these issues. Real solutions can be reached only when open and candid discussion at the national and regional level is accumulated, and social values are shared among a wide range of people.

4. Phnom Penh Initiatives for Narrowing Development Gaps

The Phnom Penh Initiatives for Narrowing Development Gaps set out the key strategies to further ASEAN agenda to narrow development gaps within ASEAN, both within and between AMSs. It amplifies an important element of the "Phnom Penh Agenda to Realize the ASEAN Community by 2015" that the ASEAN Leaders issued during the 20th ASEAN Summit in April 2012. It also contributes to the articulation of "The Jakarta Framework: Moving AEC Forward into 2015 and Beyond".

4.1. Initiatives for Geographical Inclusiveness

-*Enhance Physical and Institutional Connectivity*

To address geographical inclusiveness, enhance physical and institutional connectivity together with supplementary improvement of location advantages and encourage developing countries/regions to come into production networks:

4.1.1. Enhance Physical Connectivity

1. Develop industrial/economic corridors such as the Mekong-India Economic Corridor in order for developing countries/regions to take advantage of production links with industrial agglomerations.

2. By learning experiences in other AMSs, achieve more efficient resource mobilization and increase the applications of ASEAN Infrastructure Fund (AIF). Try to introduce PPP scheme in order to accelerate and upgrade the procurement of economic infrastructure.

3. Also secure connectivity for rural areas by providing infrastructure such as rural access roads and electricity interconnection.

4.1.2. Enhance Institutional Connectivity

1. Find and remove bottlenecks in institutional connectivity. Eliminate non-tariff measures (NTMs) with substantial trade barrier effects.

2. Ensure implementation of existing ASEAN transport facilitation agreements, including AFAFGIT and AFAFIST as well as simplifying and coordinating better CIQS in border areas within ASEAN.

3. Fully implement national and ASEAN trade repositories.

4. Develop and implement coordinated national programs to strengthen standards and conformance capability in AMSs especially the newer AMSs.

4.2. Initiatives for Industrial Inclusiveness

- *Upgrade Industrial Foundations with Local Firms/Entrepreneurs*

Access to finance and technology and upgrading of innovation capability are the most critical factors for SMEs or local firms to link with and benefit from production networks. To meet these ends, national and regional cooperation should focus on the following policy priorities.

1. Facilitate the establishment of industrial clusters and agglomeration – industrial estates, science parks, and incubation facilities

2. Promote technological transfers and upgrade innovation capability of indigenous firms – linking science and technology research institutions with firms

3. Create/strengthen testing, quality assurance, and calibration centers for the common uses of firms in the industry.

4. Develop diversified financial facilities such as venture capitals, start-up incubators, credit guarantee schemes to facilitate SMEs access to finance.

5. Encourage greater private investment into agriculture and resource-based industries in tandem with greater government investment in rural infrastructure (e.g., roads, irrigation), R&D, and rural institutions - certain land ownership and land use rights, enforceable contractual arrangements, as well as better management of natural resources such as fishery grounds.

6. Raise R&D expenditure ratio to GDP to at least the global average.

4.3. Initiatives for Societal Inclusiveness

- *Secure Sustainability and Resiliency of the economy and society*

Constructive approach to societal inclusiveness can enhance the basis of education and human resource development, energy/resource/food security, the economic and social resiliency against natural and man-made disasters, and the development of formal social protection in order to strengthen confidence on our development strategy with economic dynamism.

1. Upgrade the quality of education and guarantee opportunities for everybody to get access to good quality education. Respond to increasing demand for human capital along the path of industrial transformation and urbanization.

2. Strengthen energy, resource, and food security with regional cooperation.

3. Establish and strengthen effective prevention against economic shocks and natural disasters with measures such as early-warning system, national and regional insurance scheme against disasters, and others.

4. Set priority to provide formal social protection including pension, health insurance, and unemployment insurance, in response to demographic changes, urbanization, and the transformation of industrial structure.

5. Address immigrant labor issue.

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