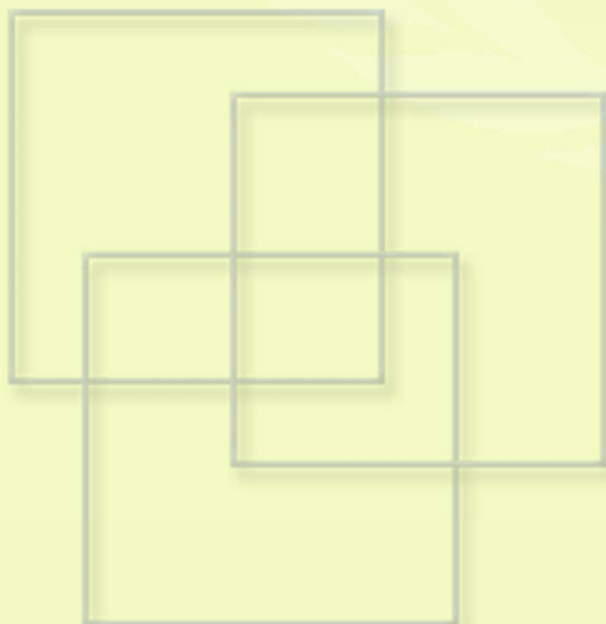


ILO Asia-Pacific Working Paper Series

ASEAN Economic Community 2015: Enhancing competitiveness and employability through skill development

Monika Aring
February 2015



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Regional Office for Asia and the Pacific

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Preface

By 2015, the ASEAN Economic Community (AEC), envisioned as a single common market and production base, will become a reality. This will lead to the freer flow of goods, services, investment capital and skilled labour in the region. Tariff and non-tariff barriers will be reduced, which will have implications for intraregional trade and investment. New opportunities for growth and prosperity are likely to emerge, but the challenge is to ensure that growth is inclusive and prosperity is shared.

Ultimately, the success of ASEAN regional integration will depend on how it affects the labour market and therefore how it improves the quality of life of women and men in the region. To prepare for the impact and find the opportunities to seize, the International Labour Organization initiated with the Asian Development Bank a joint study to examine the impact of the AEC on labour. Findings from the series of studies that were initiated are collected in the 2014 publication *ASEAN Community 2015: Managing integration for better jobs and shared prosperity*. That report highlights the challenges and opportunities that will accompany the AEC, including managing labour migration, boosting productivity and wages and improving job quality. The report offers policy recommendations for creating better jobs and ensuring that the benefits of the AEC are equitably shared among different countries and sectors.

The background papers to the joint publication are available as part of the ILO Asia–Pacific Working Paper Series, which is intended to enhance the body of knowledge, stimulate discussion and encourage knowledge sharing and further research for the promotion of decent work in Asia and the Pacific. This paper by Monika Aring looks at which skills are needed in which countries and how countries can strengthen their skills and training systems to benefit from emerging opportunities of integration and thus boost their competitiveness in the AEC context.

The ILO is devoted to advancing opportunities for women and men to obtain decent and productive work. It aims to promote rights at work, encourage decent employment opportunities, enhance social protection and strengthen dialogue in handling work-related issues. As countries in the Asia and the Pacific region continue to recover from the global economic crisis, the ILO's Decent Work Agenda and the Global Jobs Pact provide critical policy frameworks to strengthen the foundations for a more inclusive and sustainable future.

Tomoko Nishimoto
Assistant Director-General and
Regional Director for Asia and the Pacific

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Abstract

Given the varied development levels of countries with the Association of Southeast Asian Nations (ASEAN), this paper¹ examines which skills are needed in which countries and how countries can strengthen their skills and training systems to benefit from emerging opportunities of integration and boost competitiveness. It also introduces the issues of skills certification, portability and recognition.

Maximizing the benefits of regional integration will necessitate leveraging the knowledge, skills and creativity of ASEAN's labour force of 317 million women and men.² This paper looks at recent sex-disaggregated statistical indicators and trends since 2005 regarding education and skills attainment and technical and vocational education and training enrolment in ASEAN countries.³ It assesses the quality of education and vocational training and the readiness of ASEAN's labour force, including young people making the school-to-work transition, to take advantage of new opportunities in a more integrated and dynamic region.⁴ The paper also examines the challenge of skills mismatch and skilled labour shortages in the ASEAN region by reviewing findings related to skills demand from recent enterprise surveys and quantitative trends in employment and unemployment by education and skill levels.

The paper provides an overview of the training and education systems, institutions and policy frameworks in the ASEAN countries, including the extent of equity and inclusion (of women, youth, rural populations, etc.). And it presents a review of recent quantitative metrics in public and private investment in education and training as well as indicators related to staffing and capacity of teachers and trainers.

In addition, the paper looks at the challenges confronting the education and training systems of ASEAN countries, such as the quality of education professionals, the relevance of curricula, links between industry and training systems (including labour market information and employment services, youth apprenticeships and on-the-job training) and lifelong learning. It also introduces the issue of skills certification and portability and mutual recognition arrangements.⁵

Emerging skill requirements in ASEAN countries associated with deeper regional integration, structural change and new production patterns are highlighted, and the capacity of ASEAN countries to meet these emerging labour market demands domestically and within the region as production moves away from agriculture and into higher-value added industrial and services sectors is assessed. The analyzing was done with a gender perspective, looking at the extent that shifting skills requirements can foster better economic opportunities and prospects for women in ASEAN's labour market.

¹ Text for the abstract is derived from the terms of reference issued by the ILO and ADB to the author.

² Labour force estimates based on ILO: "Economically active population, estimates and projections (6th edition, October 2011)". Available at: http://laborsta.ilo.org/applv8/data/EAPEP/eapep_E.html [2 Jan. 2015].

³ For a list of indicators related to the finance, access and participation, quality and relevance of technical and vocational education and training, see: ETF, ILO and UNESCO: *Proposed indicators for assessing technical and vocational education and training*, Geneva, April 2012.

⁴ For example, this could include reviewing the results of the latest surveys from the Programme for International Student Assessment and other current research.

⁵ In this chapter, skills certification and recognition are introduced only as part of the existing skills regimes of the ASEAN countries.

The paper concludes that policy priorities that, if successfully implemented, can help ASEAN reach its goal of becoming a highly competitive economic region by harnessing its human resources. In addition to national policies, areas for regional cooperation among ASEAN countries that would help address the various gaps in human resources and national skills systems are singled out.

About the author

Monika Aring works with donors, policy-makers, governments, business leaders, NGOs and education institutions on designing policies, programmes and partnerships that build human capital for sustainable economic growth. A graduate of Harvard University's Kennedy School of Government, Aring, who has worked in 47 countries, recognizes that building a skilled workforce requires systems thinking, social dialogue and integrating the flow of information across social partners, who often are not used to working together.

The responsibility for opinions expressed in articles, studies and other contributions rests solely with the authors, and publication does not constitute an endorsement by the International Labour Office of the opinions expressed in them, or of any products, processes or geographical designations mentioned.

Abbreviations and acronyms

ADB	Asian Development Bank
AEC	ASEAN Economic Community
AFTA	ASEAN Free Trade Area
APEC	Asia–Pacific Economic Cooperation
ASEAN	Association of Southeast Asian Nations
AusAID	Australian Agency for International Aid
BPAP	Business Processing Association of the Philippines
CLMV	Cambodia, the Lao People’s Democratic Republic, Myanmar and Viet Nam.
FDI	foreign direct investment
GDP	gross domestic product
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
IT	information technology
ITC	information telecommunications industry
ICT	information and communications technology
ILO	International Labour Organization
LEED	Local Economic and Employment Development
NGO	non-governmental organization
OECD	Organisation for Economic Co-operation and Development
R&D	research and development
SME	small and medium-sized enterprises
STEM	science, technology, engineering and mathematics
TESDA	Technical Education and Skills Development Authority (Philippines)
TVET	technical and vocational education and training
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization

1. Introduction

Given the varied educational development levels of the Member States of the Association of Southeast Asia Nations (ASEAN), this paper analyses issues related to skills and employability in those countries. Additionally, this paper examines how ASEAN countries can strengthen their skills and training systems to benefit from emerging opportunities through economic integration and how they can boost their individual and the region's competitiveness. How integration may be used to benefit women and young people in the region is also assessed.

This introductory section provides an overview of the economic competitiveness of the region and ASEAN Member States. Section 2 examines the quality of the region's human resources as well as their access to and quality of education and training, from primary through tertiary education. Section 3 provides an overview of educational institutions and their policies, with a special focus on technical and vocational education and training (TVET). Section 4 examines the structural transitions in the economies of the region, emerging industries, new skill requirements and their impact on vulnerable populations, such as women, youth and migrant workers. Section 5 contains a number of recommendations to foster more effective skills and employability in the countries and region, with specific focus on actionable items that policy-makers can address. The recommendations focus on improving the quality of TVET so that national and regional qualification frameworks can be developed as effectively as possible.

For comparison purposes, the paper divides the ASEAN countries into three groupings: The high-income countries of Singapore and Brunei; the ASEAN-4 countries of Indonesia, Malaysia, the Philippines and Thailand; and the CLMV countries of Cambodia, the Lao People's Democratic Republic, Myanmar and Viet Nam.

1.1 Structure of the paper

The paper is divided into five sections. With the exception of the final section with its recommendations, each references a country comparison table relevant to the section's topic; see Annex II for all five tables.

- Table A1: Economy
- Table A2: Employment
- Table A3: Education
- Table A4: Workforce development
- Table A5: Educational institutions

1.2 A note on terminology

The framework in which the term "workforce development" is used encompasses human resource development processes in education, economic development and corporations. In this paper, the term is synonymous with human capital or human resource development and is defined as "the coordination of public and private sector policies and programmes that develop the collective skills, knowledge or other

intangible assets of individuals that can be used to create economic and social value for individuals, their employers and their communities and helps countries and their enterprises achieve their goals, consistent with the societal and economic aims” (Jacobs and Hawley 2009).⁶

1.3 Definition of terms

- **Skill:** The ability, coming from one’s knowledge, practice, aptitude, etc. to do something well. Competent excellence in performance; expertness; dexterity.⁷
- **Qualification:** A circumstance or condition required by law or custom for getting, having, or exercising a right, holding an office, or the like. Also a quality, accomplishment, etc., that fits a person for some function.⁸
- **National vocational qualifications:**⁹ The national vocational qualifications are the standards by which to assess someone’s competence in a work situation. The national vocational qualifications are created to promote and develop the proposals for integration of vocational training with the assessment and certification of the corresponding professional competencies.
- **Accreditation and certification:** An accreditation and certification system promotes the comparability of education and training systems among concurring countries. It enables harmonization and standardization of their curricular programmes and qualifications and accelerates the competitiveness of their workforce, thereby facilitating mobility across national borders (Valmote and Park, 2009).
- **Skills gaps:** A skills gap is the difference in the skills required on the job and the actual skills possessed by an individual (Aring, 2012).
- **Skills (or labour) shortage:** A lack of individuals who have the skills that are required for a particular job.
- **Technical (or hard) skills:** These are skills that have to do with handling or dealing effectively with a tool or process, such as operating a machine, coding software or a specific method or technique (such as statistical analysis).
- **Soft (generic) skills:** Skills that have to do with the human interaction of how work gets done. Soft skills are variously defined as including communicating, conflict management, human relations, making presentations, negotiating, teamwork, etc. In the largest empirical study on learning in high-performing companies, soft skills are defined as a complex set of skills that have to do with: (i) successfully navigating the culture of a workplace; (ii) effective communication with others (listening, speaking, presenting); and (iii) effective management of time, budgets, people and one’s own emotions (Aring and Brand, 1998).

⁶ The author is indebted to Ron Jacobs and Josh Hawley, for their thoughtful paper on “Workforce development: Emergence of workforce development: Definition, conceptual boundaries and implications”, in *International Handbook of Education for the Changing World of Work*, 2009, pp. 2537–2552.

⁷ Dictionary.com

⁸ Dictionary.com

⁹ UNEVOC-UNESCO: “National vocational qualifications”, in TVETipedia Knowledge sharing platform, [www.unevoc.unesco.org/tvetipedia.0.html?&tx_drwiki_pi1\[keyword\]=National%20Vocational%20Qualification](http://www.unevoc.unesco.org/tvetipedia.0.html?&tx_drwiki_pi1[keyword]=National%20Vocational%20Qualification) [4 Nov. 2014].

1.4 Brief overview of regional competitiveness

During the 12th ASEAN Summit in January 2007, the ASEAN leaders affirmed their strong commitment to accelerate the establishment of an ASEAN Economic Community (AEC) by 2015. Under the AEC, ASEAN countries will integrate as a single market and production base. This will make ASEAN more dynamic and competitive by introducing new mechanisms and measures to strengthen the implementation of existing economic initiatives, such as: accelerating regional integration in the priority sectors; facilitating movement of business persons, skilled labour and talents; and strengthening the institutional mechanisms of ASEAN Member States. The ASEAN Community as a whole will remain outward looking, and the AEC foresees: (i) a single market and production base; (ii) a highly competitive economic region; (iii) a region of equitable economic development; and (iv) a region fully integrated into the global economy. Because these characteristics are interrelated and mutually reinforcing, they will be incorporated into one blueprint to ensure consistency and coherence as well as ensure proper implementation and coordination among relevant parties.

The process of establishing the AEC is well on its way. The region's gross domestic product (GDP) grew by 5.5 per cent from 2000 to 2011 (World Bank, 2013). Partially fuelled by exports to China, the United States and Europe, middle-class growth in the region has been among the most rapid rates in Asia (OECD, 2013). This same middle-class growth is spurring financial services, automobile purchases and consumer goods production as well as education and health services (OECD, 2013). However, further improving the competitiveness of the region's enterprises will require more efficient and effective investments in their human capital. This will mean integrating traditionally disadvantaged populations, such as youth and women, so that they can reap the benefits of higher skills and better jobs and thus contribute to a bigger pool of higher-skilled workers and economic growth. A 2010 United Nations Development Programme report pointed out that "a growing body of evidence shows that gender equality is good economics" (UNDP, 2010). The increased competition from China and other emerging economies that are equally eager to attract value-added foreign direct investment (FDI) should stimulate a cycle of better and more effective human capital development in the ASEAN countries.

Lessons from "best-practice" countries (such as Singapore, the Republic of Korea, Ireland, German-speaking countries, Scandinavia and Chile) teach that human capital investments yield the highest return if they are aligned to meet a country's economic goals (Aring, 2013b). Although this may seem obvious, there are many countries throughout the world in which this is not the case. All the ASEAN countries have economic plans that specify in which industry sectors and occupations they want to grow. However, it is not clear to what extent most of the industrial plans link to an integrated human resource development plan. Ideally, each country's human resource development plan should target specific skills goals by industry or sector and target specific investments in education and training to achieve the desired result. Because each country has already identified its top-three or more growth occupations for 2005–08 (see Table A1), these should be revised for 2015–20; the education and training strategies should be aligned to achieve the required skill levels. Aligning country economic goals with human resource development plans requires a TVET and higher education system that responds to demand from industry, holds institutions and individuals accountable through quality assurance mechanisms and engages the social partners (government, employers and trade unions) in an ongoing social dialogue about the country's current and future skill needs. Without this kind of engagement and collaboration among the key parties, the alignment between economic goals and human resource development will not occur.

Eight of the ten ASEAN countries have made improving agricultural productivity a top priority. As agricultural productivity increases, many traditional low-skilled jobs in the informal sector will be replaced by jobs that require more complex skills. As shown in Table A1, the CLMV countries depend heavily on agriculture (with the sector accounting for 37 per cent of GDP in Cambodia, 31 per cent in the Lao People's Democratic Republic, 57 per cent in Myanmar and 22 per cent in Viet Nam), while the middle income countries depend on agriculture for slightly more than 10 per cent contribution to their GDP. Improving the productivity of agriculture provides an opportunity to learn from best practices, such as those promoted by the International Labour Organization's Training for Rural Economic Empowerment (TREE) Programme (ILO, 2009). The loss of traditional agricultural jobs will likely spur migration to urban economic centres, where opportunities will have to be put into place for skill development and employment services so that displaced workers can find decent work.

Small and medium-sized enterprises (SMEs) employ the majority of the population in the formal and informal sectors in all ten countries. SMEs make up the great majority of all enterprises (Southiseng, 2012), contribute between 32 and 60 per cent to GDP and provide between 60 and 97 per cent of total employment (with the exception of Brunei Darussalam, at 22 per cent; see Table A1). Improving the productivity and competitiveness of the SMEs in the region must be another priority; such a prioritizing would provide an opportunity for identifying best practices in rapidly upgrading the skills of the SME workforce. There are many examples from which to choose, and many of these involve strategic alliances among tertiary colleges, small businesses, regional development authorities and employers.¹⁰ Many of the best-practice countries (such as Ireland, Malaysia and Singapore) strategically use backward links from multinational companies to SMEs as a way to transfer knowledge and skills. For example, an international manufacturer of medical devices wants to use a local SME to supply specific components. The international company uses globally recognized quality standards, which the local SME supplier must adhere to as well. However, if the local supplier has never used quality measures, the workforce cannot add the needed value for the medical device company, and an important opportunity to achieve higher productivity is lost. Many countries, including Singapore and Malaysia, use national skill development funds to help workers in SMEs learn the skills they need to be a part of global supply chains. This helps cultivate a local workforce that has higher-quality skills and is thus more employable – and also generates more highly paid job opportunities.

Improving the productivity and competitiveness of manufacturing and services is a primary challenge for attracting and keeping FDI. With globalization, technology is transforming many industry sectors that have traditionally depended on low-skill work, such as the production of garments. Garment production is an important source of income and, perhaps even more importantly, offers low-skilled jobs for many women in the lower-income countries of the region. Textiles and clothing accounted for 21 per cent, 22 per cent and 87 per cent (2000) of value added in manufacturing for Viet Nam, the Lao People's Democratic Republic and Cambodia, respectively. As the garment industry continues to achieve higher productivity, it is likely that many of the traditional, low-skill jobs held mostly by women will be lost. This is where a responsive, quality TVET system could step in to provide retraining and new opportunities for better work.

For many ASEAN countries, raising skill levels to improve economic competitiveness will require structural reforms in their TVET systems to provide the skills that are relevant to each country's industry

¹⁰ For example, Singapore's Skills Development Fund or the US Transatlantic Technology and Training Alliance, www.clevelandstatecc.edu/news/article/denmark-comes-to-cscs [4 Nov. 2014], Cleveland Ohio's Near West Side Initiative, www.icic.org/ee_uploads/pdf/WhatWorksCaseStudies.pdf [4 Nov. 2014] or funding of individual development accounts are all strategies that create a "pull" for skill training in small enterprises as opposed to top-down measures.

needs. Good national qualification frameworks that are jointly developed with industry, trade unions and government education and training officials will be critical for specifying desired competencies and is delivering the required skills. Because the ten countries will be functioning as a common market, each set of national vocational qualifications must be calibrated to the ASEAN Qualifications Reference Framework. Both the regional and the national frameworks must be based on current and emerging industry skill needs. Together with quality assurance measures, such as certification and accreditation process, the qualification frameworks provide guidelines or targets that let TVET and higher education policy-makers know what they should deliver in terms of skills, while quality assurance mechanisms make it possible to hold the various institutions accountable for the achievement of the education and training outcomes.

1.5 The importance of ongoing social dialogue with social partners – Business, education, government and trade unions

As the ASEAN economies continue to shift to jobs that require higher skills, policy-makers will be challenged to collaborate more within their own countries and within the region. As the examples of Ireland and Singapore demonstrate (Aring, 2013a), each country's ministries will need to collaborate horizontally with each other and with employers and trade unions to ensure that skills meet economic growth priorities and that learning opportunities are inclusive and accessible to women and young people. As previously noted, each country will need to align its educational and training institutions with qualification standards across the entire ASEAN region, from primary through tertiary education. Government alone cannot do this; demand-driven qualification standards require ongoing information and updating from the private sector in terms of knowing what skills are needed for adding value in the context of specific industry sectors.¹¹ Maintaining an ongoing social dialogue with the private sector and trade unions helps ensure that education and training institutions can anticipate skill needs and prepare the workforce with skills that will make them highly employable.

2. ASEAN's human resources: Quality and access to education and training

Maximizing the benefits of regional integration will necessitate leveraging the knowledge, skills and creativity of ASEAN's labour force of 317 million women and men (ILO, 2011). This section thus looks at (i) recent sex-disaggregated statistical indicators and trends regarding education, skills attainment and TVET enrolment in the ASEAN countries;¹² and (ii) the challenge of skills mismatch and skilled labour shortages in the ASEAN region (see Annex 6 for a summary of country-specific skills mismatches). This section also includes analysis of literacy rates, access to quality primary, secondary and tertiary education and the quality of the education systems as measured by the World Economic Forum. Issues of access and gender are reflected in the World Economic Forum's ranking on quality in education systems across the region (the quality of vocational training and the readiness of ASEAN's labour force are discussed in Section 3).

¹¹ For example, Sweden's Ministry of Education consults with the IT industry association to find out what math and science skills are needed to find a job in the IT industry and what additional skills are needed for students pursuing tertiary degrees in ICT.

¹² For a list of indicators related to the finance, access and participation, quality and relevance of technical and vocational education and training, see ETF, ILO and UNESCO (2012).

2.1 Literacy and education achievement across ASEAN

It is axiomatic that literacy (along with a secondary education) (Aring and Leff, 1995) is critical for developing skills for employability. Unlike many other regions of the world, the overall literacy rates across ASEAN are greater than 90 per cent, with the exception of Cambodia and the Lao People's Democratic Republic. However, female literacy continues to lag behind in most of the region, with the exception of Brunei Darussalam and the Philippines. The overall high literacy achievement is also reflected in primary education completion rates, which are greater than 87 per cent. Secondary education rates compare with those of highly industrialized countries (Conference Board of Canada, undated); for example, survival rates to the last year of secondary education are greater than 86 per cent for the region, except for the CLMV countries where, with the exception of Viet Nam, there is a significant drop in secondary survival rates, at an average of approximately 66 per cent (UNESCO, 2009).¹³ Cambodia, the Lao People's Democratic Republic and Myanmar in particular will need to raise their secondary completion rates so that students can transition into vocational, technical and university opportunities.

Tertiary education completion rates and quality

Tertiary education is widely accepted as critical for countries seeking to become knowledge-based economies; having at least some tertiary education is considered important for many higher-income jobs.¹⁴ However, for a number of reasons, tertiary education or completion rates by themselves may not be valid indicators of whether a graduate is actually employable. The national accreditation system in many countries may be compromised by the political environment, and many Member States are not producing qualified university graduates that meet employers' needs for skills. For example, according to figures from the Economic Institute of Cambodia (Keo, 2012), only one in ten graduates finds work. And in the Philippines, a recent news article quotes a United States Agency for International Development education official, who noted, "Studies show that the largest groups of unemployed or underemployed in the Philippines today, despite the massive economic growth, are college graduates" (Bernabe, 2013).

Tertiary completion rates provide an insufficient picture regarding employability. A second issue regarding some tertiary education is the need for most ASEAN nations to produce a larger number of graduates with science, technology, engineering and mathematics skills (STEM) because these are the skills necessary in a knowledge economy (OECD, 2012, p. 25). It is often assumed that graduates with STEM skills require a university degree; but it is important to recognize that many good STEM jobs require less than a tertiary degree (Aring and Leff, 1995). A 2013 Brookings Institution policy paper noted that "workers in STEM fields play a direct role in driving economic growth. Yet, because of how the STEM economy has been defined, policy-makers have mainly focused on supporting workers with at least a Bachelor of Arts (BA) degree, overlooking a strong potential workforce of those with less than a BA" (Rothwell, 2013).

¹³ UNESCO's Education Statistics Technical Guidelines (2009) state that survival rates reflect the percentage of a cohort of pupils (or students) enrolled in a given level or cycle of education in a given school year who are expected to reach successive grades. The purpose of survival rates is to measure the retention capacity and internal efficiency of an education system. It illustrates the situation regarding retention of pupils (or students) from grade to grade in schools, and conversely the magnitude of dropout by grade.

¹⁴ In developing national skill standards for the bioscience industry in the United States, for example, the author and her team found that most employers wanted two years of post-secondary education combined with practical experience.

DiGropelo (2012) reports that skill gaps in the Philippines are particularly large in the service industry, export sector and the technologically intensive sectors, adding, “Many firms face the challenge of hiring higher education graduates who simply do not have the right skills and these skills mismatches have been widening between firms and employees at all employment levels.”

The following summarizes the latest information from UNESCO (various years¹⁵) on tertiary science degrees in the region, although the data should be read with some caution because the information did not indicate whether the graduate was actually employable in terms of skills and knowledge. Proportions are science degrees out of all tertiary degrees received.

1. In Brunei Darussalam, 11.3 per cent of students received tertiary science degrees in 2011 (10 per cent of female degrees and 13.7 per cent male of male degrees). There were no available data for Singapore. However, according to Singapore’s 2012 Graduate Employment Survey, more than 85 per cent of graduates in the sciences were employed full time, with the exception of one or two specific occupations (MOE, 2012).
2. In the ASEAN-4 countries, in Malaysia, 10.8 per cent of students graduated with science degrees in 2010 (10.3 per cent of female degrees and 11.5 per cent of male degrees). In Indonesia, 5.5 per cent of students graduated with science degrees in 2009; gender disaggregated data was not available. There were no available data for the Philippines or Thailand.
3. In the CLMV countries, the highest is Myanmar, with 32.3 per cent of students earning science degrees in 2011 (33.2 per cent of female degrees and 30.6 per cent of male degrees). Next is Cambodia (2008), at 9.4 per cent (3.8 per cent of female degrees and 11.5 per cent of male degrees). Finally, the Lao People’s Democratic Republic (2011), at 3.3 per cent (3.2 per cent of female degrees and 3.5 per cent of male degrees). Data for Viet Nam were not found. (For a more nuanced analysis of emerging skill needs, see section 4.)

English language proficiency ranking 1–54th

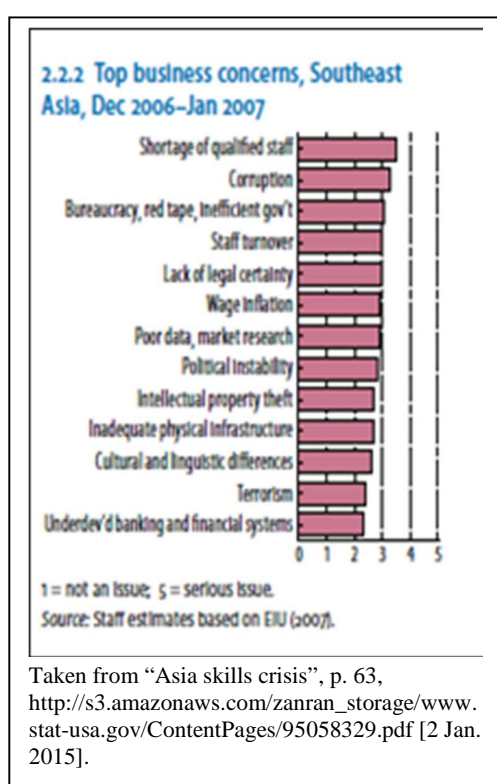
English is the language of international business and the lingua franca across the many regions of the world. Proficiency in English is therefore important. English is also important because the ten ASEAN countries need a common language that allows them to communicate across their borders. As well, English is considered critical for the ASEAN countries to compete with India, China and the rest of the world. A 2010 ABC news story reported, “In the next five years, all state employees younger than 40 will be required to master at least 1,000 English phrases, and all schools will begin teaching English in kindergarten” (Ward and Francis, 2010). The Chinese Government is funding extensive teacher training programmes to find new models for language learning and to develop new textbooks. According to the ABC news report, “more people are learning English in China than there are people in the US” (Ward and Francis, 2010). It is difficult to make comprehensive statements about English language proficiency because five of the ten ASEAN countries are not currently ranked on the English Proficiency Index (Brunei Darussalam, Cambodia, the Lao People’s Democratic Republic, Myanmar and the Philippines) (Education First, 2012). The countries that are ranked and that need to improve English language proficiency the most include

¹⁵ UNESCO Institute for Statistics: Distribution of tertiary graduates by field of study, http://data.uis.unesco.org/Index.aspx?DataSetCode=EDULIT_DS&popupcustomise=true&lang=en# [accessed 20 Nov. 2014].

Thailand (53 of 54 countries), Viet Nam (at 31 of 54 countries) and Indonesia (at 27 of 54 countries) (see table A3).

Gender Inequality Index: 1–136

The Gender Inequality Index is important for this analysis because it indicates the presence of barriers beyond education for women in terms of full economic participation, such as mortality, legal and regulatory frameworks, institutional sexism and equal opportunity in labour markets. The Index is a composite measure reflecting inequality in achievements between women and men in three dimensions: reproductive health, empowerment and the labour market. With the exception of Singapore, the ASEAN countries lag behind the rest of the world in terms of gender equality (see table A1). This is a critically important measure because the full economic and social participation of women is essential for rapid economic advancement.



Due to data limitations having to do with under-reporting and that many women work in the informal economy, the Gender Inequality Index (UNDP, 2013) does not specifically include gender pay gaps. Of the wealthier countries in 2012, Singapore ranked highest of the ASEAN countries, at 13th, and Brunei Darussalam received no ranking. Of the ASEAN-4 countries, Malaysia ranked 42nd, followed by Thailand at 66th, the Philippines at 77th and Indonesia at 106th. In the CLMV countries, Viet Nam was the highest, at 48th, followed by Myanmar at 80th, Cambodia at 96th and the Lao People's Democratic Republic at 100th. These numbers suggest that gender inequality should present a serious concern for many of the region's women. This is borne out by a Joint Statement of the Southeast Asia Women Caucus (2012): "We, the representatives of various women organizations, groups, affiliations from the ASEAN region are concerned about the impact of the ASEAN Economic Community (AEC) 2015 integration plan and the ASEAN Community blueprints on Women. ... We have deep concerns that the three blueprints have been formulated in isolation of one another and have not taken into consideration the collective impact they will have over the ASEAN community, in particular, women."

2.2 Skill mismatch, labour shortages and qualitative trends in employment and unemployment by skill levels

Skill mismatches and labour shortages are an overarching issue for the ten ASEAN countries, many of whose employers find their growth constrained by missing skills and labour shortages. The skill mismatches highlight the challenge of aligning ASEAN countries' education and training systems with the needs of industry, especially emerging industries that can provide higher-quality jobs. For a deeper analysis of skill mismatches, structural changes and the implications for higher-quality employment, see Section 4.

Employers report significant gaps in both technical and soft skills. The overwhelming majority of reports on skill gaps in all ASEAN countries suggest that the lack of soft skills, such as time management, problem solving, creative thinking and interpersonal communication, is a critical void in the skills of the region's workforce. A lack of English language proficiency and computer-related or other technical skills also present challenges to employers, many of whom report difficulty finding suitable candidates.

Employers are on the front line of the impact of skill gaps. However, the impacts are likely to extend to the overall economy. Some of the consequences of skill gaps include hard-to-fill vacancies, high staff turnover and wage inflation that is not based on higher productivity gains. This then bids up wages, and prompts professionals often to move between firms to gain a higher salary. Employers may also have to settle for fewer or less experienced professionals, which can lead to lower productivity and weak enterprise competitiveness. Skill constraints can retard growth just as much as weak infrastructure. This is especially important for critical sectors, such as information and communications technologies (ICT), that might be a source of foreign exchange or that are needed to improve the productivity of other sectors, such as health care, financial services and lean manufacturing (ADB, 2008; Aring, 2013a). Skills shortages due to out-migration, ageing populations and declining birth rates, as in the case of Thailand, make skills development a priority because skill shortages could intensify and become more costly (Aring, 2013a). (See Annex VI for snapshots on specific skill mismatches and labour shortages in selected ASEAN countries.)

3. Overview of training and education institutions and policies in ASEAN

This section presents an overview of the training and education systems, institutions and policy frameworks in the ASEAN countries, including reference to equity and inclusion (women, youth and rural residents), with the exception of TVET. It reviews recent quantitative metrics of investment in education and training as well as indicators related to staffing and the capacity of teachers and trainers. There is also discussion on the challenges relating specifically to TVET in ASEAN Member States, including the task of developing regional and country-specific qualification frameworks.¹⁶ And there is discussion on the issue of improving the transition from school to work.

The economic shift towards higher-skilled requirements (together with the increased need for additional managerial and organizational skills in developing countries) has several consequences. If low-skilled workers are not retrained, their growing numbers may put downward pressure on wages, especially for other low-skilled workers. This has been particularly hard on women, who comprise the majority of the unskilled labour force in the poorest countries, and youth, who even if they have some skills, have little experience. The region's TVET programmes need to accelerate their training of skills that are relevant to employers. TVET institutions will need to form partnerships with local businesses to identify their most pressing skill needs and jointly develop programmes that meet those needs (Fawcett and McPherson, 2009). More accurate and effective responses to skills challenges will also require a more integrated approach to human capital development in which appropriate government ministries (education, vocational education, labour, youth and commerce) collaborate with each other and the private sector to align their investments across the education span to reach human capital goals.

¹⁶ In this paper, skills certification and recognition are introduced only as part of the existing skills regimes of ASEAN countries.

3.1. Overview of the training and education systems, institutions and policy frameworks in ASEAN countries (excluding TVET)

Quality of education systems

The quality of education systems ranking presented in table A5 comes from the World Economic Forum's Global Competitiveness Survey (2013). This data is largely based on an external survey of business managers and their perceptions of the skills of the graduates in the region's countries. Interestingly, Malaysia's ranking (at 19th) is higher than that of Brunei Darussalam (at 32nd), despite the four-fold difference in their GDP per capita (with Malaysia at \$10,381 and Brunei Darussalam at \$41,127¹⁷) and a significant difference in their spending on education share of GDP (with Malaysia at 5.1 per cent and Brunei Darussalam at 3.3 per cent).

According to the findings of the 2013 Global Competitiveness Survey (World Economic Forum, 2013):

1. Singapore ranked third of 148 countries measured; Brunei Darussalam ranked 32nd.
2. In the ASEAN-4 countries, the highest ranked was Malaysia, at 19th of the 148 countries, Indonesia at 36th, Philippines at 40th and Thailand at 78th.
3. In the CLMV countries, the highest ranked of the 148 countries was the Lao People's Democratic Republic, at 57th, followed by Cambodia at 76th, Viet Nam at 95th and Myanmar at 125th.

As the region forms a common market, the quality of education systems needs to become more aligned to prevent brain drain and provide more equal opportunity and mobility. In terms of gender issues, women and girls appear to have similar access to primary and secondary education as their male counterparts in the majority of ASEAN countries. With the exceptions of Cambodia and the Lao People's Democratic Republic, women have higher graduation rates than men at the tertiary level. This relative parity suggests that cultural norms within most ASEAN countries support and encourage the education of girls and women, in contrast to other regions, such as Latin America.

Private versus public investment in education

In many countries, private schools and tutoring raise concerns about the equity of access and financing. The region's reliance on private tutoring makes it likely that students who cannot afford such extra help may not be as competitive when it comes to university admission.¹⁸ According to a recent Asian Development Bank report (ADB, 2012c) on private supplementary tutoring, anywhere from 20 per cent to almost 100 per cent of students in ASEAN countries use private tutors. This industry is particularly robust in Singapore, where a straw poll by *The Straits Times* newspaper in 2008 found that of 100 students interviewed, only three students did not have any form of tuition.¹⁹ In 2010, the *Shin Min Daily News* estimated that there

¹⁷ All \$ currencies in this paper are US\$.

¹⁸ This is a significant issue in Latin America, where most countries have parallel public and private education systems and graduates from private schools often crowd out their public school peers when it comes to public university admission.

¹⁹ M. Toh: "Tuition nation", in *AsiaOne News* (16 June 2008), <http://news.asiaone.com/News/Education/Story/A1Story20080616-71121.html> [accessed 9 Dec. 2014].

were around 540 tuition centres offering private tuition in Singapore.²⁰ Due to their high demand, tuition centres are able to charge high fees for their services.²¹ In Cambodia and Myanmar, weaknesses in the school system due to poor teacher quality and pay necessitate private tutoring to pass mandatory examinations for secondary-level completion. Private tutoring is eating into what has been left of the impoverished public school curriculum itself. In some countries (for example, Cambodia), it is practically impossible to complete the state-mandated curricula without enlisting private tutoring services. In these countries, only part of the state curriculum is available during the official school hours – the rest of the state curriculum is being unofficially ‘sold’ through private tutoring lessons” (Silova, 2012). In many cases, teachers offer private tutoring lessons to their own students after school hours on school grounds. “While the reasons for such an irregular ‘merging’ of public schooling and private tutoring vary – ranging from insufficient school hours in Cambodia to low teacher salaries in many other ASEAN countries – the outcomes are the same. The complete public school curriculum is available only in combination with private tutoring, leaving behind many students who are unable to pay the full price for education” (Silova, 2012).

Country-specific education policy priorities and challenges (non-TVET)

For a detailed list of country-specific education policy priorities drawn directly from official country documents, refer to Annex I. For a detailed description of country-specific education challenges, largely identified by country officials and external organizations, refer to Annex II.

3.2. TVET challenges and policy priorities

It is difficult to talk about TVET without addressing the structure and productivity of the enterprises in an economy – as well as its governance – because both directly affect training and skill needs. The region’s move to qualification frameworks should improve governance and the assessment of skill needs, which should lead to higher productivity.

According to the ADB guide for good practice on TVET, in many countries, technical and vocational training and skills development “pose a serious challenge, particularly in countries with rapidly evolving labour markets” (ADB, 2013). The high-skill mismatches in the region suggest that the quality of TVET is low in many ASEAN countries, with notable exceptions, such as Singapore and Malaysia. Additionally, there are many problems associated with vocational education. For example, in ASEAN-4 countries, where economies are rapidly transitioning to higher value-added work, improving TVET is likely to be costly because sophisticated computer-run tools and equipment are expensive and often have a relatively short shelf life due to advances in technology. Second, finding qualified teachers may be difficult because they are often lured away by industry, where they can earn far more. Third, social dialogue with employers and their business associations as well as trade unions lies at the heart of any good vocational system. In the sophisticated TVET systems, such as in Singapore, Ireland and Germany, employer skills councils tell the workforce development authority (or equivalent) what skills are needed and what skills are likely to be needed in the future, based on anticipated changes in technology. According to the literature, in many of the ASEAN countries, employers are weakly represented in TVET systems, if at all. In many of the

²⁰ *AsiaOne Education*: "540 tuition centres in Singapore – and growing" (22 August 2010), <http://education.asiaone.com/content/540-tuition-centres-singapore-and-growing> [accessed 29 November 2012].

²¹ *Ibid.*

countries, TVET is either centralized or fragmented, and there are weak mechanisms for assessing, accrediting and certifying performance.

There is another, more subtle policy challenge that often remains ignored. This challenge is about improving the capacities of leaders who are social partners – the private sector, government and trade unions – to work and learn as a team. As the best-practice countries demonstrate (the Republic of Korea, Singapore, Taiwan (China), Denmark, Germany, Ireland and Sweden), government ministries must learn to work seamlessly with each other, the private sector and other key parties to create a human capital system that is aligned with the economic and social goals of their country (and region). This is no small challenge; it will likely require re-engineering outdated public management systems as well as a cultural change for government bureaucracies that are used to operating in an individualistic, fragmented and top-down manner (Aring and Teegarden, 2012).

Another challenge for TVET systems is finding ways to practically engage the private sector in co-financing training opportunities and providing work-based learning experiences for young people making the transition from school to work. The soft skills that employers want and need cannot be learned theoretically but must be learned by application and require instructors with practical and relevant experience in industry (Aring and Leff, 1998; Aring and Brand, 1998 and 2000). For both of these reasons strategic alliances with the private sector are absolutely necessary to help co-invest and co-develop the TVET system to meet industry demand.

TVET enrolment and quality


The TVET enrolment numbers (table A4) are grouped with secondary education and thus represent the percentage of students who replace all or part of their academic secondary education with TVET. Until an ASEAN qualifications reference framework is established (Lythe, 2013a) and quality assurance mechanisms are fully integrated, there is no overall quality measure of TVET in the region or among individual countries. Given the extent of the skill gaps in the region, it is likely that the quality of TVET within and across countries is highly variable. For greater clarity on the performance of TVET, it is helpful to examine recent country assessments of TVET programmes conducted by Lythe (2013a) and various donor organizations. Their assessments have found that most ASEAN Member States face a common set of well-known challenges (OECD, 2012):

1. Increasing industry ownership and participation, so that the TVET system is driven by demand for skills – not supply. For TVET to work, it must be linked closely to the current and future skill needs of the various industry sectors, whose leaders must be considered as critical social partners.
2. Building a coherent system for training and for encouraging the development of a training market. Linked services must be emphasized over individual programmes.
3. Reducing skill mismatches by linking industry and training needs. Training needs must focus on anticipated skill needs. Best-practice countries emphasize that training must be done for both today's and tomorrow's jobs (Aring and Teegarden, 2012).
4. Upgrading outdated training approaches and underqualified instructors.

Developing regional and country-specific NVQ frameworks

Collaborating to develop a regional framework for assessing and comparing skill acquisition will make it possible for the various countries to catalyse a virtuous cycle of competition while learning from each other's successes and, perhaps more importantly, failures. According to Paryono's review of national vocational qualification frameworks (2013), "At a national level, ASEAN countries are raising the bar to benchmark their TVET quality. ... At regional and global levels, the issue of student and labour mobility are also prevalent, particularly in anticipation of full ASEAN integration in 2015." Numerous regional meetings have made progress towards mutual recognition arrangements for education, training certificates and credentials between countries, regional qualification frameworks and regional quality assurance frameworks. As a result, beginning national qualifications frameworks have been developed to promote the development, implementation and facilitation of transparency in assessment, certification and recognition of skills across ASEAN countries and internationally. Table 1 shows how national vocational qualifications compare in selected ASEAN Member States.

Comparing national qualifications frameworks in selected ASEAN countries

Indonesia		Malaysia		Philippines		Recognition of prior learning
Level	Credential	Level	Credential	Level	Credential	
9	Specialist or doctorate degree	8	Doctorate degree	8	Doctorate and post-doctorate degrees	
8	Master's degree	7	Master's and post-graduate certificate or diploma	7	Post-baccalaureate	
7	Professional	6	Baccalaureate and graduate certificate or diploma	6	Baccalaureate	
6	Baccalaureate/DIV	5	Advanced diploma	5	Diploma	
5	DIII	4	Diploma	4	NC4	
4	DII	3	Skills certificate 3	3	NC3	
3	DI	2	Skills certificate 2	2	NC2/Grade 12	
2	High school	1	Skills certificate 1	1	NC1/Grade 10	
1	Elementary/Primary					

Source: Paryono, 2013, p. 3.

Paryono found that some countries have partial national quality frameworks that do not include all education and training qualifications, possibly because some countries place greater value on higher education while others emphasize TVET (Paryono, 2013).²² Referencing research by Bateman et al. (2012),

²² According to Paryono (2013), Thailand, for instance, has a National Qualification Framework for Higher Education that contains six levels: Level 1 (associate degree), Level 2 (bachelor's degree), Level 3 (graduate diploma), Level 4 (master's degree), Level 5 (higher graduate diploma) and Level 6 (doctorate). The Office for Vocational Education Commission of Thailand has developed a qualifications framework consisting of seven levels: Level 1 (semi-skilled), Level 2 (craftsman/skilled), Level 3 (highly skilled), Level 4 (technician), Level 5 (senior technician), Level 6 (specialist) and Level 7 (senior specialist). Some developments combine the two to create a "comprehensive" national qualifications framework.

The Singapore Workforce Development Agency developed the Singapore Work-force Skills Qualification that is more associated with a TVET qualifications framework. It consists of eight levels: Level 1 (pre-beginning), Level 2 (beginning/certificate), Level 3 (high beginning/higher certificate), Level 4 (low intermediate/advanced certificate), Level 5 (high intermediate/diploma), Level

Paryono stated, “Countries have been venturing into improving the connectivity of their TVET systems to support regional economic integration via cross-border investment and the mobility of skilled labour. Currently, these processes have striven towards mechanisms for improving cross-national connectivity, particularly regarding occupational standards and qualifications.” One of the East Asian Summit’s initiatives is to provide a set of principles, standards and quality indicators to assist countries to develop, improve, reform and assess the quality of their TVET systems and provide a basis for alignment among national TVET systems (ASEAN, 2012).

Internationally benchmarked quality assurance mechanisms for TVET and universities are critical for aligning not only TVET but also human capital development systems (Aring and Goldmark, 2013). In concluding his review, Paryono noted,

“Based on the current status, the development of a comprehensive ASEAN Regional Qualifications Framework still has a long way to go. To move forward, there is a need to identify major obstacles, including reaching a mutual understanding between the ‘sending’ and the ‘receiving’ countries and identifying key players to be in the taskforce. It requires strong and long-lasting commitment by the participating countries and entails strong collaborations within and across Ministries, and other stakeholders in the participating countries” (Paryono, 2013).

To further acknowledge the complexity of developing and implementing national qualification frameworks and linking them to an ASEAN qualifications framework, Lythe (2013a) underscores the importance of recognizing that the process of fully developing a regional qualifications framework is long and arduous. Encouragingly, his report finds that the process is ongoing in each country, although at different stages of development:

“Given the hugely ambitious intentions of the AEC (the free movement of goods, services, investments, skilled labour, and freer flow of capital), it is likely that full integration across all ten Member States, will take several years. Clearly not all members will be ready to recognize the skills and professional qualifications of all migrant workers, from 2015. It is likely that this will be achieved progressively over several years. However, by 2015, all countries will have at least begun the journey” (Lythe, 2013a).

National qualifications frameworks calibrated to a regional framework are necessary for developing transparent criteria for skills and quality assurance to enable ASEAN countries to transition to higher value-added work, incomes and knowledge-based economies.

6 (advanced/specialist diploma), Level 7 (high advanced/graduate certificate) and Level 8 (proficient/graduate diploma). The higher education qualifications have yet to be integrated into the framework.

Other countries, such as Brunei Darussalam, the Lao People’s Democratic Republic and Viet Nam, are each still in the process of developing their national qualifications framework. To a certain degree, the differing status of framework development among ASEAN countries affects the progress of the ASEAN Qualifications Reference Framework, even though it is not the prerequisite (Paryono, 2013, p. 4).

3.3. School-to-work transition and gender implications²³

The ILO defines the school-to-work transition for persons aged 15–29 years as the period from the end of schooling to the first stable or satisfactory job (Kanol, Khemarin and Elder, 2013). In many cases, the transition from school to work is understood as the transition from secondary schools to the workplace. However, the transition from university to work is equally problematic as long as universities do not modernize their curricula to meet the current and future needs of the domestic and regional labour markets. The transition from school to work is especially difficult for young people in countries where the education system has been theory based, in which students lack opportunities to learn soft skills by actually applying them in their classrooms via project-based learning strategies (Aring and Leff, 1995). In the majority of countries, females have more difficulty making the transition from school to work. An ILO report of school-to-work transitions in Viet Nam (GENPROM, undated) noted that employers could more easily hire qualified workers if they gave up their preference for a particular gender and the rationale that certain jobs are not suitable for a specific gender.

According to an OECD report on pro-poor employment growth, more young people are likely to take up the option to migrate if they cannot find adequate employment in their own country. Moreover, underutilization of young people in the labour market can trigger a vicious circle of intergenerational poverty and social exclusion (Coenjaerts et al., 2009).

To help promote youth employment, the ILO has been encouraging strategies that lead to a better transition from school to work for young people in Asia, recognizing that ASEAN youth represent some 40 per cent of the 75 million youth unemployed globally (ILO, 2013). ASEAN countries recognize that to improve their competitiveness, they must deal more effectively with the following serious problems:

- Thousands of young people enter the labour markets every year without adequate skills.
- There is a significant lack of employment opportunities, particularly in poor economies and post-conflict countries.
- Low-quality education and training improperly link youth to labour markets.

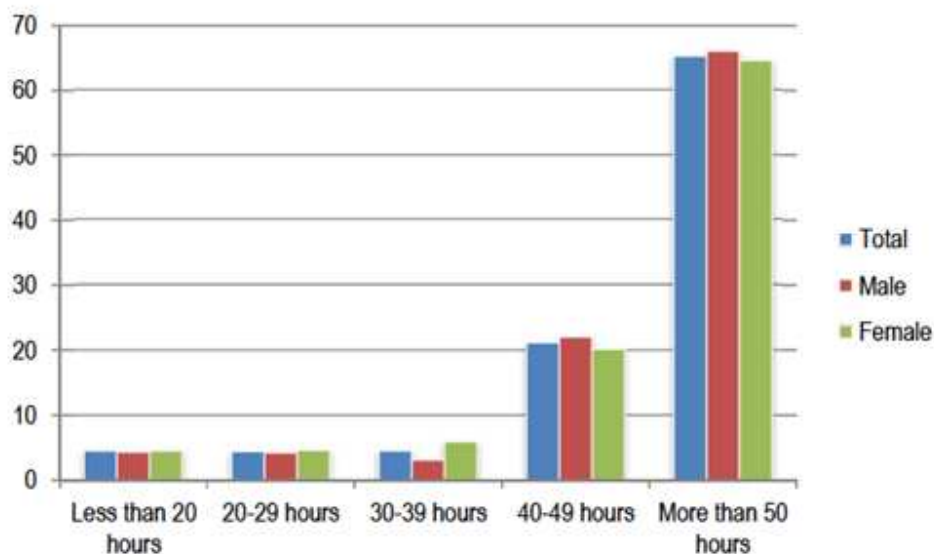
To identify specific youth employment challenges and to support policy-makers to help youth transition to work, the ILO has developed a school-to-work transition survey, which is a household survey of young people aged 15–29. Intended for countries in most of the world's regions, Cambodia was the first ASEAN country surveyed, in 2012, with a second round planned for 2014. The report of the survey findings is intended for policy-makers and other parties working in relation to the implementation, monitoring and evaluation of youth-related policies and programmes (Kanol, Khemarin and Elder, 2013).

Underutilized young people incur significant economic and opportunity costs when the national workforce is not used to its full potential, and young people spend time doing low-skill low-wage jobs. As shown in Figure 1, young Cambodians work hard and have a strong work ethic. Among a number of recommendations in terms of better employability for youth, participants in a recent ASEAN Youth Employment Forum (ILO, 2013) recommended easing the transition from school to work by:

²³ An extensive web search revealed little recent data on the transition from school to work in ASEAN countries.

- improving relevance and quality of training provision to align with industry demands;
- including well-regulated and structured apprenticeship programmes that facilitate the career development of young people;
- sharing countries' knowledge and experiences to improve labour market information for youth and promote career guidance; and
- improving the signalling functions of the labour market in terms of demand for specific skills.

Distribution of youth employment in Cambodia, by actual hours worked per week and by sex (%)



Source: SWTS-Cambodia, 2012 in ILO, 2013.

Widely accessible and quality TVET programmes, as well as good career information services would help ease the transition from school to work for many young people. Young people, especially young women, need to learn about career opportunities and that participating in TVET will lead to good jobs. An examination of TVET enrolment rates, depicted in table A4, reflects that, with the exception of Cambodia, the Lao People's Democratic Republic and Viet Nam, female enrolment lags behind that of males in ASEAN. This disparity is especially high in Indonesia, Malaysia and Thailand, urging the improvement of the transition from school to work for women and other vulnerable groups be made a priority. According to a 2008 ILO report on labour and social trends in ASEAN, "In many cases, upper-secondary education and TVET programmes have not adequately prepared both young women and men for a smooth school-to-work transition. Typically, females do not have avenues in secondary education and technical training that are free of sex-based discrimination and stereotyping. This, in turn, hinders their decent work prospects and, at a national level, the development of a future workforce capable of maximizing its full productive potential" (ILO, 2008).

The ADB report *Improving Transitions from School to University to Workplace* (2012) highlighted that to become an economic driver, ASEAN universities need to tackle three challenges to strengthen higher education:

1. “Secondary schools need to provide a curriculum and pedagogy that foster creativity, problem solving, critical thinking and the entrepreneurial spirit. They should also focus on more math and science. This is kind of a challenge but more a solution.”
2. “Families who invest more in higher education expect outcomes of better jobs and rising incomes. Governments and higher education leaders should pursue the reform of higher education for the changing labour market.”
3. “As the number of universities grows, there will be increasing competition for funds for scientific research, requiring strategies for better partnerships, including partnerships across borders.”

The ILO report *School to Work Transitions for Youth in Cambodia* (Kanol, Khemarin and Elder, 2013) suggests seven recommendations for policy-makers to improve the transition from school to work:

1. Provide educational access for all and prevent students from dropping out of school.
2. Improve conditions of work by ensuring equal treatment for and rights of young workers.
3. Support employers in taking an active part in the creation of decent jobs for young people.
4. Enhance the role of institutions that deal with employment/unemployment issues and improve the collection and dissemination of labour market information.
5. Promote decent work in the agriculture sector and among low-wage occupations.
6. Facilitate financial inclusion of youth and access to credit and business support services to young entrepreneurs.
7. Bipartite and tripartite cooperation on youth employment can yield better employment outcomes.

The transition from school to work cannot be accomplished without social dialogue and clearly articulated agreements among employers, educators and trade unions, specifying who is responsible for what. Employers must see that they, as well as trade unions, are one of the key parts of the skill development system and that easing the transition from school to work can be an important part of obtaining a workforce with the skills that employers need. Educators, on the other hand, must recognize that education should lead to productive livelihoods as well as other benefits. Trade unions should help ensure that young people have a genuine opportunity to learn important skills in workplaces.

4. Structural transitions, emerging industries and new skills requirements

This section highlights emerging skill requirements in ASEAN countries associated with deeper regional integration, structural change and new production patterns. It assesses the capacity of ASEAN countries to meet these emerging labour market demands domestically and within the region as production moves away from agriculture and into the higher value-added industrial and services sectors. It analyses the extent to which shifted skills requirements can foster better economic opportunities and prospects for women in the

ASEAN labour markets. For a better sense of the impact of recent structural changes on employment, see Annex IV for a series of charts that illustrate changes in the share of occupations between 2000 and 2010.

An examination of the Charts in Annex IV confirms that there has been a significant decrease in the number of agricultural workers throughout ASEAN countries, with varying degrees of increase in service workers. Most of the ASEAN countries are undergoing massive structural changes as they transition from economies rooted in agriculture and informal sector work to economies based on higher value-added (higher skill) work. For example, 40 per cent of the region's population works in agriculture, while agriculture only accounts for 10 per cent of the region's GDP. As much as 67 per cent of the region's workforce operates in the informal sector. That number is twice that of Latin American countries and nine times higher than in Organisation for Economic Co-operation and Development countries (ILO and ADB, 2013). Workers in the informal sector tend to be relatively unskilled, and moving them into better jobs must be one of the principal aims of the restructuring process. About half of the ASEAN region consists of young people. Helping them to transition into the formal labour market and increasing the average years of schooling for the CLMV countries must be a priority to grow the region's "economic pie" (ILO and ADB, 2013).²⁴ Not only must the economic pie grow bigger, each of the slices must grow bigger as well to prevent an acceleration of winners and losers in the restructuring process. Better work that rewards higher skills, together with education and training that provides opportunities for women and young people to acquire these skills, are the keys to growing a bigger pie with bigger slices.

Shifting from agriculture and a large informal sector to higher value-added work will be especially challenging for the CLMV countries. Three of the countries (with the exception of Viet Nam) identify agriculture as their top sector investment priority (table A1). If the countries' national qualifications frameworks include institutions and skills related to higher productivity in agriculture and if institutions provide these skills, that sector will become more productive; in doing so, it will displace people who then need to find work in other growth sectors. Where displaced people will work and what skills they will need are questions at the heart of this section on economic restructuring and creating good jobs.

Table A1 reflects the three priority sectors identified by each CLMV country for growth. Agriculture is the top sector, followed by electronics and machine assembly for Cambodia and the Lao People's Democratic Republic. In Myanmar, agriculture is followed by forestry and energy, while in Viet Nam, the top priority sectors for investment are garments and textiles, shoes and leather, and plastics. Many multinational companies in these industries are continuously improving their performance on price, delivery, quality and social and environmental performance due to global competitive pressures; and many of those companies are undergoing structural transformations as new value-added technologies are introduced. These changes in work processes will require similar changes in skill development processes and an enabling environment that values accountability and transparency.

Policy-makers from the ASEAN-4 countries state that their priority is to move their economies into more knowledge-intensive activities, pointing out that 50 per cent of global GDP comes from knowledge economies (ILO and ADB, 2013). Growing the pie for all to have larger slices is a key issue for ASEAN policy-makers. For example, at a recent ILO/ADB workshop for ASEAN policy-makers in Bangkok (2013), a Philippine official talked about the need to transition workers from their tradition of rice and sugar

²⁴ The average years of school in ASEAN-6 is 8.1 years, while for CLMV, individual averages range from 4.1 to 5.9 (according to discussions during an ILO/ADB workshop, 5–6 November 2013).

cultivation because these sectors will likely not be able to compete with rice and sugar from other countries where agricultural productivity is greater.

The final row on table A1 identifies the ASEAN-4 countries' three priority sectors for employment: In Malaysia it is oil and gas, palm oil and related products and financial services. For Indonesia, the priority sectors are agriculture, steel, food and beverage production. For the Philippines, it is information technology (IT) and business process outsourcing as well as shipbuilding. For Thailand, the priority sectors are automotive, electrical and electronics and hospitality. Transitioning these sectors into higher value-added knowledge economy work will require significant skill development in science and technology, robotics and ICT. And soft skills will become even more important to promote higher levels of teamwork that translate to higher productivity and enterprise competitiveness. Singapore provides a good example of how to link TVET with university institutes and further education pathways to develop needed skills. Singapore's priority sectors focus on emerging and green technologies, financial services, biotechnology and the production of chemical and petrochemicals. Finally, for Brunei Darussalam, the priority sectors for investment are agriculture and non-oil and gas and knowledge-based economic activity. For both Singapore and Brunei Darussalam, the challenge is to develop workforce skills in innovation and research and development (R&D).

Plummer, Petri and Zhai projected (ILO, 2013) the impact of various trade scenarios onto employment by industry for 2025. Although it is unclear which scenario will prevail, it is highly likely that the AEC countries will shift their current proportion of low- and middle-skilled labour to higher-skilled labour as they implement the ASEAN Qualifications Reference Framework and thereby improve the transparency and performance of their education and training systems to respond to emerging skill needs. According to a recent McKinsey study (Auguste et al., 2011), the nature and content of work has changed and will continue to change as technology developments accelerate. In their research, Auguste et al. identified three types of work: (i) interactions work – which requires exchanges involving complex problem solving, experience and context; (ii) production work – the process of converting physical material into finished goods (such as a factory worker or farmer); and (iii) transactional work – exchanges that can be scripted, routinized or automated, such as bank tellers and retail cashiers. The researchers point out that the only work that will not be replaced by technology is interactions work, which requires interactions with technology for solving complex problems. Interactions work also requires experience and context knowledge. Interactions workers include lawyers, physicians, nurses, researchers, entrepreneurs, engineers and other occupations in which technology and individuals interact to create greater value.

To reach more productive performance in each of the sectors identified by Member States, their various industry sectors will need to close their skill gaps and anticipate skill requirements for the future. There are cross-cutting skills, however, that support the performance of every industry sector, such as skills in ICT and advanced manufacturing technologies, including mechatronics, lean manufacturing and other process-improvement tools. Assuming that the technical (hard) skills are in place, interactive work in contemporary productive enterprises requires soft skills, which are competencies that help workers navigate the cultures of workplaces, communicate effectively with others, solve problems, use creativity and manage resources and their emotions effectively (Aring and Brand, 1998 and 2000). Technical skills can be acquired in schools, especially in good vocational and technical schools and colleges and, when the private sector gets involved, in establishing standards for high-quality and relevant education. However, soft skills require a different pedagogy. In the same way that learning to ride a bike cannot be done by studying a book, soft skills are learned by experience. This means soft skills have to either be embedded into a teaching process, as in project-based learning, or they can be acquired via internships or youth apprenticeships in firms that are linked to TVET institutions.

Interestingly, the need to rapidly upgrade and harmonize soft and technical skills across the region may be a selling point for more enlightened employers to participate in school- to-work transition programmes, such as Germany’s dual system of youth apprenticeships. The need for harmonizing soft and technical skills is also likely to create a market for skill development. Unless there is oversight and regulation in place for private training institutions, there is a risk that private providers may exploit students and compromise quality (Thomas, 2008). Although not an ASEAN Member State, India provides a good example of how the proliferation of private training institutions, even in the professions, can result in the decline of the overall quality of graduates (Thomas, 2008). This is why it is important that the national qualification frameworks are calibrated to the regional qualifications framework and that associated quality assurance mechanisms are put in place as quickly as possible in each country.

4.1 Regional initiatives to address the effects of structural changes

The OECD (2013) cited a number of changes that will restructure the region’s economy and what individual ASEAN Member States might choose as priorities to develop skills and increase employability of their workforce, including human capital priorities.

The significant differences in labour productivity in the region can be viewed as a proxy for the disparity in skill levels and employability. In 2012, labour productivity in Singapore was \$49.7, compared with \$24.9 in Malaysia, \$16.8 in Thailand, \$11.5 in Indonesia, \$8.7 in the Philippines, \$7.7 in Myanmar, \$6.3 in Viet Nam and \$5.5 in Cambodia (ILO, 2012). The wage harmonization envisioned in the ASEAN Economic Community Blueprint depends on a harmonization of skill levels as well as quality assurance mechanisms that are internationally linked to prevent potential fraudulent “accreditations” that prey on students’ desire for a certificate or degree and then fail to teach the requisite skills. Although ASEAN countries have so far developed seven mutual recognition agreements that allow for the free mobility of certain types of professionals across borders (Lythe, 2013b), the free mobility of other high- and middle-skilled workers will depend on the development of the ASEAN Qualifications Reference Framework.

To achieve harmonization of qualifications and skills, the ASEAN Economic Community Blueprint (ASEAN Secretariat, 2008) lists specific priorities for action and regularly tracks how they are implemented. Among them are several factors that will lead to real changes in the structure of the region’s labour markets, such as a harmonization of national vocation qualifications and quality assurance mechanisms. The 2010–15 Blueprint singles out five strategic priorities: legal foundation, institutional capacity, social partnership, labour markets and workforce development (ASEAN Secretariat, 2008). To be entirely effective, it should also prioritize the inclusion of women and young people in the region’s labour markets.

4.2 Structural transitions and emerging skill requirements

In terms of skills and employability, there are several important structural transitions that will occur as the region’s economies shift from low-skill and low-wage to higher-skill and higher-wage economic activities. Central to these are priorities of the ASEAN labour ministries: inclusive job creation, skill building, harmonization of skills and quality assurance mechanisms. The following section focuses on specific shifts

in production or service sectors and on specific countries to better illustrate the impact on skills development.

4.3 Skill shifts in agriculture – spotlight on Myanmar

As discussed previously, the CLMV countries will be especially affected by the shift in agricultural production. In some CLMV countries, such as Myanmar, where agriculture has remained unchanged in terms of its contribution to GDP (at 36 per cent), the non-agriculture portion of GDP has shifted towards industry. For example, in 1965, industry contributed a 13 per cent share to GDP, rising to 26 per cent by 2010. Industry is also replacing farms, displacing generations of people whose safety nets depended on their agricultural community (Noom, 2013). These low-skilled workers need opportunities to develop their skills as well as information about where there are job opportunities for decent work. The shift from agriculture, which in the CLMV countries accounts for anywhere from 22 per cent of GDP (Viet Nam) to 57 per cent of GDP (Myanmar), challenges these countries to plan for how to help affected workers gain higher skills before they are displaced.

Implication for skills requirements

There are many examples of how agricultural extension services help to raise the productivity of agriculture in countries throughout the world. When coupled with mobile technology, such as cell phones with a camera, farmers can take pictures of their problem crop and send it directly to a university research station. Extension workers help farmers build their skills and improve their crops in the process.²⁵ As the region's universities reform, the universities in the CLMV countries could be encouraged to develop extension services to support various industry sectors. For example, faculty and students could use mobile technology to help small and medium-sized enterprises in various sectors. Innovative extension services could also help increase productivity of light manufacturing, agro-processing and tourism and could help absorb part of the workforce still in agriculture and the several million migrants waiting to return to their home country (ADB, 2012b).

4.4 Skill shifts in manufacturing – spotlight on Cambodia's textile and garment industry

Many of the region's manufacturing industries produce and assemble goods using work processes that pay low wages and require low skills. As global manufacturers increase their demand for automation, low-skilled workers in their enterprises and supply chains will need ongoing skill development to move to higher-paying work.

The example of Cambodia's textile and garment industry is telling: garments and textiles are the lifeblood of the Cambodian economy, representing 87 per cent of the country's total exports (95 per cent when including footwear). Garment manufacturing accounts for 16 per cent of GDP and employs 45 per cent of Cambodia's manufacturing workforce (Southeast Asia Textile Business Review, 2009). Around 280,000

²⁵ Accenture, Vodafone and Oxfam (2011) have partnered in a project that promotes the use of mobile technology to drive efficiency and sustainability in the food and agriculture value chain.

workers, more than 90 per cent of them rural females, were working in the garment industry in April 2010 (Textile World Asia, 2009). Low productivity due to weak skills and labour-intensive production methods keep wages low. The country's Garment Manufacturer's Association reports that a Chinese worker produces 100–120 shirts per hour and a Vietnamese worker makes 60–70 shirts per hour while a Cambodian worker produces 30–40 shirts per hour (YNFX, 2010.). Industry buyers want full service, from design to stock delivery, to shorten lead times and lower costs for customers. According to the Garment Industry Association report, Cambodia's industry cannot yet supply a full service because it mainly consists of low-skilled cut, make and trim workers (YNFX, 2010).

There are abundant opportunities for the garment industry within the framework of many free trade agreements, according to the Garment Manufacturing Association report (YNFX, 2009). However, these can be achieved only with skills training, lean manufacturing and other process improvements as well as new technology, such as automatic sewing machines, hanger systems, pattern-making systems and new software in addition to an established workforce who can use these tools efficiently. The ILO's Better Factories Programme in Cambodia monitors and reports on working conditions in garment factories according to national and international standards by helping factories to improve working conditions and productivity and by working with the Government and international buyers to ensure a rigorous and transparent cycle of improvement (ILO, 2008a).

Implications for skills requirements

To raise the skills of the workforce in the garment industry and in similar low-skill and low-wage manufacturing, TVET institutions should partner with the industry to identify future skill needs, develop curricula that lead to higher skills and train people in schools and workplaces. Skill development must include learning by doing to gain the essential soft skills. High-skill and high-wage manufacturing involves working in teams and collaborating with other and thus requires a strong command of soft skills combined with a higher level of technical skills.

4.5 Skill shifts in manufacturing – spotlight on Thailand's automotive industry

Thailand is a major automotive production base, ranked fourth in Asia and 12th in the world. Production output reached 2.2 million vehicles in 2012 and aims to achieve 3 million in 2015. Rapid increases in automotive production volumes have underscored skilled workforce shortages that are disrupting the growth of the sector.

Implications for skills requirements

The Australian Agency for International Aid (AusAID) reported in (Australian Trade Commission Report, 2013) that there are opportunities for Australian providers to offer training solutions in specific technological skills²⁶ as well as opportunities for partnerships in R&D, product and process design and setting up an in-house training centre. The AusAID also concluded that, given the level of urgency and

²⁶ Such as quality engineering, engineering design, production management, CAD, CAM, TIG welding, MIG welding, engine repair, and body and paint repair.

competitive nature of the industry, there is a unique window of opportunity to develop win-win partnerships between Australian training providers and Thailand's Tier 1 automotive parts manufacturers. The Thailand Automotive Institute has set a target to upgrade the skills of 300,000 skilled personnel within ten years and considers such win-win partnerships a strategic opportunity.

4.6 Skill shifts in services – spotlight on the Philippines

The Philippines provides a telling example of the mismatch between skills demanded and skills supplied. The oversupply of skilled university graduates in some disciplines has resulted in an entire industry of recruiters that has grown to meet the demand for workers from abroad. According to a 2010 news article (Milan, 2010), only 5–10 per cent of graduates will find jobs consistent to their education and only 30–40 per cent will find any employment. The vast majority of graduates will remain unemployed.

Yet, the Philippine business process outsourcing industry has grown at an extraordinary pace over the past decade, catalysed by reforms in the telecommunications sector in the early 1990s (World Bank, 2011). According to the World Bank Country Director, Philip Hofman, “The liberalization of the Philippine telecommunications sector in the early ‘90s improved the quality and efficiency of telecommunications infrastructure through greater competition. That’s a very important factor for the success of the industry. But the bigger story is really the rich human capital that the country possesses and which it has to continue to nurture” (World Bank, 2011).

Total employment in the sector has surged to nearly 640,000 workers, of which nearly 400,000 work in “voice-related services” (call centres) (*Economist*, 2012). Since 2010, the Philippines has the largest global market share in call centres (India had dominated this particular segment of the business process outsourcing until 2010). Service export revenues from call centres have climbed from \$6.1 billion in 2008 to more than \$11 billion (or about 5 per cent of GDP) in 2011 (World Bank, 2012c). The information telecommunications industry (ITC) has become a major driver of the economy and job creation in the Philippines.²⁷ Aside from earning tremendous amounts of foreign exchange, it has also spurred growth in other parts of the economy, notably real estate, retail trade and telecommunications. The business process outsourcing industry’s total (direct plus indirect) contribution to growth through real estate, construction, retail trade and telecommunications was estimated at around 11 per cent of GDP in 2011 – roughly the same as merchandise exports value added as a share of GDP. In addition to those directly employed in the outsourcing work, the sector is helping to create some 1.6 million jobs in real estate, construction, telecommunications and other related sectors (World Bank Philippines, 2012).

Growth prospects for the Philippine outsourcing sector are considered promising because companies in high-income countries continue to offer offshore business processes. The Business Processing Association of the Philippines (BPAP) is targeting a doubling in size by 2016, earning nearly \$25 billion in export revenues and employing some 1.3 million people directly and 3.2 million indirectly.²⁸ The sector would also help generate substantial amounts of tax revenues for the Government, both directly as well as

²⁷ The ITC industry in the Philippines includes medical transcription, software services and back-office processes (World Bank, 2012c).

²⁸ This would place the sector at par with, or even ahead of, other traditional mainstays of the economy notably remittances.

indirectly, by stimulating additional growth in other related sectors of the economy (World Bank Philippines, 2012).

Implications for skills requirements

To meet economic growth goals, the country's education and training programmes must become more aligned with its labour market needs. According to an Asian Pundit 2012 article, "Demand for talent is high and increasing, so much so that the capacity of the industry to grow now largely depends on how many employable graduates can be produced" (Hamlin, 2012). To address the talent hurdle, the BPAP is undertaking a series of initiatives in cooperation with government agencies, multilateral institutions and the private sector to attract potential hires and improve the skill sets of nearly hired workers so that more Filipino graduates become employable. Hamlin reports that while many Filipinos apply for work in IT-business process outsourcing companies, the hiring rate is just 5–10 per cent. Most candidates lack the necessary qualifications, skills and professional expertise.

4.7 Skill shifts in food services for tourism – spotlight on Indonesia

The ASEAN Tourism Integration Working Group's strategic plan aims to establish South-East Asia as a leading global tourist destination by 2015 (Australian Trade Commission, 2013). On the human resources development side, the goal is to improve tourism-related human resources, services and facilities. Currently, there is a shortage of human resources. According to the AEC Blueprint (OECD, 2013), such countries as Indonesia should attract more tourists.

The McKinsey Global Institute (2012) points out that the growth of Indonesia's "consuming class" now numbers 45 million and is forecast to increase to 85 million by 2020. The Institute suggests that hospitality and retail services, in particular the retail food service sector, are high-growth markets and will require strengthened food safety systems and handling processes to improve integrity across the value chain. With retailers expanding operations, including Carrefour supermarkets and hotel chains, their demand for trained food and beverage staff will continue to grow.

Implication for skills requirements

Helping this promising sector grow requires better vocational training as well as lifelong learning opportunities for those already employed so they can quickly and easily upgrade their skills in the food-processing sector. This will help drive efficiencies and domestic and international competitiveness of Indonesian companies. Another opportunity may lie in the area of producing more processed food. It is unlikely that schools alone can produce the needed results in terms of skill development. Instead, strategic cluster-based alliances with food processing firms and universities could create industry training centres through collaboration with vocational schools, such as New York's Finger Lakes Food Processing Initiative, which has created a cluster of food processing companies linked to a university and vocational training centres.²⁹

²⁹ The Finger Lakes Food Processing Cluster Initiative is one example.

4.8 Skill shifts in information and communications technology – Spotlight on the ASEAN

The ASEAN ICT Master Plan 2015 acknowledges that “ICT will continue to be the driver in all aspects of nation-building in the next few decades. Similar to other regions, ASEAN is poised to embrace the future” (ASEAN, 2010, p. 5). The ICT Master Plan states that ICT development in ASEAN has evolved at a phenomenal pace and that “now is a new era of ICT brought about by the advancement and application of ICT in almost every facet of our working and social lives”. ICT is a growth industry sector employing more than 11.7 million people, contributing more than \$32 billion (more than 3 per cent to the ASEAN region’s GDP) and will grow significantly by 2015. Although there is a considerable digital divide, especially in the CLMV countries and in rural areas, governments are going to great expense to ensure that the non-served and underserved areas and communities have access to ICT, according to the Master Plan.

Implications for skill requirements

The ASEAN Master Plan states that human capital-related barriers in ICT are important. The top-three human capital challenges are relevant skills, availability and costs. The transformation of other sectors through better ICT skills and knowledge has to be a core strategy because every industry sector is shaped by ICT. Whether engineers use software programmes to develop blueprints for a building, an artisan uses the Internet to get ideas or to sell wares or a rural eco-tourist lodge attracts customers and makes reservations via the Internet, ICT skills are essential. This has potentially costly implications for vocational and technical education where embedding ICT in the curriculum will have to be a top priority to harmonize skill levels across the region. The ASEAN-4 plus Singapore and Brunei Darussalam are implementing different approaches, such as an ICT scholarship programme and ICT certification programmes by increasing ICT roll-outs in schools and through enhanced collaboration between ministries. So far, telecommunications and ICT ministers from Member States have approved 21 initiatives that were scheduled to be implemented in 2012 (OECD, 2013). It is not clear if the costs associated with embedding ICT in TVET have been discussed by the ICT Industry Association.

4.9 Shifts in the productivity and skills of small and medium-sized enterprises and what it might mean for women business owners in ASEAN

As evident in table A2, SMEs across the ASEAN region contribute between 60 per cent of GDP in Singapore and 32 per cent in Malaysia. They provide between 97 per cent (Indonesia) and 56 per cent (Malaysia) employment, with the exception of Brunei Darussalam (at 22 per cent.) The skill gaps discussed in section 2 have even more serious implications for the SMEs in the region because those enterprises do not typically have resources for training. The generally lower TVET enrolment rates for women (with the exception of Indonesia and Viet Nam) add an important gender dimension to improving the competitiveness and skill levels of the region’s SMEs.

If SMEs are to become integrated into vertical production chains in the region, then their workforces must be skilled in meeting quality standards and certifications, such as those of the International Standards Organization. The ASEAN Policy Blueprint for SME Development 2004–14 outlines a framework that comprises strategic work programmes, policy measures and indicative outputs, such as accelerating the

pace of SME development, enhancing their competitiveness and strengthening their resilience (ASEAN Secretariat, 2008). Although the Blueprint does not appear to emphasize a gender balance in ASEAN's SMEs, the Socio-cultural Blueprint and ASEAN Foundation stress the importance of women as business owners, especially in the micro-enterprises of the CLMV countries. The Asia Foundation (2013a) estimates that Asia-Pacific economies could grow by an additional \$89 billion per year if women could realize their full economic potential and that output per worker could rise 7–18 per cent if business opportunities for women and men were equal.

Women own 23 per cent of SMEs in Indonesia and the number is growing by 8 per cent per year, while the number of SMEs owned by men is dropping (Asia Foundation, 2013a). The success of the nation's overall economy hinges in no small way on the success of these firms (Asia Foundation, 2013b). Thus, the contribution from women-owned firms is increasingly critical to economic growth. By comparison, overall entrepreneurial activity of women in Malaysia is only 9 per cent (this is more than 30 percentage points less than in the Philippines and Thailand), and despite strong economic growth, the ILO (2012) estimated that only 46.8 per cent of working-age females participated in the Malaysian labour market in 2012. A recent study by the Rotman School of Management at the University of Toronto highlighted the role of cultural norms related to women's business activity in Malaysia. These norms dictate and limit women's modes of operation in business spheres by expecting them to "lead as if they were mothers or teachers," rather than taking on what is perceived to be the more traditional masculine role of formal leadership (Toh and Leonardelli, undated).³⁰

In response to these limiting factors, the Government of Malaysia actively promotes women's entrepreneurship through capacity-building initiatives. The Government has also worked with ministries and agencies to offer programmes for female entrepreneurs. These initiatives have helped contribute to an increasing number of female-owned SMEs in Malaysia, which rose to 17 per cent of the total SME population in 2008, up from 12 per cent in 2000 (Toh and Leonardelli, undated). Various government ministries, working with other government agencies, provide support to women entrepreneurs in terms of funding, physical infrastructure and business advisory services. To provide financial support, the Government has encouraged the creation of special funds targeted for women entrepreneurs, such as special assistance schemes through the Small and Medium Industries Development Corporation.

In the Philippines, opportunities for starting businesses exist for both men and women, as evidenced by the greater proportion of women owners of nascent businesses and women's relatively high level of entrepreneurial activity (at 40 per cent in 2010 (APEC, 2010). Although a 2006 survey on entrepreneurship in the Philippines conducted by the Global Economic Monitor (APEC, 2010) found that Filipino women owned 45 per cent of business enterprises, these were generally nascent businesses (at 69 per cent), while men more often own established businesses (at 66 per cent). Despite these trends, there remains an under-representation in the numbers of women entrepreneurs among established businesses, suggesting a number of factors that limit women when it comes to managing and operating a business. Researchers have found that although women have a strong role in starting a business, family responsibilities constrain their available time. Furthermore, social services for women that enable them to put time into their business while taking care of a family were "generally insufficient" (Asia Foundation, 2013b). Women are typically found in activities that permit them to balance family responsibilities with income-generating activities, such as retail trade, food preparation or home-based piecework. In particular, younger women with small children tend to start businesses that allow them to remain close to their home (Asia Foundation, 2013b).

³⁰ Research has also noted a trend in Malaysian female entrepreneur's micro-enterprises often being taken over by the woman's husband or a family member when the business grows to become a larger enterprise.

A MasterCard Worldwide 2010 study found that Thailand's proportion of working-age females participating in the labour market (at 64 per cent) was also considerably larger than that in Malaysia and the Philippines. Women constitute 47 per cent of Thailand's business people (MasterCard, 2010). The same study by MasterCard Worldwide found that women-owned SMEs in Thailand contributed approximately 38 per cent of GDP and that their businesses had an annual growth rate of 2.25 per cent, compared with 0.31 per cent among SMEs owned by men. According to the Global Entrepreneurship Monitor (2007), social and cultural mores in Thailand have long encouraged and supported female participation in the workforce, which explains the high prevalence rates of women's entrepreneurship.

In Thailand, gender is not necessarily perceived as an impediment to success in business. However, despite this commonly held perception, research reveals that women still experience a wide range of barriers to starting, sustaining and growing their businesses. For example, although women technically have the same legal rights as men, married women need their husbands' consent for critical legal transactions, including bank loans. In addition, industry restrictions and cultural expectations mean that Thai women's businesses tend to be in the lower-earning sections of sectors, such as retail, hospitality and personal services.

In Viet Nam, 54 per cent of non-agricultural household enterprises, which include micro-enterprises and SMEs, were operated by women and 46 per cent were operated by men in 2000, suggesting that private enterprise is a relatively more important source of female income than it is for men. Women tend to be more active in trade, and men more in production and services. However, within production, women are more important in the key subsectors of food and beverages and textiles and garments. According to the available data, women tend to have smaller enterprises with fewer employees, fewer hired labourers, lower turnover (except for services), smaller asset values and lower profits. The rural and urban non-farm enterprises controlled by males have a larger value of total business assets than those controlled by females. On average, calculated profits in female-operated non-agricultural household enterprises, which include SMEs, were about 70 per cent of the profits made by male operated non-agricultural household enterprises in 2000 (Akram-Lodhi and van Staveren, 2004).

4.10 Implications for skills requirements

Improving the skills of SME workforces and the skills of women business owners in the formal sector of their economies requires an ecosystem of multiple approaches that remove barriers and raise overall skill levels. Apart from removing barriers that constrain women's participation, there are several promising models for improving the skills found in SMEs. For example, Singapore and some of the other wealthier countries in ASEAN promote SME skill development via skills development funds. Every effort should be made to have these funds directed towards national economic and social goals, including the training of women owners of SMEs and women workers in them. Most importantly, skills training should help improve the number and quality of backward links from multinationals attracted through FDI and local supply chains.

Other approaches to SME skill building also might be considered as ASEAN Members States think about how to improve the competitiveness of their SMEs. For example, individual training accounts that are co-funded by an employee of an SME allows workers to purchase their own training (the other co-funder can be the government). This creates a more competitive market for training institutions for both men and

women. The ASEAN Foundation is supporting TVET for women's economic empowerment (ASEAN Foundation, undated) because improving female participation rates in TVET could unleash the productivity of the region's many SMEs while dramatically raising TVET quality and performance (ASEAN Foundation, undated). Additionally, for women to participate fully in a country's economy, various barriers need to be removed. Barriers include access to business finance and managing both childcare and housework. Most of these obstacles stem from traditional gender roles that limit women's ability to break into the business sphere (Asia Foundation, 2013a).

4.11 Shifts in the informal economy should provide opportunities for improving women's lives and those of vulnerable populations

ASEAN's Socio-cultural Blueprint lists several goals to improve the participation of women in all fields and all levels, including political decision-making, as well as the socio-economic empowerment of women. The Blueprint notes that women are heavily represented in the informal economy, where their exposure to the risk of exploitation is usually greatest and they have the least formal protection. At the same time, the informal economy provides a vital source of livelihood for masses of women and families (ILO and ADB, 2011). As job growth continues to drive economic growth in Member States, it is likely that the informal sector will shrink, necessitating skills development for displaced workers, most of whom will likely be women. In addition to specific technical skills required by a particular industry sector (such as retail, food and beverage, back-office services, health care and banking), some of the skills that likely will be important for women who become displaced are entry-level competence for accounting, bookkeeping, typing, English language and various software programmes (such as Microsoft Office) and other programmes for communication. NGOs often create specific training programmes for preparing and integrating women into the formal sector. The national qualifications frameworks should help in terms of making sure that displaced women are learning the right skills and receiving industry certifications, both of which will improve their employability opportunities.

A joint ILO/ADB report on *Women in Labour Markets in Asia* (2011) noted, "Progress in reducing vulnerable employment has stagnated, and progress in reducing working poverty has stagnated. Moreover, gender-based inequities in the labour market persist, in part due to the expansion and feminization of informal employment." The study's authors state that "poor women workers of the Global South, as well as female migrant workers in a range of international contexts, generally fare worst of all" (ILO and ADB, 2011). As previously noted, many ASEAN countries have large areas for improvement in terms of increasing women's economic participation, lives and skills. According to the Gender Inequality Index shown in Table A1, Singapore ranks near the top, at 13 of 186 countries, with Malaysia at 42nd, followed by Viet Nam at 48th, Thailand at 66th, the Philippines at 77th, Myanmar at 80th and with Cambodia trailing at 96th, the Lao People's Democratic Republic at 100th and Indonesia in 106th place. Based on a wider set of indicators, the World Economic Forum's Global Gender Gap Index calculates gender gaps on the basis of 14 indicators, grouped around four dimensions: economics, politics, education and health. The Gender Gap Index shows no significant association with levels of development; but economic growth by itself does not automatically produce equality (UNDP, 2010).

According to the UNDP report *Power, Voice and Rights* (2010), there is a growing body of evidence that confirms "gender equality is good economics". For instance, over the past ten years, the increase of female workers in industrialized countries is estimated to have contributed more to global growth than China's remarkable economic performance. Reaching the same level of women's labour market participation in the

United States, which stands at more than 70 per cent, would boost GDP by 4.2 per cent a year in India, 2.9 per cent in Malaysia and 1.4 per cent in Indonesia. The gains would be greater where current female participation rates are the lowest (UNDP, 2010, p. 64). These estimates depend, however, on women having access to quality child care. In 2013, the ASEAN Secretariat posted the statement that “gender equality should be central in achieving the ASEAN Community.” The importance of quality child care was not mentioned, yet it is critical if women are to participate fully in the labour market, especially in the formal sector. Chant and Pedwell (2009) stress the importance of more process-based research that takes into account the whole of women’s daily activities. Combining education and training with quality child care for women and access to credit and other services is an example of the type of ecosystems approach that is needed in situations in which a number of factors converge to make it difficult for women to be fully integrated into their countries’ labour markets.

The ILO/ADB 2011 report on *Women and Labour Markets in Asia* pointed out that gender inequality in labour markets remains a persistent phenomenon, albeit to varying degrees in regional, national and local contexts. Women continue to disproportionately experience a range of multiple challenges relating to access to employment, choice of work, working conditions, employment security, wage parity, discrimination and balancing the competing burdens of work and family responsibilities that are often exacerbated by gendered patterns in occupational segregation. The majority of women’s work is typically concentrated in a narrow range of sectors, many of which are vulnerable and insecure. The share of vulnerable workers (unpaid family workers or own-account workers) is at 81 per cent in CLMV, compared with 38 per cent in the rest of ASEAN (OECD, 2012a). Women are also increasingly migrating for work due to limited labour market opportunities at home.

4.12 If social partners align their investments, economic shifts could open new opportunities for improving the transition to work for youth

Economic shifts could open up new opportunities for youth in the region if social partners across the region align their investments to improve TVET, the transition from school to work and gender equity. Youth unemployment cannot be solved by ministries of labour, education or youth alone, however well intended. Although government can and should act as a relatively “neutral” broker” (Aring, 2013a), the full partnership of the private sector is needed, along with appropriate safeguards provided by trade unions to protect youth from exploitation.

Global economic crises affect youth (and other vulnerable groups) disproportionately. According to ILO/ADB data (2011), the proportion of ASEAN’s youth who are employed declined by 5 per cent between 1999 and 2009, with males participating at approximately 20 per cent more than females. Lower female employment rates are especially pronounced in Brunei Darussalam, Indonesia, Malaysia, the Philippines and Thailand. In the CLMV countries, employment rates are roughly equal or even higher for females, which may suggest that young people in these countries begin work earlier to supplement family income (OECD, 2012a), and quite likely in the informal labour markets. Policies should ensure that the region’s young women and men have access to the education and training they need to more easily make the transition from school to the region’s workplaces.

Structural changes in many ASEAN countries are displacing workers in traditional industries, such as agriculture. At the same time, structural changes in industries in the region accelerate the need for skill

development. If the structural changes are accompanied by well-designed skill development strategies, the changes can open up new opportunities for better work and higher pay.

5. Recommendations

This section summarizes and builds on the previous analyses of education and training needs, emphasizing recommendations for TVET because it is the primary vehicle for delivering skills and employability to the more than 600 million people in ASEAN countries. Developing effective TVET systems will help to tackle issues affecting many economies in terms of responding to demographic shifts, high youth unemployment and rapid labour market changes. Moreover, reforming TVET is especially critical for the CLMV countries that need to accelerate changes already underway in order to fully develop a national qualifications framework that can calibrate to the regional qualifications framework now under construction. This regional framework will bring coherence and a freer flow of workers across a region that is now characterized by vastly different skill and employability systems. Many of the recommendations for TVET are drawn from Lythe (2013a).

Improving TVET is strategically important to move the region's low and mid-level skills to higher value-added skills that will support the Member States' economic goals. The fact that each country is in the process of developing a national qualification framework calibrated to the regional qualifications framework is a critical factor in the following recommendations. Assuming that the qualification frameworks are done well and are accompanied by quality assurance and other mechanisms, many of the issues that make TVET problematic in countries should be resolved.

The region is remarkable in its education achievements. Even though the CLMV countries need to increase their secondary graduation rates to catch up with their neighbours in the ASEAN-4, as well as with Singapore and Brunei Darussalam, the provision of basic and secondary education in terms of access and participation is impressive across the region. There are a number of specific improvements that should be made for secondary and even primary education, such as better teachers, more relevant curricula, better facilities and increased access in rural areas.

As discussed in the previous sections, the quality of TVET in the region is highly uneven. An important recommendation therefore is to develop a series of activities to build the capacity of ministries involved in TVET delivery to work with each other so that their actions are coordinated and aligned with their respective government's economic strategy. Lessons from best practice countries emphasize that coordination and alignment of multiple ministries with the private sector and the national economic goals are the critical ingredients for success. The development of national qualification frameworks requires new strategic and implementing capacities in many of the region's public sector administrations. Without building the human capacity to make the necessary changes, inserting a national qualifications framework into a weak public sector may further weaken the sector's performance. Instead, the public administrators involved in TVET should participate in learning experiences that help them make the many changes that need to be made to TVET. There are many ways to build the capacity of policy-makers, such as developing communities of practice, study tours, workshops, peer-to-peer learning and strategic alliances.

Looking across the three primary country groupings of the AEC, certain common tasks emerge for the further development of TVET within each (Lythe, 2013a). For example, the critical tasks facing the CLMV

countries include creating a unified coherent system, developing the physical infrastructure for TVET (such as trained teachers, instructional materials, tools and equipment), fully developing their national qualifications frameworks (with participation from industry), linking the frameworks to the education sector, increasing gender equity and participation, and aligning the frameworks with national economic plans. This alignment is particularly critical if the economic opportunities that are emerging within trade zones, corridors and new ports are to translate into higher skills and wages.

Among the ASEAN-4 group, the common tasks include rationalizing TVET systems so that responsibility clearly resides within a single ministry, fully implementing their national qualifications frameworks to calibrate them with the regional framework, developing stronger links with industry, fully establishing quality assurance mechanisms and improving the transition from school to work.

For Singapore and Brunei Darussalam, the critical tasks include further strengthening education and training systems that are already among the best in the region and benchmarking their respective national qualifications frameworks with the emerging ASEAN qualifications.

5.1 Specific recommendations for CMLV countries

Cambodia. Cambodia aims to reduce the poverty of its rural poor populations by improving family income through skills training and to support industrial development with skills demanded by industry (Tep, 2011). According to a 2011 presentation by the Ministry of Labour and Vocational Training, the Government is committed to expanding and promoting TVET for the desired economic growth. The goal is to achieve a 30 per cent increase in people with formal TVET qualifications for basic and mid-level skilled work. According to Lythe (2013a), Cambodia has a policy framework and systems architecture in place for recognizing TVET qualifications, and regional recognition of their national quality framework will be achievable but not fully in place by 2015. Lythe (2013a) points out four areas that need immediate attention:

- ensure the accreditation of trainers is on track as proposed;
- ensure that the competency-based system is progressing in partnership with employers and unions;
- ensure that the national assessment and certification system is in place to support the national qualifications framework because it is an essential component; and
- organize study tours for leaders in the TVET system to learn from countries with established national assessment and certification systems as well as trainer certification systems, such as Singapore, Malaysia or the Philippines.

Lao People's Democratic Republic. The country is experiencing a shortage of semi-skilled workers due to outward migration, particularly to Thailand. Although there is no national TVET framework in place, the Government recognizes the need for such a framework and is working with GIZ and the ADB to develop one. There are 154 vocational training centres, but there is a lack of coherence and coordination, as illustrated by the fact that the Ministries of Labour and Education have different certification and qualification structures. For the Lao People's Democratic Republic, the following is recommended:

- Develop a ten-year economic roadmap for the country that spells out clearly in what sectors economic growth is desired along with measurable benchmarks for this intended growth. This is essential to develop a national TVET qualifications framework and unified national system.
- Develop a single, unified coherent system by convening a facilitated forum that engages all parties, including industry, trade unions and leaders of education and training institutions.
- Improve secondary education by improving curricula and training teachers to help assure that students entering TVET institutions can succeed and, if desired, progress beyond this level.
- Develop a national strategy for improving English language skills because this is the lingua franca across the region.

Myanmar. A presentation by Myanmar's Department of Technical and Vocational Education noted that reorienting TVET policy towards sustainable development is a national priority. To accelerate the development of vocational education and build a modern nation, the Government has already opened 29 government technical high schools and ten technical institutes (Theingi, 2009). Job opportunities will be opening up for skilled workers with the establishment of economic zones. The new zones and ports will create opportunities for skilled workers in niche areas. To take full advantage of these opportunities, a unified skills training system must be established. Although the Ministry of Labour has taken the lead role in establishing such a unified system, the skills training remain fragmented, as illustrated by the fact that 13 ministries offer skills training. For Myanmar, the following is recommended:

- Complete the national skills qualifications framework, with particular emphasis on recognizing and certifying the new skills that have been identified as important for the development of the economic zones.
- Strengthen the links to industry at the national level and at local TVET centres.
- Build on the National Skills Standards Authority to fully establish competency standards, policies and programmes and to accredit trainers and assessors.
- Establish national technical teacher training centres, with a mission to raise the quality of teaching, and develop much-needed instructional materials. These centres should draw on industry experts to assist in teaching and developing the instructional materials.

Viet Nam. Like Myanmar, Viet Nam is developing economic corridors that will lead to rapid economic growth and require more than low-skilled labour. For example, economic zones at higher levels tend to require workers with skills in logistics, finance and management. At lower skill levels, workers will be needed to interact with sophisticated machines to do assembly work and/or provide services. Viet Nam offers three levels of TVET, including short-term, mid-level and college-level courses that last from less than a year to three years. Only 26 per cent of the active workforce is formally qualified in any trade or profession and the demand for untrained workers will decrease by 2 per cent per year while the demand for formally qualified workers will increase by 7 per cent per year. Moreover, there will be a sharp increase of workforce participation, from 34.7 million in 1997 to an estimated 55 million by 2020. A national qualifications framework and a coherent national TVET system are critical for reaping the benefits of economic expansion. For Viet Nam, the following is recommended to help form a stronger more coherent TVET system:

- Consolidate the currently fragmented system under one national authority. Too much control at the local level often leads to wide variation in the quality of the training institutions.
- Secure support for the development of a national qualifications framework and ensure that it links to industry skills in demand, especially for emerging skill needs.
- Convene a series of workshops over the next 6–12 months that address the following: unify a national system that includes management of TVET from a central level, develop funding strategies for resourcing TVET, identify industry-certified competencies and establish curriculum standards that link to workplace competencies.

5.2 Recommendations for the ASEAN-4 countries

Indonesia. Almost half of Indonesia’s workforce is younger than 30, and government institutions largely provide workforce training. The TVET system is labyrinthine and involves many government ministries that offer programmes of up to three years of study. Competing ministries also offer technical education. According to Lythe (2013a), there are a number of problems with the current education and training system in which schools largely take academic approaches. In addition, there is little industry-relevant equipment with which students can learn on and there is a shortage of trained teachers. As of 2013, the national qualifications framework had no significant links to industry. For Indonesia, the following is recommended:

- Streamline and rationalize the Government’s role in TVET.
- Ensure that the national qualifications framework has industry links and that qualifications are developed with input from industry and appropriate professional bodies.
- Finalize the features of the nine-level qualifications framework and align them with the national economic and social development goals.
- Develop competency-based training and assessments throughout the TVET system.
- Develop national assessment policies regarding the qualifications framework.
- Accelerate and expand the production of TVET graduates; currently, only 10,000 certificates are issued annually when millions are needed.
- Secure the support of external development partners to assist in building capacity, developing policies and implementing the national qualifications framework.

Malaysia. According to the OECD and LEED report *Skills Development Pathways in Asia* (2012), “Malaysia’s growth is between that of fast-growing high-income economies and that of developing ones.” In the current economic climate, achieving the required high growth rates to transition into a high-income economy is challenging. Malaysia will need to upgrade its existing, mostly semi-skilled workforce as well as improve educational levels of new workers entering the labour market. Malaysia has a well-established TVET system that begins in the tenth year of education and allows students to continue on to work or pursue a post-secondary degree. Having developed a national qualifications framework in 2002 and implemented it in 2007, Malaysia has gone one important step further by establishing internationally benchmarked quality assurance requirements. The country has achieved close to full employment since 1999 while

maintaining low total population growth (Lythe, 2013a).³¹ The Government plans to have a highly skilled workforce by 2020, boosting the portion of high-skilled labour from the current level of 28–50 per cent and to graduate 1.3 million TVET students by 2020.

Malaysia's national qualifications framework features many best practice elements. For example, it sets standards of qualifications and reinforces policies on quality assurance, supports flexible education with various learning pathways, encourages partnerships between the private and public sectors, promotes links between non-degree programmes with undergraduate and post-graduate levels, promotes parity of esteem among different types of education and provides clear and accessible public information about education and training options. Nevertheless, there are challenges that Malaysia is confronting. Currently, there are two agencies responsible for managing TVET, and they are using different criteria for qualifications. Furthermore, there is no single database for all qualifications that are included in the national quality framework. For Malaysia, the following is recommended:

- Consolidate responsibility for overseeing the development of qualifications to one agency and create a single database for all qualifications that are quality assured and recognized on the national quality framework.
- Link all eight levels of the national quality framework to enable the formation of value chains of skills development (this would also attract industry investment).
- Review and refine the current national occupational standards systems so that they can be extended to the TVET sector.
- Because the current national occupational skill standards are too narrow, expand them to reflect the emerging requirements of work that go beyond the trades.

Philippines. According to the Technical Education and Skills Development Authority (TESDA), the Philippines TVET network consists of approximately 4,500 public and private training institutes, with 80 per cent consisting of private institutes. “TESDA registers the TVET programmes/courses offered by these institutes prior to offering. There are sets of standards called the Training Regulations, which TESDA develops with the assistance of industry experts and which serve as the basis for registering programmes” (TESDA, 2010). Similar to Malaysia, the Philippines has developed an extensive TVET system that has been in operation since 1994. Managed by TESDA, over the past 20 years the TVET system has demonstrated many of the qualities associated with effective systems, including lifelong learning, national qualifications connected to broad-based industry needs, a wide national qualifications framework that includes all three sectors of education and a clearly articulated quality assurance framework that is internationally benchmarked. Despite these achievements, the TVET system has failed to generate employment, especially for the poor. For the Philippines, the following is recommended:

- Fully implement the Philippine Qualifications Framework so that it can be benchmarked with the ASEAN Qualifications Reference Framework; by doing so, Filipino workers will benefit from migrating within the AEC.
- Structure the Philippine Qualifications Framework to accommodate national certificates and diplomas and include qualifications for higher education that are internationally recognized.

³¹ Many Malaysians are said to not want jobs considered “3-D” – dirty, difficult and dangerous, which has created demand for migrant foreign workers.

- Establish a common standard for quality assurance across the central agencies involved in all education sectors.
- Adopt the University Mobility in Asia and the Pacific system for credit transfer to allow for greater student mobility.

Thailand. Thailand's open economy attracts large numbers of professional, managerial and highly skilled workers from abroad. Much of its manufacturing sector is financed by FDI, and companies employ both high-skilled and low-skilled migrant workers. The Government Office of Tourism promotes the country as a tourist destination for medical care, secondary and tertiary education and retirement. In 2010, more than 10,000 foreigners held work permits in high-skill occupations. According to the Vocational Education Act of 2008, vocational education must be in line with the National Economic and Social Development Plan. Skill levels must meet the demands of labour markets but also integrate international theoretical knowledge with Thai wisdom to equip students with practical capacity and competencies for their occupations (UNESCO, 2010/11). Thailand has many ministries and private sector agencies involved in technical and vocational skills training. To help achieve more coherence, the Ministry of Education is drafting a national qualifications framework with six industry clusters plus 15 more that have recently been finalized. For Thailand, the following is recommended:

- Strengthen cooperation and collaboration among industry groups, the service sector and professional councils because these groups represent the demand side of the education and training system and can specify emerging skill requirements.
- Establish a clear governance and management structure for the implementation of the national qualifications framework and involve key ministries and other national stakeholder groups.
- Develop learning pathways out of the formal education system so that students can obtain needed qualifications.
- Fully implement quality assurance of education and training.

5.3 Recommendations for Brunei Darussalam and Singapore

Brunei Darussalam. One of Brunei Darussalam's goals is to become known for a highly skilled workforce and a quality of life that is among the top nations in the world. The Government acknowledges that the future will require moving away from an oil and gas-based economy to a knowledge-based economy. Education and training, particularly TVET, will have an important role in helping to accomplish this shift. Major reforms are underway in TVET – the Government is working closely with the Director of the Institute of Technical Education in Singapore to raise the level and quality of TVET training. One of the key steps in this process will be to implement the revised national qualifications framework. For Brunei Darussalam, the following is recommended:

- Adopt and fully implement the Brunei Darussalam Quality Framework.
- Benchmark the national framework with the emerging ASEAN Qualifications Reference Framework.
- Implement the revised national quality assurance regulations and policies outlined in the Brunei Darussalam Quality Framework Policy Handbook.

- Increase collaboration between the public and private sectors to achieve shared investment in knowledge exchange.

Singapore. Singapore is widely acknowledged for its economic and educational achievements and is a model for other countries on how to align human resource development strategies with goals for economic development. Workforce development is seen as central to meeting strategic economic goals. Singapore's Ministry of Manpower runs both the TVET system and workforce development and collaborates closely with the Ministry of Education, which in turn oversees the public schools system and regulates private schools. A total of 33 industry and occupational frameworks have been developed by industry leaders, training institutions and labour unions that participate in Industry Skills and Training Councils to identify the skills required to meet industry-specific skill demands. One of the challenges recognized by the Singapore Government, as it looks to the future, is to strengthen the role of innovation and creativity in its educational and training institutions to generate the new knowledge and technology that will be required in their knowledge-based economy. For Singapore, the following is recommended:

- Clarify how qualifications other than formal degrees will be recognized, because a few other agencies and ministries award qualifications; this may pose problems for mutual recognition with the AEC.
- Develop greater emphasis on creativity, innovation and the role of R&D throughout the education and training system.

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ANNEX I

Country-specific education policy priorities

(Taken from officially published documents referred to in the footnotes at the end of each country list)

Brunei Darussalam

The three strategic focus areas (SFAs) that the Ministry of Education has identified are: 1. Teaching and learning excellence; 2. Professionalism and accountability; and 3. Efficiency and innovativeness.

SFA 1: Teaching and learning excellence

- Set a clear education framework to support education policy.
- Provide evidence of performance evaluation to focus on student development through school-based assessment.
- Establish a comprehensive ICT framework to improve efficiency and speed up administrative work.
- Continually benchmark with other international best practices.

SFA 2: Professionalism and accountability

- Regulate framework compliance and practise good governance.
- Provide capacity building through the development of teaching, coaching and mentoring and facilitating the learning environment to improve student achievement.
- Encourage continuous staff empowerment.

SFA 3: Efficiency and innovativeness

- Communicate the national and the Ministry of Education policies and objectives.
- Plan and provide resources.
- Adopt innovative initiatives.
- Implement key projects, including SPN21 and e-Hijrah.
- Monitor and evaluate the outcomes by using the concept of the measurement framework (MOE, 2012).

Cambodia

- **Ensure equitable access to education services** by building schools as close as possible to residences, reducing the number of incomplete primary schools, increasing operational budgets to schools, increasing the supply of teachers, providing houses to teachers and building dormitories for students in disadvantaged areas, especially girls. Access will also be expanded for children in early childhood education as well as those with disabilities and those from minority groups. Ensuring community and private engagement in this process is crucial for long-term success.
- **Improve the quality and efficiency of education services** by increasing the provision of school instructional materials, libraries and laboratories, continuing to further develop the curriculum, increasing learning hours and providing scholarships (cash and food) to poor students, enhancing teaching and management capacities, strengthening the teachers' code of conduct, improving school environments (supply of clean water and latrines), expanding vocational orientation, increasing

inspection of administration, finance and educational quality assurance. Strengthening PRESET and INSET systems and management training and linking them with career paths and promotion that will enhance the motivation of teachers and management staff.

- **Improve the institutional and capacity development of educational staff for decentralization** by re-structuring working procedures, developing legislative instruments and training education officers at all levels in technical skills. The continued emphasis on PF internal audit systems, planning, monitoring and evaluation systems will enhance institutional development and increase the capacity of staff to manage these systems (MOEYS, 2010).

Indonesia

Strategic goals

- Availability and affordability of early childhood education and development services, which are of equal good quality in every province, district, and city.
- Guarantee geographical and financial access to basic education services, which are of equal good quality in every province, district, and city.
- Provide geographical and financial access to secondary education services, which are of equal good quality and are relevant in every province, district, and city.
- Provide geographical and financial access to higher education services, which are of equal good quality, relevant and internationally competitive in every province.
- Provide geographical and financial access to sustainable adult education services, which are of equal good quality and relevant with the needs of the society.
- Provide access to a reliable governance system to ensure the delivery of excellent national education services (MNE, 2010).

Lao People's Democratic Republic

To carry out education reforms, the education sector will focus on four prioritized government projects:

- The National Education System Reform Strategy 2006-2010 will increase the length of schooling in general education from 11 years (5+3+3) to 12 years (5+4+3).
- The Quality Improvement and Access Expansion Project consists of two programmes: an access expansion programme and a quality and relevance improvement programme, which are currently being implemented in the education sector.
- Problem Solving for Teachers and Instructors and Upgrading the Capacity of Educational Administrators and Managers Project. This project is presently being implemented through the Teacher Education Strategy 2006–2015 and Action Plan 2006–2010.
- The expansion of technical schools and vocational training in all provinces throughout the country, which is currently being implemented within the Technical and Vocational Training Development Strategy of the education sector (MOE, 2008).

Malaysia

The Malaysian education system is working to improve on access, quality, equity, unity and efficiency. These outcomes are in line with the aspirations articulated by participants during the National Dialogue and are comparable to outcomes set by other high-performing education systems. Action across all five areas is important, and no initiative in one area should detract from or undermine progress in another.

- Access: Every child in Malaysia deserves equal access to an education that will enable that child to achieve his or her potential. The Ministry thus aspires to ensure universal access and full enrolment of all children, from preschool through the upper secondary school level (Form 5) by 2020.
- Quality: All children will have the opportunity to attain an excellent education that is uniquely Malaysian and comparable to the best international systems. The aspiration is for Malaysia to be in the top third of countries in terms of performance in international assessments, as measured by outcomes in TIMSS and PISA, within 15 years. (TIMSS and PISA currently test for literacy, mathematics and science only. Additional assessments that address other dimensions of quality that are relevant to the Malaysian context may be included as they are developed and become accepted international standards).
- Equity: Top-performing school systems deliver the best possible education for every child, regardless of geography, gender, or socioeconomic background. The Ministry aspires to halve the current urban–rural, socio-economic and gender achievement gaps by 2020.
- Unity: Because students spend more than a quarter of their time in school between the ages of 7 and 17, schools are in a key position to foster unity. By interacting with individuals from a range of socio-economic, religious and ethnic backgrounds – and learning to understand, accept and embrace differences – a shared set of experiences and aspirations for Malaysia’s future can be built. The Ministry aspires to create a system in which students have opportunities to build these shared experiences and aspirations that form the foundation for unity.
- Efficiency: The Malaysian education system has always been well funded, yet improvements in student outcomes have not always matched the resources channelled into the system. Although the Government will maintain current levels of investment, the aspiration is to further maximize student outcomes within the current budget levels.

Eleven shifts to transform the education system are planned:

Shift 1: Provide equal access to quality education of an international standard.

Shift 2: Ensure every child is proficient in Malaysian and English languages.

Shift 3: Develop values-driven Malaysians.

Shift 4: Transform teaching into the profession of choice.

Shift 5: Ensure high-performing school leaders in every school.

Shift 6: Empower JPNs (National Head Office), PPDs (District Education Office) and schools to customize solutions based on need.

Shift 7: Leverage ICT to scale up quality learning across Malaysia.

Shift 8: Transform Ministry delivery capabilities and capacity.

Shift 9: Partner with parents, community, and private sector at scale

Shift 10: Maximise student outcomes for every ringgit.

Shift 11: Increase transparency for direct public accountability (MOE, 2012).

Philippines

Goals

- a. Promote relevant and quality higher education (higher education institutions and programs are at par with international standards and graduates and professionals are highly competent and recognized in the international arena).
- b. Ensure that quality higher education is accessible to all who seek it, particularly those who may not be able to afford it.
- c. Guarantee and protect academic freedom for continuing intellectual growth, advancement of learning and research, development of responsible and effective leadership, education of high-level professionals and the enrichment of historical and cultural heritages.
- d. Commit to a moral ascendancy that eradicates corrupt practices, institutionalizes transparency and accountability and encourages participatory governance in the Commission on Higher Education and the subsector.

Objectives

- a. Improve the relevance of higher education institutions, programmes, systems and research to respond to the thrusts of the Philippine Development Plan, 2011–2016.
- b. Upgrade the quality of higher education institutions, programmes and systems in the country towards achieving international standards.
- c. Broaden access to quality higher education of those who seek it.
- d. Efficiently and effectively manage the higher education system, ensuring transparency and integrity in its programmes and activities as its commitment to moral ascendancy.
- e. Strengthen the Commission on Higher Education and other major stakeholders (CHE, undated).

Annex II

Country-specific education challenges (non-TVET)

Challenges for Cambodia

According to the International Reading Association (2008), “Monitoring improvements and education standards remains weak in the absence of: (i) systematic and functional linkages and efficient enforcement of school, teacher, and student performance monitoring; (ii) facility development; (iii) need-based teacher development and deployment; (iv) curriculum and textbook development, printing, and distribution; (v) student promotion and examination standards; and (vi) timely cash disbursements. Currently, the Ministry has only 68 trained secondary education inspectors, who lack the means to monitor 25,107 secondary teachers in 810 schools. Teacher quality is also hampered by their inadequate qualifications. For example, 34.5 per cent of teachers in remote areas, 6.4 per cent in rural areas and 4.2 per cent in urban areas have not received an education beyond the primary level. Schools at all levels face a shortage of textbooks and teachers’ guides. In 2004/2005, only 24.5 per cent of teachers at the primary level and 2.6 per cent at the lower secondary school level had received teachers’ guides.”

Challenges for the Lao People’s Democratic Republic

According to the International Reading Association (2008), “The main challenge for Lao PDR is its acute shortage of qualified teachers in many districts; approximately 20 per cent of primary school teachers are unqualified to teach. About 16,300 of 27,600 (approximately 60 per cent) primary school teachers have less than the current qualification to teach. Of these 16,300, about 6,400 teachers in primary education have no teacher training at all, and about 9,900 teachers are underqualified. At the lower secondary level, about 5,450 of 9,800 teachers are either unqualified or underqualified, and only about 30 per cent have adequate pre-service teacher training offered at eight teacher training colleges in the country. Even trained teachers’ skills and competencies are limited and rote learning approaches are still often used. Too few Pedagogy Advisers have too many schools to cover, resulting in insufficient ongoing follow-up and support to teachers.”

Challenges for Malaysia

According to the International Reading Association (2008), “The government plans to raise education in Malaysia to world standards. In 2006, teacher-training colleges were upgraded to the status of institutes and they are now known as Institute of Teacher Education (ITE). The aim of establishing ITEs is to further enhance the quality of teacher education in Malaysia. Lecturers in ITEs are expected to have at least a master’s degree in their respective disciplines and are encouraged to obtain a PhD in their respective fields. Addressing the needs of the four types of schools that coexist in the Malaysian education system is a real challenge for the TED [Teaching Education Division] division. The school types include the National

Schools, the Chinese Schools, the Tamil schools, and the Islamic religious schools.³² ITEs have to provide training in the respective languages while teaching other related subjects such as sociology and psychology in the national Malay language. As a result the universities have altered their approach to teacher education and training based on the four different types of schools. The current trend is to move to more English instruction; the ITEs and universities need to provide English language courses for would-be English teachers and non-English teachers as it is compulsory for teachers of all four types of schools to be proficient in English.”

Challenges for Singapore

According to the Yam (2010), Singapore’s education challenges seem vastly different from those of the other member countries. Teachers and students are reputed to be under a lot of stress due to aggressive streaming and the branding and ranking of schools. The “climate of elitism” that this produces has not appeared to produce the kinds of creative innovators the society says it needs to become the world’s leading green city. By comparison, Finland has approximately the same population as Singapore. Yet Finland comes in first and second in PISA (Singapore ranks fourth in the world). Finnish students spend at most an hour after school doing homework, while Finnish teachers work about half the amount of time US teachers work (1,100 hours). In school, Finnish students learn in a relaxed atmosphere, yet the country has produced four Nobel Prize winners (Singapore has yet to win one). In contrast, students and teachers in Singapore reportedly feel the pressure to perform and succeed, resulting in a climate of elitism in the schools.

Challenges for Thailand

According to the International Reading Association (2008), “Teacher education in Thailand consists of pre-service and in-service training for elementary, secondary and tertiary levels of education. Approximately 85 per cent of the graduates are teaching in public schools, while the remaining are in private schools. Most primary teachers (about 84.7 per cent) hold a four-year bachelor’s degree or higher, while 95.9 per cent of teachers in secondary schools hold the same degree, but many have training in a specialized subject.” Despite attempts to attract and retain teachers, teacher shortages in primary and secondary schools continue to exist. To alleviate the problems, the Ministry of Education (MOE) proposes to refill up to 50–100 per cent of the vacancies. More pre-service and in-service training programmes are needed to increase the number of teachers in subject areas, such as science, mathematics, and foreign languages and for students with disabilities (special educational needs). Low economic status and low salaries and heavy workloads prevent teachers from performing effectively. The MOE is working on procedures to diminish these issues.

Challenges for Viet Nam

According to the International Reading Association (2008), “The main concern in Viet Nam is the lack of teachers qualified with the minimum standards so that Viet Nam can achieve its objective of expanding primary education. More flexibility has been introduced to make recruitment of teachers easier, such as provisional teachers who have not yet participated in any training course. In addition, curricula, teaching materials and modes of delivery are only slowly becoming modernized. The rate of primary school teachers

³² The Malay schools use Bahasa Malaysian for instruction, the Chinese schools use Mandarin, the Tamil schools use Tamil, and the Islamic Schools use Malay and Arabic.

who are not yet qualified is rather high at 15 per cent. Teachers of arts, singing-music, physical education, and optional subjects such as computer and foreign languages are strongly needed. Although the number of teachers meeting training standards is increasing, their professional skills and methodologies are still weak. Lecturers in the pedagogical institutions for training primary teachers have not yet been highly qualified and particularly lack practical experience”

Table A1. Country comparison table – Economy

Note: *estimate; ** data from 2000.

INDICATOR	ASEAN-6						CLMV			
	Brunei Darussalam	Indonesia	Malaysia	Philippines	Singapore	Thailand	Cambodia	Lao PDR	Myanmar	Viet Nam
FDI, net inflows, % GDP (2011) ³³	7.4	2.3	4.2	0.8	22.8	2.3	7.0	3.7	N/A	6.0
Per capita income, current US\$ (2012)	41 127	3 557	10 381	2 587	51 709	5 480	946	1 399	N/A	1 596
Agriculture, % GDP (2011)	1	15	12	13	0	12	37	31	57**	22
Gross agriculture production index number (2011) ³⁴	132.9	125.0	121.3	115.1	101.1	118.6	154.5	146.6	133.3	127.3
Textiles and clothing, % value added in manufacturing (2009)	N/A	11	2	7**	0	12**	87**	22**	N/A	21**
World Economic Forum stages of development ³⁵	Transition from Stage 1 to 2	Stage 2 (Efficiency driven)	Transition from Stage 2 to 3	Transition from Stage 1 to 2	Stage 3 (Innovation driven)	Stage 2 (Efficiency driven)	Stage 1 (Factor driven)	N/A	N/A	Stage 1 (Factor driven)
Gender Inequality Index, value/rank of 186 (2012) ³⁶	N/A	0.494 / 106	0.256 / 42	0.418 / 77	0.101 / 13	0.360 / 66	0.473 / 96	0.483 / 100	0.437 / 80	0.299 / 48
Top sector investments and priorities ^{37,38,39,40,41,42,43}	<ul style="list-style-type: none"> ▪ Agriculture ▪ Non-oil & -gas industries ▪ Knowledge-based industries 	<ul style="list-style-type: none"> ▪ Agriculture ▪ Steel ▪ Food & beverage 	<ul style="list-style-type: none"> ▪ Oil & gas ▪ Palm oil & related products ▪ Financial services 	<ul style="list-style-type: none"> ▪ IT & business processing outsourcing ▪ Electronics ▪ Shipbuilding 	<ul style="list-style-type: none"> ▪ Financial services ▪ Biotechnology ▪ Chemical & petrochemical industries 	<ul style="list-style-type: none"> ▪ Automotive ▪ Electrical & electronics ▪ Hospitality 	<ul style="list-style-type: none"> ▪ Agriculture ▪ Electronic & machinery assembly ▪ Physical infrastructure 	<ul style="list-style-type: none"> ▪ Agriculture ▪ Electronic & machinery assembly ▪ Hospitality 	<ul style="list-style-type: none"> ▪ Agriculture ▪ Forestry ▪ Energy 	<ul style="list-style-type: none"> ▪ Garments & textiles ▪ Shoes & leather ▪ Plastics

³³ World Bank, 2013. Same source for per capita income, agriculture as % GDP and textiles and clothing as % value added in manufacturing.

³⁴ FAO, 2013. Base: 2004–06 = 100.

³⁵ World Economic Forum, 2013.

³⁶ UNDP, 2013.

³⁷ Economist Intelligence Unit, 2012.

³⁸ Economic Planning Unit, 2010.

³⁹ World Bank, 2012a.

⁴⁰ MPI, 2011.

⁴¹ Royal Government of Cambodia, 2009.

⁴² UNEP, 2009.

⁴³ Department of Foreign Affairs and Trade, 2013.

Table A2. Country comparison table – Employment

INDICATOR	ASEAN-6						CLMV			
	Brunei Darussalam	Indonesia	Malaysia	Philippines	Singapore	Thailand	Cambodia	Lao PDR	Myanmar	Viet Nam
Unemployment rate, % (2011) ⁴⁴	2.7*	6.6	3.2*	7.0	2.0	0.7	N/A	N/A	4.0*	4.5*
Employment to population ratio, age 15+, total (female, male) (2011) ⁴⁵	62.9 (52.8, 72.9)	62.7 (46.8, 79.0)	58.6 (42.4, 74.5)	59.9 (46.2, 73.8)	63.6 (53.8, 73.5)	71.2 (63.4, 79.5)	81.2 (77.6, 85.1)	76.9 (75.6, 78.2)	75.8 (72.2, 79.5)	75.3 (71.3, 79.5)
Employment to population ratio, age 15-24, total (female, male) (2011) ⁴⁶	40.6 (36.6, 44.3)	39.6 (30.5, 48.5)	35.1 (28.6, 41.4)	39.6 (30.0, 48.9)	35.0 (32.9, 36.9)	46.3 (38.3, 54.0)	69.6 (70.1, 69.1)	61.4 (66.7, 56.2)	52.5 (51.9, 53.1)	58.2 (55.8, 60.5)
Employment in agriculture, % of total employment (2011) ⁴⁷	N/A	35.9	13.3 [^]	32.2 [°]	20.9 ⁻	38.7	55.8	N/A	N/A	47.4 [°]
Employment in informal economy, % non-agricultural employment, total (female, male) ^{48,49}	N/A	61.6 (64.0, 60.1) ⁻	N/A	57.5 (57.0, 58.0) ⁻	N/A	42.3 (43.5, 41.2) [^]	N/A	N/A	N/A	68.2 (66.8, 69.4) ⁻
Small and medium-sized enterprises, % GDP (2010) ^{50,51,52,53,54}	58	55	32	36	60	37*	65	N/A	N/A	40
Small and medium-sized enterprises, % total employment	22	97	56	61	70	78	85	83	70	77

Note: ** data from 2000–02; ⁻ data from 2009; [^] data from 2010; [°] data from 2012.

⁴⁴ IMF, 2013.

⁴⁵ World Bank, various years.

⁴⁶ World Bank, various years.

⁴⁷ ILO, 2011.

⁴⁸ ILO, 2011.

⁴⁹ ADB, 2011.

⁵⁰ Calverley, 2010.

⁵¹ ASEAN Secretariat, 2011.

⁵² TOSMEP, 2011.

⁵³ Runckel, 2011.

⁵⁴ UNDP, 2009.

Table A3. Country comparison table – Education

INDICATOR	ASEAN-6						CLMV			
	Brunei Darussalam	Indonesia	Malaysia	Philippines	Singapore	Thailand	Cambodia	Lao PDR	Myanmar	Viet Nam
Primary education completion rate, relevant age group, % total (female, male) (2011) ⁵⁵	119.5 (119.5, 119.5)	107.8 (108.9, 106.7)	98.9 (98.9, 99.0) ^o	91.6 (94.2, 89.0)	N/A	87.6 (87.0, 88.2) ^a	89.9 (89.7, 90.1)	92.6 (89.9, 95.3)	103.6 (106.2, 101.1)	104.3 (N/A, N/A)
Survival rate to last grade of secondary, % total (female, male) ⁵⁶	99.4 (99.8, 99.1)	94.7 (94.5, 94.9)	90.7 (93.4, 88.1) ⁻	86.2 (89.6, 82.8) ⁺	99.7 (100, 99.5)	N/A	65.8 (64.4, 67.1)	68.7 (69.7, 67.8)	69.3 (73.9, 64.9) ⁻	85.9 (N/A, N/A)
Tertiary gross graduation ratio, total (female, male) (2011) ⁵⁷	11.2 (14.6, 6.9)	12.4 (N/A, N/A)	20.4 (26.3, 14.6) [^]	19.3 (24.4, 14.4) ⁺	N/A	29.0 (35.1, 23.1) ⁺	4.2 (2.6, 5.8) ⁺	6.6 (4.1, 9.0)	13.2 (17.2, 9.3)	10.1 (10.7, 9.6) [^]
Tertiary education gross enrolment ratio, total (female, male) (2011) ⁵⁸	19.6 (24.8, 14.7)	24.9 (23.2, 26.6)	42.3 (48.6, 36.2) [^]	28.2 (31.3, 25.3) ⁻	N/A	46.4 (53.5, 39.6) ^o	14.5 (11.1, 17.8)	17.7 (15.0, 20.3)	14.8 (17.1, 12.5)	24.4 (24.5, 24.2)
Effective transition rate from primary to secondary, total (female, male) ⁵⁹	99.9 (99.9, 100.0) [^]	89.8 (96.4, 84.1) [^]	99.2 (98.5, 100.0) ⁻	98.9 (97.8, 100.0) ⁺	90.8 (93.9, 88.0) ⁺	N/A	81.9 (82.4, 81.3) [^]	82.8 (80.8, 84.6) [^]	77.1 (77.0, 77.1) ⁻	100.0 (N/A, N/A) [^]
English language proficiency, rank out of 54 (2012) ⁶⁰	not ranked	27	13	not ranked	12	53	not ranked	not ranked	not ranked	31
Literacy rates, age 15+, % total (female, male) ⁶¹	95.2 (96.8, 93.6) [^]	92.6 (89.7, 95.6) ⁻	93.1 (90.7, 95.4) [^]	95.4 (95.8, 95.0) ⁺	95.9 (93.8, 98.0) [^]	93.5 (91.5, 95.6) ^o	73.9 (65.9, 82.8) ⁻	72.7 (63.2, 82.5) ^o	92.3 (89.9, 94.8) [^]	93.2 (91.1, 95.3) [^]

⁵⁵ World Bank, various years.

⁵⁶ World Bank, various years.

⁵⁷ World Bank, various years.

⁵⁸ World Bank, various years.

⁵⁹ World Bank, various years.

⁶⁰ Education First, 2012.

⁶¹ World Bank, various years.

INDICATOR	ASEAN-6						CLMV			
	Brunei Darussalam	Indonesia	Malaysia	Philippines	Singapore	Thailand	Cambodia	Lao PDR	Myanmar	Viet Nam
PISA: Mean performance on the reading/mathematics/science scale (15 year olds) (2009) ⁶²	N/A	402 / 371 / 383 [†]	414 / 404 / 422 [†]	N/A	526 / 562 / 542 [‡]	421 / 419 / 425 [†]	N/A	N/A	N/A	joined 2012
Unemployment rate for persons with primary level education or less, % total (female, male) ⁶³	N/A	5.8 (6.7, 5.3) ⁺	2.1 (2.2, 2.0) ⁺	3.2 (2.5, 3.6) ⁺	4.1 (4.7, 3.7) [°]	0.5 (0.4, 0.6) ^x	N/A	N/A	N/A	N/A
Unemployment rate for persons with secondary level education, % total (female, male) ⁶⁴	N/A	15.3 (19.1, 13.4) ⁺	3.6 (3.9, 3.5) ⁺	8.5 (8.4, 8.6) ⁺	3.8 (4.4, 3.4) [°]	0.9 (0.8, 0.9) ^x	N/A	N/A	N/A	N/A
Unemployment rate for persons with tertiary level education, % total (female, male) ⁶⁵	N/A	12.0 (14.1, 10.3) ⁺	3.9 (4.4, 3.5) ⁺	10.5 (9.5, 11.4) ⁺	3.3 (3.6, 3.0) [°]	1.4 (1.4, 1.3) ^x	N/A	N/A	N/A	N/A

Note: [†]statistically below OECD average; [‡]statistically above OECD average; [°]data from 1999; [°] data from 2005; ⁺ data from 2008; ⁻ data from 2009; [^] data from 2010; ^x data from 2011; [°] data from 2012.

⁶² OECD, 2009.

⁶³ ILO, 2011.

⁶⁴ ILO, 2011.

⁶⁵ ILO, 2011.

Table A4. Country comparison table – Workforce development

INDICATOR	ASEAN-6						CLMV			
	Brunei Darussalam	Indonesia	Malaysia	Philippines	Singapore	Thailand	Cambodia	Lao PDR	Myanmar	Vietnam
Quality of management schools on scale 1–7; rank of 148 countries (2013) ⁶⁶	4.5 / 52	4.4 / 58	4.9 / 35	4.7 / 39	5.7 / 6	4.5 / 53	3.7 / 108	4.1 / 82	2.7 / 141	3.3 / 125
Extent of staff training, scale 1–7; rank of 148 countries (2013) ⁶⁷	4.6 / 26	4.6 / 25	5.1 / 11	4.6 / 27	5.2 / 6	4.2 / 50	4.0 / 66	4.2 / 55	2.6 / 146	3.7 / 98
Local availability of specialized research and training services, scale 1–7; rank of 148 countries (2013) ⁶⁸	3.9 / 87	4.5 / 48	5.3 / 20	4.4 / 51	5.4 / 14	4.3 / 64	3.9 / 90	3.9 / 88	2.9 / 140	3.3 / 125
TVET enrolment total (female, male), % of total secondary enrolment ⁶⁹	8.6 (7.8, 9.3) [*]	18.0 (15.4, 20.5) [*]	6.2 (5.3, 7.1) [^]	N/A	11.6 (8.4, 14.5) ⁻	15.5 (13.0, 18.0) [*]	2.3 (2.4, 2.2) ⁺	0.44 (0.45, 0.43) [*]	N/A	8.0 (8.4, 7.5) [^]
Top-three growth occupations (2000–08) ⁷⁰	N/A	<ul style="list-style-type: none"> ▪ Production & related ▪ Service ▪ Professional, technical & related 	<ul style="list-style-type: none"> ▪ Service & shop/market sales ▪ Technicians & associate professionals ▪ Professionals 	<ul style="list-style-type: none"> ▪ Elementary occupations ▪ Legislators, senior officials & managers ▪ Service & shop/market sales 	<ul style="list-style-type: none"> ▪ Professionals ▪ Legislators, senior officials & managers ▪ Technicians & associate professionals 	<ul style="list-style-type: none"> ▪ Service & shop/market sales ▪ Professionals ▪ Craft & related trades 	<ul style="list-style-type: none"> ▪ Clerks ▪ Professionals ▪ Technicians & associate professionals 	N/A	N/A	<ul style="list-style-type: none"> ▪ Craft & related trades ▪ Professionals ▪ Technicians & associate professionals

Note: *data from 2008; - data from 2009; ^ data from 2010; * data from 2011

⁶⁶ World Economic Forum. 2013.

⁶⁷ World Economic Forum. 2013.

⁶⁸ World Economic Forum. 2013.

⁶⁹ World Bank, various years.

⁷⁰ ILO, 2011.

Table A5. Country comparison table – Educational institutions

INDICATOR	ASEAN-6						CLMV			
	Brunei Darussalam	Indonesia	Malaysia	Philippines	Singapore	Thailand	Cambodia	Lao PDR	Myanmar	Viet Nam
Public spending on education, % GDP ⁷¹	3.3 ^o	2.8 ^x	5.1 [^]	2.7 ⁻	3.3 ^o	5.8 ^x	2.6 [^]	3.3 [^]	0.8 ^x	6.6 [^]
Public spending on education, % total gov't expenditure	13.7 ^x	15.2 ^x	21.3 [^]	15.0 ⁻	21.4 ^x	29.5 ^x	12.4 ⁱ	13.2 [^]	18.1 [*]	19.8 ⁺
Primary private enrolment, % total	36.6 ^x	17.1 ^x	1.0 [^]	8.1 ⁻	7.6 ⁻	18.4 ⁻	1.5 ^x	3.8 ^x	N/A	0.5 ^x
Secondary private enrolment, % total	13.5 [^]	41.4 ^x	4.5 [^]	20.0 ⁻	6.4 ⁻	16.4 ^o	N/A	3.0 ^o	N/A	N/A
Primary pupil–teacher ratio	11.3 ^x	15.9 ^x	12.7 [^]	31.4 ⁻	17.4 ⁻	16.0 ⁺	47.3 ^x	26.8 ^x	28.2 [^]	19.6 ^x
Secondary pupil–teacher ratio	9.9 ^x	14.8 ^x	13.7 [^]	34.8 ⁻	14.9 ⁻	20.0 ^x	28.9 ⁱ	19.9 ^x	34.1 [^]	N/A
Duration of compulsory education, years	9	6	6	7	6	9	9	5	5	9
Trained primary teachers, % total	88.3 ^x	N/A	N/A	N/A	94.3 ⁻	N/A	98.9 ^x	93.8 ^x	99.9 [^]	N/A
Trained secondary teachers, % total	90.9 ^x	N/A	N/A	N/A	91.6 ⁻	N/A	N/A	87.3 ⁺	98.8 [^]	N/A
Quality of educational system, scale 1–7; rank of 148 countries (2013) ⁷²	4.4 / 32	4.3 / 36	5 / 19	4.3 / 40	5.8 / 3	3.6 / 78	3.6 / 76	4.0 / 57	2.7 / 125	3.4 / 95

Note: *estimate; ^o data from 1999; ^o data from 2005; ⁱ data from 2007; ⁺ data from 2008; ⁻ data from 2009; [^] data from 2010; ^x data from 2011; ^o data from 2012.

⁷¹ UNESCO, various years.

⁷² World Economic Forum, 2013.

Annex III

Changes in occupations in ASEAN Member States

An overview of skills development pathways in Asia

Figure 1.3. Change in shares of occupation between 2000* and 2010*

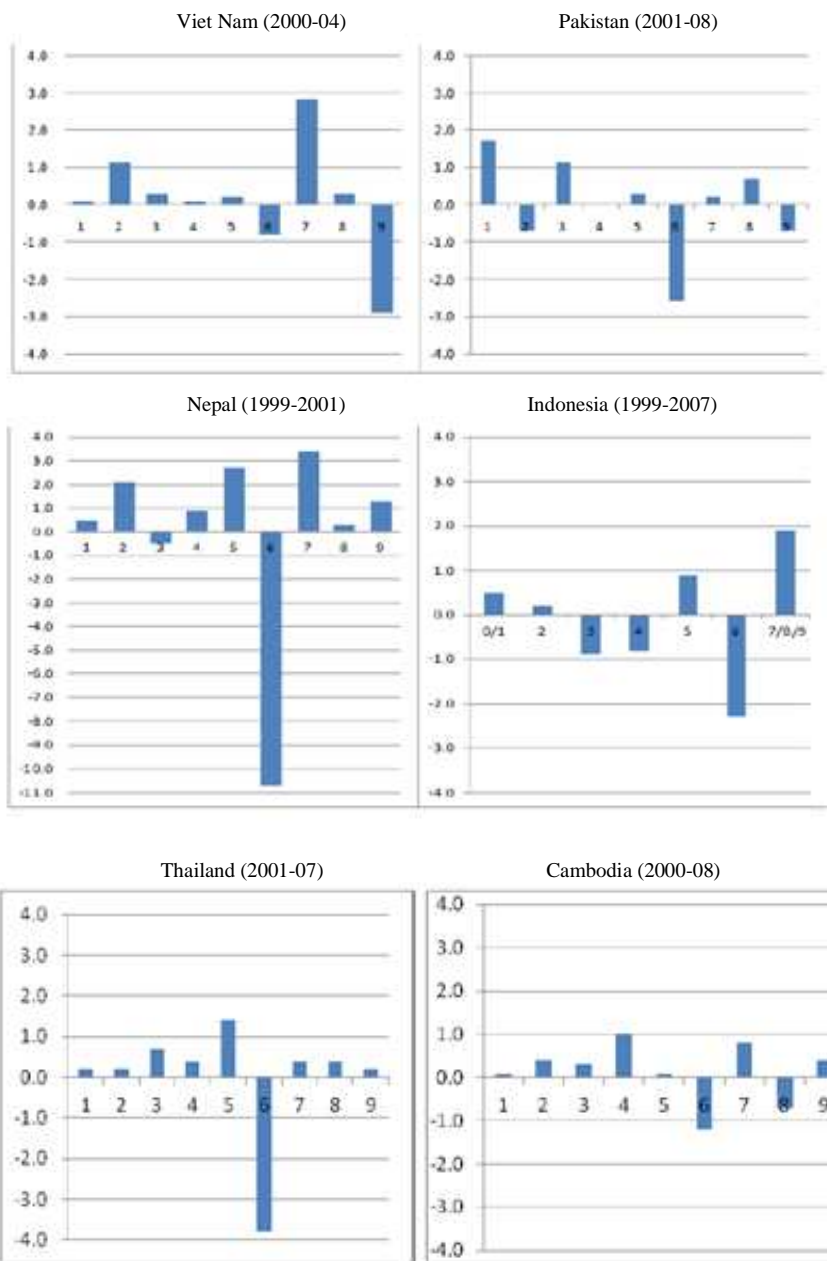


Figure 1.3. Change in shares of occupation between 2000* and 2010* (cont'd)

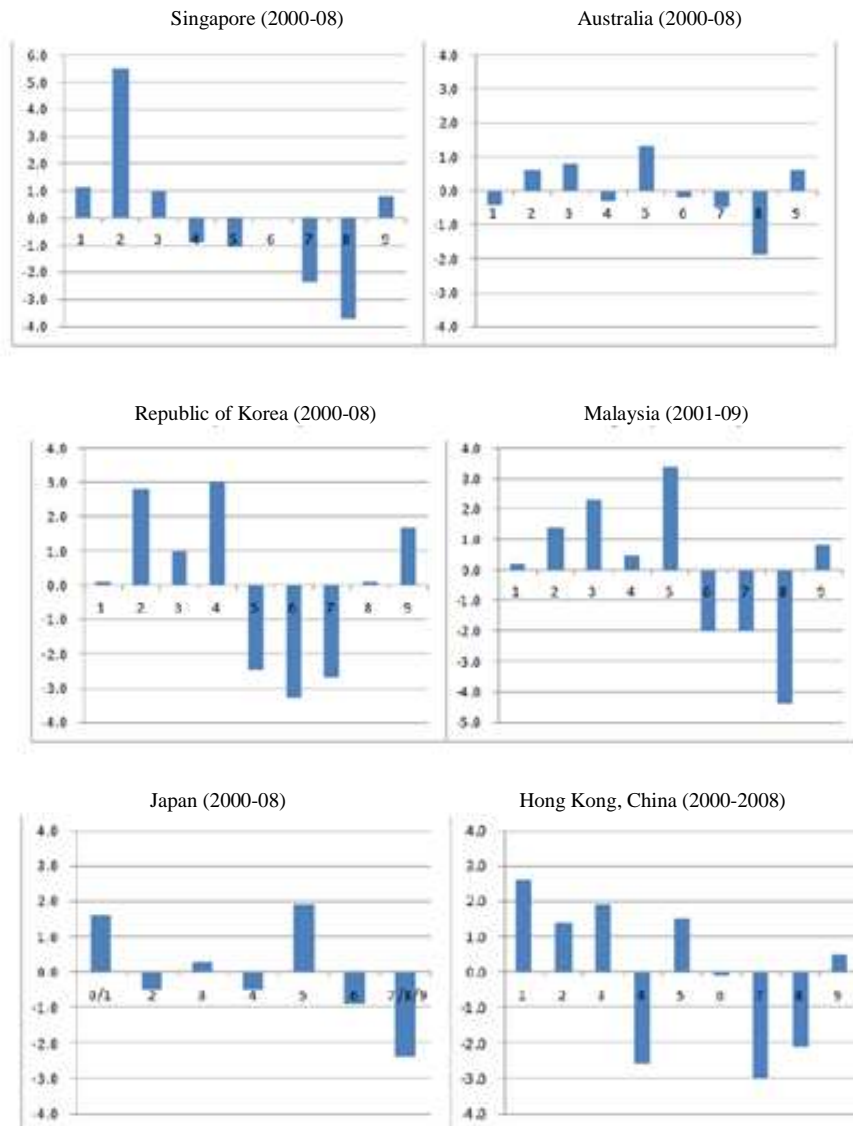
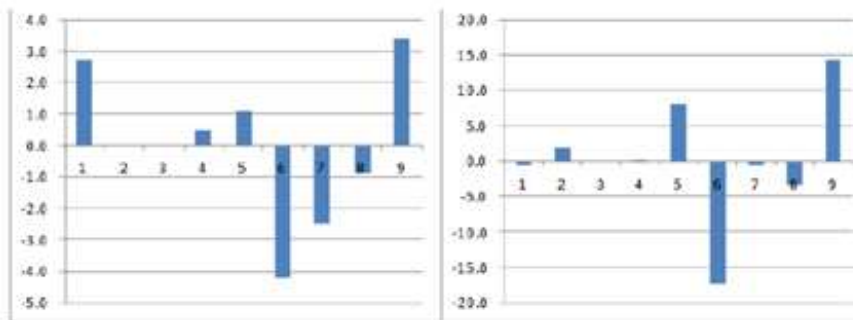


Figure 1.3. Change in shares of occupation between 2000* and 2010* (cont'd)

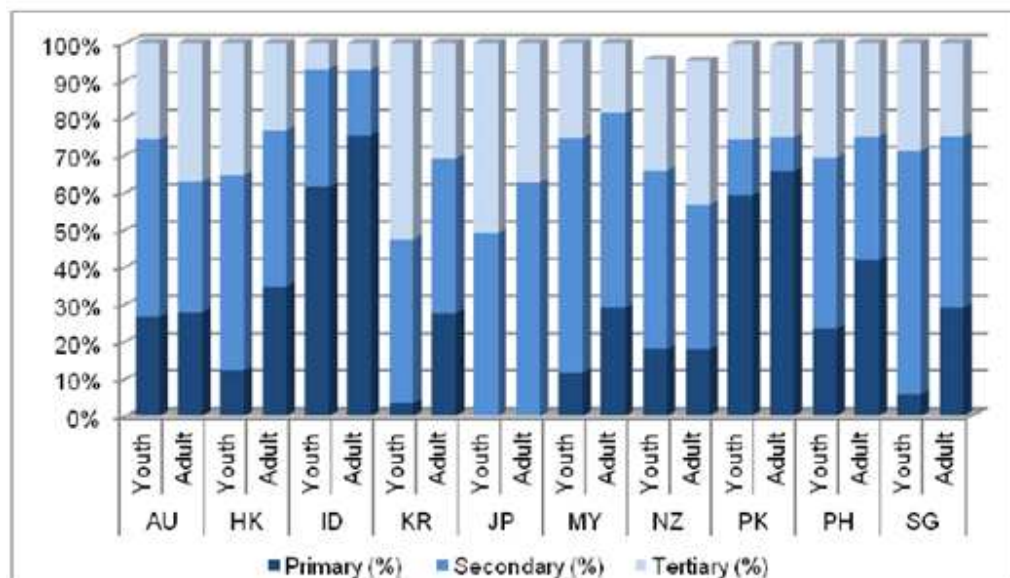


Notes: ISCO-88 occupation categories: 1. legislators, senior officials and managers; 2. professionals; 3. technicians and associate professionals; 4. clerks; 5. service workers and shop and market sales workers; 6. skilled agricultural and fishery workers; 7. craft and related trades workers; 8. plant and machine operators and assemblers; and 9. elementary occupations.

Data for Indonesia and Japan are in ISCO-68 occupation categories as follows: 0/1. professional, technical and related workers; 2. administrative and managerial workers; 3. clerical and related workers; 4. sales workers; 5. service workers; 6. agricultural, forestry, fishermen; 7/8/9. production and related workers.

Source: Based on ILO (2011), *Key Indicators of the Labour Markets (KILM)*, 7th edition, ILO, Geneva.

Figure 1.4 Educational attainment by labour force (age cohort), 2008



Notes: Australia (AU); Hong Kong, China (HK); Indonesia (ID); Japan (JP); Republic of Korea (KR); Malaysia (MY); New Zealand (NZ); Pakistan (PK); The Philippines (PH); Singapore (SG). The "youth" category is aged 15-29 and "adult" aged 30 and over, except for Japan and Singapore where youth is 15-35 years old and adult is 35 and over, and for Australia where adult is 30-64. ILO's *Key Indicators of the Labour Markets (KILM)* primary level includes ISCED-97 level 1) basic education; 2) lower secondary education; secondary level includes; 3) upper secondary; 4) post-secondary non-tertiary; and tertiary includes 5) first-stage tertiary; and 6) second-stage tertiary education. For Japan, "primary" includes secondary. Data for Republic of Korea is for 2007.

Source: Based on ILO (2001), *Key Indicators of the Labour Markets (KILM)*, 7th edition, ILO Geneva

Annex IV

Specifications for TVET reform based on best practice experience

Best practice lessons from countries where TVET works and is considered highly effective teaches that such training should be the responsibility of one public sector agency and supported across various ministries, such as education, science and technology, labour, commerce, youth, women and vulnerable populations. The following recommendations are designed to help Member States improve the governance, relevance, quality, effectiveness, reach and reputation of their TVET systems. To a large extent, developing a viable systems approach requires social organizing as well as technical expertise; mobilizing social partners or stakeholders, enrolling them in developing a shared vision and developing shared accountability mechanisms. The following recommendations are a beginning list and should be supplemented by inputs from experts in Member States and donor institutions who have been hard at work on improving TVET in the region's countries:

- Invest in TVET across ministries.
- Use various means of co-financing or cost-recovery for financing TVET, including employer subsidies.⁷³
- Embed appropriate technology into teaching and learning tools at TVET schools; use tools similar to those used by industry.
- Build strategic alliances with employers. These are most effective by specific industry sector, such as automotive, textile and garments, advanced manufacturing, medical, etc.
- Embed soft skills in all learning/training processes and make sure that instructors have these soft skills.
- Ensure that critical cross cutting competencies are learned in the TVET curriculum. These include core processes that undergird the production of goods and services, such as ICT, soft skills, STEM skills, art and design (as these encourage creativity and thinking “outside the box”).
- Reform curricula and use skill standards and competency maps as a baseline for the reform process.
- Improve the reputation of TVET through social marketing. Consider countrywide workshops.⁷⁴

⁷³ In many countries, employers co-finance the TVET system, often through a tax on payroll.

⁷⁴ Nancy R. Lee is the acknowledged “guru” of social marketing. She has systematically trained public sector agencies in her State, other U.S. states and in many countries throughout the world. For more information: www.sagepub.com/authorDetails.nav?contribId=522624 [31 Oct. 2014].

Annex V

ASEAN countries – Skills mismatch

Brunei Darussalam

One of the causes of unemployment is the lack of labour skills and low education attainments among the unemployed youth. Hence the objective of the Government's effort is to provide free training to upgrade and update unemployed youth with marketable skills for the private sector, based on the skills required. Free TVET training courses, such as cashier, customer services, business English and ICT skills, were identified as suitable for the unemployed youth with minimum education levels (Hong-Hut, 2009).

Cambodia

In a World Bank survey, 22 per cent of Cambodia's foreign firms identified skills as a "severe" or "very severe" constraint to their business. Employers point to a structural imbalance in skills supply, including a relative shortage of vocational training graduates compared with university graduates. In a new survey of 78 employers by HRINC (Cambodia) Co. Ltd⁷⁵ (2011), 73 per cent of employers reported that university graduates do not have the right skills (while only 12 per cent said that there are not enough university graduates); 62 per cent of employers noted that vocational training graduates do not have the right skills (while 38 per cent suggested that there are too few vocational graduates). Moreover, 31 per cent of employers noted that it is difficult to train or upgrade their existing workforce – this may reflect not only a low quality and availability of training programmes but also a weak skills foundation on which to build.

Employers perceive the sharpest skill shortages in senior management; they identify soft skills as the most important type of skills lacking in employees. In the HRINC 2011 survey, more than 70 per cent of employers reported a major shortage in management skills, 36 percent in middle management and supervisor skills, and 34 per cent in professional staff skills. Among the most deficient soft skills, 52 per cent of employers cited work attitudes in unskilled workers; 45 per cent cited decision-making skills in semi-skilled workers; and 64 per cent mentioned analytical skills in skilled workers. Employers complained about difficulties in finding employees with not only specific vocational skills but also basic skills, such as literacy and numeracy (World Bank, 2012b).

Indonesia

According to a World Bank survey (2008) distributed to the nation's employers, core skills – numeracy, literacy, and other generic skills – and practical experience are perceived to be nearly as important as theoretical knowledge for professionals and skilled workers. However, the survey goes on to reveal that such skills are often lacking among managers and professionals, with English and computer competencies particularly scarce. The survey also found that behavioural skills were especially desirable in managers yet nearly one third of employers thought there was a gap among managers and professionals. The survey findings indicate that nearly all employers from manufacturing and services expect skill requirements in their industries to rise, indicating ever-worsening skill shortages.

⁷⁵ World Bank: *Matching aspirations: Skills for implementing Cambodia's growth strategy*, 2012, <https://openknowledge.worldbank.org/bitstream/handle/10986/13808/67349.pdf?sequence=1> [2 Jan. 2015].

According to World Bank estimates for 2010, about 55 per cent of tertiary graduates were “overqualified” in their employment, the highest such skills mismatch in South-East Asia (Cambodia is an unlucky second, with around 48 per cent of such overqualified graduates).

Youth unemployment suffers disproportionately from the skill gaps. Surveyed employers cite the youth’s lack of practical experience and the poor quality of schooling. Most likely to be unemployed are secondary school and TVET graduates – between 35 and 40 per cent of graduates aged 15 and older are expected to not find suitable employment. Women and youths from urban areas also have particular difficulty finding jobs.

Indonesia does not suffer so much from a lack of graduates but rather, it suffers from a lack of appropriately skilled workers regardless of educational attainment. Even as university enrolment and completion rates rise, highly educated labour does not necessarily correlate neatly with highly skilled labour. Serious concerns still abound over the quality and relevance of the training that new graduates receive, which falls short of employers’ expectations and needs. Additionally, companies continue to cite the lack of, and demand for, generic skills, such as behavioural skills, critical thinking, and English (EIU, 2012).

Lao People’s Democratic Republic

The effectiveness of the current TVET system is also constrained by a lack of accepted national skill standards on which defined competency-based courses and curricula can be established. In the current context, employers in the Lao People’s Democratic Republic are frequently frustrated by both the narrow pool of suitably skilled labour in the country and the inconsistent quality and coverage of so-called “certified” TVET programmes (ILO, 2011).

According to the 2010 enterprise survey carried out by the World Bank, an insufficiently skilled labour force and low productivity are major constraints for firms wanting to grow. Interviews with company managers in the garment sector have shown that though investment in training is high, labour retention is poor. The migration of skilled labour to Thailand was one reason cited by respondents. Skills deficits are also a problem in the service sector, where the lack of English language competency and the absence of tourism-related education are often cited as important constraints to the expansion of domestic ownership of firms. Perception of unskilled labour as a major constraint varies with firm size.

Lao firms, irrespective of size, offer fewer opportunities for training than firms in other countries in the East Asia and Pacific region. Exporting and non-exporting enterprises perceive the constraint of unskilled labour similarly. Foreign-owned enterprises are much more likely to regard labour as a key constraint. Such firms offer more training opportunities than domestic enterprises but less than foreign-owned firms in the region. Foreign firms may be obtaining the required skilled labour by hiring foreign workers.

Another important migration issue is a continued brain drain or migration of educated youth. This may be accounted for by the fact that the Lao labour market does not provide enough jobs for highly educated workers (UNESCO, 2013).

Malaysia

According to the Tenth Malaysia Plan, employers in both the public and private sectors and industry associations find that many graduates lack soft skills, such as a positive work ethic, communications, teamwork, decision-making and leadership skills. The Plan also acknowledged that the massive intake of students to tertiary education in recent years has not been underpinned by effective mechanisms to ensure quality education, and it has thus reduced many graduates' employability.

The brain drain has not eroded the number of available graduates in Malaysia. But it has made a substantial cut in the number of highly qualified graduates and has increased the problem of mismatch between supply and demand. The Economic Monitor emphasized that the brain drain is a symptom and not the problem. There are many push-and-pull factors that drive the migration decision. Among the key factors for Malaysians are differences in earning potential, career prospects, quality of education and quality of life. For the Malaysian Government, the bulk of the Malaysian diaspora is non-Bumiputeras; leaving the country is a way of expressing discontent with Malaysia's inclusive policies (Fleming, Søborg, 2012).

Myanmar

No information.

Philippines

Between 9.5 million and 12.5 million Filipinos (about 11 per cent of the total population) were estimated to be working outside their country in 2010. Scientists, engineers, doctors, IT specialists, accountants and even teachers are among the English-speaking talent heading abroad, largely driven by the country's low salaries. The exodus also includes an increasing number of skilled workers taking on unskilled work overseas, resulting in a brain drain, particularly in the health and education sectors.

In a 2010 World Bank survey assessing skills requirements, employers in both manufacturing and service sectors were looking for problem-solving, communications, management and other skills that will support higher productivity. Skill gaps were found to be particularly large in the service industry, export sector and technologically intensive sector, representing a serious bottleneck for innovation and productivity in the Philippines.

The Commission on Higher Education reported that a large proportion of the more than 2.9 million students enrolled for the 2010/11 academic year were still concentrated in certain courses: business administration and related courses (785,305 students, or 26.7 per cent); education, science and teacher training (400,912 students, or 13.7 per cent); and medical and health allied (363,147 students, or 12.4 per cent). It is an uneven concentration of students in these fields that contributes to a jobs–skills mismatch after graduation. Those courses that will most likely equip students with desired skills that are tailored-fit for emerging industries attract only a minimum share of student enrollees: information technology-related discipline (376,046 students, or 12.8 per cent); engineering and technology (354,218 students, or 12.1 per cent); and other disciplines (658,219 students, or 22.4 per cent).

Many findings point to the lack of relevance and quality of higher education and secondary graduates in relation to the needs of the service sector. These main findings include dissatisfaction of employers with the quality of some of the higher education and secondary graduates; low levels of certification in some

higher education fields relevant to growing service subsectors, also due to over-regulation of some professions; graduate unemployment on the rise in spite of sustained demand for higher education; evidence of education upgrading within occupations (and strong education upgrading within occupations of Filipinos overseas) suggesting a lack of relevance and quality of some university titles (but also some “education inflation”); and needs for and duration of re-training of a higher level or generalist staff, particularly strong in the service sector (EIU, 2012).

Singapore

According to the Manpower Singapore's 8th Talent Shortage Survey (2013), as the global talent shortage continues to intensify, 47 per cent of employers in Singapore are experiencing difficulty finding staff with the right skills.

Employers in Singapore had the most difficulty filling jobs in office support, supervisors and labourers in 2013 in comparison with the 2012 jobs in production operations, accounting and finance and engineers.

Over time, as the education and skill profile of the local workforce improves, human resources will need to consider a successful workforce strategy that will identify and solve current talent acquisition challenges, anticipate future challenges and put in place solutions to address them effectively. Some 54 per cent of Singaporean employers surveyed indicated they will re-examine their work models, while 41 per cent will increase their focus on improving their talent pipeline, such as building a succession management approach (Singapore Business Review, 2013).

Thailand

Nearly all firms and about a quarter of skilled workers rank skills in English and IT as most seriously lacking. Other basic academic skills, such as numerical skills, come next, as perceived by both firms and skilled workers. Skilled workers also point out weaknesses in technical skills. Both employers and employees indicate, however, that gaps in generic skills are the most pervasive – creative thinking and problem solving rank high among generic thinking skills. Among generic behavioural skills, the widest skill gaps appear in leadership, communication, time management, social skills, adaptability and teamwork.

University enrolments are on the rise, but higher education institutions are not yet succeeding at adequately improving the quality and relevance of their programmes. Technical skills and experience are becoming increasingly important in hiring decisions and Thai universities are perceived to be lacking in producing graduates that possess good language skills and technical and information technology skills.

Unemployment – while low overall for Thailand – is concentrated in high-skilled groups. Individuals with a higher education account for 90 per cent of those searching for a job longer than three months.

The growth model of Thailand is still largely based on “learning by exporting”. Thai firms adopt new technologies, often by acquiring them from a parent company, introduce new production processes; and develop new product lines. Technological innovations are limited while shortages and mismatches of skilled labour are limiting the ability of businesses to increase their productivity. An insufficient supply of qualified staff and high turnover rates not only immediately lowers their productivity but also limits

organizations' capacity and willingness to invest in training in the long run, which tends to perpetuate the vicious circle.

Looking ahead, the population growth of less than 1 per cent a year cannot provide enough new entrants to completely replace retiring workers. The labour force will only keep shrinking, or at best remain stable, and that cannot solve the shortage, especially with the current labour-intensive economic structure. Thailand's investment incentives for attracting high-technology businesses, particularly in its manufacturing sector, reflect its push towards higher productivity for which machines or technology can assist labour in production processes.

This is reflected in projections of future demand for workers by the Thailand Development Research Institute, which found a probable acute shortage of highly skilled automotive engineers, a shortage further challenged by the limited number of higher education programmes and courses available from local universities in Thailand.

Once the ASEAN free labour market is in place, probably after 2015, manufacturers of more labour-intensive products, which rely on low-skilled labour can be expected to gravitate towards more wage-competitive countries, such as Cambodia or Viet Nam. This will only make the economy more reliant on high-tech manufacturing, placing greater urgency on the tasks of supporting the growth of this sector and improving labour productivity to help Thailand-based firms remain competitive. If Thailand is able to offer attractive jobs and wages, it has the chance to draw more highly skilled graduates from across the region to fill the labour gaps. However, if real wages remain low, the best Thai graduates are likely to look to more developed ASEAN Member States for opportunities, making the situation even worse (EIU, 2012).

Viet Nam

Skills shortages have been a persistent problem due to the country's inadequate university training, as well as the existence of a brain drain problem. Shortages of technical and management skills – engineers, technicians and middle managers – have posed a major challenge for foreign investors in the country. With a push to modernize business processes and upgrade technologies across a range of sectors, the shortage of skilled workers is acute and of increasing concern for businesses.

Viet Nam lags behind its South-East Asian neighbours in terms of quality institutions. Symptomatic of a widespread weakness in research, the Vietnam National University (both Hanoi and Ho Chi Minh City campuses combined) had just 52 peer-reviewed publications in 2007, according to the Science Citation Index published by Reuters, that record compares poorly to Mahidol University in Thailand (950 articles), University of Malaya, Malaysia (504) and the University of the Philippines (220). None of Viet Nam's universities feature in QS' ranking of the top 200 Asian universities.

Few higher education institutions have international link, resulting in a relatively inward-looking academia. Most importantly, Vietnamese higher education institutions are not accountable to external stakeholders. Crucially, this includes employers. This results in a situation in which Vietnamese universities are not producing the skills that are needed for the country's continued economic progress. Surveys conducted by government-linked associations have found that as many as half of university graduates are unable to find jobs in their area of specialization.

The country is experiencing large shortages in four of six major job categories – labourers, management, engineers and skilled manual trades. There is also a shortage of low-skilled workers among customer service professionals, and medium-sized shortages of technicians. At the same time, about one in four respondents in a ManpowerGroup survey said that Vietnam workers lacked knowledge of materials, production, products and services. Roughly the same proportion indicated lack of technological expertise or an ability to innovate as barriers to recruiting.

The survey findings indicate an abundance of workers able to perform simple tasks, such as field or assembly line work, but a shortfall in a number of areas in which higher education is necessary. The shortage looms particularly large in jobs that require vocational training. The country is expected to need more blue-collar workers with the technical and computer skills to operate sophisticated machinery, train others and manage large plants, among other tasks.

The ManpowerGroup survey (2011) revealed particularly acute shortages in certain industries. For example, large shortages in technical expertise, industry knowledge and occupational health and safety procedures affected food processing. A large shortage of technical expertise was present in the health care, construction, transportation and logistics, and chemicals and fertilizer industries. Large shortages in the ability to adapt technology and occupational health and safety were a problem in the textile industry.

The skill gaps were also pervasive at the management level. These included general management and motivational skills, an ability to develop and manage resources, delegate responsibility or grasp legal or financial basics. A number of respondents said that executives also lacked foreign language proficiency. This may be largely due to the scarcity of larger, long-standing, private enterprises and well-established executive talent to model the necessary backgrounds. A slightly smaller percentage said Vietnamese workers fall short in ensuring a safe, clean work environment, adapting to new and changing situations, managing and completing tasks and absorbing and applying new information. Such skills have been increasingly important for companies to differentiate themselves and gain competitive advantage. There were also gaps in foreign language, computer and financial proficiency, innovation and the ability to motivate others. These latter two areas have been increasingly tied to success because they enable companies to solve problems and create new products and services faster than the competition.

ASEAN Economic Community 2015: Enhancing competitiveness and employability through skill development

This paper examines the skills needs in the Association of Southeast Asian Nations (ASEAN) and how Member States can strengthen their skills and training systems to benefit from emerging opportunities of integration and boost competitiveness.

Maximizing the benefits of regional integration will necessitate leveraging the knowledge, skills and creativity of ASEAN's labour force of 317 million women and men. This paper looks at statistical trends since 2005 regarding education and skills attainment, and technical and vocational education and training enrolment in ASEAN. It assesses the quality of education and vocational training and the readiness of ASEAN's labour force, including young people making the school-to-work transition, to take advantage of new opportunities in a more integrated and dynamic region. The paper also examines the challenge of skills mismatch and skilled labour shortages in the region.

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