Enhancing Mutual Recognition and Regional Cooperation for Skills and Job Qualifications in the APEC Region

Abridged Final Report

APEC Human Resources Development Working Group

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1   Executive Summary

In line with the priorities of the APEC Human Resources Development Working Group to facilitate the mobility of labor and skills development and to develop common understanding about qualifications, skills, and professional recognition, this project seeks to raise awareness regarding the achievements and best practices of existing initiatives to mutually recognize skills and job qualifications and to build human resource development (HRD) capacity among APEC member economies.

Through literature research and interviews with 16 organizations from the public and private sectors across ten APEC economies, the project has assembled eight case profiles of initiatives in the APEC region. Each initiative was chosen through a quantitative and qualitative assessment process ensuring that the selected initiatives represented best practices in multiple areas and that they could present a good mix of participating economies well-distributed both geographically and economically. The resulting group of initiatives also include efforts led by both the public and private sectors. Each initiative has been considered through the experiences of one of the APEC economies that has had a leading role in the creation or implementation of the initiative. The eight initiatives are:

<Mutual Recognition Efforts>
1.   APEC Engineer [Japan]
2.   ASEAN Mutual Recognition Arrangement (MRA) on Architectural Services [The Philippines]
3.   IT Common Examination [Japan]
4.   Washington Accord [Japan & the United States]
5.   ASEAN Qualifications Reference Framework [Malaysia]
<Capacity Building>
6.   APEC Occupational Standards Framework [Australia]
7.   Pacific Alliance [Mexico]
8.   Thailand Automotive Human Resource Development Project [Japan & Thailand]

The findings from the literature research and interviews have been consolidated to a list of common challenges and best practice recommendations for APEC economies to enhance the effectiveness of skills and job qualification recognition initiatives and related regional cooperation activities. The key findings presented in this report are listed below:

- MRAs are providing numerous benefits to the APEC region, such as increasing the quality of workers by promoting qualification systems and monitoring organizations. The process of identifying and benchmarking occupational skills has encouraged several economies to revise their standards for professional education, in order to ensure that their educational standards match or exceed the standards in other economies. MRAs and various skills development efforts have encouraged cooperation between governmental organizations, academia, and industry partners. These efforts also help international employers to identify and recruit skilled local employees in other economies by applying mutually recognized qualifications to verify skills and experiences of potential employees. While many of the ongoing and recent MRA programs studied in the current research have not yet led to significant worker mobility, the benefits to workers and employers are expected to further accrue as new MRAs and multi-economy recognition efforts within the region are adopted.

- While the primary focus of MRAs to date has been on supporting the physical mobility of workers, emphasizing other benefits of the agreements, such as those listed in the above paragraph, can help economies to build stakeholder awareness of and support for future MRAs and other recognition efforts. With recent advances in technology and business practices in mind, APEC economies should consider various ways to support cross-border business activities through the mutual recognition of qualifications, including not

only by fostering the physical mobility of workers but also by contributing to capacity building in the human resource development (HRD) field.

- Economies face several common challenges in implementing initiatives for mutual recognition of skills and job qualifications. Several initiatives noted that significant national or regional differences in standards and processes/definitions were a key challenge. Others mentioned that the lack of incentives for workers resulted in low sign-up or renewal rates for mutually recognized qualifications. In particular, the lack of clear linkages between MRAs and the immigration policies of host economies may be discouraging workers from seeking these qualifications. In addition, with a few exceptions, regional efforts can often advance only as fast as the slowest member to implement agreements, which can lead to frustration over slow timetables or perceptions that some stakeholders are being overly protective. Especially when implementation is resource-intensive, developing economies may lack the capacity to keep pace with others. For these reasons, extensive planning, flexibility, and patience are necessary virtues for all stakeholders. Referencing projects can be a long and gradual process, so it is critical to set up realistic expectations.

- Given the above challenges, in several cases project managers noted that they found the best approach to multi-economy initiatives was to start small and build up through small groups of economies with similar characteristics and priorities. This approach allowed the participating economies to validate approaches and test expectations. Having a strong foundation in place was found to be very helpful to then expand the program to include additional economies, and makes it easier to reach widespread consensus.

- Some of the key best practices that were identified in interviews include 1) involving a wide range of stakeholders in project consultations (not only internationally but also domestically, including multiple governmental departments/ministries, regulatory bodies, employer organizations, professional organizations, educational and training institutions, etc.), 2) building support for close collaboration among stakeholders through tools such as site visits and regular meetings or consultation, 3) devoting sufficient long term resources and time to initiatives, and 4) approaching capacity building and MRAs with an open mind and an adaptive approach to consensus-building.

The research findings and recommendations from this project are expected to deepen the understanding of the current status of the mutual recognition of skills and job qualifications among APEC member economies, and will provide policymakers in APEC economies with key insights and recommendations for achieving the people-to-people connectivity laid out in the "APEC Connectivity Blue Print 2015-2025" by enhancing the mutual recognition of skills and job qualifications. With the spirit of the 1995 Osaka Action Agenda, and supported by recent declarations by APEC economic leaders and statements by APEC ministers, the project seeks to assist APEC's efforts in achieving trade and investment liberalization and facilitation in the Asia and Pacific region by stimulating labor mobility and assuring labor quality.

2 Project overview

2.1 Introduction

For decades, job seekers of all levels have relied on qualifications to establish the credibility of their knowledge and skills to employers. In the context of increasing globalization and resulting freer movement of people and goods over the past two decades, economies and other entities have also tried to establish mutual recognition of qualifications across borders. The goal of these efforts is to make a qualification granted in one economy recognized in another. For this purpose, various entities, like industrial organizations, accreditation agencies, and governments, have adopted differing methods and paths to recognize varying levels and sectors of education and training, making recognition efforts heavily fragmented.

At present, in the region covered by the Asia-Pacific Economic Cooperation (APEC), there are a variety of approaches towards mutual recognition at a variety of achievement levels. Furthermore, each APEC member economy has its own perspective and agenda for this movement. For example, it is expected for industrialized economies to want a common set of quality standards applied to workers in the region to make it easier for its businesses to evaluate and hire potential employees from other economies. On the other hand, developing economies would see value in having qualifications attained locally be recognized internationally, thereby increasing the employability of their workers, either as local workers or as immigrants, in the international labor market.

In order to make viable recommendations for APEC and related economies and entities, the current research seeks to grasp the current state of the existing efforts that 1) mutually recognize qualifications or 2) build the capacity to do so. The efforts under the second category of capacity building may include those that build basis for such mutual recognition as well as ones that simply facilitate human resource development in the region. The researchers sought to evaluate these efforts in light of the various expected benefits of mutual recognition. In other words, the scope of the research was not limited to the increased mobility of workers but also included other benefits including the shift to outcome-based education, increased involvement of stakeholders, and bridging inequality among workers; all of which may contribute to APEC's goal to liberalize and facilitate trade and investment within and beyond the region.

Nevertheless, because of the aforementioned fragmentation of recognition efforts, it is very difficult to track mutual recognition agreements/arrangements (MRAs) signed between individual economy governments. Since APEC HRD is expected to review national efforts[1] in the region, the current research focuses more on regional efforts taken by international entities and a group of economies, rather than the efforts of individual economies.

APEC is facing a real test of the current global economic and geo-political climate. Doubts have been cast towards the ideal of free and open economic relations across borders, which APEC has made strenuous efforts to achieve in the past decades. Building on APEC's past work, the current research seeks to consider these circumstances and base our recommendations for APEC on the experiences of early adopters in the region, while reflecting on the lessons learned by global pioneers.

2.2 Research framework

2.2.1 Literature and interview research

From January 2017 through April 2017, the project team conducted a thorough review of available literature on the latest status of MRAs of skills and job qualifications among APEC economies. They also researched about capacity building efforts to foster such MRAs and facilitate human resource development in the region. Background literature research was conducted on global definitions of qualifications systems and mutual recognition, the history and

current status of qualifications frameworks and MRAs, expected benefits, and European experiences with mutual recognition.

In tandem with the literature research, the project team conducted expert interviews to obtain additional information and insights specific to particular case studies and research areas. For example, interview findings supported literature research on the ways that the regional efforts to mutually recognize qualifications across borders have been reflected in domestic policies and regulations in participating APEC economies. For this purpose, experts from 10 economies were consulted for their insights (see Figure 1)

Figure 1: Economies with Experts Interviewed in the Current Research

* Viet Nam is represented by a workshop speaker.
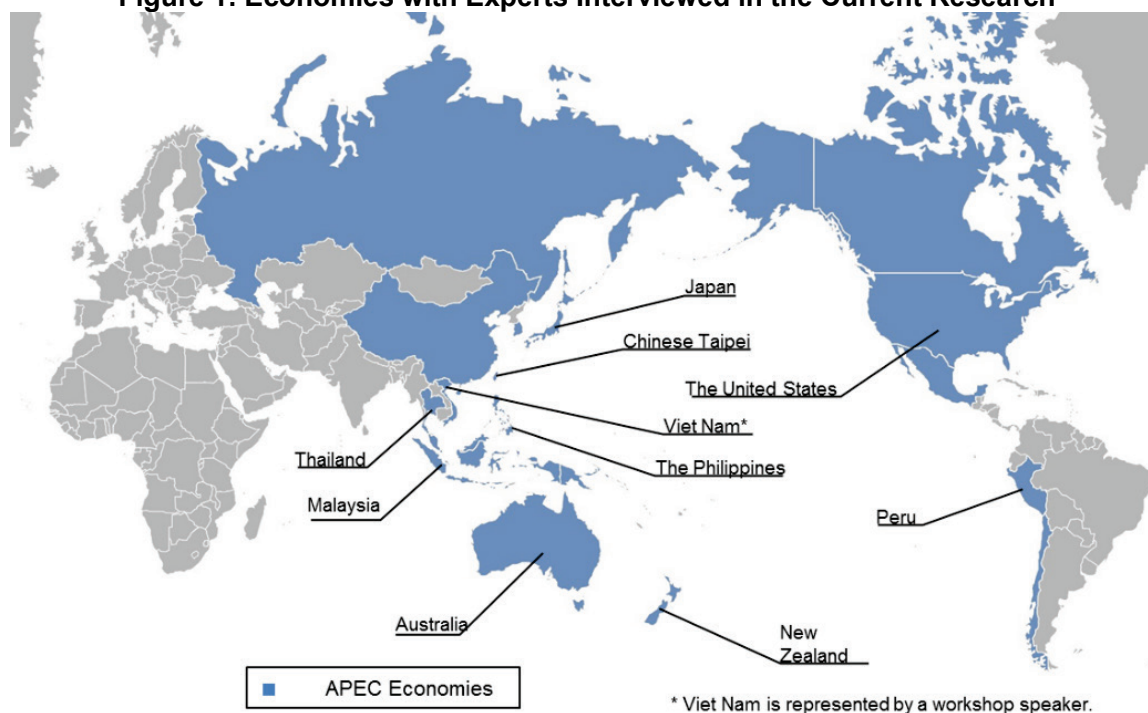
The table below provides a list of expert interviews conducted during the research, covering all of the case study initiatives.

Table 1: List of Interviews Conducted

Date	Economy	Organization	Topic Case[2]							
			A	B	C	D	E	F	G	H
3/16	Australia	Australian Government Department of Education and Training						O		
3/22								O		
3/17	The United States	Accreditation Board for Engineering and Technology (ABET)				O				
3/22	Thailand	ILO Regional Office for Asia and the Pacific		O			O			
3/24	Peru	Ernst and Young (EY)							O	
3/30	New Zealand	(former staff) New Zealand Qualifications Authority (NZQA)					O			
3/31	Australia	Private Consulting Firm with past experience in supporting TVET and MRAs					O	O		
3/31	Japan	Japan Accreditation Board for Engineering Education (JABEE)				O				
4/7	Japan	The Institution of Professional Engineers, Japan (IPEJ)	O							
4/11	Japan	Nissan Learning Center								O
4/11	Japan	Information-technology Promotion Agency, Japan (IPA)			O					
4/13	Chinese Taipei[3]	Workforce Development Agency (WDA), Ministry of Labor	O							
		General Chamber of Commerce of the R.O.C.	O							
		National Taipei University of Technology (NTUT)	O							
4/14	Malaysia	Malaysian Qualifications Agency (MQA)					O			
4/14	Japan	Research Institute of Economy, Trade and Industry (RIETI)		O						
4/19	The Philippines	Professional Regulatory Board of Architecture (PRBoA)		O						
Number of Interviewees per topic			4	3	1	2	3	3	1	1

2.2.1.1   Case Studies

Through literature research, the following 8 initiatives that encourage mutual recognition and build capacity in the APEC region were identified. For each initiative, the role and goals of a single participating economy were considered for insights on best practices at the economy level. Research for each case profile included both literature review and expert interviews.

The case profiles and their associated economies are:

<Mutual Recognition Efforts>
1. APEC Engineer [Japan]
2. ASEAN MRA on Architectural Services [The Philippines]
3. IT Common Examination [Japan]
4. Washington Accord [Japan & the United States]
5. ASEAN Qualifications Reference Framework [Malaysia]

<Capacity Building>
6. APEC Occupational Standards Framework [Australia]
7. Pacific Alliance [Mexico]
8. Thailand Automotive Human Resource Development Project [Japan & Thailand]

Case Study criteria for selection
Cases in mutual recognition and capacity building efforts that represented best practices were selected based on their measurable achievements and implications for the global community within and beyond APEC. The individual case profiles are presented in this report in Section 4 "Case Studies."

Fifteen initiatives were initially assessed regarding the quantitative data available about each initiative and their progress in implementation. The data studied included:
- Number of years in existence
- Number of APEC economies involved
- Number of non-APEC economies involved
- Number of industries studied involved from the five focus industries for this research (Manufacturing, Civil engineering, Automotive, ICT, and Service industries)
- (Only for Mutual Recognition) Number of professionals certified/ registered
- (Only for Capacity Building: Basis for Mutual Recognition) Number of reports published
- (Only for Capacity Building: Basis for Mutual Recognition) Number of workshops/events/conferences held
- Number of mentions by international organizations

This data was converted into relative scores to calculate a total score for each initiative, and the top 8 initiatives were selected as representative of best practices. This ensured that the selected initiatives represented best practices in multiple areas, and that they could present a good mix of participating economies that were well-distributed both geographically and economically. Each of the focus industry is covered by at least one initiative. Furthermore, while most of the initiatives are led by the public sector, the case profiles include some initiatives that are being led by the private sector.

3   Current Status of Mutual Recognition and Capacity Building

3.1   Global Definition of Qualifications Systems and Mutual Recognition

Qualifications are formal certificate issued by official agencies, industry organizations, or educational institutions that recognize achievement of specific learning outcomes and skills of

individuals.[4] The system of recognized learning within an economy can be defined as a **qualifications system**, regardless of whether there is an explicit framework or not.

A national qualification system is typically composed of a structure for **quality assurance** and a **qualifications framework**. Quality assurance ensures that qualifications holders meet the required standards (**occupational standards**[5]) for some occupations in an economy.[6] Qualifications frameworks are tools to develop and classify qualifications according to criteria of learning outcomes.[7] These two elements form a qualifications system. These frameworks at the economy level are called **National Qualifications Framework (NQF)**, and can include all or only certain levels of education/training, and seek to benchmark the level of learning within an economy.

Mutual recognition agreements (MRAs) seek to allow for a professional's qualification in one economy be recognized at the same level in another[8] through establishing substantial equivalence across existing qualifications systems. **Regional Qualifications Frameworks (RQFs)** serve as a translation device to reference and compare between NQFs. Goals other than labor mobility for RQFs include transparency for complex qualifications systems, credit transfer, removal of trade barriers and an impetus for economies without NQFs to establish them.[9]

3.2 Background of National and International Qualifications Systems

There have been some multilateral efforts to encourage negotiation and signing of MRAs. These efforts are often focused on specific industrial sectors, such as **manufacturing**, **civil engineering**, **automotive**, and **ICT** industries. Agreements can also recognize non-degree qualifications.[10] At first, non-degree qualifications frameworks generated little interest in the mid-1980s,[11] but eventually became viewed as a way to those without a college education to participate in training and acquire formal qualifications.[12]

3.3 Mutual Recognition in the APEC Region

The **APEC Engineer** program[13] allows for engineers' qualifications to be recognized in other APEC economies using IPEA standards. Economies in the APEC region also formed **APEC Architect**[14], an initiative to encourage MRAs in civil engineering field. Large companies (e.g. Cisco) and industry organizations (e.g. CompTIA) in the United States have established some global standards for professionals in the **ICT** sector. In Japan, the Information-technology Promotion Agency (IPA- a quasi-governmental organization), operates the **Information Technology Common Examination**, which is recognized in 5 APEC Economies.[15]

The Association of Southeast Asian Nations (ASEAN) formed a set of frameworks that encourage member economies to recognize qualifications of professionals in other economies: **ASEAN Mutual Recognition Agreements (MRAs)**[16]. The economic block has also developed **ASEAN Qualifications Reference Framework (AQRF)**, to help implement ASEAN MRAs.

Some economies are working on establishing their own NQFs to participate in RQFs. For the development of NQFs in the APEC region, Oceania and Southeast Asia have been pioneers, later followed by East Asian economies, with the least progress in the Americas. Studies by HRDWG show 12 of 21 APEC economies have NQFs, with none linked to RQFs,[17][18] as shown on the following table.

Table 2: APEC economies with NQFs 2009-2010

#	Name	Region	HRDWB 2009	HRDWG 2010
1	Australia	Oceania	○	N/A
2	New Zealand		○	○
3	Papua New Guinea		×	N/A
4	Brunei Darussalam	Southeast Asia	△	N/A
5	Indonesia		×	○

#	Name	Region	HRDWB 2009	HRDWG 2010
6	Malaysia		○	○
7	The Philippines		○	○
8	Singapore		○	N/A
9	Thailand		○	N/A
10	Viet Nam		×	N/A
11	People's Republic of China		×	○
12	Chinese Taipei		×	○
13	Hong Kong, China	East Asia	○	○
14	Japan		×	×
15	Republic of Korea		△	○
16	Russia		△	N/A
17	Chile	South America	△	N/A
18	Peru		×	N/A
19	Canada		△	×
20	Mexico	North America	△	N/A
21	The United States		×	×
	Number of Economies		7	9

* ○=established NQFs; △=considering NQFs; ×=neither established or considered NQFs
Source: Washington CORE based on 2009 & 2010 APEC HRDWG reports[19]

3.4 Capacity Building in the APEC Region

APEC economies have engaged in numerous capacity building activities to facilitate mutual recognition. The Australian government has been the most active, initiating several efforts such as the **Skills Mapping Project**[20] to compare data on labor shortages among the economies. Chinese Taipei is also organizing information through establishment of web portals regarding skills and qualifications for APEC engineers and TVET standards.[21][22]

These efforts to organize and exchange information on labor mobility have been succeeded by a recent APEC initiative to foster greater regional cooperation on labour mobility issues. The initiative, led by Australia through the APEC HRDWG, is aimed to develop an APEC Labour Mobility Framework (ALMF)[23], where officials from APEC economies can exchange knowledge and best practices on labor mobility.

Australia also leads efforts to improve quality assurance, through the **APEC HRDWG project on transport and logistics** sector to establish occupational standards for five occupations in the sector.[24] This led to the drafting of the **APEC Occupational Standards Framework**, a tool to develop a regional occupational standard for a given occupation.[25] It has been tested in the travel, tourism and hospitality (tourism) industry in five economies[26], co-led by Australia and Peru.[27]

Capacity building efforts among economies aim to foster referencing and NQF development.[28] New Zealand has been proactive, referencing its qualifications framework with Australia and Hong Kong, China. ASEAN members also work with Australia and New Zealand[29] on capacity building projects. Additionally, APEC members have sought insight from the Europe through the EQF. In Latin America, the **Pacific Alliance** (an economic partnership between Chile, Mexico, Peru, and Colombia) has initiated discussions on the importance of mutual recognition of qualifications for labor mobility.[30]

Private enterprises like **Chevron**, **Microsoft**, and **Nissan** have also partnered with local government agencies, educators, and charity organization to establish educational and training programs that contribute to the development of standards and qualifications for highly skilled professionals.[31]

4   Findings

The research findings for this project encompass several key themes:

- **MRAs provide significant regional benefits in various forms, though not yet in physical mobility of workers**:
  MRAs are providing numerous benefits to the APEC region, such as increasing the quality of workers by promoting qualification systems and monitoring organizations. These efforts also help international employers to identify and recruit skilled local employees in other economies by applying mutually recognized qualifications to verify skills and experiences of potential employees. While many of the ongoing and recent MRA programs studied in the current research have not yet led to significant worker mobility, the benefits to workers and employers are expected to further accrue as new MRAs and multi-economy recognition efforts within the region are adopted.

- **There is a need to develop stakeholder awareness of and support for MRAs and other recognition efforts by emphasizing the benefits realized so far**:
  While the primary focus of MRAs to date has been on supporting the physical mobility of workers, emphasizing other benefits of the agreements, such as those listed in the above paragraph, can help economies to build stakeholder awareness of and support for future MRAs and other recognition efforts. With recent advancements in technology and business practices in mind, APEC economies should consider various ways to support cross-border business activities through the mutual recognition of qualifications, including not only by fostering the physical mobility of workers but also by contributing to capacity building in the human resource development (HRD) field.

- **Close and efficient collaboration among stakeholders is key to successful initiatives**:
  Some of the key best practices that were identified in interviews include 1) involving a wide range of stakeholders in project consultations (not only internationally but also domestically, including multiple governmental departments/ministries, regulatory bodies, employer organizations, professional organizations, educational and training institutions, academic institutions, and skills training organizations), 2) building support for close collaboration among stakeholders through tools such as site visits and regular meetings or consultation, 3) devoting sufficient long term resources and time to initiatives, and 4) approaching capacity building and MRAs with an open mind and an adaptive approach to consensus-building.

4.1   Common challenges

Economies face several common challenges in implementing initiatives for mutual recognition of skills and job qualifications. As expected, several initiatives noted that significant national or regional differences in standards and processes/definitions were a key challenge. In addition, with a few exceptions, regional efforts can often advance only as fast as the slowest member to implement agreements, which can lead to frustration over slow timetables or perceptions that some stakeholders are being overly protective.

Especially when implementation is resource-intensive, developing economies may lack the capacity to keep pace with others. [32] Some economies may not even have equivalent institutions for recognition of qualifications, which can impact an economy's ability to reference standards or implement agreements.[33] The cost of qualifications benchmarking can also be an impediment to implementation.[34]

Many of the common challenges that economies have faced in their efforts to establish MRAs result from differences in economies' priorities and capacity to implement agreements. For example, economies across the APEC region follow different methods to recognize foreign qualifications, and as MRAs don't mandate recognition, the result can be uneven recognition of

qualifications amongst the member economies. In the same way, the variation in member economies' levels of development can affect how quickly mutual recognition is implemented and when professional service providers in each economy are allowed to provide cross-border services.

Encouraging the free movement of workers is also sometimes a sensitive domestic topic in many economies, and building MRAs must therefore recognize the balance between international agreements and domestic stakeholders' concerns.[35] In particular, the economies participating in MRAs for skills and job qualifications maintain their individual authority over whether to permit qualified workers to work within their borders.[36] Therefore, if a host economy sets prohibitively strict or selective immigration policies for incoming workers, then workers with mutually recognized qualifications will not be able to use their qualifications in that host economy.

Furthermore, in facilitating the physical mobility of workers, the interviewees pointed out that many professionals, even after obtaining mutually recognized qualifications, do not take advantage of MRAs to actually work overseas.[37] In many cases, this is causing professionals to not renew such qualifications or not trying to obtain one to begin with, leading to the slow growth in number of professionals with mutually recognized qualifications. There are various reasons that could be leading to these professionals' decisions not to obtain or renew a qualification. For example, one interviewed expert mentioned that some occupations do not necessarily require qualifications to practice in a given economy, as long as the foreign workers have locally qualified colleagues performing the restricted acts (e.g. an architect working in a foreign economy as an employee of an international corporation with locally sourced architects).[38] According to the expert, in other occupations in which qualifications are necessary (e.g. nursing), the absence of linkages between MRAs and immigration policies of host economies is a major barrier. For this reason, some interviewees mentioned that the lack of incentives should be addressed in the form of preferential immigration treatment and other benefits.[39] Others also mentioned the lack of information about domestic regulations in each economy for international professionals as major challenge to be addressed.[40] In addition, there should also be circularity in mutual recognition, so that qualifications or career accreditation earned by workers abroad will also apply in their home economies.[41] There is also the risk that internationally recognized arrangements can become captive to vested interests in each economy, in situations where some professionals might gain qualifications to join a select circle that guarantees them high incomes across the region, but then excludes other professionals from opportunities.[42]

Transparency in managing programs for qualifications and accreditation is also key in order to encourage best practices and prevent corruption.[43] In general, to truly facilitate the physical mobility of workers, economies should be mindful of opportunities to reduce barriers through reforms of their domestic regulations, for instance, in immigration. For these reasons, extensive planning, flexibility, and patience are necessary virtues for all stakeholders.

4.2 Best practices

Extensive planning, resources, consultation amongst stakeholders, and flexibility are all important ingredients to successful MRAs and capacity building initiatives. Referencing qualifications can be a long and gradual process, so it is critical to be realistic in estimating time and resource needs, as well as the timeframe for achieving milestones.[44]

Achievable Objectives

Participating economies should closely collaborate to ensure realistic mutually acceptable targets for labor mobility and to pursue mutually acceptable parameters to achieve them.[45] In some cases setting realistic expectations may require beginning with a more limited set of goals that are more easily achievable in order to score some early successes and build momentum. For example, the approach taken by the APEC Occupational Standards Framework (OSF) committee was to focus on defining job roles and their comparability across economies, rather than trying to immediately accomplish the far more difficult goal of achieving qualifications equivalence (such as benchmarking on a qualifications-to-qualifications level) between widely

varying TVET policy standards in participating economies.[46] The APEC Business Advisory Council (ABAC) has recommended that APEC expands the OSF's skills mapping exercise to include all 21 APEC economies, in order to identify which skills are in short supply and which skills are in surplus in different economies.[47]

Stakeholder Involvement

A wide range of types of stakeholders should be included in all consultations, including multiple governmental departments/ministries, regulatory bodies, employer organizations, professional organizations, educational and training institutions, and so on. In particular, it is helpful to have private sector participants involved to validate the applicability of common standards.[48] One valuable way of fostering private sector engagement is site visits for employers to training providers. Another example of good practice can be drawn from Chinese Taipei where its Workforce Development Agency (WDA) has established the Integrated Competency and Application Platform (iCAP)[49] where industries are invited to contribute to WDA's effort in developing and maintaining the economy's Occupational Competency Standard.[50] In any efforts involving many stakeholders, the expected results of various activities and potential responsibilities of stakeholders should be clearly communicated, and stakeholder feedback solicited.

Managing Body with Stakeholder Representation

It is important to ensure that stakeholders' input is managed effectively. This may require the use of representative bodies so that the size of governing committees does not become unmanageable. At the same time, if some stakeholders are not directly involved in discussions, then it is paramount to practice regular communication and transparency.[51] If implemented and managed well, the mechanism of cooperation among stakeholders can play a crucial role in maintaining and improving the quality of MRAs, keeping the agreements relevant regardless of changes in the membership of the agreements and greater society.[52]

Dissemination of Best Practices from Early Adopters

Developing economies may be better able to keep up with the progress of advanced economies if the latter provide learning opportunities. For example, the Malaysian national AQRF committee allows other ASEAN member states (AMSs) to participate as observers to understand Malaysia's direction and progress, while at the same time Malaysia has been directly helping Cambodia and Myanmar to develop their national qualifications frameworks.[53] Similarly, the Japan International Cooperation Agency (JICA) helped Bangladesh join the ITPEC in 2014, closely working with the Bangladesh Computer Council. This resulted in Bangladesh establishing a national examination based on the Japanese ITEE, as well as becoming a member of ITPEC.[54] Japan's METI has also conducted a "Training Program on Instructors for ITEE" in Manila, Cebu, Davao, Ha Noi, Ho Chi Minh, Yangon, Ulan Bart and Bangkok, which help to develop leaders in each Asian economy to promote the ITEE.[55] Lastly, Australia has been active in disseminating its best practices (developed through cooperation with New Zealand) to other APEC economies: the economy was involved in the conceptualization of ASEAN Qualification Reference Framework through the ASEAN-Australia-New Zealand Free Trade Area (AANZFTA) Economic Cooperation Work Program (ECWP)[56], and Chinese Taipei's accreditation for competency-based training program has been developed partially with reference to Australia's.[57] For MRA and skills qualification programs that are being sponsored through APEC, the dissemination of best practices can be potentially be strengthened through a clear communication plan among APEC economies, involving all actors in the relevant industries.

Marketing and Incentivisation

As noted in the beginning of this chapter, many initiatives could benefit from better marketing and clarification of the program's goals and benefits, which could raise awareness of the program among key stakeholders and improve the program's overall value to the targeted occupations. For example, one issue cited by current APEC engineers is that the program is not well known among many employers and therefore doesn't impact engineers' employability. Some mentioned steps to raise awareness and increase the programs' benefits, such as linking the qualification to travel facilitation schemes (e.g. the APEC Business Travel Card) or publicizing a list of APEC

Engineers. The latter effort of publicizing the list of APEC Engineers is still in the discussion phase, initiated by Chinese Taipei and revived by Singapore.[58] One can also draw hints for possible future efforts from the examples from Japan's IPA's efforts to promote ITPEC Common Examination.[59]

Flexibility and Consensus

It is important to approach capacity building with an open mind and adapt the approach as necessary to optimize opportunities for consensus and progress. For example, the APEC Occupational Skills Framework chose to focus on defining job roles and their comparability across economies, rather than achieving qualifications equivalence (such as benchmarking on a qualifications-to-qualifications level between economies), which is a more difficult task.[60] Similarly, the Washington Accord has been characterized by voluntary recognition, which provides participating economies with the necessary flexibility to participate in consideration of individual economies' history and background.

Developing and Testing with a Small Group of Similar Economies

Given the above challenges, in several cases project managers noted that they found the best approach to multi-economy initiatives was to start small and build up. Developing several new MRA pilot programs is a key goal identified by ABAC, in order to identify a number of sectors where APEC economies can pursue a real world implementation of mutual recognition of skills.[61] Building up initiatives through small groups of economies with similar characteristics and priorities allows the participating economies to validate approaches and test expectations. Having a strong foundation in place is very helpful to then expand to other economies, and makes it easier to reach widespread consensus on a standard methodology. [62]

4.3   Concluding Discussion

Nearly three decades after the establishment of APEC and the endorsement of the Bogor Goals, APEC member economies have continued actively to pursue trade and investment liberalization and facilitation in the Asia-Pacific region. Significant progress has been made in mutually recognizing skills and job qualifications among member economies through a wide variety of bilateral and multilateral agreements. These agreements have taken place both within the APEC framework and through ASEAN and other organizations. Based on economies' experiences in achieving the progress to date, it is now an opportune time to adapt and redefine the objectives for MRAs to ensure that future efforts will best contribute to the region's economic prosperity and labor mobility.

Throughout the course of this project, a common finding across the eight case studies was that efforts to mutually recognize qualifications have successfully improved the availability of skilled labor in the APEC region. The process of identifying and benchmarking occupational skills has encouraged several economies to revise their standards for professional education, in order to enhance the quality of the education and to ensure that their educational standards match or exceed the standards in other economies. As a result, MRAs and various skills development projects have encouraged cooperation between governmental organizations, academia, and industry partners to define and improve existing standards. MRAs have also helped international employers to identify and hire foreign talent, by providing a trusted framework to reference when comparing the skills and knowledge of potential employees.

The contributions that MRAs potentially make to skills development are particularly valuable when considering the impact of technology on many service industries. Even in cases where online technologies have lessened the need for the presence of natural persons[63] to import and export various services, there is still a need to improve and standardize the quality of regional service providers.

Another key aspect of MRAs is their potential to support people-to-people connectivity by providing new opportunities for increased mobility of skilled workers. With time and effort, MRAs

can provide new avenues for skilled professionals to find employment overseas, by expanding their awareness of and participation in MRA programs. While many of the ongoing and recent MRAs studied in the current research have not yet led to significant worker mobility, we believe that the best practices laid out in this report will support stakeholders' efforts to overcome common challenges and realize the free movement of skilled workers. As the adoption of MRAs continues to expand, there will be new opportunities to explore their potential economic benefits and impact on worker mobility, which will in turn strengthen mutual trust in implementing future agreements. However, MRAs alone cannot solve the challenge of low labor mobility[64], and should be considered in the context of other initiatives and opportunities to overcome barriers to worker mobility, such as addressing rigid and complex work visa systems. For MRAs to increase physical labor mobility most effectively, it is critical to link them with immigration policies that allow skilled workers to participate in economic activities without the constraint of excessive red tape or prohibitively strict restrictions.

The recommendations provided in this report include steps for building awareness of MRA programs among potential beneficiaries (both workers and industry organizations), as well as various practices that support more efficient cooperation among stakeholders, such as disseminating best practices from early adopters, and emphasizing flexibility and consensus in multi-economy projects. Successful MRAs should provide developing economies with opportunities to increase the international competitiveness of their workers and provide new international opportunities for them, while helping industrialized economies to mitigate labor shortages in crucial industry sectors.

Given the current global political climate in which many governments are under domestic pressure to close their labor markets to foreign workers, it is important to continue to pursue multilateral efforts to develop MRAs that provide win-win solutions for stakeholders in both developed and developing economies. It is crucial to demonstrate the positive effects of MRA efforts by achieving successful labor and economic outcomes. By doing so, APEC economies can build up the momentum to expand to future MRA projects in the future, which will support economic growth and trade and investment liberalization and facilitation in the Asia-Pacific region.

5 Appendix A – Case Profiles

5.1 Case Profile 1: APEC Engineer (Japan)

5.1.1 Initiative Background

APEC Engineer is an MRA to recognize the "substantial equivalence" of standards for professional engineers among member economies. [65] Member economies agree to minimize extra assessment required for engineers to be registered in their economies. The APEC Engineer agreement requires a separate bilateral MRA to facilitate full recognition.[66]

The program was proposed by Australia and Japan to address the necessity of facilitating the mobility of engineers among the member economies to further economic development.[67] This led to the creation of the APEC Engineer Register, a practical system to assess the competence of foreign engineers.[68] The association in charge of engineering qualifications in Japan (IPEJ) became involved to research international standards, prove the equivalence of Japanese standards[69] and ensure that Japanese graduates were qualified to work abroad.[70]

Japan has the second most registered APEC Engineers, at 1,824, slightly behind the 1,852 of New Zealand.[71] Japanese engineers enrolled due to high expectations for the program.[72]

5.1.2 Implementation

Challenges	As of 2014, there were two supporting bilateral MRAs (Japan-Australia, Australia-Malaysia). Australian body, Engineers Australia, has been increasing the number of MRAs with counterparts in APEC economies, including Canada; Hong Kong, China; and Singapore, as well as non-APEC economies like the United Kingdom. [73]
	Lack of recognition of APEC Engineers; only one APEC engineer from Australia registered in Japan, no APEC engineer registered in Australia
	Many APEC Engineers do not renew their qualification[74], possibly due to unclear benefits from enrolling (lack of employer awareness) [75]
Achievements	7,580 APEC Engineers registered June 2015[76], 35% increase 2011-2015
Lessons Learned	Need to simplify the application process; adding too many additional processes to the national registration process lowers enrollment.[77]
	Better marketing, clarify program's goals: program needs to be well known among employers to be useful
	Need to be mindful of immigration/labor regulatory barriers: more would enroll as APEC engineers if they saw the increased potential of finding work overseas and less barriers; currently, APEC engineer does not address either barrier[78]
	Increased benefits and linkage to other programs could spur more adoption; such as linking to the APEC business travel card or better publicity for APEC Engineer register
	A common competence agreement was successfully developed for APEC Engineer and other agreements: International Professional Engineers Agreement (IPEA) and the International Engineering Technologist Agreement (IETA). This helped with standardizing Integration with other programs has been successful in supporting international benchmarking efforts, such as International Professional Engineers Agreement (IPEA) and the International Engineering Technologist Agreement (IETA), that have helped with standardizing the equivalency of engineers in different economies and increasing their mobility

5.2 Case Profile 2: MRA on Architectural Services (the Philippines)

5.2.1 Initiative background

The 2003 ASEAN Bali Concord II called for the completion of MRAs for qualifications in major professional services by 2008 to facilitate the free movement of skilled professionals in the ASEAN region who are authorized, licensed or certified by the respective authorities within the framework of the MRAs among ASEAN member states.[79]

The MRA on Architectural Services is one of eight ASEAN MRAs. The MRA states that professional architects registered in their home economy will be eligible to register as an ASEAN architect (within the host economy, the ASEAN Architect is referred to as a Registered Foreign Architect (RFA)).[80] The MRA encourages the standardization of education and training policies. For example, one MRA program is the Graduate Internship Exchange Program (GIEP), which encourages companies to host and hire foreign interns in the architecture field.[81]

The Philippines led the program from 2013-2015. The Philippines would like the agreement to recognize the presence of foreign professionals in host economies so there can be evidence of the mobility of Filipino professionals, and so that Filipino professionals can be properly recognized according to their skills, and receive the appropriate wages.[82] Upcoming infrastructure development also will increase demand for foreign architects in the Philippines, although legislation prevents recognition unless the sending economy reciprocally recognizes Filipino architects.[83]

In the 25th meeting of the ASEAN Architect Council in 2015, the members agreed that the role of the council in promoting the mobility of architects should be reexamined, and requested further domestic consultation with the relevant domestic agencies.

5.2.2 Implementation

Challenges	Lack of cross-agency coordination/approval[84]
	Standards for qualification may be too high (10 years practice, one "complex" project)[85]
	Lack of automatic recognition; ASEAN registered architects still find it challenging to register abroad[86]
	Focus on collaboration between solo architects, rather than architectural firms,[87] no template for "collaboration agreement"[88]
	Restrictive local partnership rules in many ASEAN member states[89]
	Differing levels of development/progress complicate coordination[90]
Achievements	MRA motivates ASEAN member states to upgrade domestic qualifications
	Supported mobility of limited number of professionals
	Philippines has completed all preparatory work for implementation, and has rules to accommodate RFAs (among four others)
Lessons Learned	Requirements for program qualification need to be realistic; overly stringent requirements in the MRA itself plus local restrictions limit interest in the program[91]
	Participating economies should set targets for labor mobility and examine their immigration/labor regulatory policies[92]

5.3 Case Profile 3: IT Common Examination (Japan)

5.3.1 Initiative Background

In October 2000, Japan proposed the "Asian Common Skill Standard Initiatives for IT Engineer," which was adopted at the economic ministers meeting of the "ASEAN +3" group. Afterwards, the Japanese representative body, the Information-technology Promotion Agency of Japan (IPA), started to establish MRAs with its counterparts in other economies (12 total).[93] The MRAs with organizations in economies that already had an IT Engineers Examination (ITEE) established the equivalent values of their ITEEs.[94] On the other hand, others adopted common examinations designed through the Information Technology Professionals Examination Council (ITPEC).[95]

Currently, the ITPEC Common Examination consists of three exams in increasing levels of difficulty: the IT Passport Examination (IP), the Fundamental IT Engineers Examination (FE), and the Applied Information Technology Engineer Examination (AP). The tests are considered to be reliable assessment tools as they are administered on a national basis by each participating government, which issues official certificates to the engineers who pass the exams.[96]

The ITEE was first conceptualized due to concerns about foreign competition to the Japanese IT industry, which created a strong demand for highly skilled IT professionals.[97] IT professionals also wanted to be able to obtain recognition and credentials from reliable authorities. ITPEC's goals are to raise the skill level of IT engineers in each economy; to increase cross-border job opportunities; and to promote the alliance of IT companies in each region.[98] Within the program is IPA's Top Gun Program, where the IPA invited those who qualified ("Top Guns") to Japan for a short-term program, where they had exposure to the Japanese IT industry and were appointed as ITPEC ambassadors. This Asia Top Gun Program began in 2015, with the expectation that the participants would play a key role in promoting the exams and building a relationship with Japan after returning to their home economies.

5.3.2 Implementation

Challenges	Existing exams (pre-MRA) are different in terms of awareness, purpose, and pass rate (difficulty)[99]
	Large amount of effort to establish and maintain MRAs among these vastly different exams[100]
	Certain economies lack sufficient applicants to fund the exam through fees alone
	Lack of commitment from economies to independently manage program
	Changing institutional arrangements make coordination difficult
	Complicated governance structure of exam
Achievements	IT Passport Examination: 6,713 successful applicants (2010-2016), IT Passport Examination: 4,820 successful applicants (2001-2016).[101]
	Human resource development, increased employability of applicants[102]
Lesson Learned	Importance of marketing strategies: success of exam due to awareness (e.g. ITPEC ambassador program for high scorers)
	Attention to priorities of other economies: Japan has significantly supported international development of IT education by being receptive to the interests of each economy.

5.4 Case Profile 4: Washington Accord (Japan)

5.4.1   Initiative background

The Washington Accord was created in 1989 by the accreditation bodies of Australia, Canada, Ireland, New Zealand, the United Kingdom, and the United States. Students who graduate from engineering programs accredited by their signatories are recognized as equally qualified as graduates of their counterpart engineering programs.[103] It is one of three constituent accords of the International Engineering Alliance (the Sydney and Dublin accords deal with engineering technologists and engineering technicians respectively).[104]

The Accord was established as a mechanism to determine the equivalency of education as industries became increasingly transnational and graduates sought employment in jurisdictions other than their own.[105] The accord has been accelerated by the idea of the "Washington Consensus": open markets and trade as well as deregulation and privatization, based on neoclassical economic theory.[106]

The Japanese accreditation body, the Japan Accreditation Board for Engineering Education (JABEE) joined the Washington Accord in 2005 as the ninth member, and the first non-English speaking member.   The primary mission of JABEE is to enhance the quality of Japanese engineering education and to provide a foundation for guidelines to train students to become competent engineers.[107] JABEE aims to ensure the international equality of engineering educations through the accreditation of education programs. JABEE accredited engineering programs aim to enhance the skills of engineers as professionals who are able to compete with their international counterparts, and also aim to open opportunities for individual engineers to work globally.[108]

5.4.2   Implementation

Challenges	Decline in accredited programs due to lack of perceived benefit of JABEE accreditation (professional engineers don't need to graduate from accredited programs in Japan)[109] - this also creates issues for exchange students [110]
	Concern with issues regarding maintaining quality of some programs at Japanese universities[111]
	Limited feedback/support from industry stakeholders for JABEE[112]
Achievements	175 universities and programs have been accredited by JABEE, with graduates in Japan from 2001-2016[113]
	Successful applicants increased 58% 2015-2016
	JABEE assists Indonesia to establish the accreditation organization, and the accreditation of 4 programs of 4 universities in Indonesia was included as a part of this project
Lessons Learned	Example of how recognition programs can raise global education standards
	Accord led to the establishment of Engineering Attributes for the Global Engineer, further internationalizing engineering
	Flexibility of voluntary recognition has allowed Japan to improve internal education and assist other economies
	Mutual support through mentorship is key between economies
	Raising awareness in government continues to be a challenge
	Signatories must review and update accreditation practices

5.5 Case Profile 5: ASEAN Qualifications Reference Framework (Malaysia)

5.5.1 Initiative background

The ASEAN Qualifications Reference Framework (AQRF) is a mechanism to transform national qualifications frameworks into mutually comparable regional standards among ASEAN member states (AMS).[114] As a voluntary framework the AQRF is intended to establish minimum qualifications as well as a mechanism to "translate" NQFs between ASEAN member states. The framework supports the recognition of qualifications, promotes labor mobility, aligns educational institution standards with international standards, and promotes student mobility.[115] It is intended to benefit qualified workers and students that are participating in basic, TVET, and higher education programs.

The member economies have a shared interest in creating opportunities for their skilled professionals within the region, to increase regional economic, integration and to create competitive labor markets. The AQRF will allow economies with labor shortages to import skilled workers and skilled professionals from economies with unemployment or underemployment in their sector. Increased opportunities for workers within ASEAN may also provide an alternative for workers that are considering working in OECD and BRICS economies.[116]

This case study examines the implementation of the AQRF through Malaysia's experiences aligning its NQFs with the AQRF. Malaysia was chosen as the case study economy because it has been one of the leading AMS in developing the AQRF.[117]

Malaysia seeks to gain recognition of its qualification system through this process, and also allows engagement with associations, employers, students, and universities about qualifications and build trust in the qualifications system.[118] As a net importer of labor, Malaysian firms will benefit from better understanding the qualifications of Malaysia's immigrant workforce. Net exporters of labor can expect to benefit from increased employability of their citizens seeking employment abroad.

5.5.2 Implementation

Challenges	Slow implementation of NQF among AMS[119]
	Challenging to resolve differences in NQFs[120], as they are based on unique national experiences
Achievements	Malaysia is most advanced in referencing - set to complete November 2017[121]
	AQRF serves as catalyst for NQF development and globalization in ASEAN
	Malaysia has conducted compatibility (referencing) studies with New Zealand, Australia, Chinese Taipei, Japan, and South Africa
	Indonesia, the Philippines, and Thailand are planning to implement partial referencing to the AQRF in 2018[122]
Lessons Learned	Need to devote sufficient long term national resources to project due to scale and complexity of referencing[123]
	Consolidate stakeholder representation through key organizations, due to large number of stakeholders involved in skills/qualifications referencing- Malaysia did this through national committee[124]
	Communicating expected results/responsibilities to stakeholders is essential[125]
	Support for other economies' efforts is essential to success; Malaysia allows other economies to observe its committee meetings

5.6 Case Profile 6: Occupational Standards Framework (Australia)

5.6.1 Initiative background

The Occupational Standards Framework (OSF) is an agreed protocol for the development and validation of regional occupational standards.[126] The OSF differs from an NQF or an RQF in that it is designed to enable a comparison of skills required for specific occupations among different APEC economies, and is focused specifically on describing the expected scope of the skills and knowledge for those specific occupations. By providing a reference point for economies' occupational standards and capacity development activities, the OSF supports the exchange of best practices in training and assessment. The initiative has explored the development of occupational standards in the Transport & Logistics and Travel, Tourism and Hospitality sectors and involved the participation of both government and industry. The initiative aims to develop occupational standards that can be used as a reference point for industry and jobs. It is expected to provide a benchmark for economies to develop their own national occupational standards and qualifications; allow for their flexible application in member economies; and improve the links between industry and government in TVET across APEC economies. [127] [128]

The OSF complements an Australian effort to explore the establishment of an APEC Integrated Referencing Framework for Skills Recognition and Mobility (IRF), which also includes a qualifications referencing framework (to allow for comparison of national qualification levels) and a quality assurance referencing framework (to enable confidence in relevance/quality of training).[129] These benefits are expected to support labor and business mobility and enhance economic integration throughout APEC.[130]

Twelve APEC economies[131] participated in an initial meeting to discuss the development of the IRF.[132]

5.6.2 Implementation

Challenges	Vocational educational systems/job outcomes measuring is very different among economies[133]
	Varying levels of development of training systems[134]
	Different scope of job roles[135]
	Need for flexibility in project deadlines, milestones, dates for workshops to accommodate different priorities of APEC economies[136]
	Cultural/linguistic differences in job roles[137]
	Qualifications benchmarking can be costly for certain economies[138]
Achievements	Drafting of OSF concept
	Conclusion of Transport and Logistics and Tourism projects
	Better government cooperation with industry in occupational standards[139]
	Private sector participants have opportunity to upskill their workforces based on agreed regional occupational standards[140]
Lessons Learned	Flexibility has allowed negotiation to advance more rapidly[141]
	Strong involvement of industry is key to identify their needs for skills required in jobs[142], and the process significantly enhances the government-industry relationship[143]
	Unexplored areas for cooperation could yield significant commonalities across economies (e.g. Transport and Logistics)[144]
	Participants noted that site visits helped create exchanges between industry and training sector.
	Initiative discovered value in comparability of skills, rather than equivalency
	Consensus among small groups (5-6 economies) creates a solid base to scale up

5.7   Case Profile 7: Pacific Alliance (Mexico)

5.7.1   Initiative Background

The Pacific Alliance was formed by Chile, Colombia, Mexico, and Peru to form a regional trading bloc and strengthen economic ties with the Asia-Pacific region through the free flow of goods, services, capital and people. The Alliance hopes to liberalize trade in goods and services, open foreign investment, integrate securities markets, and support the free movement of people.[145]

The Alliance's capacity building efforts have focused on educational integration, through coordination of educational policies and collaboration on issues such as human resource training and scholarships.[146] Goals include the recognition of higher-education degrees, exploring NQFs, strengthening TVET and promoting mobility through student internships in technical programs.[147]

Labor mobility was a significant topic of discussion at the April 2016 "Labor Mobility within the Pacific Alliance" event, in which representatives of the four member economies, entrepreneurs and international experts discussed the issue. The commitment to labor mobility was formalized in July 2016, where it was declared that the Alliance would work toward goals assessing current labor mobility, discuss free movement with the EU, and analyze current visa extension programs.[148] Based on a proposal by Peru, the Alliance is currently considering the formation of a technical group on issues of Labor and Employment that would promote effective labor mobility.[149]

Mexico was chosen as the case study economy for this issue due to its strong economic influence in the Alliance. Mexico hopes to increase its economic presence in the region[150] through exports in strategic sectors and demonstrate the benefits of free trade against trends towards protectionism in the region.[151]

5.7.2   Implementation

Challenges	Potential differences in TVET systems[152]
	Preponderance for trade integration over labor mobility
	Visa exemptions don't include working visas
Achievements	Fast progress towards free trade goals
	Progress in exemption of visa requirements
	Exchange program for young workers and students[153] (855 students exchanged)
	Between 2013 and 2016, 1,200 scholarships were awarded through this scholarship program, and it was institutionalized into the Alliance's Platform of Student and Academic Mobility.[154]
	the Alliance also worked with Australia to build on another APEC skills standards development project for the travel, tourism, and hospitality industry that expands on the work done in the transportation sector
Lessons Learned	Build on past accomplishments to support future activities on labor mobility; Alliance should build on visa exemption and student exchange programs
	Work to build on the APEC skills standards projects shows the importance/potential benefits of collaboration among economic support organizations

5.8 Case Profile 8: Thailand Automotive Human Resource Development Project (TAHRDP) in testing and certification (Japan & Thailand)

5.8.1   Initiative Background

The Japan International Cooperation Agency (JICA) launched a project to assist the Thai automotive sector in 2004 through the Thailand Automotive Institute (TAI). Initially, JICA provided training and promoted improvements to local parts manufacturers. JICA later launched a research and proposal project for human resources development, predicting a shortage in the skilled labor force when more foreign manufacturers would move their factories into the Thai market.[155]

After the initial JICA project, Nissan and Unico International (an ODA consulting firm) conducted a research project and proposed a skills certificate examination system for the auto industry. The recommendation proposed to increase awareness about the needs of internal human resources development so that autoworkers could become motivated to seek higher objectives. This was to address the lack of applicable certificates in place for auto manufacturing skills. Furthermore, the level of existing certifications did not meet the needs of the Japanese auto industry.[156] The Thailand Automotive Human Resources Development Project (TAHRDP) was launched in 2006, and resulted in the streamlining of the skill certificate systems for seventeen fields with three levels, which created 51 certificates through the five-year project.[157]

Japan assisted the Thai government to raise the technical skill levels of the local automotive industry in Thailand through TAHRDP. Because cost and quality are crucial in order to become competitive in global markets, finding qualified, skilled employees was imperative. Therefore, Japanese companies have incentives to promote human resources development in Thailand.[158]

5.8.2   Implementation

Challenges	Challenging to motivate Thai companies to have their employees take examinations
	Difficult to involve managers of technical departments from companies in Technical Committee
	Uncertainty whether project will be maintained after Japanese participation concludes[159]
	Difficult to measure the outcome of the technical skill certifications[160]
	Lack of assessment/follow up[161]
Achievements	Since 2006, TAHRD has fostered 6,000 trainers or trainees corresponding to 1.5% of the total workforce in the automobile industry in Thailand
	Increased competitiveness/productivity of Thai workers
	Companies/trainees indicated "more support to co-workers", "improvement of product quality", "improvement in work attitude", and "introduction of new technology".
	Trainees indicate continued use of skills learned in TAHDRP
Lessons Learned	Need to ensure long term local commitment to program to ensure maintenance after JICA, JETRO, Japanese automakers depart
	Need neutral, multi-disciplinary project lead to bridge the gap between government agencies, companies, economies
	Employers differ in priorities; some welcome upskilled workforce, other resent it due to the possibility of having to raise wages
	Setting an ambitious standard for skills can be beneficial, as Thai 1st class certified technicians were just as competent as Japanese ones

6   Appendix B – Key Acronyms

AANZFTA ECWP	ASEAN-Australia-New Zealand Free Trade Agreement Economic Cooperation Work Programme
ABAC	APEC Business Advisory Council
ADB	Asian Development Bank
AELM	APEC Economic Leaders Meeting
AFAS	ASEA Framework Agreement on Services
AIET	Agreement for International Engineering Technicians
AMM	APEC Ministerial Meeting
AMS	ASEAN Member State
APEC	Asia-Pacific Economic Cooperation
ASEAN	Association of Southeast Asian Nations
CBN	(APEC HRDWG) Capacity Building Network
CEDEFOP	European Centre for the Development of Vocational Training
CTE	career and technical education
EDNET	(APEC HRDWG) Education Network
EQF	European Qualifications Framework
HRDMM	(APEC) Human Resources Development Ministerial Meeting
HRDWG	(APEC) Human Resources Development Working Group
ICT	information and communications technology
IEA	International Engineering Alliance
IETA	International Engineering Technologists Agreement
ILO	International Labour Organization
IPA	Information-technology Promotion Agency, Japan
IPEA	International Professional Engineers' Agreement
ITPEC	Information Technology Professionals Examination Council
LSPN	(APEC HRDWG) Labor and Social Protection Network
MRA	Mutual Recognition Agreements/Arrangements
NQF	National Qualifications Framework
OECD	Organisation for Economic Co-operation and Development
RMCS	Regional Model Competency Standards
RQF	Regional Qualifications Framework
SCE	(APEC) SOM Steering Committee on ECOTECH
SOM	(APEC) Senior Officials' Meeting
TVET	technical and vocational education and training
UIL	UNESCO Institute for Lifelong Learning
UNESCO	United Nations Educational, Scientific and Cultural Organization

7 Appendix C – References

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