

## 1. Introduction

This project was undertaken for the Asia-Pacific Economic Cooperation (APEC) Human Resources Development Working Group (HRDWG) Subgroup Education Network (EDNET). It has been undertaken by the Monash University-ACER Centre for the Economics of Education and Training (CEET) in a consortium with the Centre for Postcompulsory Education and Lifelong Learning University of Melbourne (CPELL) and the Victorian Registration and Qualifications Authority (VRQA).

The request was for research and analysis to map qualifications frameworks across APEC Economies with attention to:

- Qualifications frameworks and associated recognition tools;
- The uses and benefits of qualifications frameworks;
- Implementation issues including policy constraints;
- The linkages between qualifications frameworks and qualifications recognition;
- Quality assurance;
- Reviews undertaken in the APEC region in relation to qualifications frameworks or with a qualifications recognition component; and
- The feasibility of developing an Asia-Pacific Qualifications Framework having regard to possible models.

The Joint Statement released by education ministers at the 2004 APEC Education Ministers meeting in Santiago (the 3rd meeting of APEC Education Ministers) included: ‘economies need effective governance including transparent, accountable, regulatory, accreditation, and quality assurance systems’. This project responds to this priority.

## 2. Background and overview of frameworks in APEC economies

This section provides an overview of qualifications and qualification frameworks. It uses the issues and concepts identified in this overview to report on NQFs in the APEC economies. The information on the APEC economies was obtained from desktop work and contacts available to the team but has been supplemented with information from the survey described in section 3 and Appendix 2.

The changing nature of work creates demands for more flexible, multi-skilled workers who are mobile across the economy and internationally. For efficiency, and fairness, this requires that a qualification or skill, however or wherever acquired, should have common meaning among employers selecting workers throughout the country. For individuals it implies they should be able to have their qualifications and skills recognised for entry into further studies or relevant forms of employment over their lifetime.

NQFs classify qualifications according to criteria for learning outcomes achieved. NQFs, backed by a system of quality assurance, can contribute to improvement in matching workers to industry needs

and of individuals to education and training over their working lives. As outlined by Coles (2006 pp 5-6) NQFs can do this by:

1. *Establishing national standards and levels* for the outcomes of education and training, skills, and competences.
2. *Promoting quality* by ensuring the standards are met by education and training providers or authorities who issue qualifications. This implies an associated regulatory system of approval and monitoring of qualifications and providers of training and also provision of information on qualifications and providers to the users of the system.
3. *Facilitating comparison* among the levels and contents of qualifications so they can be compared with confidence by education and training providers, employers and individuals
4. *Promoting access* to learning and transfers to higher levels of education and training by clarifying the entry points to qualifications. This can be facilitated if associated with the NQF there is some structured method of recognising the volume and level achieved in a variety of learning for the purposes of credit into further learning.

Tuck (2007) outlined a set of ‘problems and needs’ (fairly similar to those outlined by Coles) which an NQF can help to address. They are:

- consistency in standards;
- quality assurance;
- the relevance of qualifications for users;
- international recognition;
- access of learners to qualifications; and
- progression routes.

## **2.1 Development and implementation of NQFs**

Qualification frameworks are associated with reforms to the education and training system to provide for a more mobile workforce and to facilitate individuals to participate in education and training over their lifetime. Qualification frameworks have been associated with the shift from the content of education and training being under the control of providers towards the content being related to the achievement of knowledge and skills required in particular occupations as perceived by industry stakeholders, particularly in vocational education and training. This movement towards standards-based learning outcomes has led to the need for different forms of quality assurance for qualifications. At the same time it has created greater opportunities for credit for entry to further study of prior formal, informal and non formal learning.

The growth of the global economy has more recently increased the interest in comparing qualifications across economies. This is particularly relevant to migrant workers and also to the movement of international students. Economies increasingly reference their qualifications and their frameworks against those of other economies and form international agreements in relation to qualifications.

The literature on NQFs suggests several lessons for their implementation of NQFs (Coles 2006, 2008; Raffe et al 2008; Young 2006, 2008). These lessons include the need:

- to see NQFs as developmental entities to be built upon stakeholder commitment;
- to reflect national education and training system characteristics, and that this requirement limits the direct applicability of apparently attractive international innovations; and
- to avoid over-engineering qualifications systems and NQFs, especially in the less developed economies.

## 2.2 International and regional frameworks

The European Qualifications Framework (EQF) was adopted by the European Parliament and Council in April 2008. The EQF will support the correspondence between the member states' qualification systems. Some details are provided in Box 1 and further consideration will be given to the EQF in the conclusions to this report.

### Box 1. The European Qualifications Framework (EQF)

The European Qualifications Framework (EQF) acts as a translation device to make national qualifications more readable across Europe, promoting workers' and learners' mobility between countries and facilitating their lifelong learning.

The EQF will relate different countries' national qualifications systems to a common European reference framework. Individuals and employers will be able to use the EQF to better understand and compare the qualifications levels of different countries and different education and training systems.

The EQF encourages countries to relate their qualifications systems or frameworks to the EQF by 2010 and to ensure that all new qualifications issued from 2012 carry a reference to the appropriate EQF level.

The core of the EQF are eight reference levels describing what a learner knows, understands and is able to do – 'learning outcomes'. Levels of national qualifications will be placed at one of the central reference levels, ranging from basic (Level 1) to advanced (Level 8). It will therefore enable much easier comparison between national qualifications and should also mean that people do not have to repeat learning if they move to another country.

The EQF applies to all types of education, training and qualifications, from school education to academic, professional and vocational. The system shifts the focus from the traditional approach which emphasises 'learning inputs' such as the length of a learning experience, or type of institution. It also encourages lifelong learning by promoting the validation of non-formal and informal learning.

Most Member States are now developing their own National Qualifications Frameworks (NQFs) to link into the EQF. The Commission, national authorities and social partners are working to implement the EQF through an EQF Advisory Group. The group's work is complemented by the Cluster on the Recognition of Learning outcomes, one of the eight clusters within the Education and Training 2010 Work Programme, which supports the validation of non-formal and informal learning (extract from EC 2009).

The EQF has been developed in parallel with some major sectoral agreements relating to qualifications. In higher education the Bologna Process is a commitment by forty-six European countries to undertake a series of reforms to achieve greater consistency and portability. The Bologna Process aims to create a European Higher Education Area by 2010 in which students can choose from a wide and transparent range of high quality courses. Key components of the Bologna Process include:

- mutual recognition of degrees and other higher education qualifications;
- transparency (readable and comparable degrees organised in a three-cycle structure) including a Bologna Framework of descriptors and credit accumulation system titled the European Credit Transfer Scheme (ECTS);
- European cooperation in quality assurance; and
- a structure for development and implementation built around biennial conferences of Education Ministers of the participating countries, supported by representatives of the universities and their students. These meetings take stock of progress over the last two years and set directions for the next two, including the identification of targets, common data requirements and indicators of progress; this work program is coordinated by the Bologna Follow-Up Group (BFUG) (EC 2009).

In vocational education and training in the EU the Copenhagen Declaration aims to:

- rationalise and clarify information about VET programs and exiting tools for mobility;
- develop reference levels, common certification principles as well as common measures, including a scheme for transferring credit between VET programs, the European Credit System for VET (ECVET) ;
- formulate common principles for validating non-formal and informal learning; and
- promote common criteria and principles for quality in VET programs (European Ministers 2002).

Both of these developments have taken place alongside work on the recognition of informal and non-formal learning within the EU, including the development of an inventory of methods and tools.

Regional frameworks are also under development in the Caribbean, the Middle East, and the Southern Africa Development Community.

### **2.3 Asia-Pacific initiatives**

APEC, as stated earlier, has initiated the current study in response to the view of Education Ministers at their third meeting in 2004 that economies need transparent, accountable, regulatory, accreditation, and quality assurance systems for their qualifications.

Overlapping with this work of APEC was an announcement by Asia-Pacific Education Ministers meeting in 2006 (Asia-Pacific Education Ministers 2006) indicating their agreement to actively encourage and facilitate regional student and academic mobility and exchange, and address barriers to these activities. Ministers agreed to collaborate on:

- quality assurance frameworks for the region linked to international standards, including courses delivered online;
- recognition of educational and professional qualifications;
- common competency-based standards for teachers, particularly in science and mathematics; and

- the development of common recognition of technical skills across the region in order to better meet the overall skills needs of the economic base of the region.

At a follow-up meeting of senior officials in November 2006, it was agreed to undertake scoping studies to ascertain the current situation in the region and to determine where effort needs to be placed for future action.

Stella (2008) produced a report on behalf of the Asia-Pacific Quality Network for the Australian Department of Education, Employment and Workplace Relations (DEEWR) on quality assurance in higher education in the Asia-Pacific Region. The development of robust quality assurance is integral to the implementation of NQFs and the two areas need to be developed in tandem. The recommendations in that report regarding cooperative work on quality assurance are compatible with the findings of this current report on NQFs.

DEEWR (2008) released a report on the recognition of higher education qualifications for the region. The report recommended activities to promote awareness of the benefits of the recognition of qualifications, the establishment of *national information centres* on qualifications, and support for the development of NQFs. An example of this is the Australian national information centre AEI NOOSR<sup>1</sup>. It advises on how Australian and overseas qualifications compare, to help overseas-qualified people study and work in Australia. AEI-NOOSR has developed education profiles on over 120 countries and provides assessments for a fee of the higher education, post-secondary and technical and vocational qualifications of other countries.

In relation to NQFs DEEWR (2008) supported consultation on the development of a broad, overarching regional qualifications framework, a mapping of higher education systems and structures, promotion of credit systems, descriptors in the frameworks based on learning outcomes, learning from the more developed frameworks and mechanisms to support development of NQFs while avoiding the problems of earlier ones<sup>2</sup>.

## **2.4 Qualifications, qualifications systems, frameworks, credit systems and recognition tools**

The following definitions have been used in this project, drawn largely from work carried out in the OECD activity on qualifications systems and lifelong learning (OECD 2006).

### *Qualification*

A qualification is formal certification, issued by an official agency, in recognition that an individual has been assessed as achieving learning outcomes or competencies to the standard specified for the qualification title, usually a type of certificate, diploma or degree. Learning and assessment for a qualification can take place through workplace experience and/or a program of study. A qualification confers official recognition of value in the labour market and in further education and training.

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<sup>1</sup> Australian Education International National Office of Overseas Skills Recognition

<sup>2</sup> Stephens et al (2008) undertook related work with a focus on the international recognition of Australian vocational education and training (VET) qualifications. Their report stresses the importance of the Australian Qualifications Framework supported by the quality assurance system (the Australian Quality Training Framework) and the role of the major stakeholder—industry—in facilitating international recognition. The similar development of NQFs in other countries, and preferably regional NQFs, is seen as important

### *Qualifications systems*

A qualifications system includes all aspects of a country's activity that result in the recognition of learning. These systems include the means of developing national or regional policy on qualifications, institutional arrangements, quality assurance processes, assessment and awarding processes, skills recognition and other mechanisms that link education and training to the labour market and civil society. Qualifications systems may be more or less integrated and coherent. One feature of a qualifications system may be an explicit framework of qualifications.

### *National qualifications framework*

A qualifications framework is an instrument for the classification of qualifications according to a set of criteria for levels of learning outcomes achieved. The criteria may be implicit in the qualifications descriptors themselves or made explicit in the form of a set of level descriptors. The scope of frameworks may be comprehensive of all learning achievement and pathways or may be confined to a particular sector for example initial education, adult education and training or an occupational area. Some frameworks may have more design elements and a tighter structure than others; some may have a legal basis whereas others represent a consensus of views of social partners. All qualifications frameworks, however, establish a basis for improving the quality, accessibility, linkages and public or labour market recognition of qualifications within a country and internationally.

A qualifications framework therefore is a formal classification arrangement, which contrasts to the mostly informal relational aspects of a qualifications system. Qualification frameworks are often expressed as diagrams of the main qualifications and the levels of these qualifications. Levels typically relate to either complexity of learning and/or the progression routes that learners take. Sometimes the NQFs include taxonomies of the type of learning outcomes to be achieved at each level. Learning taxonomies can include e.g. type of knowledge, degree of application, degree of autonomy and contextual statements.

### *Quality assurance*

If education providers issue qualifications when the student has *not* achieved the learning indicated by the descriptors then employers and education providers will not value the qualifications or use them in their selection processes. Hence a qualification framework is only as strong as the *quality assurance system* supporting it. The quality assurance of qualifications includes meeting the requirements of the descriptors in the framework and the quality of the providers awarding the qualifications.

Quality assurance of qualifications typically involves three regulatory elements: accreditation, awarding and monitoring of providers. Variations in national qualifications, apart from their coverage of qualifications, typically relate to these three sets of variables:

- Accreditation may rest with a single or with multiple agencies, including self accrediting providers. Some NQFs have brought the accreditation of most groups of qualifications into a single qualifications authority or agency. In other NQFs the accreditation functions remain distributed across multiple agencies and providers.

- Award of qualifications can be carried out in various ways. In some countries a centralised agency awards groups of qualifications and in others awarding remains the responsibility of different awarding bodies and providers. There are no countries where all qualifications are awarded by a single central agency or authority.
- Monitoring of providers typically through an audit process involves some oversight of learning provision and assessments. This also can be located in a central qualifications agency or distributed across multiple agencies. Where these functions are distributed qualifications frameworks can be used as benchmark tools for the standards to be achieved in quality assurance.

Alongside the regulatory activities the provision of good information on qualifications and on the providers of education and training can assist the users of the system to choose effectively and thus exert market pressures on quality of the provision.

Where the quality assurance and information functions are handled by the body responsible for the NQF it can be said to be a *regulatory* one. That is the NQF has a formal role in the key processes for the delivery of a qualification. Through this role an NQF allows a qualification to be accepted as a nationally recognised qualification. Where none of these functions are located in an NQF the framework can be called *voluntary or enabling*. That is the framework is a tool or a set of tools that other agencies that are responsible for the accreditation, awarding and quality assurance can use as a tool to enhance and/or align these functions between qualifications and qualifications types. Regional frameworks like the EQF are enabling.

### *Credit systems*

Credit systems have been developed in some countries to complement the NQF. These are typically a set of taxonomy based level descriptors designed to enable and support the development of courses and qualifications, compare and align qualifications and therefore enable stronger links between qualifications. The description of the credit system being developed for VET in Europe (ECVET) indicates it is based on dividing a qualification into units. Each unit is defined in terms of knowledge, skills and competences (KSC) and can be characterised by the *relative level of the learning outcomes* involved, which may be defined by a reference level in the EQF, and *by its volume* which may be expressed in points or other factors.

### *Recognition Tools*

Some economies are developing Recognition Tools to make the meaning of qualifications more explicit for those using them, especially to employers and providers of education and training where a student may be seeking admission. The best known one is the *Diploma Supplement* which is a European initiative which aims to describe a higher education qualification in an easily understandable way and relate it to the higher education system within which it was issued.

Australia has recently established a form of Diploma Supplement called the *Australian Higher Education Graduation Statement* which all higher education providers can issue. It is currently being introduced on a voluntary basis (commenced from the end of 2008). It has five mandatory sections:

- The Graduate - personal details (name, student number)
- The Award – details of the level of the award, pathways and course accreditation

- Awarding Institution – the name and details of the institution
- Academic Record – an academic transcript
- Description of the Australian Higher Education System

Another initiative is the *Europass Certificate Supplement* for people who hold a VET certificate; it adds information to that which is already included in the official certificate, making it easily understood by employers or institutions outside the issuing country. The information in the Europass Certificate Supplement is provided by the relevant certifying authority.

Complementing these approaches, to improve the transparency of qualifications across country borders some countries have set up national information centres on qualifications to support the recognition of qualifications across countries. As discussed above, DEEWR (2008) recommended the development of information centres across the Asia-Pacific region.

## 2.5 Types of NQFs implemented

There are considerable differences among NQFs in the countries that have adopted them (Coles 2006). Such differences include whether the NQF involves:

- all education and training and qualifications, or just some sectors and qualifications;
- a number of levels (eg 8 in the EQF);
- level descriptors for units of learning or descriptors of broad qualification levels;
- descriptors defined against a taxonomy of learning outcomes (e.g. complexity of knowledge, and skill, application, autonomy) or by learning inputs;
- measures of the volume of learning (e.g. 10 learning hours = 1 credit);
- formulae for the volume and level of units needed for qualifications to be obtained (e.g. 100 credits at level 3 for a Certificate 3);
- a public register and information system on qualifications, pathways and providers and (preferably) their performance;
- occupational competency standards (nearly always in the VET sector) or other measures of learning;
- associated Recognition Tools to improve information on the value of qualifications;
- associated credit framework to estimate the level and volume of learning in various qualifications and in non-formal and informal learning to assist in transfers within the system, in employment selection and to support qualification design;
- regulatory quality assurance functions by the national NQF agency, or distributed to other institutions;
- links to other frameworks including regional frameworks;
- legal control, or voluntary involvement;
- development and control by a national NQF agency, or development managed by stakeholders,

This list of key features is used below as the basis for discussing the NQFs of the APEC economies that have introduced them. It might seem desirable for an NQF to have particular features, and



indeed to have a similar form across all education sectors. However, the form of NQF adopted is dependent on the circumstances of the particular economy. Stakeholder support—from other sectors of government, industry, providers and students—is vitally important for the development of trust in qualifications.

## **2.6 APEC NQFs: information from desktop work and survey**

A range of published and web based documents were analysed to give a basic overview of the extent to which economies had introduced NQFs and their features. The details here have also been supplemented with information in the surveys by member economies. Section 3 below draws on the surveys to provide a richer insight into the reasons for the development or non-development of NQFs, the benefits of NQFS and the support for regional frameworks.

Table 1 indicates which economies have frameworks or are developing them. It was constructed on the basis of a desktop scan and the survey. It shows that seven economies have whole or partial frameworks and that there are varying developments under way in another six economies. Of the remaining eight, some have expressed interest but there is no evidence of development of an NQF.

The broad features of the NQFs in the seven economies that have introduced them are outlined in Appendix 1 and summarised in Table 2. Table 2 shows:

- Five of the economies have NQFs covering all sectors—senior secondary, VET and higher education—but in all cases there are differences across the sectors in the nature of the framework and its application.
- Five of the economies have explicit levels of qualifications and two have them implicitly. For example Hong Kong SAR's has explicit 7 levels, Malaysia 8 and New Zealand 10.
- Most NQFs contain descriptors of qualifications and units, and have descriptors based on a taxonomy of learning outcomes for the VET sector.
- Six economies have measures of the volume of learning; five have formulae for the volume of learning required to achieve a particular qualification (which can be useful in the development of credit frameworks).
- New Zealand and Singapore and one Australian state have developed credit frameworks. All seven economies maintain a public register of qualifications.
- Competency standards are set in the VET sector in all seven economies.
- Recognition tools are being introduced in Australia and are under discussion in New Zealand but have not been reported to be under consideration in the other five economies with NQFs.
- The NQFs in each economy are managed by a national agency.
- Compliance with the NQF is supported by systems of quality assurance though it tends to be shared by a number of agencies, with higher education, VET and school qualifications usually handled separately.
- The frameworks have been supported by legislation or by government regulation.
- To date the NQFs are not linked to regional or international frameworks.

**Table 1. APEC economies with and without NQFs**

<i>APEC economy</i>	<i>Framework</i>	<i>Completed survey</i>
<b>Economies with NQF</b>		
Australia	All sectors, but VET and higher education somewhat separate	!
Hong Kong, SAR China	All sectors, but some industry areas still to be included	!
Malaysia	All sectors, but early stage of implementation	!
New Zealand	All sectors but differences for VET and higher education	!
Singapore	VET only	
Thailand	Higher Education only	!
The Philippines	All sectors included, but sectors managed separately	!
<b>NQF in development</b>		
Brunei Darussalam	In development	!
Canada	Proposed, one province Ontario has a partial framework	
Chile	In development	
Mexico	In development, details not yet available	
Republic of Korea	In development	!
Russia	In development	
<b>No NQF</b>		
Chinese Taipei	None	
Indonesia	None, but support for the concept	!
Japan	None, but likely	!
Papua New Guinea	None	
People's Republic of China	None	
Peru	None	
United States	None, some support but unrealistic in their federal system	!
Viet Nam	None	

**Table 2. Key aspects of qualifications frameworks in APEC**

<i>All qual's or just some sectors</i>	<i>A number of levels</i>	<i>Level descriptors for units or for qual's</i>	<i>Descriptors on taxonomy of learning outcomes or inputs</i>	<i>Measures of volume of learning</i>	<i>Formulae for volume and level for qual's</i>	<i>Register and public information system</i>	<i>Occupation/competency standards,</i>	<i>Recognition Tools</i>	<i>Credit framework for level and volume</i>	<i>Quality assurance (QA) by NQF agency</i>	<i>Links to other frameworks e.g. regional frameworks</i>	<i>Legal control, or voluntary involvement</i>	<i>Control by a NQF agency, or by stakeholders</i>
<b>Australia</b>													
All nationally recognised qualifications are included in the AQF	Level is not specified in the framework; but there are implicitly 11 levels	Descriptors for qual types. Approach differs across sectors	No explicit taxonomy but descriptors for each qual refer e.g. to knowledge, skills, performance and responsibility	Only for higher education measured in duration of months or years	No	The AQF Register has six sub-categories	Competency standards for VET. Not for schools or higher education	Australian Higher Education Graduation Statement introduced in 2008, to be implemented over 5 years	The state of Victoria has developed a unit based credit framework	AQF Council oversees the AQF; QA functions are distributed among the separate sectors and jurisdictions	No, but being explored	Legal with state and national legislation	Managed by Australian Qualifications Framework Council from 2008; previously by an advisory board.
<b>Hong Kong SAR</b>													
The HKQF covers academic, vocational and continuing education	7 levels with 7 the highest	Descriptors for units in vocational competencies developed by Industry Training Advisory Committees (ITACs)	4 elements: Knowledge/ Intellectual Skills; Processes; Application, Autonomy/ Accountability ; ICT and Numeracy	1 credit = 10 notional learning hours	Yes, eg Diploma at level 3 to level 7 ≥ 120 HKQF credits	Hong Kong Council for Academic Accredit. and Vocational Qual's (HKCAAVQ) maintains the Qual's Register	Yes for vocational education developed by ITACs	No information	A credit framework is being developed under HKQF	HKCAAVQ accredits and registers VET. Publicly funded universities have separate QA	No	Legal	National agency HKCAAVQ
<b>Malaysia</b>													
Malaysian Qual's Framework (MQF) for Skills, VET sectors, Higher Education and processes for Lifelong Learning.	8 levels: 5 for the Skills Sector/ VET sectors; 6 for Higher Education, three overlapping	Descriptors of qual's based on learning outcomes	Implicit 5 outcomes: complexity of knowledge; application; autonomy communication skills; breadth etc of practice	1 credit = 40 hours learning or academic load (all the learning activities)	Yes, eg bachelor degree 120 credits, certificate 60 credits under development	Register and public information on qual's and providers	Competency standards for skills and VET sectors, learning outcomes for Higher Education	No	Credit system being developed	Malaysian Qual's Agency (MQA) for higher education and Register; QA Unit for Polytech etc	No	Legal with state and national legislation	MQA implements and supervises the MQF

<i>All qual's or just some sectors</i>	<i>A number of levels</i>	<i>Level descriptors for units or for qual's</i>	<i>Descriptors on taxonomy of learning outcomes or inputs</i>	<i>Measures of volume of learning</i>	<i>Formulae for volume and level for qual's</i>	<i>Register and public information system</i>	<i>Occupation/competency standards,</i>	<i>Recognition Tools</i>	<i>Credit framework for level and volume</i>	<i>Quality assurance (QA) by NQF agency</i>	<i>Links to other frameworks e.g. regional frameworks</i>	<i>Legal control, or voluntary involvement</i>	<i>Control by a NQF agency, or by stakeholders</i>
<b>New Zealand</b>													
NZ has an NQF for the whole education sector	10 levels—levels 1 to 7 for certificates; 5 to 7 for diplomas; levels 7 to 10 for bachelor and higher degrees	Level descriptors for units and qual's	A taxonomy of process, learning demand and responsibility for levels 1-7; knowledge and skills statement for levels 8–10	Credits, reflecting the time a typical learner takes, 1 credit = 10 hours learning	A formula for the credits required at specified levels. 1 credit = 10 hours of learning	The NZ Register of Quality Assured Qual's includes national qual's and other quality assured qual's	Occupat'l competency standards or learning outcomes are specified in a common outcome based format	NZ Qual's Authority (NZQA) has released a discussion paper seeking feedback on the Diploma Supplement	System of credits includes a credit framework	NZQA administers NQF and QA of VET; NZ Vice Chancellors Committee deals with universities	No	Legal	NZQA has the major functions from senior secondary schools to VET and for international students
<b>Philippines</b>													
PNQF - three parts—basic ed., technical-vocational education and higher education	Implicit levels in separate sectors	Level descriptors for units and qual's	For TVET the taxonomy is: process, responsibility and application	For TVET by the number and content of units of competency in the qual	Explicit volume measure not reported	A register in each sector	Yes in TVET	No	The 'ladderization' of qual's allows for credit towards higher qual's	TESDA for technical and vocational; Commission on Higher Education (CHED) for higher ed.	The PNQF aims to enhance international recognition but is not linked to other frameworks	Legal under instruction from the President	Managed by TESDA and the Federation of Accrediting Agencies (FAAP) and (CHED).
<b>Singapore</b>													
Singapore Workforce Skills Qual's (WSQ) system, only for VET sector	7 levels	Descriptors for both units and qual's.	Yes:— complexity: knowledge and skills; problems applied to; independence etc; and occupational levels.	Recommended Training and Assessment Hours (RTAH) 10 = 1 Credit Value	Yes, eg Certificate =10 credits value, Diploma =20 credit value	Register	Competency standards	No	Levels and credits are assigned to units in a qualification	Qual's issued by Workforce Develop. Agency (WDA). QA: pre-delivery by approval of courses/ providers & post-delivery monitoring	No	Legal	Control by the WDA
<b>Thailand</b>													
For higher education only.	6 levels	Yes	Yes	Yes	Yes	Yes	Outcome based approach	Not yet	Yes	Commission on Higher Education - Bureau of Standards & Evaluation	Not yet, pending full implementation of own framework	Legal under the Commission on Higher Education	Commission on Higher Education