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(in collaboration with the CESR Team, UNESCO national consultants. and CESR international advisers)

For Ministry of Education (MOE)

Asian Development Bank

Myanmar Comprehensive Education Sector Review (CESR)
Phase 1: Rapid Assessment

Technical Annex on TVET Subsector Analysis – Policy, Legislation, Management & Service Delivery

Final version (revised 8 March 2013)

Foreword

This report was prepared as part of the Rapid Assessment (Phase 1) of the Comprehensive Education Sector Review (CESR), which is managed and directed by the Union of Myanmar Ministry of Education (MoE), coordinating inputs from other government agencies and support from an array of development partners (DPs). The report serves as a Technical Annex to the compilation "Volume 1" for CESR Phase 1. Under the framework of the CESR, the analysis reported herein was principally funded by the Asian Development Bank (ADB) under technical assistance TA 7275-REG: Implementing the GMS HRD Strategic Framework and Action Plan; German Development Cooperation through the "Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH"; and the United Nations Educational, Scientific and Cultural Organisation (UNESCO).

Subject to more in-depth analysis under Phase 2 of the CESR, the report presents initial analysis of Myanmar's technical and vocational education and training (TVET) subsector, based on various available data and information as well as efforts to consult with various stakeholders as part of the CESR's Rapid Assessment.

While the report was principally drafted by GIZ consultant Gerhard Kohn (focusing on TVET policy and management) and ADB consultant Carsten Huttemeier (focusing on TVET service delivery), it reflects a collaborative effort involving inputs from the CESR Team—including in particular Daw Tin Tin Shu, Daw Myat Thida Tun, and U Zay Yar Aung—throughout the process, national consultants mobilized by UNESCO (U Maung Maung and Daw Than Htay Khin), as well as CESR international advisers Ian Birch and Maurice Robson.

The report reflects this team-based approach, which included literature reviews and analyses of various documents, interviews with key TVET subsector stakeholders (e.g., government ministries, industry associations, professional associations, private and public training providers as well as enterprises and development partners), and visits to selected TVET institutions and organisations, as well as intensive discussions of findings. During early-stage work, the joint team more clearly recognized the extent to which the TVET subsector in Myanmar is rather complex, challenging and fragmented. Therefore, the CESR management and technical team, with support by the development partners (DP), organised three Round Table meetings during November 2012-January 2103 with representatives from the various line ministries involved in TVET delivery as well as employers and other stakeholders.

The report also reflects inputs from other members of ADB's core staff team for Myanmar education (in particular Wolfgang Kubitzki, as well as Chris Spohr and Yasushi Hirosato) and ADB-mobilized consultants supporting CESR Phase 1 (in alphabetical order, Siddeth Dy, Martin Hayden, Anthony Welch, and Marion Young), staff of GIZ (in particular Julia Froelicher), and staff of UNESCO (in particular Umar Alam and Myint Myint San). It also benefited significantly from dialogue with counterparts from AusAID and UNICEF (which are supporting overall CESR coordination), significant and relevant analysis by JICA, and other development partners supporting the CESR.

Disclaimer:

Content

Abbreviations/Acronyms

ADB	Asian Development Bank
AEC	ASEAN Economic Community
BMZ	German Federal Ministry for Economic Cooperation and Development
CESR	Comprehensive Educations Sector Review
CVT	Centre for Vocational Training
DP	Development Partners
DTVE	Department of Technical and Vocational Education
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
GTC	Government Technical College
GTHS	Government Technical High School
GTI	Government Technical Institute
MEC	Myanmar Education Council
MES	Myanmar Engineering Society
MoE	Ministry of Education
MoFA	Ministry of Foreign Affairs
MoH	Ministry of Health
MoHT	Ministry of Hotels and Tourism
MoI	Ministry of Industry
MoLESS	Ministry of Labour, Employment and Social Security
MoST	Ministry of Science and Technology
MoSW	Ministry of Social Welfare
NSSA	National Skill(s) Standards Authority
NQF	National Qualifications Framework
NVQF	National Vocational Qualifications Framework
PRC	People's Republic of China
TU	Technological University
TVE	Technical and Vocational Education
TVEC	Technical and Vocational Education Council
TVET	Technical and Vocational Education and Training
UMFCCI	Union of Myanmar Federation of Chambers of Commerce and Industry
UNESCO	United Nations Educational, Scientific and Cultural Organisation

Executive Summary

Findings/Critical Issues

TVET Policy, Legislation, Management:

- TVET system is rather fragmented
- TVET nomenclature not uniform, not harmonized
- Little coordination/cooperation among (14) line ministries involved in TVET (exception: NSSA)
- Upcoming ASEAN Economic Community perceived as a serious challenge for TVET (and beyond)
- Need for developing a National Qualifications Framework (NQF) to facilitate harmonisation & comparability of TVET in the ASEAN region

Access to TVET:

- Considerable GAP between potential demand for TVET and training capacities of public providers
- Effectiveness of training institutions is low (under-utilisation of capacities)
- Tuition fees and a rigid enrollment system, based on graduation marks may be a barrier for youth
- Access to TVET in the rural areas is very limited and training basically only provided by agricultural extension services
- High dropout rate in the TVET institutions (e.g. 40% after the 1st year of AGTI)

Relevance/Quality of TVET:

- TVET is highly supply driven and the subjects taught or tasks trained on are defined by officials who have no or little affiliation with the labour market/world of work
- Neither labour market partners nor training institutions have influence in the development of curricula
- With the introduction of NSSA, curricula need to be transformed into outcomes based curricula

Recommendations

Policy, Legislation, Management:

(1) TVET Round Table meetings to be continued and to be organised regularly
(2) Stakeholder representation of Round Table to be better balanced and to be harmonised with NSSA/Skill Development Committee (MoLESS)
(3) Round Table meeting to focus on (drafting) a TVET policy (including management structure; access; quality/relevance; financing; NQF) in preparation of an updated legislation
(4) Thematic Working Groups to be established to provide technical inputs/support to Round Table meetings
(5) Proceedings of Round Table to be supported by DP involved in CESR (TVET subsector)

Capacity – Access to TVET:

(6) Make better (more efficient) use of existing training capacities
(7) Increase number of short courses at existing institutions
(8) Further study the needs and ways for TVET expansion during Phase II of CESR
(9) Study ways to increase TVET for disadvantaged youth
(10) Study ways of TVET expansion for the rural population

Quality – Relevance of TVET:

(11) Further study training delivery (curricula, teaching and training methodology, instructional materials) with a view to increase quality and relevance

(12) Assist NSSA to become operational

(13) Study modalities of a TVET Teacher Training Programme with a view to establish TVET teacher training and research centre

(14) Study possible intervention areas for training relevant for the rural population

(15) Study training delivery for disadvantaged groups with a view to increase quality and relevance

(16) Support introduction of tracer studies

1 Part I: Policy, Legislation, Management of the TVET Subsector

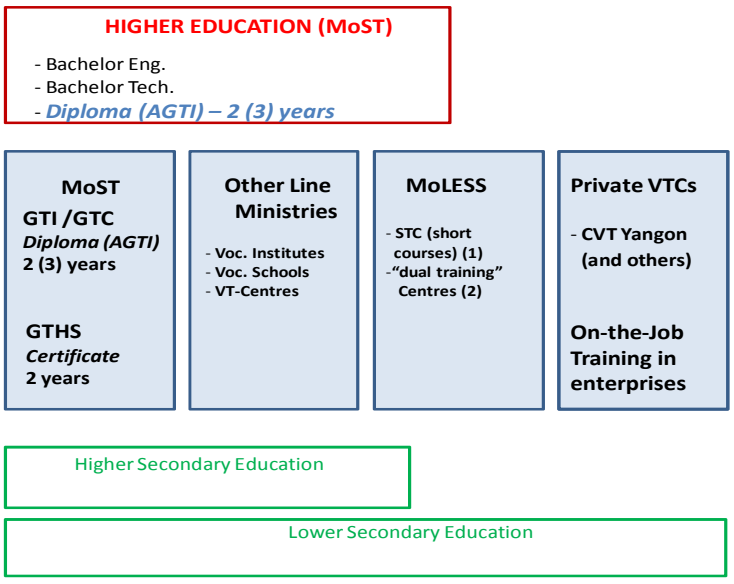
1.1 Current situation

1.1.1 Current TVET System's Architecture

In an attempt to get a systematic overview over types, delivery modes and responsibilities of TVET in Myanmar, the following picture emerged (see diagram 1 below). Diagram 1 reveals basically four major pathways or "towers" of what can be considered to belong to the TVET-subsector:

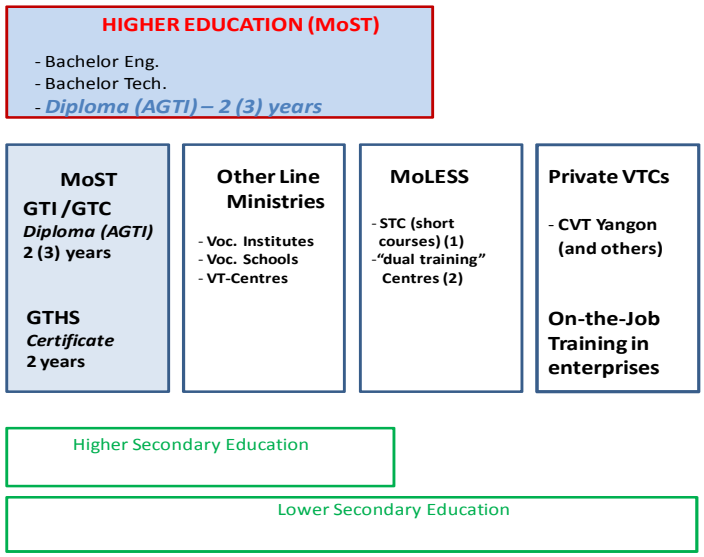
- (Formal) TVE offered by four different types of institutions under the auspices of the Ministry of Science and Technology (MoST): Government Technical High Schools (GTHS); Government Technical Institutes (GTI); Government Technical Colleges (GTC); and Government Technological Universities (TU).
- TVET offered by different types of institutions of another thirteen (13) ministries, among them: Ministry of Industry; Ministry of Agriculture; Ministry of Environmental Conservation and Forestry; Ministry of Social Welfare; Ministry of Co-operatives; Ministry of Hotels and Tourism; Ministry of Education; Ministry of Border Affairs; Ministry of Transport; Ministry of Culture; Ministry of Sports.
- Vocational training offered by the Ministry of Labour, Employment and Social Security (MoLESS), which is consisting of short courses conducted at one of their three skills development centres or in companies.
- Vocational training provided by private training providers such as the Swiss-supported Centre for Vocational Training (CVT) in Yangon. In addition it is assumed that many (medium and large scale) enterprises do conduct some sort of on-the-job skills training and upgrading, possibly in the form of unregulated apprenticeships.

Diagram 1: TVET Structure in Myanmar 2012



It is noted that MoST uses the term with a different connotation in their publications/papers. "Formal TEV(T),"[1] in MoST's perception, comprises all education and training offered by the institutions under their responsibility, i.e. including bachelor and master courses at Technological Universities (TU) (see Diagram 2). All other provision of TVET is considered to be "non-formal" or "in-formal".

Diagram 2: Formal TVE(T) as per MoST understanding



Another categorisation of TVET is provided by MoLESS. In their interpretation of the TVET system a principal distinction is made between "Academic Programmes" and "Skills Development Programmes" (see Diagram 3).

[1] In papers prepared by MoST, the terms Technical and Vocational Education (TVE) and Technical Education and Training (TVET) are used interchangeably. However, in the related Agricultural, Technical and Vocational Education Law of 1974 (last amended in 1989), the term "Technical and Vocational Education" is used.

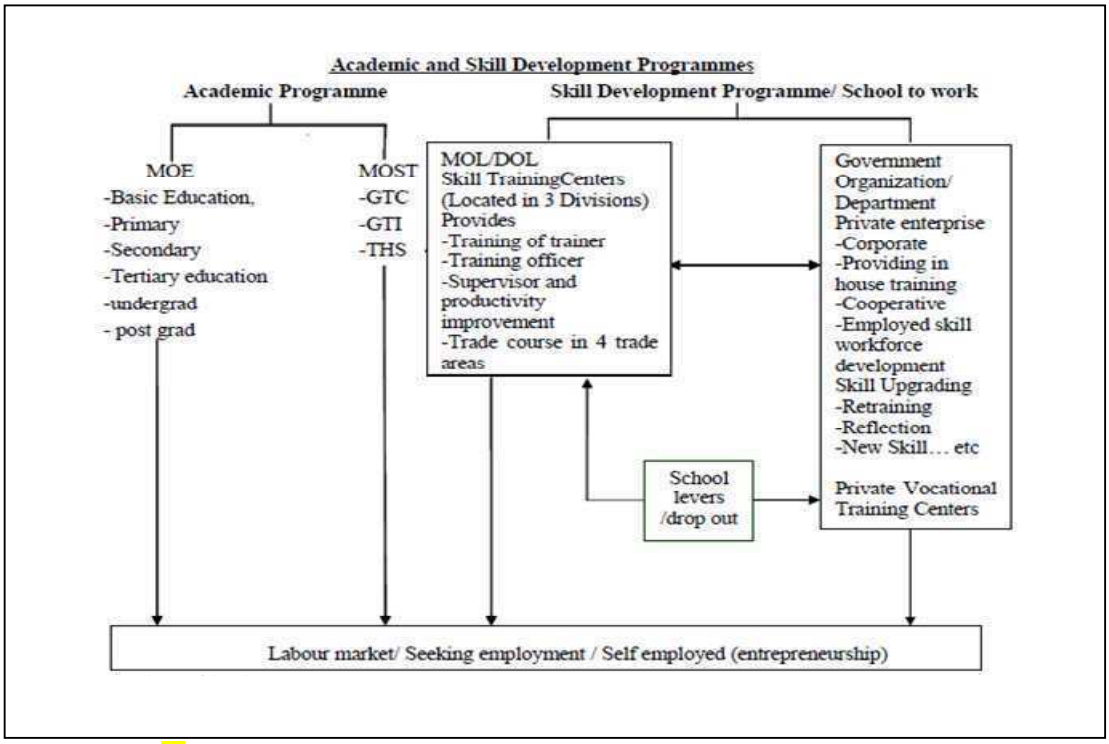
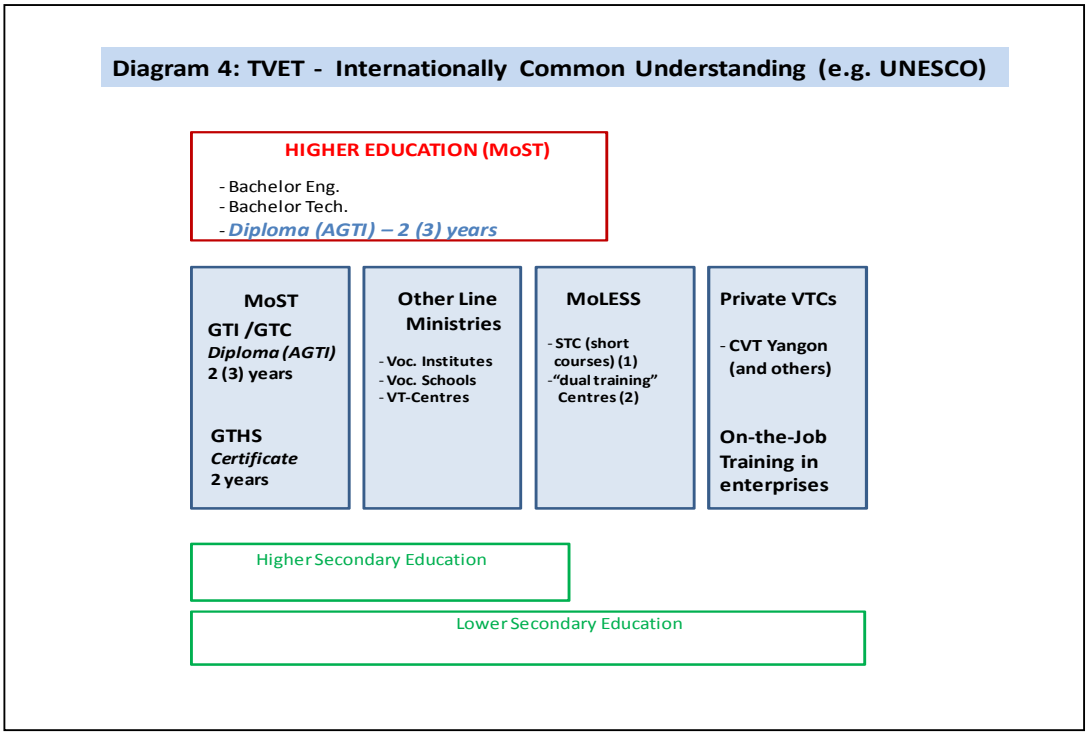


Diagram 3/ Source: Daw Khin Mar Aye (Ministry of Labour, Employment and Social Security): National Skill Standards Authority (NSSA) Myanmar, 14.06.2012

For the purpose of the CESR, the joint study team adopted a broad working definition of TVET which includes ALL forms of TVET (excluding TVE in Higher/Tertiary Education), whether formal or non-formal/informal, regulated or unregulated, taking place in institutions or enterprises, that focus on knowledge, practical skills and competences which are relevant for employment. In other words: *"In this broad definition, TVET refers to a range of learning experiences which are relevant to the world of work. The learning experiences may occur in a variety of learning contexts, including educational institutions and work places."* (UNESCO: Revised Recommendations Concerning Technical and Vocational Education, 2001).

This working definition of TVET is displayed in the following diagram 4. However, the joint study team proposes to include diploma courses at TU into the discussions on TVET because: (i) the diploma programmes at TU are similar to those offered by GTI/GTC; (ii) there seem to be high drop-out rates during diploma courses and those drop outs enter the labour market with "some" employment related knowledge and skills; and (iii) by considering diploma courses to be part of the TVET system (even if partially overlapping with Higher Education) provides a progression route for high performing TVET graduates (thus preventing TVET to be perceived as a "dead end" route).



1.1.2 Policy and Legislation

An overall TVET policy does not exist. Formal TVE under the MoST (since 1996) is regulated by the "Agricultural, Technical and Vocational Education Law of 1974, (Law No.4), with amendments in 1983 (Law No. 8) and 1989 (Law No. 20/89)."[2] According to this Law, "Agriculture, Technical and Vocational Education" means **all types of vocational education** offered by agricultural, technical and vocational training schools and institutes under the supervision of the Department of Agriculture, Technical and Vocational Education (of the Ministry of Education at the time of the last amendment) with the aims of fulfilling the objectives of agriculture, technical and vocational education. The objectives of this Law are:

> *(a) "To nurture technicians and specialists required for the establishment of industries.*
> *(b) To nurture luminaries required for the effective utilization of sophisticated technology for the development of agriculture and livestock activities.*
> *(c) To expand or increase vocational education courses which are in-line with the country's political, economic and social systems.*
> *(d) To nurture technicians and intellectuals who have positive attitude and strong nationalist sentiments."*[3]

Another important development that is relevant for TVET policy considerations are the activities undertaken by the MoLESS under the project "Enhancing Skills Recognition Systems in ASEAN (2004-2008)". This project was launched to help ASEAN member states to prepare for the upcoming ASEAN Economic Community in 2014. As part of the project, the (hitherto) MoL (now MoLESS) established, by order of the Union Minister of Labour and with Cabinet approval, a "National Skill Standard

[2] It was reported that this Law was amended again by Presidential Decree in 1991, but no related document could be found.
[3] The Agricultural, Technical and Vocational Education Law of 1974, (Law No.4), with amendments in 1983 (Law No. 8) and 1989 (Law No. 20/89).

Authority" (NSSA) in 2007. The (board of the) NSSA is headed by the Deputy Minister of MoLESS and is comprised of representatives of various line ministries,[4] business and professional organisations.[5]

The functions of the NSSA are designed to improve quality/relevance of and access to vocational training and skills development by:

- *"Selecting the prioritized occupational areas to set up competency/ skills standard.*
- *Establishing the working group comprised of respective experts to draw up the skills standard in each area.*
- *Designing the competency based curricula by the working groups in each area.*
- *Designing the required training materials in conformity with the above said curricula and conducting the necessary courses.*
- *Conducting the competency based assessment and issuing the national certificates."*[6]

NSSA has developed skill standards for 153 occupations/jobs, of which 55 have been approved by Cabinet and has started to apply these standards in curriculum development, for accreditation of (public and non-public) training providers and for skill/competence assessment of trainees.

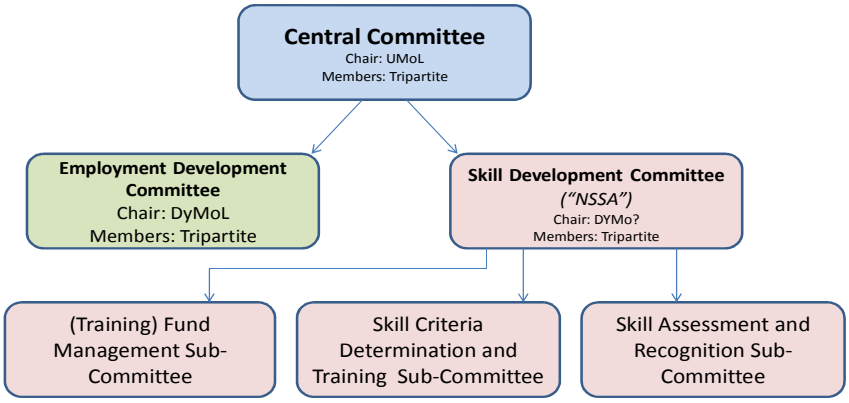
There are most interesting legal processes underway to formalise the NSSA and thus providing a legislation regarding the regulation of the fourth (and possibly part of the third) pathway of TVET, i.e. vocational training under MoLESS, under other ministries and in the private sector. An "Employment and Skill Development Law" has been drafted[7] and has been forwarded to Parliament. It is expected that the Law will be enacted soon. In the draft law (Bill), a new structure to regulate, manage and finance vocational skills development has been proposed, thus formalising the hitherto temporary set-up of the National Skill Standard Authority (NSSA). The draft law proposes to establish three multipartite bodies (with representatives from several government departments, employers, UMFCCI, technical associations, unions) as depicted in diagram 7 below. The current NSSA is reported to be transformed into the "Skill Development Committee" supervising and guiding the three sub-committees on Training Fund Management, Skill Criteria and Training, and on Skill Assessment and Recognition. Thus, the "Skill Development Committee" with its affiliated Committees resembles functionally what in other countries is usually dubbed a "National Training Authority" or a "National (Vocational) Qualifications Authority".

[4] Ministry of Labour, Employment and Social Security, Ministry of Science and Technology, Ministry of Education, Ministry of Hotels and Tourism, Ministry of Industry, Ministry of Railways.

[5] Union of Myanmar Federation of Chambers of Commerce and Industry, Myanmar Industrial Association, Myanmar Engineering Society, Myanmar Computer Association, Myanmar Timber Entrepreneurship Association, private training providers.

[6] Source: Daw Khin Mar Aye (Ministry of Labour, Employment and Social Security): National Skill Standards Authority (NSSA) Myanmar, 14.06.2012.

Diagramme 5: Management Structure proposed by Draft Employment and Skill Development Law



The multipartite composition of the "Skill Development Committee" and the definition of its mandate and functions are encouraging. The Training Fund shall be fed, inter alia, by a training levy to be paid by employers. After the Law will have been enacted, a number of regulations, rules and guidelines to operationalise and implement the Law will have to be drafted and enacted. Another interesting aspect of the draft Law is that employers may start to train youth who have attained 16 years of age (instead of currently 18 years of age).

1.1.3 Management of TVET

Formal TVE (i.e. the first pathway, diagram 1 above) is regulated and managed by the Ministry of Science and Technology (MoST). MoST was established on 2nd October 1996, i.e. after the last amendment of the "Agricultural, Technical and Vocational Education Law of 1974, (Law No.4), with amendments in 1983 (Law No. 8) and 1989 (Law No. 20/89). The Department of Technical and Vocational Education (DTVE) of MoST is in charge with the implementation of formal TVE (according to the definition applied by MoST, i.e. including bachelor and master programmes at Technological Universities). DTVE shall be guided and monitored by a "Technical and Vocational Education Council (TVEC)" established under the "Myanmar Education Council (MEC)" (which is affiliated to the Ministry of Education). The TVEC is reported to be the "highest supervisory body for DTVE".[8]

Based on the "Agricultural, Technical and Vocational Education Law of 1974" (last amended in 1989), the TVEC is chaired by the Minister of Education and comprises twenty five (25) members, all of them representing government organisations and institutions. Among them are representatives of the Ministries of Education, Livestock and Forestry, Mining, Industry, Labour, Construction, Transport, Home Affairs and Religious Affairs. TVEC has established two "educational committees", one each for technical and vocational education, and two "curriculum committees", one each for technical and vocational education.

Each of the altogether fourteen ministries involved in provision of TVET (in a broad sense) is following its particular ministerial structures to plan and manage TVET / skills development / human

[8] Dr. Win Aye (MoST), Country Report Myanmar, Presented at Experts Meeting on Competence Building in APACC Accreditation, Republic of Korea, 25 – 29 June 2007.

resource development. For example, in the Ministry of Industry (MoI) industrial training is managed by an HRD section under the Director General for the Directorate of Industrial Planning; in the Ministry of Labour, Employment and Social Security (MoLESS), skills development is managed by the Director General for the Directorate of Labour.

1.2 Critical Issues

The TVET System in Myanmar is rather fragmented. An agreed upon definition and nomenclature for what is internationally understood as TVET (see paragraph 6) is not in place. The (non-existing) demarcation between post-primary TVET and higher education under MoST is not in line with international practices. An overarching TVET policy has not been developed to date. The legislation to regulate formal TVET under MoST must be considered to be outdated.

There has been little coordination and co-operation among the fourteen line ministries involved in the provision of TVET and/or skills development during the last decades. The TVEC, affiliated to the Myanmar Education Council, is only supervising formal TVE of the MoST. Stakeholders of the non-public/private sector of the economy (employers, employees) and of other sections of civil society are not represented on the TVEC. Co-operation between ministries, the employment sector and other important institutions of civil society is only taking place to some extent at NSSA under the Ministry of Employment, Labour and Social Security (MoLESS) since 2007. An overarching (central) body or legal entity to regulate and manage the entire scope of formal and non-formal TVET has not been established. However, the structures and legal provisions of the proposed Employment and Skills Development Law are encouraging and point in the right direction, especially regarding the involvement of stakeholders of different quarters of the civil society. But this Law will only apply to (non-formal) skills development and will probably not have any legal effects on formal TVE under the auspices of MoST.

The upcoming ASEAN Economic Community (AEC) and the ASEAN labour market integration envisaged in the near future (2014) are perceived by stakeholders as a serious challenge for the entire education and training system. Some ground work to establish a vocational domain of a National Qualifications Framework (NVQF) has been done already by the NSSA/MoLESS in collaboration with representatives of other line ministries and representatives of civil society. However, there is a risk that decisions on the architecture of a Myanmar NQF, covering all qualifications of TVET and Higher Education, are taken in a rush; and that important technical, administrative and financial implications of an NQF are not sufficiently reflected, communicated and considered by stakeholders in the public and private sectors and the civil society.[9]

1.3 Recommendations[10]

1.3.1 For solving and improving the situation

The Round Table meetings of line ministries involved in TVET and (some) representatives of the civil society, organised by the CESR team, are considered to have been successful interventions to raise the awareness on issues and necessities of the TVET subsector in Myanmar. Participants in the Round Tables exchanged important information and views on the situation of TVET as well as on

[9] Some lessons learned with establishing NQF (especially the TVET domain) were presented by the author and discussed during the second Round Table meeting on 14 December 2012. In a follow-up to the Round Table, stakeholders from different line ministries and civil society decided to form a working group to discuss the establishment of an NQF in more depth.

[10] The following recommendations refer to policy, legislation and management aspects only. Further recommendations have been made by the consultants focusing on TVET delivery and on labour market.

some core issues of policy, legislation, governance, co-operation and collaboration in TVET. In view of the complexity and challenges in the TVET subsector it is crucial that this dialogue between the different government departments and other stakeholders in TVET will be continued, be systematically intensified and possibly be institutionalised. It is therefore recommended that:

i. The Round Table meetings to be organised regularly (e.g. bi-monthly, and if need arises) until an appropriate (overarching) TVET body or authority will be in place.
ii. Participation in the Round Table to be reviewed to provide for an improved and more balanced representation of TVET stakeholders from the different sectors of the society. The upcoming multipartite structures of the Employment and Skills Development Law to be given due attention and to be appropriately linked up (or integrated) with the Round Table.
iii. Round Table meetings to focus on TVET policy, co-ordination, legislation, financing, delivery, quality assurance and the structures of an upcoming NQF. The Round Table also to discuss and advice on current and planned interventions of development partners in the TVET subsector.
iv. Round Table meetings to be prepared and organised by the CESR Team with substantial administrative, technical and financial facilitation by the development partners involved in the CESR-TVET. Thematic working groups to be established by the Round Table and CESR Team to prepare technical inputs for the Round Table meetings.
v. Development partners in TVET to consider additional capacity development measures to support the Round Tables and the related thematic working groups, e.g. through special studies (in Myanmar and regional comparative studies), (national) seminars/conferences and/or study tours in the ASEAN region and beyond.

1.3.2 For Phase 2 of the CESR

There is still a need to collect more information on policy, legal and management aspects of the TVET sub-system (in a wider definition) as laid down in the TOR for Phases 1 and 2 of the CESR. Some important information gaps regarding policy, legislation and management of TVET may be closed through the continued Round Table meetings, the proposed thematic working groups to feed the Round Table meetings as well as through structured interviews of the CESR TVET team with representatives of the stakeholders represented in the Round Table. One important information gap on financing of TVET is still to be filled. Acknowledging that the proposed Employment and Skills Development Law (MoLESS) will establish a Training Fund to be fed, inter alia, by a skills development levy/training levy to be paid by employers, the studies and analyses of current TVET financing practices by the different line ministries should be reflected against the provisions of the new law.

However, considering the complexity, magnitude and urgency of TVET related issues as well as the recommendations made above to proceed with the Round Table ("Plus") meetings, one may consider the type of further research to be conducted during Phase 2 of the CESR as a sort of "Action Research": Any further studies and research should be future-oriented and should focus on drafting a well-informed TVET policy in close interrelations with the TVET stakeholders presented in the Round Table "Plus".

2 Part II: TVET service delivery

2.1 Current Situation

2.1.1 Overview of TVET institutions

459 public training institutions provide TVET in Myanmar. There are no statistics for the number of private training providers, but a qualified assumption is that there in total are no more than between 800 to 1000 training institutions including private providers.

Table 1: Major TVET Institutions and supervising Ministries in Myanmar[11]

Ministry	Field	TVET Institutions	Total
Ministry of Agriculture and Irrigation.	Agricultural Science	**Yesin Agricultural, University**	1
Ministry of Livestock and Fisheries	Veterinary Science	**Yesin, Veterinary Science University (1).** *Fisheries Science School (1). Breeding Training Centers (2)*	4
Ministry of Commerce	Commerce and Trade	*Yangon, Trade and commerce training center (Short courses)*	1
Ministry of Cooperatives	Art, Business management and Accounting	**Cooperative Universities (2 Cooperative Colleges (2**)	4
	Hand craft industry	**Lacquer ware college (1),** *Basic Weaving Schools (5) High Level Weaving Schools (8)*	14
Ministry of Science and Technology	Engineering	**University of Technology (4) University of Technology ICT (1) Technical Universities (27) Aerospace Eng. University (1) University of Computer Studies (25) Gov. Technical Colleges (3) Gov. Technical Institutes (11) Gov. Tech. High Schools (36)**	108
Ministry of Education	Arts and Science	**Arts and Science Universities(38) Degree Colleges (5) Institutes of Economics (3)**	44
	Teacher Training	*Education Colleges*	20
	Pre-Vocational Education	*Pre Vocational Schools (Combined with High Schools)*	120
Ministry of Health	Health Science and Traditional Medicine	**University of Medicine (4) University of Pharmacy (2) University of Paramed. Science (2) University of Dental Medicine (2) University of Nursing (2) University of Public Health (1) University of Community Health (1) Nursing and midwife schools (46)**	61

[11] Source JICA Data collection Survey on education Sector in Myanmar, draft interim report November 2012

		University of Trad. Medicine (1)	
Ministry	**Field**	**TVET Institutions**	**Total**
Ministry of Religious Affairs	Religious and Missionary Works	*International Theravada Bhuddist Missionary University*	1
Ministry of Transport	Maritime Engineering	Myanmar Maritime University *Myanmar Mercantile Marine College*	2
Ministry of Culture	Music, Theater and Arts	**National University of Arts and Culture**	1
Ministry of Environmental Conservation and Forestry	Forestry and Plantations	*Forestry Training Center (1)* *Forestry Development Training Centre (2)* **University of Forestry (1)**	5
Ministry of Defense	Military Defense Medical Science Engineering	**Defense Service Academy** **Medical Defense Service Academy** **Technological Defense Service Academy** **Nursing and Paramedical Defense Service Institute** **National Defense College**	5
Board of Union Civil Service	Civil Service	*Central Institute for Civil Service (Short Courses)*	2
Ministry of Border Affairs	Teacher Education, Arts and Science	*University for the Development of the National Races of the Union (1)* *Youth Nationality resource Development Degree Colleges and Central Training Schools (2)*	3
	Vocational Education	*Vocational Training Schools for Women' Domestic Science* *Training Schools for Youth Development of Nationalities from Border Areas*	58
Ministry of Industry	Engineering	*Industrial Training Centers (1 year certificate course)*	6
Ministry of Labor, Employment and Social Security	Engineering, Language and IT	*Skills Training Centers (Short Courses)*	3
Ministry of Social Welfare	Non Formal Education	*Youth Care and Vocational Training Centers for Disabled Adults (10)* *Schools for Visual and Hearing Impairment and Students with Disabilities (4)*	14

Bold: Higher education institutions which provide undergraduate diploma or higher degrees related to technical and vocational education.
Italic: TVET institutions which do not provide degree
Italic with underline: Higher education institutions which provide both undergraduate diploma or higher degrees and TVET without degrees.

TVET institutions located in Yangon, Mandalay and Central Dry Zone (CDZ) area tend to have few branches. On the other hand, TVET institutions under DTVE have many branches all over Myanmar following the policy to provide TVET for both rural and urban areas. TUs were established in all

regions and states except Chin state. The areas without TUs have GTCs or GTIs, and these TVET institutions are located in all region and states. GTHS are also being opened in all regions and states in Myanmar. These institutions are relatively congested in CDZ, where many industrial zones (Mandalay, Magway and Sagaing region) are located, as well as in the delta area (Ayeyawaddy region) as this region is the biggest population center in Myanmar.

There is a large scale gap of institutions between the border and central areas though tremendous efforts and remarkable progress has been made to establish TUs and GTHSs in all region and states in order to provide TVET opportunities nationwide. However, from the view point of effective utilization of limited financial resources, expenditures for institutions with very few students can be reconsidered. Some TUs and GTHSs ought to be considered for closed or merged with other institutions. The budget saved could be used for more cost effective ways to improve access to TVET in rural areas, e.g. scholarship for students, provision of student accommodations at urban institutions and so on.

The following table compares the scale of institutions in each state and region. There are few institutions located in states near the border and student enrollment is relatively small. GTHS especially, have considerably fewer numbers of students in the state institutions. Never the less, the number of teachers is not very different between states and regions, thus students in state institutions have an advantage in respect of student/teacher ratio. There is no reliable data on the geographical locations from other ministries except for the Ministries mentioned below which is an overview of major TVET institution under the Department of Technical and Vocational Education (DTVE), the University of Technology, the Ministry of Science as well as the Skill Training Centers under MoL as well as Institutes under the Ministry of Industry.

Table 2: Overview of Technological Universities

Name of Institution	**Technological Universities**
Number of Institutions	27 TUs throughout Myanmar except Chin state
Year established	2007 (Most were originally established from 1977 to 2007 and were upgraded from GTHS, GTI or GTC.)
Number of students	Approximately 66,000, about 2,400 per TU (2011/2012)
Number of Lecturers	Approximately 3000 about 110 per TU (2011/2012)
Field of education	All TUs offer Civil Engineering, Electronic Engineering, Electrical Power Engineering and Mechanical Engineering. Some TUs offer IT, Mechatronic Engineering, Metallurgical Engineering, Chemical Engineering, Architectural Engineering, Petroleum Engineering, Textile Engineering, Mining Engineering, Biotechnology and Nuclear Technology. The degrees offered are AGTI (Diploma), B.Technology and B.E.

Table 3: Overview of Government Technical Colleges

Name of Institution	**Government Technical Colleges: GTC**
Number of Institutions	3 GTCs in the central dry zone
Year established	2007 (Upgraded from GTIs, which were established in 2004) and 2008
Number of students	Approximately 5000, about 1700 per GTC (2011/2012)
Number of Lecturers	Approximately 220 about 70 per GTC (2011/2012)
Field of education	GTCs offer Civil Engineering, Electronic Engineering, Electrical Power Engineering, Mechanical Engineering and IT. The degrees offered are AGTI (Diploma) and B.Tech. In addition two GTCs offer recently began offering B.E.

Table 4: Overview of Government Technical Institutes

Name of Institution	Government Technical Institutes: GTI
Number of Institutions	11 GTIs mainly located at central dry zone and states in upper Myanmar
Year established	1973- 2011 (6 GTIs were newly established after 2008, others were upgraded from GTHS)
Number of students	Approximately 5000, about 450 per GTI (2011/2012)
Number of Lecturers	Approximately 500 about 45 per GTC (2011/2012)
Field of education	GTIs offer Civil Engineering, Electronic Engineering, Electrical Power Engineering, Mechanical Engineering, Mechatronic Engineering, and IT. The degree offered is only AGTI. (4 GTIs began offering B.Tech in recent years but this is planned to eliminated in 2012/2013 AY)

Table 5: Overview of Government Technical High Schools

Name of Institution	Government Technical High Schools: GTHS
Number of Institutions	36 GTHSs throughout the nation
Year established	2009-10 (All old GTHS were upgraded as GTI or other institutions in the 1990's, and there was no GTHS for 10 years. All current GTHS are newly established.)
Number of students	Approximately 3000, about 80 per GTHS (2011/2012)
Number of Lecturers	Approximately 1000, about 30 per GTHS (2011/2012)
Field of education	Electronic Technology, Machining Technology, Building Technology, Building Services Technology, Auto Mechanics Technology, Electrical Technology and Metal Process Technology The course offered is two years education at the high school level (grades 10 and 11).

University of Technology (Yatanarpon Cyber City)

University of Technology (Yatanarpon Cyber City) is a new university established in 2010. It is the only university in Myanmar that focuses on ICT. This university is different from other universities regarding its education system. Five years of education are offered for the students in a B.E course. The system is close to the idea of CoE under DAST. This university also has an aspect of an institute for teacher education by offering a PhD course targeting lecturers and government officials of other TVET institutions such as TU, GT and GTI. The missions of the university are:

1) To Train Students to become skillful and Proficient Engineers,

2) To Become the Hub of Myanmar Cyber University Network to be able to Share Educational and Research Materials, and

3) To Become a Global Intensive Research University.

The university is pursuing challenging and innovative activities such as a joint degree program with Asian Institute of Technology in Thailand, and Asian Cyber University Networking under assistance of KOICA.

Table 6: Overview of University of Technology (Yatanarpon Cyber City)

Name of Institution	University of Technology (Yatanarpon Cyber City)
Number of Institutions	1 University in the Mandalay region
Year established	2010
Number of students	Approximately 1730 (2011/2012) to be increased to 4000 students in near future
Number of Lecturers	Approximately 127 (2011/2012) planned to increase in near future
Field of education	ICT, Electronic Engineering, Advanced Materials Engineering, and

	Precision Engineering Plans to offer B.E course (6 years), Masters course (2 years) and PhD course (3 years) in future. Half of students study ICT.

Table 7: Overview of TVET Institutions under the Ministry of Labor (MoLESS)

Name of Institution	Skill Training Centers
Number of Institutions	3 in Yankin at Yangon, Mandalay and Pathein
Year established	Yankin (1972 supported by ILO and UNDP, Mandalay (2008), Pathein (2011)
Number of students	9,549 (2011/2012:Yankin): Vocational training (445), Korean language training (1,426), overseas induction (7,678) for both government officers and private industries
Number of Lecturers	Only 12 fulltime staff (Usually ask outside part-time trainers when respective courses are started)
Field of education	Supervisor, Instructional Technique, Trade Skill Testing, Productivity Improvement, Basic Welding, Basic Electrical, Basic Machinist, Pipe Fitting, Basic Computer Application, Korean Language, Overseas Induction Courses (Durations are 2 weeks to 1.5 months)

Table 8: Overview of TVET Institutions the Ministry of Industry

Name of Institution	Industrial Training Centers
Number of Institutions	Six (6) centers mainly located at central dry zone
Year established	Mandalay (2008), Shinde (1979), Thagaya (2009), Pakkoku (2010), Magway (2011), Myingyan (Under construction). MOI also plans to establish an Advanced ITC in Yangon.
Number of students	120~216 per center (Target is youth that have completed grade 11: about 17-25 years old)
Number of Lecturers	24 trainers per center (Mandalay ITC)
Field of education	Mechanical Draughtsman, Conventional Machine Tool Operator, CNC Machine Tool Operator, Electrical Fitter, Computer & CAD/CAM, Welding, Electro Plating & Surface Treatment, Tool and Die Making, Automobile Maintenance, Industrial Electrician, Electronic Mechanic, Sheet Metal, etc. (1 year certificate course)

2.1.2 Budgeting and lack of financial resources

Government TVET institutions receive almost their entire budget from their respective ministries. Employment and deployment of teachers are also budgeted and decided by the respective ministries, and TVET institutions are not left with much influence in these matters. However, a university council law has been prepared to enhance autonomy of universities. This may change the situation for the TUs, but it is likely, that the law will not create more autonomy for other TVET institutions. The table next page shows the expenditure of the most recent five years in DTVE. The expenditure has gradually increased, but the percentage of GDP has been stable at about 0.1%. While it varies by year, generally speaking capital expenditures for facilities and equipment have been larger than current expenditures for personnel and maintenance. It is, however, observed during the survey at institutions that there is a shortage of equipment used as teaching aids at hands-on trainings as well as the equipment that the TVET institutions have is out dated. Therefore the budget for these purposes should be increased in order to provide quality education for all students at present and in the future.

Current expenditures of TVET institutions under DTVE are mainly used for teacher salaries. Capital budgets for facilities, equipment and teaching materials are unfortunately constrained. Therefore it is difficult to provide practical training to students in many TVET institutions such as the TUs, because much of the equipment and apparatus in laboratories and workshops is outdated or non-functioning. As a result, teachers tend to teach/train by lecturing from textbooks. This may also affect the drop-out rate, which is 40% at the 1st year of AGTI. In addition, there are very few opportunities to receive scholarships for both students and teachers. Improvement is required in these areas

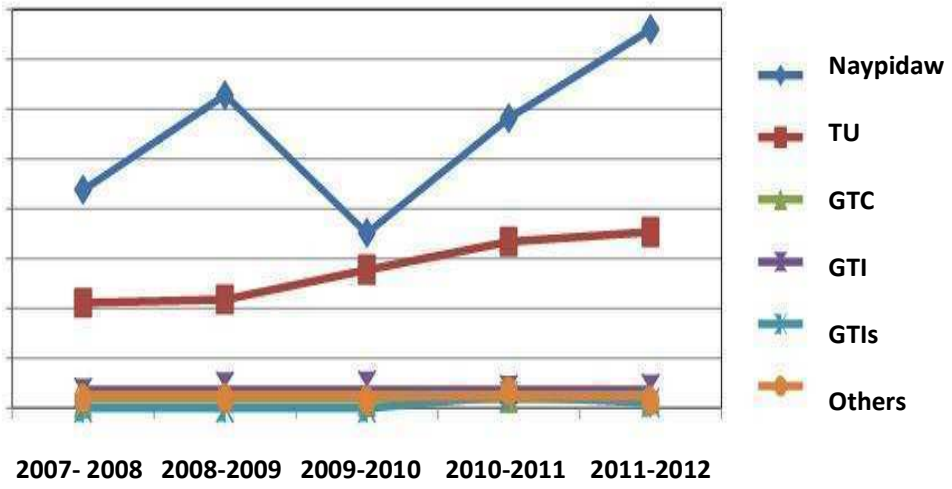
Table 9: Financial status of DTVE in recent 5 years[12]

(million Kyat)

Fiscal year	Current expense	Capital expense	Total	% of GDP
2011-12	15.762	8.179	23.941	-
2010-11	8.541	12.101	20.642	0.10
2009-10	6.132	7.927	14.058	0.07
2008-09	4.976	13.000	17.976	0.11
2007-08	4.756	9.455	14.212	0.09
Total	40.167	50.663	90.830	0.09

The following figure shows the distribution of DTVE's budget to individual TVET institutions. The expenditure of Head of Office is the highest amount in each year, because basically procurement of equipment and building facilities are unified at the department level and the department distributes procured materials to each institution. The second largest amount has been distributed to TUs as they have the highest number of students and teachers among TVET institutions. The expense to other institutions is considerably lower in comparison with the department in Naypyidaw and TUs. There is unfortunately no similar information on financial status or distribution of budgets from other ministries information involved in TVET.

Table 10: Distribution of budget to TVET institutions under DTVE[13]



[12] Source: Developed by JICA study team based on the statistical data of MoST (2012) and Statistical Yearbook 2010

[13] Source: Developed by JICA study team based on the statistical data of MoST (2012): million kyat

2.1.3 Enrolment

According to MoST 79,771 students were undergoing training in institutes under the Ministry. There is no data on how many students are trained by other ministries, but with an early exit of approximately 1.0 million students from primary and secondary education annually, the Myanmar TVET system can only provide access to a limited number of these students. As the number given from Most, also include students in higher education, a qualified assumption is that no more than 10.000 students are trained to become skilled workers. Despite the number of students attending MoST training in 2011/2012 seem relatively high, it should be taken into consideration that only an average of 60% graduated their training and education, the rest dropped out.

Table 11: Number of students in each study field and MoST institution in academic year 2011 to 2012[14]

Study field	TU	GTC	GTI	GTHS	Total
Civil Engineering	20.915	1.611	1.782	0	24.308
Electronic Engineering	11.208	966	377	0	12.551
Electrical power engineering	11.206	1.050	1.432	0	13.608
Mechanical Engineering	14.197	1.150	1.600	0	16.947
IT/ITC	3.056	399	32	0	3.487
Mechatronic Engineering	2.466	0	28	0	2.494
Metallurgical Engineering	143	0	0	0	143
Chemical Engineering	683	0	0	0	683
Architect Engineering	1.213	0	0	0	1.213
Petro Engineering	522	0	0	0	522
Textile Engineering	276	0	0	0	276
Mining Engineering	214	0	0	0	214
Biotechnology	197	0	0	0	197
Nuclear technology	101	0	0	0	101
Electronic technology	0	0	0	391	391
Machining technology	0	0	0	339	339
Building technology	0	0	0	1.048	1.048
Building services technology	0	0	0	36	36
Auto Mechanics technology	0	0	0	695	695
Electrical technology	0	0	0	448	448
Metal Process Technology	0	0	0	70	70

The above show that the largest number of students trained by MoST is within higher education and the number of trained skilled craftsmen is not very high, despite that Myanmar need skilled labor and not academic graduates.

Also, it has been observed that the effectiveness of the institutions is low. Institutions are normally open from 9 to 3 during the day; some workshops have vacant space but are not utilized full time. Furthermore, most workshops are poorly equipped and the total enrollment of students seems rather low, despite the high student/class ratio. In addition, fees and a rigid enrollment system may be an enrollment barrier for the students.

[14] Source JICA Data collection Survey on education Sector in Myanmar, draft interim report November 2012

2.1.4 Critical issues

It is a critical issue that relatively few students have access to skilled training within TVET in Myanmar. Reasons can be several as mentioned above, but it is essential that the TVET system in Myanmar increases capacity in order to meet the labor market demands for skill labor in the future. At the moment only Skill Development Centers under MoLESS, Ministry of Industry and Ministry of Co-operatives are the only providers of short courses (1 to 9 month courses) in the Myanmar TVET system. With reference to Data Collection Survey done by JICA, November 2012, the total enrollment of the skill development centers were 9549 trainees in 2011/2012, but only 445 out of the 9540 trainees were enrolled for vocational training. The rest was enrolled for Korean language courses (1426) and overseas induction (7678). It has not been possible to get access to information on short course delivery from other ministries like Ministry of Transport, Ministry of Hotel and Tourism, Ministry of Border Affairs and other Ministries involved in TVET delivery.

The rather low efficiency of the TVET institutions is another critical issue, most TVET institutions, apart from few private training providers, visited were only open from 9 am to 3.30 pm; expanded opening hours would increase capacity, but will need equivalent supply of adequate equipment and human resources in terms of workshop assistants and teachers.

Also access to TVET in the rural areas is very limited, possibly only covered by the extension service of Ministry of Agriculture and to a very limited extend Ministry of Cooperatives in terms of mobile village community service. Also existing TVET system in Myanmar consider short courses as courses with a very limited time frame from 6 hours to 4 weeks, however time for short courses should not be fixed, but aligned with the content and complexity of the courses.

Funding of the non-formal TVET institutions is also a critical an issue, while Myanmar lack skilled labor, the data collection survey done by JICA as well as conclusions drawn from study visits to institutions shows that TVET in lower end of the hierarchy or non-formal TVET lacks considerable funding in order to increase intake and deliver quality training.

2.1.5 Recommendations for Phase 2

For further progress in CESR Phase 2, key collaboration partners/ministries need to be selected; potential partners could be Ministry of Transport, Ministry of Tourism, Ministry of Science and Technology as well as Ministry of Cooperatives and Ministry of Agriculture with a view to poverty alleviation in the rural areas as well as targeting potential growth in sectors like construction, hotel and tourism and manufacturing with reference to initial labour market study done by the CESR in the rapid assessment phase. Therefore, it is suggested that s short assessment is carried out for each of the potential ministries during phase II in order to analyse existing duplication of courses as well as possible areas of collaboration with other ministries.

This should be done according to present and foreseen labour market demands as well as a thorough analyse of the potential partners. Overall criteria to be considered for future collaboration could be:

- Capacity in terms of institutions and management
- Transparency
- Commitment in terms of “willingness to change”
- Labour market trends for increased employment

A thorough analysis of the efficiency and capacity together with a proposal for adequate budgeting need also to be carried out and a catalogue of possible intervention areas for increased enrolment should be developed and discussed with collaboration partners.

As the Myanmar TVET system is dominated by a supply-driven mindset of government officials, there is an absolute need to work in partnership with entrepreneurs/business associations/chambers in order to change the system from supply driven to a demand driven TVET system. The collaboration and future partnership need also to address the need for skills up-grading possibilities for the existing workforce and propose funding modalities for skills upgrading as well as utilization of existing resources. The collaboration with and creation of partnership between ministries and entrepreneurs/business associations/chambers need to be prioritized during phase 2 of the CESR.

With a view to poverty alleviation, it is highly recommended that collaboration with Ministry of Agriculture is intensified during Phase 2 either to support the existing extension services or to engage in a joint collaboration with Ministry of Cooperatives and Ministry of Agriculture. A concept of establishing "farmer's high schools" could be considered, however, high school in this sense should not be confused with the traditional technical high schools, but be "high schools" were young farmers supported financially over a short period (3 to 6 months) were able to receive education in basic mathematic, language etc. as well as technical subject within farming, livestock production etc. Ministry of Co-Operatives could contribute with training in income generating activities, especially for women. A joint collaboration between two ministries e.g. the Ministry of Cooperatives and the Ministry of Agriculture could be considered and should be on the agenda for phase II.

As the only information on funding and budget status available is from the DTVE, it is necessary during Phase 2, to make a further study of the existing funding and budget modalities in other Ministries involved in TVET. This should be done with a view to propose other budgeting and funding principles and simulation models for e.g. training levy, education taxes and activity based budgeting. Appropriate funding will definitively be a mean for increased capacity, but also be a mean for improved quality in TVET delivery.

A future modality for financing TVET could be a "taxameter" system based on the actual price for training one student at a given course. The total price for training delivery should include salaries for teachers and workshop assistants, maintenance of equipment and buildings, electricity and consumables and all other expenditures covering TVET delivery for the actual course. The "taxameter" system is based on the principle that the institution will receive 30% of the total cost for training at enrolment of the student, another 30% when the student has reached mid-term of the training – that be short or long courses- and finally 40 % or the rest when the training has been completed by the student. This will also encourage the TVET institutions to actively boost the enrolment of students, the quality of training and possibly also ensure a higher graduation rate, as a larger number of students will create a better economy for the institution. On the other hand, limited number of students enrolled, will consequently mean limited funds for the institution, which eventually could lead to closure of institutions which fails to enrol students and maintain quality in the training delivery. This would also the first step towards responsible autonomy for the TVET institutions.

A mean of increasing capacity is to initiate the delivery of targeted professional short courses which has a modular approach. With reference to the initial labour market survey carried out by the CESR, increased short course delivery should be done for sectors where growth is foreseen such as the construction, manufacturing and hotel and tourism sectors. Short course delivery should be based on a modular approach and should be based on the initial work done by the NSSA in respect of the

development of national skill standards, but will require an interdisciplinary collaboration between responsible ministries due to the fact that duplication of courses is quite common between the different ministries in the present TVET system. For a matter of relevance, employers/industry partners from private sector should be involved in the planning process why it is suggested that Phase II also will focus on private sector involvement in any workshops held regarding development of skills and increased capacity. The issue of increasing short courses with a modular concept need to be elaborated during phase two and a number of workshops should be held in order to disseminate the concept, but also in order to reach agreement in the delivery of courses. The long term objective will be to produce courses, which has the same objective and content disregarding under which ministry and where in the country obtained; the certificate shall guarantee that a trained person has the same competences whether he/she is trained by a different ministry. The use of national skill standards will be the "ice breaker" for this purpose. The concept of a modular training concept will be elaborated under quality of TVET. In respect of training for the rural population a further study of the capacity of Ministry of Agriculture and e.g. Ministry of Co-operatives is needed during Phase 2 in order to develop mechanism and alternative ways to increase training capacity for the rural population.

2.2 Quality of TVET

Despite the limited time frame for the CESR rapid assessment it has been possible to create a snapshot of the quality of TVET across the wide diversity of training providers. In general, public TVET training delivery, curriculum development and assessment of students is directed from respective departments in the ministries. Private providers seem to be more flexible and pursue affiliation with international recognized organization such as City and Guilds, UK, thus using their curricula and syllabuses and assessment materials.

It should be acknowledged that quality of TVET delivery and its improvement do not depend on single interventions like change of curricula, equipment etc. It is a very complex area, which covers assessment, curricula, equipment, training delivery etc., but also a significant change of mind setting, which is a very long process.

2.2.1 Curriculum

Across the range of public TVET providers it is significant that curricula development is done in departments concerned with TVET in the various ministries involved with TVET. Despite that curricula are claimed to be revised once or every second year, there is no evidence of public or private enterprise involvement in the development of curricula. The consequence has been that TVET is highly supply driven and the subjects taught or tasks trained in are defined by officials who have no or little affiliation with the labor market. Some departments/ministries e.g. the Ministry of Industry have adapted foreign curricula. There is unfortunately no evidence, how this adaptation is carried out and who is involved in it, but officials interviewed are all of the opinion that all curricula are adapted to Myanmar conditions. However, it does not alter the fact that many of the curricula in use are outdated and do not correspond with actual developments in regional, national and international labor markets. Below are an overview of training institutes and the development of curricula and teaching materials.[15]

[15] Source JICA Data collection Survey on education Sector in Myanmar, draft interim report November 2012

Table 12: Overview of training institutes and the development of curricula and teaching materials[16]

Name of Institution	**Technological Universities**
Curriculum and teaching materials	Curriculum Development Committee under DTVE designed a standardized curriculum and textbooks for all TUs. After the examination at the end of academic year, students have to conduct one month on-the job training at private or public industries or factories (Industrial Attachment) or Project work.
Issues and remarks	Lack of equipment/ teaching materials for practice, fixed curriculum. Some TUs will not offer B.E from the academic year 2012/2013
Name of Institution	**Government Technical Colleges: GTC**
Curriculum and teaching materials	Same as TU
Issues and remarks	Size of institution is relatively small in compared with TUs. However there is no difference with TUs in educational content in recent years, because two GTCs offer B.E course.
Name of Institution	**Government Technical Institutes: GTI**
Curriculum and teaching materials	Same as TU
Issues and remarks	There is no difference with GTCs in educational content at 4 GTIs because they offer B.Tech course. Some GTIs have less than 20 students enrolled / year.
Name of Institution	**Government Technical High Schools: GTHS**
Curriculum and teaching materials	Standardized curriculum is used in all GTHSs. Academic curriculum and textbooks are same as high schools under MoE.
Issues and remarks	GHTS was abolished once because of un-popularity with students and then re-established. However there are very few students in local areas and it is possible GTHSs will be abolished again in near future
Name of Institution	**University of Technology (Yatanarpon Cyber City)**
Curriculum and teaching materials	Using original curriculum and utilizes textbooks from overseas. The curriculum is fixed by department and lecturers cannot change without authorization
Issues and remarks	Facilities of ICT department are well equipped under the assistance of KOICA, and offers e-learning courses with other universities in Korea and ASEAN countries as a member of Asian Cyber University Network. On the other hand, the facilities of other departments have the same problem as other TUs. Facilities and teachers' capacity should be improved.
Name of Institution	**Skill training Centers**
Curriculum and teaching materials	Curriculum and teaching materials from the Ministry of Labor are used.
Issues and remarks	There are few trainees at vocational training and their training facilities also seem out dated. However the role of STC is now shifting to language training and overseas induction courses, which seems to be a good development in terms of avoiding duplication of training courses offered by other ministries.
Name Institution	**Industrial Training Center**
Curriculum and teaching materials	Curriculum and teaching materials vary in each ITC. Each respective country supports the development of curriculum. Graduates receive

[16] Source JICA Data collection Survey on education Sector in Myanmar, draft interim report November 2012

	certificate from Ministry of Industry.
Issues and remarks	Each ITC has different conditions depending on the supporting country. For example, support from Germany for Shinde ITC was completed more than 30 years ago, and facilities and equipment are outdated. The support from the People's Republic of China (PRC) for Mandalay ITC was completed in 2008 and it is difficult to expand the scale. On the other hand, Korea is continuing to support their respective ITCs like Thagaya and sent experts to ITCs it supports.

Course duration is fixed and do not consider the complexity of the subjects taught. As a result employers often have to retrain students after they have gained employment as their ability to fit into a workplace is limited. In respect of private TVET providers, use of curricula seems to be adapted from international organization concerned with TVET such as City and Guilds, UK, except for one training provider, the CVT who actively has trained curricula developers in collaboration with the mother organization, a Swiss NGO. The CVT also revise their curricula with the assistance of and in collaboration with Swiss technical experts.

2.2.2 Critical issues

With the anticipated establishment of the National Skill Standard Authority based on the Skills Development and employment bill, the TVET system in Myanmar is moving away from a supply driven system to a more demand driven system. With the introduction of skill standards, curriculum development will face several immediate challenges. In order to implement the 55 skills standards approved by the national assembly, curricula now need to be transformed into outcome based learning, thus corresponding with the competencies defined in the standards. It is noticed that the National Skill Standard Authority has been able to develop a number of skill standards for 175 of occupations with a remarkable speed. 55 of these have, as mentioned, already been approved by cabinet. The format used for the standards is a common and international recognized format adapted from supposedly Australia, never the less, the real question is if the content of the standards have been adapted accordingly so it fit into a world of training and work in Myanmar. Analyzing a number of standards, the team has found no evidence that standards have been adapted to Myanmar conditions, which may have consequences, when the standards are to be transformed into curricula and implemented. One of the consequences will be, that un-like the traditionally academic orientation that many vocational training programs have in Myanmar, competence-based vocational training programs will need to be characterized by:

- Focus on labour performance and not the course's contents.
- Improvement of the relevance of what is learned.
- Avoiding the traditional fragmentation of academic programs.
- Facilitating the integration of contents applicable to the job.
- Generating applicable lessons to complex situations.
- Favouring the autonomy of individuals.
- Transforming the role of the teachers toward a conception of facilitating and provoking.

Furthermore, characteristics for the vocational training programs based on competency should be:

- Competencies are carefully identified, verified and of public knowledge.
- Instruction is aimed at the development of each competency.
- The evaluation and assessment takes into account knowledge, attitudes and performance as the main sources of evidence.
- The progress of the students within the program goes at the rhythm of each person.

- Instruction is as individualized as possible.
- Emphasis placed on the results (Competent or not yet competent and not on marks)
- Requires the participation of workers in the elaboration of a learning strategy.
- The learning experiences and progress are guided by permanent feedback.

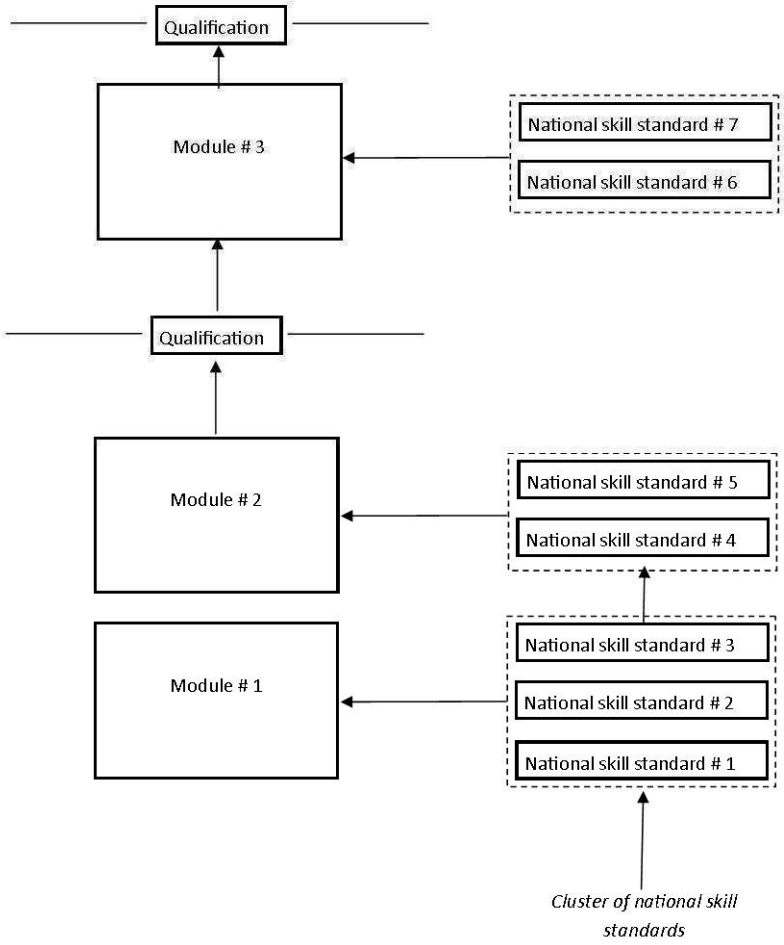
The above will probably require rewriting of existing curricula before the use of skill standards can be implemented in Myanmar, and it should be observed that curricula development for competence based training and education takes time and demand the involvement of expert workers within the field.

Another critical issue is that the skill standards developed, probably requires an amount of equipment which is not available. Unless investments in equipment are made for training, the institutions will have no possibility to deliver training which corresponds to the competencies defined in the skill standards. In order to ensure that equipment corresponds to the learning demands in the competence based curricula, no equipment should be procured before competence based curricula has been written unless the skills standards already list the equipment necessary.

Never the less the anticipated use of national skill standards is welcomed and with view to increased capacity as well as increased quality a national modular approach should be introduced across the various ministries involved in TVET.

A modular approach is based on the concept that modules contains a cluster of skill standards, when a student has passed a modular test he/she is declared competent according to the cluster of competencies contained in the module. Modules are to be considered as building blocks in a course; the building blocks are based on the national skill standards, thus ensuring that the content and learning objectives are the same despite when, where, how the training is or has been delivered. Module assessment is efficient, fair and reliable and involves the participation of external assessors recruited from industries. Below is a graphic presentation of the modular approach. The number of skill standards clustered is depending on the complexity of the standards, some standards might even stand alone and constitute a module.

Table 13: The relationship between national skill standards and modules



qualification. Modules can be interdisciplinary and utilized in more than one course e.g., a welding module may be utilized in auto tinkering as well as in metal fabrication.

2.2.3 Recommendations for Phase II

Technical workshops on modular curricula development should be held as early as possible in the second phase, where different options for curricula development are presented by CESR consultants. In parallel, it is also recommended that a "stock taking of inventory" is carried in selected training institutions which are identified for implementing competence based training. This will to some extend reveal the immediate needs for investment in equipment. However, the above is depending on the operationalization of the NSSA, why support to the NSSA and the formation of its sub-committees is highly recommended. Also CESR shall support the active involvement of private stakeholders in the formation of sub-committees under the NSSA, such as the Skill Criteria Determination and Training Sub-Committee. The selection of pilot schools for competence based short course delivery and the pilot delivery should be done with a view to engage industry/employers, and establish partnership schemes with the private sector, thus describing types, the extent of services between the public and private sectors; the development and delivery

of short courses in partnership with private sector will be a potential for further contributions to quality and relevance;

Immediate action for phase II:

- Assist NSSA to become operational.
- Further study and assessment of training delivery (curricula, teaching and training methodology, instructional materials) with a view to increase quality and relevance.
- In collaboration with the Skill Criteria Determination and Training Sub-Committee support the development of pilot competence based short courses targeted at construction, tourism and manufacturing priority sectors.
- Support the engagement with industry/employers, and propose models for partnership schemes with the private sector, describing types and extent of partnerships between the public and private sectors.
- Selection of pilot schools for modular short course delivery.
- Technical workshops on competence based modular curricula development.
- Presentations of 1 to 3 modular short courses to be implemented as a pilot projects for priority sectors.

2.3 Training delivery

TUs, GTCs, and GTIs in Myanmar train students by a fixed national curriculum in order to become an engineer or technician with a certain degree of knowledge and skills. This is very different style of education from engineering universities in developed countries. The qualifications of teachers/lecturers in TUs are still not very high and there are very few professors. This is not a significant problem given the current role of TUs.

The following table summarizes number of teachers under DTVE by type of qualifications. Basically, the Ministry has recruited new teachers who are currently pursuing or have completed post-graduate degree programs related to engineering subjects. The Ministry has also offered the opportunity of training after employment such as attending higher-level courses (such as Master and PhD programs) at a university of technology. Regarding the training for teachers of GTHS, majority of them receive refresher training and are deployed to schools after the training. They also have the opportunity of short in-service training courses which focus mainly on the contents of the fixed curriculum. The employment, training and deployment of teachers are managed centrally by each respective department in the ministries concerned with TVET delivery.

Table 14: Number of teachers in each qualification (MoST), academic year 2011 to 2012[17]

Institution	PHD	Master Engineering	Bachelor	AGTI (Diploma)	Master (Others)	Bachelor (Others)	Diploma	
TU	322	513	1078	91	765	265	20	3065
GTC	12	46	77	5	124	87	0	351
GTI	28	49	197	131	124	84	3	619
GTHS	2	3	218	239	349	181	7	999
Total	374 (7%)	611 (12%)	1570 (31%)	466 (9%)	1362 (27%)	620 (12%)	30 (1%)	5033 (100%)

Lecturers are recruited from Technical Universities and are usually bachelor degree graduates or retired government personnel. All lecturers interviewed during the rapid assessment had no

[17] Source JICA Data collection Survey education Sector in Myanmar, draft interim report November 2012

industrial experience, except for lecturers employed at the technical training institute under the Ministry of Industry in Mandalay. Here all lecturers were recruited from government industries managed by the Ministry. Workshop assistants are in general graduated students, who are employed directly after graduation; obviously they too have no industrial experience.

TVET training delivery in Myanmar is also basically influenced by the notion that TVET is divided into academic subjects delivered by a lecturer and practical subjects delivered by workshop assistants. TUs, Technical colleges and technical institutes in general, have a time distribution of theory and practical which is 70% theory and 30% practical, the only exemption is the institutes under Ministry of Industry which have a distribution rate of 70% practical and 30% theory. By the academic year 2013 – 2014, all ministries have agreed to raise the time for practical training so the ratio of time distributed between practical and theory will become 50 – 50. However, practical training is basically delivered as demonstration after the concept: "You watch and learn". Only few institutes visited practised, hands on skill practise/training e.g. the technical training institute under the Ministry of Industry in Mandalay, though equipment was limited with consequence that a rather large number of students practising on the same equipment. Private institutes, except the private Centre for Vocational Training, have so limited capacity in terms of equipment that they offer practical training in shifts, often only two hours a day.

2.3.1 Critical issues

The fact that the curricula is developed by ministerial officials with no involvement of industry partners and lecturers and workshop assistants have poor industrial experience make TVET delivery in Myanmar theory oriented, except for few exceptions as mentioned above, it is a critical issue when it comes to relevance for the labour market in Myanmar. Another critical issue is the lack of equipment which also forces the training institutions to increase the ratio of theory as equipment breaks down. The result is that students may have a substantial theoretical knowledge, but do not have any idea on how to apply the theoretical knowledge into practise. This is underlined by the fact that graduates from technical training institutes, that be technical universities, technical colleges, technical institutes or technical training centres need further training when employed at a workplace. The fact that TVET is delivered with a high ratio of theory and the facts that practise is delivered as a "demonstration and observe" modality may also influence the high drop-out rate from the institutions.

Another crucial issue is, that when the approved skill standards are to be implemented, there is a serious risk that some of the lecturers as well as the workshop assistants may not have the capacity to deliver the outcomes as described in a competence based curricula. The consequence will be that lecturers and workshop assistants will stick to the old system and a higher rate of students will not pass their examinations when assessed against the skill standards.

2.3.2 Recommendations for Phase II

The implications and challenges for the Myanmar TVET system when introducing skill standards need to analysed further and a catalogue of consequences and challenges should be developed. In collaboration with both public and private stakeholders possible solutions should be presented with a view to costing in phase 3. A training program based on a modular approach for lecturers and workshop assistants could be developed and presented for the relevant ministries involved in TVET with a view to establish a vocational teacher training and research institute. An alternative to existing practices in hiring and firing teachers/instructors need to be developed with a view to apply more flexibility and autonomy in the public TVET institutions. It is also recommended that study tours with focus on institutional management, training delivery, pedagogical development and training, career development for lecturers and instructors should be planned and carried out for the

relevant key persons in respective ministries in order to start a process of knowledge transfer. In respect of study tours, it is suggested that not only Asian countries are the target for study tours, but also highly developed western countries are identified.

2.4 Assessment and examinations

Myanmar TVET follows a traditional system, where the score of graduation marks will decide the student's further future. Though Ministry of Labour accepts students from grade 8 and upwards unconditionally, matriculation examinations are commonly used, and often will graduation scores decide if the student is allowed to sit for matriculation examinations. TVET examinations are not free in Myanmar and are considered to be a heavy financial burden for a large group of students especially for students in the higher end of the system as well as for students from rural areas. But even in the lower end, students who attend certificate courses are now required to pay for examination fees, despite the fact that the course is of very limited duration such as short courses delivered by MoL. Furthermore, most of the students attending certificate courses pursue overseas jobs through foreign employment agencies which also require fee for registration. If the student should be lucky enough to get an overseas job, the contracted employee/former student need to pay up to 3 month wages back to labour exchange office. There are unfortunately no statistics on how much examination fees contribute to the ministries budgets, but is assumed to be a lot.

Examinations in the Myanmar TVET system consists mostly of a theoretical part and a practical part, the practical weighs little approximately between 10 to 20 % compared with the overall score. The theoretical part weighs up to 70% and range from simple multiple choice tests in the vocational training centres to complex problems in TUs, which have to be solved – theoretically.

The existing testing system have with no doubt a big influence in the relatively high drop-out rate of students as many realize they not will be able to pass their semester examinations or their final examinations, furthermore by dropping out, students will save money which is essential as they often are considered as bread winners by their families. Furthermore, but not documented, it seem to be common practise in the TUs, that students in order to pass their examinations are requested to follow "private" tuition sessions delivered by their respective lecturer. These private tuition sessions are not free and create another financial burden for the students.

Table 15: Number and completion rate of students in each grade, academic year 2010 to 2011[18]

2.4.1 Critical issues

The issue regarding examination fees is a critical issue itself and need to be investigated with aim of finding appropriate solutions in order to reduce the financial burden for students and also reduce

[18] Source JICA Data collection Survey education Sector in Myanmar, draft interim report November 2012 based on statistical data from MoST.

the high drop- out rate. However the examination modality is also considered a critical issue as it creates a gap between the ability to deliver practical skills and the demands of the labour market as students tend solemnly to focus on theoretical matters in order to pass the examinations.

With the proposed introduction of National Skill Standards, the examination and assessment system will need to be changed at least up to diploma level. Traditionally, Myanmar uses testing and examination to determine whether or not a person should receive a qualification. The concept of testing and examination implies that assessment is a single event like an exam or formal test. The concept of assessment is broader. Assessment may include formal skill tests and theory. However, it also implies that there may be other methods of assessing competence. The reason why Myanmar needs to use the term assessment is to signify that there may be a number of ways in which a person is able to demonstrate their competence. A discussion of the principles of competency based assessment should clarify what is meant by assessment and how it differs from traditional examinations.

As the TVET sector in Myanmar has adopted skill standards, the authorities will need to adopt a Competency Based Training (CBT) model. A CBT model will better meet the current and new skill needs of the nation. CBT involves close links with industry to identify the skills, knowledge and attitudes required for competent workplace performance. These skills, knowledge and attitudes are specified by industry in "Skill Standards". In turn, the demonstration of the skills, knowledge and attitudes provides "evidence" that a person can perform a job to the standard specified by industry. Competency Based Assessment is the process of showing that a person can perform the Skill Standards.

Competency Based Assessment involves collecting evidence that a person can perform against the specifications in the Skill Standards. In traditional assessment, a person takes a single test or examination. In competency based assessment, there are a number of activities to determine whether a person has demonstrated competency.

To change the existing examination system towards a competence based assessment and certification system will take time and will need commitment and agreement among all stakeholders involved in TVET in Myanmar.

2.4.2 Recommendations for Phase II

A thorough analysis of the examination and assessment system of the existing TVET system is needed along with analyse of the future consequences for transforming the existing examination system into a competence based system.

A catalogue of possible solutions for foreseen challenges as described as above should be developed by the CESR TVET team and discussed with the relevant decision making stakeholders such as the Skill Assessment and Recognition Sub-Committee under the NSSA, why support to the further formation of NSSA and its sub-committees is highly recommended to during CESR Phase 2. Thematic workshops arranged by working groups should be held and included on the agenda for "round table meetings" in order to define and discuss challenges and solutions.

2.5 Equipment

In general equipment and workshops are in a rather poor state apart from technical institutes managed by the Ministry of Industry. At the Technical University, managed by Most, 70% of the equipment was not functioning and at the Vocational training centre in Mandalay, the equipment

and the workshop itself was in such a condition that it was doubtful that any sensible training could be implemented. The training institutions lack funds for maintaining their equipment, in some cases they also lack funds for running costs of energy demanding equipment like electro plating and foundry equipment. In general there are no financial or practical maintenance systems of equipment and repairs seem to be done on an ad-hoc basis if funds are available.
Though, there are small centres like the weaving centre in Mandalay under the Ministry of Co-operatives, who manage to maintain and operate industrial looms despite the fact that they origin back to 1954, a majority of the training institutes visited have equipment which is in a rather poor condition. As for private training providers except one, the availability of operational equipment was limited to few tools and few pieces of equipment to such an extent that practical training was performed in shifts, with only two hours practical training a day.

2.5.1 Critical issues

The lack of equipment has forced the training institutions to focus on theoretical training and to use demonstration as a practical training mode. There is in general not enough equipment available for hands on training. The few places where there are too many students share an operational piece of equipment. During field study it was observed that 9 students shared a single lathe, which again limits learning processes to a watch and observe process for many of the students. If the availability of equipment is neglected by the responsible Ministries, it will contribute to a further gap between industry demands and capabilities of trained students, as it is expected, with the newly approved investment law that industries will invest in production equipment within various sectors in Myanmar.

2.5.2 Recommendation for phase II

Equipment lists for few selected pilot programs need to be developed in order to prepare for a costing/investment plan.

Furthermore, an inventory for selected training institutions needs to be carried out in order to get precise information about the condition and running costs of equipment. A financial assessment should be carried out, in order to get further clarification on the present funding of TVET providers under the different ministries.

In line with the above, a financial modality for investment in equipment should be developed in collaboration with the relevant stakeholders together with a financial scheme for maintenance e.g. a depreciation system, which takes into account that it is training equipment and the wear tear is judged higher than ordinary production equipment. An inventory exercise for selected pilot training institutions should be carried out during CESR phase 2 and could form the basis for the costing of equipment in the CESR Phase 3.

3 Summary of recommendations

3.1 Policy, Legislation, Management

- The Round Table meetings to be organised regularly (e.g. bi-monthly, and if need arises) until an appropriate (overarching) TVET body or authority will be in place.
- Participation in the Round Table to be reviewed to provide for an improved and more balanced representation of TVET stakeholders from the different sectors of the society. The upcoming multipartite structures of the Employment and Skills Development Law to be given due attention and to be appropriately linked up (or integrated) with the Round Table.
- Round Table meetings to focus on TVET policy, co-ordination, legislation, financing, delivery, quality assurance and the structures of an upcoming NQF. The Round Table also to discuss and advice on current and planned interventions of development partners in the TVET subsector.
- Round Table meetings to be prepared and organised by the CESR Team with substantial administrative, technical and financial facilitation by the development partners involved in the CESR-TVET. Thematic working groups to be established by the Round Table and CESR Team to prepare technical inputs for the Round Table meetings.
- Development partners in TVET to consider additional capacity development measures to support the Round Tables and the related thematic working groups, e.g. through special studies (in Myanmar and regional comparative studies), (national) seminars/conferences and/or study tours in the ASEAN region and beyond.

3.2 Capacity – Access to TVET

- Study and assess existing short course delivery with a view to develop a consistent plan for Increasing the number of short courses at existing institutions in various ministries, including student admission policies and finance-related interventions.
- Study possible income generating measures for public TVET institutions through production and service provision, and other cost-recovery mechanisms, assess extent and potential for engagement in public-private partnerships to lower the public financial burden.
- Further study and assessment of existing training capacities with a view to develop modalities for increased capacity through the expansion of competence based short courses.
- Further study the needs and ways for TVET expansion during Phase II of CESR with a view to future development partner support.
- Study ways to increase TVET for disadvantaged youth with a view of targeted support to disadvantaged students including student admission policies, finance-related interventions (e.g., scholarships and/or loans), and/or other support schemes (e.g., remedial assistance) for students from disadvantaged groups (e.g., from poor households, ethnic minority groups).
- Study and assess training delivery capacity for the rural population including capacity of training institutions and extension services under the Ministry of Agriculture as well as admission policies, finance-related interventions (e.g., scholarships and/or loans), and/or other support schemes with a view to expand TVET for the rural population.
- Review budget allocation for public TVET provision and assess fund flow mechanisms under various ministries with a view to expand capacity.
- Carry out an inventory of equipment for selected pilot training centers in order to provide a comparative analysis of availability of equipment and equipment required for implementing national skill standards.

3.3 Quality – Relevance of TVET

- Further study and assessment of training delivery (curricula, teaching and training methodology, instructional materials) with a view to increase quality and relevance.
- Assist NSSA to become operational.
- In collaboration with the Skill Criteria Determination and Training Sub-Committee support the development of pilot competence based short courses targeted at construction, tourism and manufacturing priority sectors.
- Support the engagement with industry/employers, and propose models for partnership schemes with the private sector, describing types and extent of partnerships between the public and private sectors.
- Study modalities of a TVET Teacher Training Programme with a view to establish TVET teacher training and research centre including finance-related interventions.
- In collaboration with relevant ministries e.g. Ministry of Co-operatives as well as Ministry of Agriculture, study existing training delivery/possibilities for the for the rural population with a view to develop intervention areas for increased training and income generating activities relevant to the rural population.
- Study training delivery for disadvantaged groups with a view to increase quality and relevance in training delivery with a view to develop intervention areas for increased relevance and income generating activities adaptable to the rural population.
- In collaboration with selected public training providers develop and support the introduction of tracer studies.
- Review expenditures under various ministries (breakdown by capital and recurrent costs; salary/benefits and non-salary recurrent costs).
- Review financing arrangements for public TVET institutions including tuition/fees, income generating measures through production and service provision, and other cost-recovery mechanisms, assess extent and potential for tapping public-private partnerships to lower the public financial burden.
- In collaboration with the TVET team, develop a glossary of terms for the TVET sector.

ANNEX I: Study visit to training institutions in Mandalay & Yangon

CESR TVET sub-team study visit Mandalay and Yangon, November-December 2012

The below contains the initial findings from the CESR TVET institutions visits to Mandalay and Yangon. The team consisted of Carsten Hüttemeier, ADB, Ms. Ma Khiin, UNESCO and CEST sub team members Mr Zay Yar Aung and Ms. Mya Thida Tun.

1. Saunders Weaving School, Ministry of Cooperatives

Amarapura
Mandalay, Division
Contact person: Daw Tint Tint
Saunders Weaving School was established in 1914 and is now under the governance of Ministry of Cooperatives. The training center deliver following courses at certificate level 1 and 2:
Machine weaving course, 18 months duration
Hand weaving course, 6 months duration
Tapestry and Knitting course, 3 months duration.

The institute also delivers short courses for village citizen. These courses are primarily targeted at income generating initiatives for female citizens in the villages. Furthermore, the institute delivers "mobile training" in hand weaving; the target is women in remote villages in the Mandalay State.

The institute employs 14 teachers and 12 administrative support staff; teachers are recruited among former students, but are exposed to 40 days industrial attachment before they deliver training. Once a year all teachers are exposed to 5 days of industrial attachment as well as refresher courses held in the industry which includes basic pedagogical training.

1.1 Enrollment

The enrollment criteria for machine weaving courses are minimum passed middle school. Candidates are to pass an aptitude test and an interview before enrollment; approximately 20 students are enrolled every year. After completion of course the students are eligible for employment in government factories.

For hand weaving courses enrollment criteria are as a minimum passed lower secondary school and aptitude test, both oral and written. Only 10 students are enrolled every year for this course.

Tapestry and knitting course are open to students with passed primary school exam, but they also sit for oral and written aptitude tests, before they are enrolled. Only 10 students are enrolled every year for this course. All students are female.

According to the management most of the students seek employment in government factories after completion of the courses, there are no tracer studies, but drop outs seem not to be a problem.

1.2 Curricula

Curricula is developed by the Ministry of Cooperatives and issued to the institution. The institution has the right to add or amend in technical matters if needed. The curricula has been revised in year 2000 and again in year 2012, as the ministry wish more demand orientated training according to labor market demands. Skills standards developed by the National Skill Standard Authority are to be used by next school year, however there seem to be some confusion on the content and modality of the standards.

Students are not provided with text books, but the ministry provides funds for training materials (consumables), usually these are obtained through government factories by the institution. Teachers do have text books, but are to provide them by themselves at their own expense.

1.3 Financing

Budget for operations, wages and maintenance are submitted once a year based on last year expenditure. Ministry allocates funds once a year, but the institution may apply for additional funds if needed. From 2012 students are to pay equivalent to 22 US $ as tuition fee, however this still needs approval from the government. It is not known if the institution will be allowed to dispose over funds collected from tuition fees. Never the less the institution have a small production of handcrafts which are sold from the institutions show room. The institution has the right to keep funds gained from this activity and utilize them for training activities.

1.4 Equipment

Most of the equipment for machine weaving dates back from 1954 and are of Japanese origin. However all the machines are according to the management in running conditions and well maintained, despite the fact that only a small number of machines were running and several were without threading. Equipment for hand weaving consists of locally produced bench weaves and seems to function. It was not possible to gain information on how and when the equipment was maintained and or repaired.

1.5 Testing and assessment

All students are to pass a final test before obtaining a certificate. The tests consist of a 3 hour theoretical test and a 1½ hour practical test. For machine weaving course students are exposed to an examination after 10 months and again as a final assessment, after 18 months. Other students are only exposed to assessment by the end of the course, the testing mode for these students are also a 3 hour theoretical test and a 1½ hour practical test. The content of assessment and delivery mode is determined by the examination board of the ministry, but subject teachers are managing the testing and assessment by themselves. Marks are recorded on student's certificate; students who pass are as mentioned eligible for employment in government weaving factories.

2. Centre for Skill Training, Ministry of Labor

Room-301, Building 37, Ah Shae, Pyin Villa
Mandalay
Contact person: Min Min Win, Senior Staff Officer.
The center for dual training delivers following courses:
Electrical, 6 weeks duration
Welding, 6 weeks duration
Supervisory courses, 6 weeks duration.
Computer training courses for Ministry of Labor staff, after demand.
The institute employs 4 trainers and 3 administrative staff. Senior trainers have a Bachelor of Engineering; junior trainers have a Diploma in Engineering. None of the instructors have previous practical experience from industries; never the less, instructors also provide training in industries. 3 of the instructors have attended trainer of trainer courses in Southeast Asia.[19]

[19] Precisely where in Southeast Asia these are provided is not known.

2.1 Enrollment

It was not clear how many students were enrolled per school year, but each course enrolled approximately 20 students and all courses are repeated 5 times a year, which should give a maximum total of approximately 300 students a year. Training may be free of charge[20]; most students are admitted from junior secondary school, but unemployed are also admitted into the courses. Students must be at least 18 years of age. There are no aptitude tests for admission. There are 5 intakes for all courses a year; after 6 weeks of training students are send for 2 weeks industrial attachment.

Technical courses such as welding and electricity are mostly attended by males; supervisory courses are approximately 50% female and 50% male.

2.2 Curricula

Curricula were provided by the Ministry of Labor, the institution has no influence in the content or the duration of training. For ARC welding the curricula consist of 60% practical training and 40% theory, regarding supervisory and electrical courses the practical/theory ratio is not known. In future, curricula will be according to National Skill Standards, but only for ARC welding. Labor market demands are decided upon by the Ministry of Labor and corresponding subjects supposedly included in the curricula.

2.3 Financing

Budget for the institution's spending is submitted to Ministry of Labor once a year. Budget is based on activities which are decided upon by the Ministry. There is basically no difference in the budget allocations from year to year and the institution has no possibilities for additional funds if needed. Never the less, it was informed that budget allocations were sufficient. The institution did not provide any income generating activities.

2.4 Equipment

Most of the equipment for welding was observed broken or in a very bad condition. Equipment for electrical courses was not present. In fact the condition of the existing equipment was in such a condition that it seems impossible to carry out any training at all. 6 out of 8 welding machines were severely damaged, 2 may have been in working conditions, but in very poor shape and not suitable for training.

2.5 Testing and assessment

Final testing of the students consists of a practical test, content and duration of the test is decided by Ministry of Labor. This applies only for the courses in ARC welding and Electrical courses. Testing content and duration for supervisory courses is not known; only that it is determined by Ministry of Labor. External examiners (Censors) are present when testing the students; external examiners are recruited from the national assessment board. The students are supplied with a certificate, their markings are noted on the certificate, but it is possible for the students to obtain a national certificate if they undergo testing at a national skill testing center. Testing at a National Assessment Center is not free of charge, the amount of the testing fee is not known.

[20] Lecturer was of the opinion that tuition fee did exist; Director claimed that the training was free. Both Senior Lecturer and Director was interviewed independently

3. Industrial Training Centre Mandalay, Ministry of Industry

The Mandalay Industrial Training Centre provides training within the following subjects:
Conventional machine operator, (Turning and Milling) 10 months duration
CNC operator, 10 months as conventional machine operator plus one month CNC
CAD - CAM design, 10 months duration.
Electrical fitter, 10 months duration
Welding and electro plating, 10 months duration

All courses are level 2 courses (skilled level) according to the recently proposed national qualification framework, but this has not been verified.

The training center employs 25 permanent teaching staff and 15 administrative staff. All trainers/teachers are recruited from factories managed by the Ministry of Industry and have been to the PRC for a 5 months training of trainer course.

3.1 Enrollment

The institution enrolls approximately 180 students a year, with male/female ratio of approximately 50%. All students must have passed at least grade 10 (the semi-final grade of upper secondary, also referred to as "9th standard") as certified by their school: some entrants have also passed the matriculation exam at the end of grade 11. The Ministry of Industry determines requirements related to upper secondary school marks from year to year. All students are to pass a personal interview, but aptitude tests as such do not exist. Students' who possesses level 1 certificates (Semi Skilled) are eligible for enrollment, but it is not known how many of the total intake is level 1 certificate holders.

3.2 Curricula

All curricula are based on curricula from the PRC adapted for Myanmar conditions and approved by Ministry of Industry. Curricula may be revised, but changes are not allowed. All curricula have been used for 5 years, supposedly with no amendments. The institution provides students with text books and work sheets free of charge. Materials for training (Consumables) are also provided by the institution. Approximately 80% of the training is practical, why 20% is reserved for basic theory.

3.3 Financing

The institution's budget for operations, maintenance and wages are submitted once a year to the Ministry of Industry and based on previous years running costs. The operational budget is approximately 70 million Kyats. However, in 2011 budget was cut with 50% by the Ministry, supposedly only for expansion of the institute, why it did not affect the normal operations of the institution.

3.4 Equipment

All the equipment is imported from the PRC in 2006 and 2007 and in good condition. The institution have production lines for metal plating and foundry, though metal plating equipment is seldom used due to pollution issues and foundry equipment is not utilized either due to the large amount of electricity required. The institution does not have funds for high electricity bills.

3.5 Testing and assessment

Students are tested by the end of their training course, testing and assessment content is developed by the institution, but approved by the Ministry of Industry and consist of a practical test as well as a theoretical test. Trainers from the institution carry out the testing of the students with no involvement of external examiners.

According to the management all students pass their training, but certificates include the final score in term of marks. The institution is able to provide jobs for all graduated students in Ministry of Industry factories, however the final score will eventual decide upon their further career development.

4. Mandalay University of Technology, Ministry of Science and Technology

Contact person: Prof. Dr. Aye Myint, Rector

The Mandalay University of Technology was established in 1955 as a government entity and provide diploma and bachelor degrees within following subjects:

Civil Engineering
Mechanical Engineering
Electronics
Megatronics
Chemical Engineering
Petrol Engineering
Mining Engineering
Architecture

The ratio of academic staff and administrative staff is not known, however career progression for academic staff depends on articles and scientific reports submitted to and accepted by the Ministry. The University do have a management board, influence and authority is unknown as it is Rector for the university who solemnly appoints members to the board.

Courses are delivered as 3 years diploma courses with the possibility of 2 years further study for a Bachelor degree in technology, depending on final examination score from diploma course. A Bachelor in Technology can be extended to a Bachelor of Engineering with further 1 year study; admission to Bachelor of Engineering is also depending on final examination score from Bachelor of Technology study. However, this is likely to change by academic year 2013 – 2014.

4.1 Enrollment

Students are recruited at upper secondary school level, but their final examination marks will determine their admission. The Ministry of Technology and Science determines the university admission score for the upper secondary students, but with the sufficient admission score all students are accepted. For the school year 2012 – 2013, 1034 students were enrolled. The university has a maximum capacity of approximately 5000. Students will have to pay tuition fee at admission, at the moment the fee for Diploma courses 6000 Kyat per semester (6 months), 12000 Kyat per semester for Bachelor of Technology courses and 18000 Kyat per semester for Bachelor of Engineering courses.

4.2 Curricula

Curricula are provided by the Ministry of Science and Technology and are supposed to be amended or changed according to needs once a year. Faculty staff has the possibility to propose changes twice

a year, but it is not known if this happens. The university has no collaboration with industries and do not provide any services to the industry in terms consultancies or development of projects.
The Ministry provides all instructional material and also provide for equipment and materials for training. Training and education is at the moment divided into 70% theory classes and 30% practical exercises however it is anticipated that this will change by the academic year 2013–2014 and be altered to 50% theory and 50% practical exercises.

4.3 Financing

The university submits its operational budget as per semester or every 6 months. The University has no influence in the budget allocations from the Ministry, but according to Rector, funding was not adequate, which supposedly influenced the quality of education and training. Tuition fees collected are submitted back to the Ministry of Science and Technology. The university has no income generating activities as there is no collaboration with industries across the state.

4.4 Equipment

Most of the equipment available dates back from the early nineties and is in a poor condition. According to senior lecturer from the mechanical engineering section approximately 70% of the equipment was not in running conditions. Most of the workshops for practical training lacked evidence that training actual took place and most of the equipment was stored away or utilized for other purposes than training. By next year the university will face challenges when the curricula are to change to 50–50% theoretical and practical content. The real question is, if the university is capable of delivering the actual 30% practical exercises according to the curricula in use.

4.5 Testing and assessment (Examinations)

Students are required to pass semester examinations which are held every 6 months. Semester examination score is determining if the students allowed proceeding to next semester. Content and modality of semester examination are developed by the different faculties at the university, content and modality for final examination is determined by the Ministry. Semester examinations are supposedly purely theoretical, for the final examination, a practical project is required together with a theoretical test. If a student fails semester tests, he/she is allowed to sit for a second test, if that also fails the student will need to do the semester again. Failing again the student will be dismissed from the university. According to rector of the university, second year students and onwards who Final project fails either semester examination or final examination are provided with jobs, first year students do unfortunately not get any kind of recognition for their attempts. Of the output of approximately 1000 diploma or bachelor graduates each year, 62% passes.

Training institutions in Yangon

5. Glory training center

No 125/B First Floor
38th street KTDA Township
Yangon
Contact person: Kyaw Soe Moe

Glory training center was established in 2004 and was accredited to provide diploma courses by City and Guilds in 2008. The center provides training within the following subjects:

Advanced Engineering Diploma courses within applied electrical engineering; applied electronics; applied mechanical; applied megatronics; mechanical and electrical engineering and construction.
Engineering Diploma within refrigeration and air conditioning; electrical installation; electronics; electrical engineering; mechanical and electrical installation.
Vocational engineering (vocational short courses) within welding; automotive electrical wiring; air conditioning and refrigeration; electrical wiring; applied electronic course; motor, dynamo and transformer course; electronic repairs, level 1 and 2; electrical control technology; engine repair course; micro controller; hand set repair course; satellite receiver repair and automotive electrical.
Computer and English courses within windows and office application course; desk top publishing; auto cad; graphic design; e-mail and internet course; practical A; networks, programming; English speaking and general English speaking course.

The center employs approximately 30 full and part time teachers, supporting workshop assistants 2 and administrative staff is estimated to 15. Workshop assistants are responsible for the practical training.

Advanced engineering diploma course have duration of 12 months, engineering diploma courses is 6 months, vocational engineering and computer and language courses is between 4 and 12 weeks.

Students who wish to achieve advanced diploma in engineering are to pass engineering courses. The training center has no collaboration with government ministries or institutions.

5.1 Enrollment
The institutions enroll approximately 400 students a year and have a total capacity of 500 students. Diploma courses students must have passed grade 10, for vocational engineering course the entry requirement is between grade 8 and 10 depending on vocational direction. Tuition fee is 200 US$ for engineering diploma courses and 300 US$ for advanced diploma courses. The tuition fee for vocational courses and computer/language courses is not known. Classes vary from 10 to 30 students approximately 30% drop out for various reasons, basically considered not qualified for studies. Tuition fee is not refunded in case of drop out.

5.2 Curricula
The city and guilds provide syllabuses for training center within 30 different vocational directions. The syllabuses are strictly followed as it is one of the audit requirements by City and Guilds. City and Guilds price for syllabus is 300 UK £ per course. Diploma students are provided with textbooks and necessary materials by the institution. Curricula for vocational courses are partly taken from City and Guilds syllabuses and partly developed at the training center. Students who are attending vocational courses are not expected to be given any instructional material.

The ratio between practical and theoretical training is 60% theory and 40% practical for diploma courses, vocational courses have a ratio 60% practical and 40% theory. Revision of curricula/syllabus is done by City and Guilds for diploma courses, occasionally, but seldom, curricula for the vocational courses are reviewed and adjusted. Training time is between 20 and 27 hours per week depending of subject.

5.3 Financing
The Glory training center is totally self-financed through tuition fees.

5.4 Equipment

All equipment is in a rather poor state, there is no evidence that equipment has been upgraded or serviced the last ten years. The institution has old demonstration equipment, but no equipment for hands on training. According to the principal, the institution also had access to a metal training workshop outside Yangon.

5.5 Testing and assessment (Examinations)

Graduation examination for diploma students consists of a theoretical part as well as a practical part. The theoretical part was approximately 70% of the total examination, practical part approximately 30%. The institution used City and Guilds assessment material and an external verifier/assessor approved by City and Guild took part in the assessment. However, the assessment procedures seem to be a two-step procedure, internal assessment done by the institution and an external assessment procedure done by City and Guilds.

City and Guilds assessment required a certain graduation score depending on subject, from the internal assessment procedures. Thereafter students are allowed to register at British Council for City and Guilds assessment. The British Council registration fee for assessment is approximately between 200 and 400 US $ depending on subject.

Students who attend short vocational courses receive attendance certificate, it is unclear if students who attend vocational short courses are assessed both theoretical and practical.

The institution do not carry out any tracer surveys for the graduates, but according to principal 30% of graduated diploma students apply for further studies or jobs abroad. The whereabouts regarding the remaining 70% is unknown, though assumed that some of them get employment in either government or private enterprises.

6. Dual Tech, Vocational Training & Service Co, Ltd

Linn Thit Street
Swabwagyione, Insein Tsp
Yanon
Contact person: Yin Yin Aye

The Dual Tech training center provides the following courses:

Engineering diploma courses within Air conditioning and Refrigeration and electrical installation

Applied Engineering diploma courses within mechanical, electrical power, electronics and construction

Advanced Engineering diploma courses within mechanical, electrical electronics and civil construction.

Engineering skill courses within (short vocational courses) refrigeration; design of air conditioning; internal combustion engines; automotive electrical; electrical wiring; industrial motor controls; electronics; advanced electronics; lathe machine; PLC (Programmable logic controllers); PIC (Programmable Interface microcontrollers; CNC (Programmable numeric control); motor, transformers and generators; electric arc welding; pipe fitting; TV and DVD repairs; Hand phone repairs; technical drawing and estimates; road construction; survey, mason; tile; scaffolding and bar bending.

Engineering diploma courses have duration of 6 to 18 months depending of subject; applied diploma courses have duration of 12 months and advanced diploma courses last 18 months.

Vocational training courses have duration of between 4 to 12 weeks.

The venter employs approximately 40 teachers, who mostly are retired government engineers; administrative staff employed is 10. The center also employs a number of full time workshop assistants; workshop assistants are responsible for the delivery of all practical training. Workshop assistants are recruited among graduates from the center.

6.1 Enrollment

The center have a capacity of approximately 1200 students a year, approximately 100 students are enrolled for every month especially for vocational short courses. Enrollment for diploma courses is assumed to take place twice a year.

Enrollment requirements is minimum a passed grade 10 for all courses and tuition fee is between 200 and 300 US $ depending on level and subject.

6.2 Financing

The Dual Tech training center is totally self-financed through tuition fees.

6.3 Curricula

City and guilds provide syllabuses for all courses provided. Training time for diploma courses are approximately 20 hours per week and consist of 70% theory and 30% practical. Vocational courses, despite subject and content, have a training duration of 62 hours, but the ratio between practical and theoretical is 70% practical and 30% theoretical. There is no revision of curricula as the center is obliged to follow the syllabus of City and Guilds. Students are not given any text books or hand-outs, but are referred to school library and internet

6.4 Equipment

All equipment is in a rather poor state, there is no evidence that equipment has been upgraded or serviced the last ten years. The institution has very old demonstration equipment, which barely has been maintained, but never the less; some practical training was carried out within welding and mechanical workshops at the time of the visit. Due to lack of appropriate equipment, students practice in turns 2 hours a day. Access to equipment was very limited. Despite the training center claim, that they provide courses within turning and CNC, there was no evidence that the manual lathe machine was

working, and CNC lathes was not available, why it is assumed that courses within CNC are purely theoretical.

6.5 Assessment and certification

Assessment is carried solemnly after City and Guilds criteria. Like Glory training center, students may pass an institutional examination before the register at British Council for City and Guild assessment. Registration and examination fee is informed to be US $ 300. Like assessment procedures carried out by the Glory Training Center, City and Guilds provide an external verifier or assessor accredited by City and Guilds, theory examination consist of 70% and practical 30% disregarding level and content. It is not known how many passes City and guilds examinations, but 90% of the students who pass go abroad.

7. Center for Vocational Training

42, Strand Road
Myanmar Red Cross Building, 3rd floor
Botataung
Yangong
Contact person: Nyi Nyi, Public relations

E4Y (Under CVT)

Kyaikwine Boys Training Center
65, Kyaikwine Pagoda Road
Mayangone Township
Yangon
Contact person: Hla Hla Hnin, E4Y Head.

Centre for Vocational Training (CVT) in Yangon was established in 2002 with financial and technical support of a Swiss private sector foundation. The CVT has adapted a dual mode approach to TVET operating 3 years apprenticeship schemes within following areas:

Commercial assistant
Cabinet maker
Electrician
Hotel and Gastronomy assistant
Metal worker

The center employs approximately 32 teachers and is working together with 500 companies.
The Center also provides a vocational orientation program for out of school youngsters living under difficult circumstances called Education for Youth (E4Y)

E4Y provides education and training for kids at the age of 14, the aim with the E4Y is to provide apprenticeships for out of school youngsters, basically through CVT's own apprenticeship program.

The E4Y program includes subjects within:

Myanmar Language
English Language
Mathematics
Human & Nature
General Sciences
Textile,
Creative Work

Wood & Metal
Art and Sports

7.1 Enrollment

The CVT enrollment has increased from approximately 50 students in 2003 to 475 students in 2012.
Admission criteria is a passed grade 10 combined with an oral and written aptitude test. In 2012 there were 200 applicants for the hotel and gastronomy assistant program 55 was enrolled in the apprentice ship scheme.

7.2 Curricula

The curricula used for the theoretical training is developed with assistance from Swiss experts, however the major focus is on the job training. Outcomes and training schemes to be achieved in the industries are developed as a mutual exercise between employer representatives, CVT staff and Swiss experts. Students have one day school based theoretical training and 5 days practical training at the workplaces. Every student is attached to a supervisor at the workplaces, twice a year visits by CVT school teachers are carried out with purpose to monitor student's progress.

7.3 Financing: CVT and the Education for Youth are totally financed by Swiss CVT organization, which are a member of the Swiss supports association.

7.4 Equipment

Despite the practical training take place at industries, CVT has 2 workshops for practical training, one for carpentry and joinery and one for electrical training. Both workshops are well equipped with quite new equipment imported from Switzerland or Taipei,China. The workshop instructors also run a maintenance scheme for all equipment provided. All equipment is provided by the Swiss non-government organization.

7.5 Assessment and certification

Basically students are exposed to continuous assessment in their workplaces through their supervisors, however by the end of each apprenticeship year students undergo a practical and theoretical test. In the third year of the student's apprenticeship test the students will undergo a "trade test", which is 50% theoretical and 50% practical. It is emphasized that the practical test in the final apprenticeship examination focus on project formulation, demonstration of practical and theoretical skills and knowledge as well as demonstration problem solving skills. A major difference from public managed TVET centers.

The apprenticeship examination for Hotel and Gastronomy assistants has recently been recognized as a national diploma.

8. Hotel and Tourism Training Center, Kandawgyi Palace Hotel.

Kan yeik Tha Road
Yangon
Contact person: Win Kyi, Principal
The Hotel and Tourism Training Center was established in 1982 with support from UN and ILO and deliver basic training within following training programs:
House keeping

Front office operations
Service and security
Food and beverage

All courses are of 8 weeks duration and done 5 times a year.

The center is now a part of HTOO corporate group which owns 15 hotels; however there is no collaboration in terms of internships and on the job training for the students.

The training center employs 25 teachers and an unknown number of training assistants. Administration staff is 15. Teachers are recruited through MoE and then retrained by the Ministry of Tourism

Total number of students is approximately 180, according to the principal.

8.1 Enrollment

Students for house- keeping, service and security and food and beverage must have at least attended 10th grade, but passed exam is not a requirement. Students for front office operations must have attended MoE colleges, but graduation is not a requirement.

Until 2002 training was free of charge, but with privatization of the institution, tuition fee is 200.00 Kyat.

The ratio between boys and girls is approximately as follows: House-keeping 100% female, food and beverage 20% female and 80% male, front office 50% male and 50% female and security services 100% male.

Since 2012 the center has experienced a drastic fall of enrollment of students, the reason is explained to be due to the relatively high tuition fee, but also, as explained by the principal, that young people do not find the hotel and tourism sector attractive due to the low wages.

8.2 Curricula

The curricula used were originally developed by ILO and is still utilized. The ratio between theory and practice is 40% theory and 60% practice, though theory is much higher in the courses like front office operation. A curriculum revision process has been commenced in 2012 with the assistance of AUSAID. New Australian competency standards developed by "William Angliss" Institute of Hotel and Tourism are to be adapted in the new curricula and new courses are to be piloted between 2013 and 2015. The center plans to introduce diploma courses, also based on competency standards, but the equipment required available by the competency standards caused serious challenges for the center as their equipment could not meet the standards. As a consequence, the center planned to reduce diploma courses from originally 12 months to 9 months.

8.3 Equipment

Equipment is very old and a lot of it is not functioning. Equipment available is only used for demonstrations.

There are no practice possibilities for the students why most of the training is based on a "watch and learn" technique with sometimes up to 50 students per class. There are no plans for upgrading the

equipment as the center has no source of funding except tuition fees that solemnly covers running costs of the center.

The school has its own training restaurant, where basic restaurant skills are taught.

8.4 Finance:
The center is solemnly financed by tuition fees and do not receive any support from development partners or the Ministry of Tourism.

8.5 Assessment and certification
The center is accredited by the Ministry of Tourism, but students do not graduate with a formal examination, but receive certificate of attendance. The principal assumes that 80% of the students gets job in the tourism sector, probably with further training. 60% of the students pursue over-seas jobs, through job exchange centers; especially jobs cooks or pursers in the merchant marine sector are popular among the youth due to the relatively high wages.

9. Central Forestry Development Training Center
Hmwawbi
Contact person. Win Maw, Deputy Director
The central forestry development training center was constructed by JICA in 1988 and inaugurated in 1990. In 1995 it was handed over to Ministry of Environment Conservation and Forestry under the department of forestry. The center provides 2 to 4 weeks courses within the following subjects:
Forest inventory
Tree improvement
Bamboo plantation and bamboo production
Basic forest induction
Forest resource management
Local community forestry development
Budget and accounting (two courses each 4 weeks)
Environmental conservation
Agro forestry
Plantation establishment techniques
Forest protection
Watershed management
Basic forest engineering
Village owned plantation establishment

The training center provide courses for employees in the Ministry of Environment Conservation and Forestry, however two of the courses (Bamboo plantation and bamboo production and Village owned plantation establishment) is for selected villages. The MECF does the selection.
The training center have in the period 1990 to 2012 trained 1523 participants from villagers and local communities and 11329 employees from the ministry, which is a total 12852 persons equivalent to an annual enrollment of 584. The center can accommodate 130 students at a time and have 24 staff houses.
Lecturers are recruited from the ministry and do 3 year terms as lecturers, retired government personnel are occasionally recruited as part time teachers. 8 full time teachers are at the moment employed, none of the lecturers have any pedagogical background.

9.1 Enrollment
Students are selected by the Ministry of Environment Conservation and Forestry; selection criteria for either public or government participants are unknown.

9.2 Curricula

Curricula have been developed by JICA and are still in use, there are no plans for revision. Practical exercises are not practiced only demonstrations regarding seed improvement are carried out, despite the center has well equipped workshops. The center covers an area of 22 hectares some practical demonstrations are carried out in green houses, but student practical exercises are not used during the training courses, why 90% of the content is delivered as lecturing.

There have been and probably are still, lecturer's guides and training material available, participants are, according to the Deputy Director, provided with hand-outs for free. The center has occasional collaboration with the University of Forestry, also under the Ministry of Ministry of Environment Conservation and Forestry, the university though is managed by another department that the center and eventual collaboration is directed by the Ministry.

9.3 Equipment

The center has well equipped laboratories for practical exercises, however laboratories did not show any sign of utilization, probably due to lack of funding for consumables.

9.4 Financing

The center is solemnly financed by the Ministry of Ministry of Environment Conservation and Forestry, courses are free, but the center charges a minimum amount for lodging and food.

9.5 Assessment and certification

There are no final tests or examination by end of courses, but course participants are given certificate of attendance. The certificate of attendance does not give access to diploma courses or other kind of training.

10. UNITEAM Offshore training center

85, Pan Hlaing Street
Sanchaung Township
11111 Yangon
Contact person: Poul Van Empel

UNITEAM training center was established in 1978 in order to overcome the problem of the ever increasing shortage of experienced and qualified crew, Uniteam Marine has invested in a combined on board and shore training program. Originally starting with 30 Cadets in 1978, we have gradually increased the number of Trainees to more than 250 in various departments.

UNITEAM training center is an International Marine Organization certified training institution and provides training within three main areas:
UNITEAM Offshore (Oil and Gas)
UNITEAM Marine (Seamen's training from officers to deck hands)
UNITEAM Yachting (Hospitality and Seafarer training for the Yachting Industry ((Commenced in 2010))

UNITEAM also provide American Oil Industry (AOI) accredited courses within construction and welding. AOI courses are international recognized as well as short specialized courses for within occupational health and safety, crane operations as well as slinging for container and bulk loads.

Admission for courses at technician level both for the Oil and Gas and Marine training requires at least a bachelor degree, the training center together with Myanmar Marine University has the second highest admission requirements in terms of graduation scores for training at technician level. Admission requirements for short specialized courses are minimum passed high school with strong proficiency in English.

Candidates for training at technician level are before admission contracted by a shipping company, however a final selection takes place and out of 75 contracted by a shipping company only 50 will get admission. Shipping companies pay for the students training, the price for two year training at technician level is approximately 50.000 US $.

Prices for short specialized courses range between 100 US $ to 900 depending of subject and content, all applicants are accepted as long as they can document passed high school and proficiency skills in English.

The training center employs 43 instructors, 40 are Myanmar nationals 3 are overseas instructors.

The center is self-financed through tuition fees, whether paid by company or individuals, it finances all training activities.

Since the training center is accredited by OPITO International, an organization which is accredited the international oil and gas industry and also recognized by the international insurance companies within the marine and oil and gas industry like Norwegian VERITAS. OPITO provides competence standards which comply with international regulations of both the marine, oil and gas industry.

The principal is accredited by OPITO to assess UNITEAM instructors and accredit UNITEAM national instructors to provide training on OPITOS behalf. OPITO audit is carried out once a year, both principal as well as instructors are assessed randomly against OPITO training standards.

Annex II: People met in the period 20th of October to 19th of December 2012

	Name	Designation	Place
	HE U Myint Thein	Deputy Minister, Ministry of Labour, Employment and Social Security	MoLESS, Building No. 51, Nay Pyi Taw
	Win Shein	Director General, Ministry of Labour, Employment and Social Security	MoLESS, Building No. 51, Nay Pyi Taw
	U Win Khaing	President, Myanmar Engineering Society	MES Building, Hlaing Universities Campus, Yangon
	Peter Tschumi	Minister, Deputy Head of Mission, Director of Cooperation, Swiss Development Cooperation	Embassy of Switzerland, 11, Kabaung Lane, Hlaing Tsp., Yangon
	Ko Ko Lwin	Director, Human Resource Department, Ministry of Industry	Ministry of Industry, Nay, Pyi, Taw
	U Myat Ko	Principal, Government Technical High School (Ywarma)	Insein Township Yangon
	Dr. Kay Thi Lwin	Rector, Technological University	Thanlyin, Yangon
	Piyamal Pichaiwongse	Deputy Liaison Officer, ILO	12th Floor, Traders Hotel, Yangon
	Beat Wicki	President, Center for Vocational Training (CVT)	Maienfeld, Switzerland
	Daw Khin Mar Yae	Assistant Director	Skills Training Center, 13th Ward, Yankin, Yangon
	Hla Hla Hnin	Head of Institute,E4Y (Education for Youth)	Kyaikwine Boys Training Center, 65 Kyaikwine Pagoda Road, Myangone Township, Yangon
	Yin Yin Aye	Director	Center for Vocational Training, 42 Strand Road, Myanmar Red Cross Building, 3rd floor, Botataung, Yangon
	Nyi Nyi	Public relation officer	Center for Vocational Training, 42 Strand Road, Myanmar Red Cross Building, 3rd floor, Botataung, Yangon
	Naing Linn	Deputy Head, Cabinet Making Department	Center for Vocational Training, 42 Strand Road, Myanmar Red Cross Building, 3rd floor, Botataung, Yangon
	Kyaw Soe Moe	Principal	Glory Career Training Center, 38th Street, KTDA Township, Yangon
	Chiko Yamaoka	TVET Senior Consultant, JICA	BERDC Building, Yankin Education College, Thisar Road; Yankin 11081, Yangon.
	Naoko Kitadate	JICA - CESR and aid coordination	BERCD Building, Yankin Education College, Thisar Road; Yankin 11081, Yangon.
	Tomoko Masuda	Basic Education Advisor	Department of Educational Planning and Training, Ministry of Education, 123 Natmauk Road, Bahan Township.
	Andreas Schantz	Business Development	UNITTEAM Marine, 84 Pan Hlaning Street,

		Manager	Sanchaung Township, 11111 Yangon
	Poul Van Empel	Head of Training	UNITTEAM Off Shore, 84 Pan Hlaning Street, Sanchaung Township, 11111 Yangon
	Emiko Naka	Senior ED. ProgramManager	AusAID, Australian Embassy, 88 Strand Road, Kyauktada Township, Yangon
	Khin Zaw	Colonel, Rector and Director of Studies	Nursing and Paramedical Sciences, Ministry of Defense
	Min Min Win	Senior Staff Officer	Skills Training Center, Mandalay, Room 301, Building 37, Ah Shae Pyin Villa, Mandalay
	Julia Frölicher	Technical Advisor, Economic Development, Employment, TVET and Labor Market	GIZ, Dag Hammarskjöld Weg 1-5, 65760 Eschborn, Germany
	Dr. Aye Myint	Rector	Technological University, Mandalay
	Victor Levine	Consultant	University of Hawai'i, 113 Wist Hall, 1776 University Avenue, Honululu.
	Sardar Umar Alam	Program Manager, UNESCO, Myanmar	UN Building, 6 Natmauk Road, Tamwe Township, Yangon
	Fuchsia Hepworth	Assistant Education Program Specialist	UN Building, 6 Natmauk Road, Tamwe Township, Yangon
	Jane Davis	Policy Education Specialist	United Nations Children Fund (UNICEF), 14th Floor, Traders Hotel, 223, Sule Pagoda Road, Yangon
	Yin Yin Aye	General Manager	DUAL TECH, Vocational Training and Service, Linn Thit Street, Swabwagyigone, Insein Township, Yangon
	Daw Tint Tint	Principal	Saunders Weaving Institute, Amarapura, Mandalay, Division. Small Scale Industries Department, Ministry of Cooperatives
	Daw Khaing Khaing	Senior Instructor	Saunders Weaving Institute, Amarapura, Mandalay, Division. Small Scale Industries Department, Ministry of Cooperatives
	Win Maw	Deputy Director	Central Forestry Development Training Center, Hmawbi
	Lat Lat Aye	Program Analyst (Disaster Risk Reduction)	UNDP, 6 Natmauk Road. P.0. Box 650, 11211, Yangon.
	Jaiganesh Murugesan	Disaster Risk Reduction Specialist	Unite Nations Settlement Program, Urban Research and Development Institute (URDI), 228.234 Bogyoke Aung San Road, Yangon
	Win Kyi	Principal HTTC	Hotel and Tourism Training Center, Kandawgyi Palace Hotel, Kan Yeik Tha Road, Yangon
	Maung Maung	EX. ILO consultant	431/432 Thihathu Street, Ward 11, S-Okalapa TSP, Yangon
	U Mya Thein	Legal Affairs and Special Issues Commission	9A, Nawarat Street, 8 mile Mayangone Township, P.O. Box 11061 Yangon
	Aung Naing Tun	Director, TECH training centre	11, Aung Myay Thar Si Street, 1st Quarter, Kamaryut T/S, Yangon

ANNEX: III: Documents consulted

Document	Author	Organization -Year
Data Collection Survey on Education Sector In Myanmar (TVET)	Chiko Yamaoko	JICA - 2012
Technical and Vocational Education in Myanmar	Dr. Zaw Min Aung Director General	Department of Technical and Vocational Education. Ministry of Science and Technology
TVET Initiatives in South East Asia Countries in response to increasing labor mobility within the region and beyond		SEAMEO VOCTECH, Brunei – Darussalam & University of State University of Malang, Indonesia - 2011
Orientating TVET for sustainable development. Approaches and concerns in Myanmar	Naing Yee Mar	UNEVOC Centre, Ministry of Education, Myanmar - 2005
Country Report MYANMAR	Dr. Win Aye Professor	Materials Science and Materials Engineering Research Center Ministry of Science and Technology - 2007
The Contribution of Technical and Vocational Education and Training to Sustainable Development	Hans Krönner, former UNESCO-UNEVOC staff	International Workshop on Workforce Development for the Knowledge Economy, ADB - 2005
Myanmar in Transition - Opportunities and Challenges	Various	Asian Development Bank - 2012
Labor Market Analysis – Initial report	Paul Brady	CESR - Asian Development Bank - 2013
Making full use of competency standards. A handbook for governments, employers, workers and training organizations.	Andre Lewis and others.	Regional skills and employability program in Asia and Pacific. Regional office for Asia and Pacific, ILO - 2009
Draft Employment and Skills Development Law	Ministry of Employment, Labour and Social Security	2012
The Agricultural, Technical and Vocational Education Law of 1974, (Law No.4), with amendments in 1983 (Law No. 8) and 1989 (Law No. 20/89)	Government of the Republic of Myanmar	1974
Handbook on Human Resources, Development Indicators 2009	The Republic of the Union of Myanmar, Ministry of Labour, Department of Labour	MoL, 2011