ASEAN–ROK Technical and Vocational Education and Training Mobility (TEAM) Programme–Component–1:

Enhancing the Competitiveness of Human Resources through Responsive TVET Curriculum Supported by Involvement of Industries and Labour Market Information

Country Report

Myanmar

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ASEAN-ROK Technical and Vocational Education and Training Mobility (TEAM) Programme – Component 1: 'Enhancing the Competitiveness of Human Resources through Responsive TVET Curriculum Supported by Involvement of Industries and Labor Market Information'

Country Report: Myanmar

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ASEAN-ROK Technical and Vocational Education and Training Mobility (TEAM) Programme – Component 1:'Enhancing the Competitiveness of Human Resources through Responsive TVET Curriculum Supported by Involvement of Industries and Labor Market Information' was led by the Technical Education and Skills Development Authority (TESDA) of the Philippines, Ministry of Labour (MOL) of Thailand, and Ministry of Labour, Invalids and Social Affairs (MOLISA) of Viet Nam and implemented by Korea Research Institute for Vocational Education & Training (KRIVET) in partnership with the ASEAN Secretariat, and with funding support from the ASEAN-Korea Cooperation Fund (AKCF). This study was planned in the SLOM-WG Work Plan 2021-2025. The views expressed in this report are those of the authors and do not necessarily reflect the views of Korean Government or KRIVET.

ASEAN-ROK Technical and Vocational Education and Training Mobility (TEAM) Programme – Component 1: 'Enhancing the Competitiveness of Human Resources through Responsive TVET Curriculum Supported by Involvement of Industries and Labor Market Information'

Country Report: Myanmar

Foreword

EUI-HAE CECILIA CHUNG

Director-General, ASEAN & Southeast Asian Affairs Bureau
Ministry of Foreign Affairs, Republic of Korea

Initiated by the ASEAN and with the support of 7 million USD from ASEAN-Korea Cooperation Fund (AKCF), the "ASEAN-ROK Technical and Vocational Education and Training for ASEAN Mobility (TEAM)" programme is one of the key deliverables of the ASEAN-Korea Commemorative Summit, held in Busan in November 2019.

Human resource development is one of ASEAN's priority as envisioned by the ASEAN Declaration on Human Resources Development for the Changing World of Work, adopted by ASEAN leaders in 2020. Furthermore, "People Mobility" is one of the 5 strategic areas of the Master Plan on ASEAN Connectivity (MPAC) 2025.

Against this backdrop, the TEAM Programme aims to strengthen technical and vocational education and training (TVET) system that enhances the competitiveness of the ASEAN region and promotes sustainable development in response to the rapidly changing industrial environment.

The TEAM Programme tackles three aspects of TVET system in the region. The first component establishes a labour market information system for ASEAN, the second component focuses on directly operating the TVET mobility program between ASEAN countries, and the third component analyzes the national qualification framework (NQF) of the CLMV countries (Cambodia, Lao PDR, Myanmar, Viet Nam).

This series of report is the result of Component 1 "The Study on Enhancing the Competitiveness of ASEAN Human Resources through Responsive TVET Curriculum Supported by Involvement of Industries and Labor Market Information" led by the Technical Education and Skills Development Authority (TESDA) of the Philippines, Ministry of Labour (MOL) of Thailand, and Ministry of Labour, Invalids and Social Affairs (MOLISA) of Viet Nam and implemented by the Korea Research Institute for Vocational Education and Training (KRIVET) with funding support from the AKCF.

All the 10 ASEAN Member States (AMS) participated in this project, including the policy makers, national resource persons, regional experts, major sectoral bodies, and the ASEAN Secretariat. In overseeing the operation of this project, KRIVET was closely cooperating with the ASEAN country coordinators, ASEAN Secretariat, Ministry of Employment and Labor (MOEL) of the Republic of Korea, and all international and national consultants. As a result to the joint-effort, a national report for 10 AMS and one regional report were successfully produced.

By analyzing AMS's current TVET governance, related policies, gaps in labour market demand and technology supply, and best practices, the reports suggest the direction of TVET policy at the national and regional level under the rapid change of the economy and labour market condition.

In the midst of the global digital transformation according to the Fourth Industrial Revolution and the continuing crisis of the COVID-19 pandemic, the establishment of a TVET system that can be used not only at the individual national level but also at the regional level will be the key to strengthening the future competitiveness of ASEAN's human resources. I hope this report can be used as a core basis for stakeholders to diagnose the current status of AMS and set the direction of future human resource training policies.

Lastly, I would like to take this opportunity to express my deepest gratitude to all the contributors to this project, especially the regional and national experts and KRIVET researchers for the hard work and great efforts to finalize the report. I would like to also convey my special appreciation to the TESDA of the Philippines, MOL of Thailand, and MOLISA of Viet Nam that proposed and acted as the country coordinators of the TEAM Programme Component 1, the ASEAN Secretariat, the ROK Mission to ASEAN, MOEL and the ASEAN-ROK Programme Management Team (AKPMT) who gave generous support for the successful implementation of the project.

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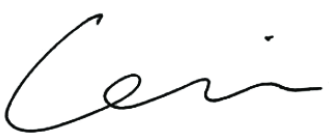

EUI-HAE CECILIA CHUNG

Director-General, ASEAN & Southeast Asian Affairs Bureau
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Foreword

PROF. ANWAR SANUSI, Ph.D.

Secretary-General of the Ministry of Manpower of the Republic of Indonesia
Chair of Senior Labour Officials Meeting (SLOM) for 2020-2022

This Regional Report and Country Reports of 10 ASEAN Member States on Enhancing the Competitiveness of HR through Responsive TVET Curriculum Supported by Involvement of Industries and Labor Market Information, aims to answer the question of how we can upgrade the competitiveness of human resources by improving the Labor Market Information System, and also by establishing the TVET Curriculum so that responds to the labour market demands and also the demands of the learners. The project addresses the question of how we can improve the TVET system so that they can produce a skilled and proficient workforce that satisfies the Skill Demands in the Labor Markets and is quality-controlled in each AMS.

Human resource development is one of the strategic objectives of the ASEAN toward achieving a productive and competitive workforce. Investments in human resource development enhance the capacity of the ASEAN workforce through strategic programs that will develop qualified, competent, and well-prepared workers that would benefit from, as well as cope with the challenges of the regional integration. At the same time, globalisation has also speeded up international competition among countries as well as inter-regional competition. Nowadays, all the modern states are working hard to stay competitive in the globalising markets.

All countries need to establish flexible TVET policies, strengthen networks between public institutions and industrial enterprises as well as international agencies, build a data collection and management system to balance the labour market demand and skills supply, create a digital learning environment that has become essential, and provide equal access to TVET for all physically or geographically disadvantaged people. In order to deal with those challenges more effectively and to achieve the goal of continuous growth, the ASEAN Member States need to secure a skilled labor force. In order to upgrade the skills of the labor force, the AMSs need to be equipped with a smart HRD system.

Finally, I would like to express my sincere gratitude to all ASEAN Member States, the ASEAN Secretariat, and partners who supported this report, and it could not have been completed without valuable contributions. It is hoped that all the information in this country reports will contribute to the promotion of international cooperation for the development of human resources and labour market information systems.

PROF. ANWAR SANUSI, Ph.D.

Secretary-General of the Ministry of Manpower of the Republic of Indonesia Chair of Senior Labour Officials Meeting (SLOM) for 2020-2022

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Towards enhancing human capital and workforce in ASEAN through technical and vocational education and training (TVET), the Study on Enhancing the Competitiveness of ASEAN Human Resources through Responsive TVET Curriculum Supported by Involvement of Industries and Labour Market Information was led by the Technical Education and Skills Development Authority (TESDA) of the Philippines, Ministry of Labour (MOL) of Thailand, and Ministry of Labour, Invalids and Social Affairs (MOLISA) of Viet Nam, with the Korea Research Institute for Vocational Training (KRIVET) as the implementing agency. The study was supported by the ASEAN Secretariat and funded by the ASEAN-ROK Cooperation Fund (AKCF). The study was the first component of the ASEAN-ROK TVET for ASEAN Mobility (TEAM) project under the guidance of the ASEAN Senior Labour Officials Meeting Working Group on Progressive Labour Practices to Enhance the Competitiveness of ASEAN (SLOM-WG).

Planned in the SLOM-WG Work Plan 2021-2025, the study aimed to enhance the competitiveness of human resources of the 10 ASEAN Member States (AMS) in response to the challenges faced by the region. The study was endorsed at the 12th SLOM-WG Meeting on 6-7 August 2019.

The study was conducted at the regional level and across all ten (10) AMS. It assessed the existing level of responsiveness of TVET systems to the labour trends, the recurring issues, and the strategies being implemented in each AMS. A team of regional consultants as well as national resource persons from all AMS worked together with the proponents in developing the regional report and 10 country reports. The study report was developed in close consultations with SLOM-WG and other relevant ASEAN bodies and stakeholders in April – August 2022 through emails and two regional workshops on 10 November 2021 and 31 May 2022, respectively. The 10 country reports were endorsed by respective AMS in April- August 2022 while the regional report was endorsed on August 2022.

We are greatly indebted to numerous individuals for the successful implementation of the study. We would like to convey our deepest gratitude to the following.

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Contributors to the Report

For completion of the report, dedicated work of a few individuals has been critical.

The basic data for the country report has been collected by the National Resource Person representing the country for the project. The process of data collection was administered under the advice of the Regional Consultant for the project. The researchers at KRIVET closely cooperated with the NRP, the RC, and other experts in order to incorporate the outcome into the final version of the country report.

Hereby, we acknowledge that the main body of the report has been prepared by collaborative work of the following individuals.

National Resource Person: Ms. Thet Su Hlaing

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Table of Contents

List of Tables

Chapter I. Introduction

Chapter II. Analytical Framework I

Chapter III. Analytical Framework II

Chapter IV. Analytical Framework III

List of Figures

Chapter I. Introduction

Chapter II. Analytical Framework I

Acronyms

Chapter II. Analytical Framework I

ACC	Assessment and Certification Committee
ADB	Asian Development Bank
AEC	ASEAN Economic Community
ASEAN	Association of Southeast Asian Nations
CESR	Comprehensive Education Sector Review
CLMVT	Cambodia, Lao, Myanmar, Vietnam and Thailand
CPSC	Colombo Plan Staff College
DOL	Department of Labour
DSA	Defense Service Academy
DSMA	Defense Service Medical Academy
DSTA	Defense Service Technological Academy
DTVET	Department of Technical and Vocational Educational Training
ELPS	English Language Proficiency School
ESDL	Employment and Skills Development Law
ESDL	Education and Skill Development Law
FY	Financial Year
GDP	Gross Domestic Production
GIZ	German Corporation for International Cooperation
GTC	Government Technical College
GTHS	Government Technical high School
GTI	Government Technical Institute
HEI	Higher Education Institutions
HRD	Human Resource Development
IMF	International Monetary Fund
ITC	Industrial Training Center
JICA	Japan International Cooperation Agency
KfW Bank	Kreditanstalt für Wiederaufbau Bankengruppe
KOICA	Korea International Cooperation Agency
MNQF	Myanmar National Qualification Framework
MOALI	Ministry of Agriculture, Livestock and Irrigation
MOE	Ministry of Education
MOI	Ministry of Information
MOL	Ministry of Labour
MOST	Ministry of Science and Technology
MRS	Mutual Recognition of Skills

MSDP	Myanmar Sustainable Development Plan
NAQAC	National Academic and Quality Assurance Committee
NEPC	National Education Policy Commission
NESP	National Education Strategic Plan
NGO	Non-Governmental Organization
NIF	National Indicator Framework
NOCS	National Occupational Competency Standards
NQF	National Qualification Framework
NQF	National Qualification Framework
NSQF	National Skills Qualification Framework
NSSA	National Skills Standards Authority
NVQ	National Vocational Qualification
NVTI	NyaungShwe Vocational Training Institute
QMS	Quality Management System
RPL	Recognition of Prior Learning
SITE	School of Industrial Training and Education
SMVTI	Singapore Myanmar Vocational Training Institute
TOT	Training of Trainers
TTC	Teacher Training Center
TTTI	TVET Teacher Training Institute
TVET	Technical and Vocational Education and Training
UAGO	Union Attorney General Office
UDE	University of Distance Education
UM	Union Minister
UNESCO	United Nations Educational, Scientific and Cultural Organization
VET	Vocational Education and Training
YWTC	Yadanar Welding Training Center

Chapter III. Analytical Framework II

ACC	Assessment and Certification Committee
ADB	Asian Development Bank
AEC	ASEAN Economic Community
ASEAN	Association of Southeast Asian Nations
CESR	Comprehensive Education Sector Review
CLMVT	Cambodia, Lao, Myanmar, Vietnam, and Thailand
DTVET	Department of Technical and Vocational Educational Training
ESDL	Employment and Skills Development Law
FY	Fiscal Year
GDP	Gross Domestic Production
GIZ	German Corporation for International Cooperation
GTC	Government Technical College

GTHS	Government Technical high School
GTI	Government Technical Institute
HRD	Human Resource Development
ILO	International Labour Organization
IMF	International Monetary Fund
INBAS	Institute for Vocational Training, Labour Market and Social Policy
ITC	Industrial Training Center
JICA	Japan International Cooperation Agency
KOICA	Korea International Cooperation Agency
LMIS	Labour Market Information System
MNQF	Myanmar National Qualification Framework
MOALI	Ministry of Agriculture, Livestock and Irrigation
MOE	Ministry of Education
MOI	Ministry of Information
MOL	Ministry of Labour
MOST	Ministry of Science and Technology
MOHT	Ministry of Hotel and Tourism
MRS	Mutual Recognition of Skills
MSDP	Myanmar Sustainable Development Plan
NEPC	National Education Policy Commission
NESP	National Education Strategic Plan
NGO	Non-Governmental Organization
NOCS	National Occupational Competency Standards
NQF	National Qualification Framework
NSQF	National Skills Qualification Framework
NSSA	National Skills Standards Authority
RPL	Recognition of Prior Learning
SMVTI	Singapore Myanmar Vocational Training Institute
TOT	Training of Trainers
TTC	Teacher Training Center
TTTI	TVET Teacher Training Institute
TVET	Technical and Vocational Education and Training
UAGO	Union Attorney General Office
UMTA	Union of Myanmar Tourism Association
UNESCO	United Nations Educational, Scientific and Cultural Organization
VET	Vocational Education and Training
WTTC	World Travel and Tourism Council

Chapter V. Analytical Framework IV

ADB	Asian Development Bank
AEC	ASEAN Economic Community
AGTI	Associate of Government Technical Institute
ASEAN	Association of Southeast Asian Nations
CAD	Computer Assisted Design
CBT	Capacity-Based Training

CESR	Comprehensive Education Sector Review
CNC	Computer Numerical Control
CVT	Center for Vocational Training
DTVET	Department of Technical and Vocational Educational Training
ESDL	Employment and Skills Development Law
FY	Fiscal Year
GDP	Gross Domestic Production
GIZ	German Corporation for International Cooperation
GTC	Government Technical College
GTHS	Government Technical high School
GTI	Government Technical Institute
HRD	Human Resource Development
ILO	International Labour Organization
ITC	Industrial Training Center
JICA	Japan International Cooperation Agency
KOICA	Korea International Cooperation Agency
LMIS	Labour Market Information System
MNQF	Myanmar National Qualification Framework
MOE	Ministry of Education
MOI	Ministry of Information
MOL	Ministry of Labour
MOST	Ministry of Science and Technology
MOHT	Ministry of Hotel and Tourism
NESP	National Education Strategic Plan
NGO	Non-Governmental Organization
NOCS	National Occupational Competency Standards
NQF	National Qualification Framework
NSQF	National Skills Qualification Framework
NSSA	National Skills Standards Authority
OECD	Organization of Economic Co-operation and Development
PLC	Programmable Logic Controllers
RPL	Recognition of Prior Learning
SMVTI	Singapore Myanmar Vocational Training Institute
TOT	Training of Trainers
TPTC	Technical Promotion Training Center
TTC	Teacher Training Center
TTTI	TVET Teacher Training Institute
TVE	Technical and Vocational Education and Training
UMFCCI	Union of Myanmar Federation of Chambers of Commerce and Industry
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific

UNESCO	United Nations Educational, Scientific and Cultural Organization
VET	Vocational Education and Training
WBT	Work Based Training
WTTC	World Travel and Tourism Counci

Executive Summary

Myanmar is a fast-growing economy, where the state is accelerating reforms in the key policy areas including human resource development (HRD). In globalizing world, Myanmar needs a skilled workforce to effectively deal with such issues as digitalization and Industrial Revolution 4.0. Myanmar, as a developing country, also needs skilled workforce in every sector, and both the hard skills and soft skills demanded in the labor markets are increasingly in high demand.

In terms of the TVET governance, Department of TVET in the Ministry of Science and Technology in Myanmar is the major governing agency in Myanmar. However, other ministries such as MOALI and MOLIP run their TVET institutions individually. There are 35 Government Technical High Schools, and 25 Government Technical Institutes (GTI) under the Ministry of Science and Technology. Other ministries also have formal and non-formal vocational institutions, where the graduates of courses can acquire diplomas or certificates. Participation in TVET programs is relatively low in Myanmar. It accounts for about 0.7% of the total enrolment at all the high schools, which is the ISCED 3 level.

The observation made in Chapter II and Chapter III of the report shows that the involvement of industries in the TVET process has a room for improvement in Myanmar, while the government is in the process of enacting a law to encourage industry participation in the TVET process.

Myanmar has implemented labor market information system concerning national skills demand and supplies. The most representative survey for skills demands and supplies is Labour Force Survey, conducted by Ministry of Labour, Immigration and Population with technical support from ILO. Yet, more systematic analysis of the LMI collected is needed, so that it can be readily utilized in predicting the future demands for the sectors in the LMs in the process of TVET, as it has been identified in Chapter II. Also, with high demands for Myanmar workers overseas, there exist imminent concerns such as illegal migration, unjust treatments by oversea employers and so on. Therefore, systematic data collection and analysis is needed regarding overseas labor demand.

In Chapter VI of the report, the process of TVET curriculum development and its implementation is documented for two representative sectors (and institutions) in Myanmar: the Manufacturing (Food Processing) sector, and the Hotel and Tourism: Hospitality Professional Course by CVT Myanmar. This shows how the curriculum is developed and implemented in a formal TVET sector at high school level and in a non-formal vocational training center in Myanmar. As it is described in Chapter VI of the report, TVET in Myanmar is curriculum-based. Curricular that are operated in vocational training centers are developed by respective training centers in accordance with National Skill Standard Authority (NSSA) guidelines.

In Chapter V, three cases of best practices of TVET programs and institutions in Myanmar are presented. The cases are selected from one of the major sectors in AMSs, and also issue sectors for Myanmar. Institutions selected range from government technical institutes to vocational training centers providing dual training to the trainees. The different cases described show what types of TVET programs can work best in Myanmar given the current conditions of TVET. Also, they provide good examples of how the programs are being operated in different types of TVET institutions providing TVET programs in Myanmar.

Feedbacks on the findings of Chapter I through Chapter V of the report are collected from major stakeholders in the fields of TVET in Myanmar. The respondents range from those affiliated in the Ministry of Labour, Ministry of Industry, and Ministry of Hole and Tourism to those in the Myanmar Chamber of Commerce and Industry (UMFCCI) and in training organizations such as GTI and CVT.

In the Chapter VI of the report, we suggest major policy implications, after incorporating the feedbacks into the findings from the cases study of Myanmar. Those recommendations are grouped into the following 4 categories. First, the LMI on demands and supply needs to be analyzed and applied in setting up plans for workforce development both in terms of quantity and quality. Second, coordination among the various ministries that are involved in workforce development is needed. Third, the state needs to encourage involvement of industries in the TVET process and also find incentives to encourage such involvement. Last, awareness of the significance of TVET needs to be boosted-up at the national level and at the individual level, since the awareness is still low in the country which is one of the key obstacles to enhancing HR competitiveness through better and quality TVET.

Chapter I. Introduction

1. Overview of the project

ASEAN has emerged as a region of prosperity with affluent human resources and high productivity. The rapid growth of the AMSs, which can be observed by the annual real GDP growth ranging between 6% to 7% in most of the AMSs during 2010~2019, show that their economies have been growing faster than ever and faster than other countries (World Bank[1], 2022).

Figure 1. Geographic Location of 10 ASEAN Member States

As a region located between the Pacific and the Indian Ocean, ASEAN has attracted attention of leading countries in the world and global investors. With the young population and abundant human resources, it is expected that the AMSs will maintain its high growth in spite of the increasing global competition.

However, there are also challenges the AMSs have to meet in order continue with the expected growth. Technological disruptions such as IR 4.0, environmental issues that are threatening all the countries in the world, and aging of the population by which all the AMSs are affected pose significant challenges for the ASEAN region. With the abundant and inexpensive labor alone, the AMSs cannot maintain their competitiveness in a world challenged by such complex issues.

To deal with those challenges more effectively and to achieve the goal of continuous growth, the AMSs need to secure skilled labor force. In order to upgrade the skills of the labor force, the AMSs need to be equipped with a smart HRD system. In other words, the AMSs need to enhance their TVET system.

The current project, titled 'Enhancing the Competitiveness of the Human Resources through Responsive TVET Curriculum Supported by Involvement of Industries and Labor Market Information (TEAM Component 1)' was launched based on this shared awareness among the

1 World Bank (2022). *World Development Indicators* [Data set]. Retrieved January 1, 2022, from https://databank.worldbank.org/source/world-development-indicators.

ASEAN member states. It was proposed by ASEAN member states (the Philippines, Vietnam, and Thailand), endorsed by ASEAN SLOM Working Group, and carried out by support of the national representatives of 10 AMSs.

As its title suggests, the project aims to seek how to enhance the competitiveness of the human resources of the AMSs by making the TVET curriculum more responsive to the labor market demands. The key variable here is the responsiveness of the TVET to the labor market demands and linkage between the TVET system and labor market demands.

In the project, the TVET responsiveness to the labor markets has been mainly operationalized as follows.

First, we checked the labor market information system, since the LMIS is key to identifying the availability of data in order to measure the labor market demands.

Then, we investigated the process of TVET curriculum along with its development and implementation. The LMIS and labor market demands and process of designing and implementing TVET curriculum are two major pillars of the project. We also looked at best practices of TVET programs in 10 AMSs to be shared among 10 AMSs.

Third, we looked at the national TVET system, which serves as backgrounds to understand the LMIS and making of TVET curriculum. Major features of the national TVET system such as the TVET governance, delivery system (TVET institutions), qualification frameworks, and policy contexts have been surveyed.

2. Analytical Frameworks of the Project[2]

While there might be more than a single route to measure competitiveness of a TVET system, there are some salient points that are universally found in competitive TVET systems. The project has been approached from the perspective of identifying such elements that make a TVET system competitive.

The analytical frameworks applied in order to measure the competitiveness of the human resources of 10 AMSs are summarized in Table 1 below.

2 https://aseanorg-my.sharepoint.com/:f:/g/personal/carl_daquio_asean_org/EtbdEj49QSBJlxNHXFW5yoIB4yWS5FtXyRso_uwMdBMQ?e=v7hizt

Table 1. Theoretical frameworks adopted to analyze "TVET Responsiveness to the Labor Markets" of 10 AMSs in the project

Subject	Analytical Frameworks	Main Contents
1. Analysis of Labor Market Information system (LMIS) and LM demands	AF II	‣ National LMIS system ‣ Employer engagement in TVET ‣ Delphi Survey to identify LM demands
2. TVET Curriculum and Its responsiveness to LM	AF III	TVET process involved in ‣ Designing the TVET curriculum - stakeholder involvement (state/TVET institutions/industry involvement) - process of designing curriculum ‣ Implementing the TVET curriculum - development of curriculum (at institution level) and teaching learning materials - quality assurance measures of TVET programs (certification. linkage to NQF)
3. Best practices of TVET programs	AF IV	‣ Cases of best practices of TVET programs (3 cases) - reported by the national representative (NRP)
4. National TVET system (Basic features of TVET which make up the national TVET system)	AF I	‣ National HRD system (incl. Education system) ‣ TVET governance ‣ TVET Institutions (TVET delivery) ‣ NQFs & involvement of industries in TVET ‣ National TVET Policy agenda/Status of TVET

First, to check the labor market information system (LMIS) and how the information on the demands and supply produced in the LMIS is being utilized in the TVET process, an analytical framework (AF II) has been developed. AF II includes questionnaires on the national LMI system, employer engagement in TVET. Also, to check the demands for industries in the LM, a Delphi survey on the most promising jobs in terms of industries and occupations in the country has been conducted.

The second part of the analytical frameworks directly deals with the responsiveness of TVET curriculum to the LM, which is covered by AF III. AF III collects detailed information on the process designing TVET curriculum in the country along with stakeholder involvement in the process including the state, industries, and TVET institutions, and also on the process of implementing the TVET curriculum such as development of teaching & learning materials and measures of quality assurance of the TVET curriculum (i.e. certification and accreditation).

AF IV deals with the best practices of TVET programs reported by the national representatives. AF I, which is about the national TVET system, covers topics such as national HRD system, TVET governance & TVET institutions, and NQFs. The subjects included in AF I provides basic information based upon which to analyse AF II~AF IV.

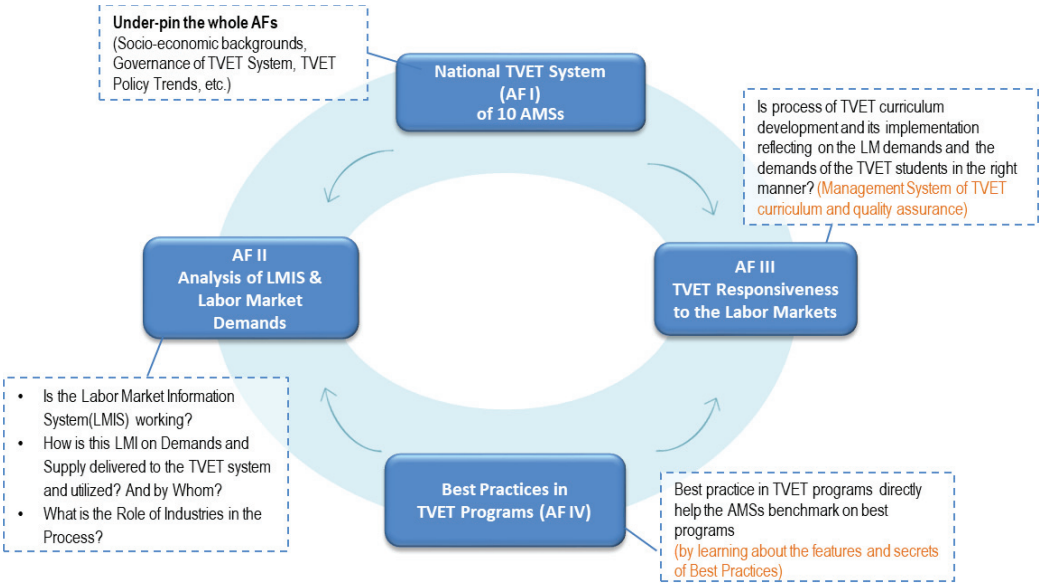


Figure 2. Connectivity among the Analytical Frameworks I~IV

In Figure 2, the linkage among the key analytical frameworks adopted in the project to measure the responsiveness of TVET curriculum to the LM is explained.

First, AF I, information on the national TVET system underpins the features in AF II and AF III, which are 'analysis of LMIS and LM demands' and 'TVET curriculum responsiveness to the LM'. Therefore, AF I serves as key backgrounds based upon which to understand the findings from AF II and AF III for the country. For instance, industry involvement in TVET process from the AF II part is closely linked to the TVET governance and stakeholder involvement in the process of implementing NQF in the AF I part.

AF II checks if the labor market information is working and how the LMI on demand and supply is conveyed to the TVET system. AF III questions if the process of TVET curriculum development and its implementation is reflecting upon the LM demands and the demands of the consumers of TVET service (TVET students, employers etc.) in the right manner. Also, findings from AF II need to be understood in close linkage to the findings from AF III. For instance, to understand the process through which the information produced in the labor-market is conveyed to the process of TVET curriculum development, the findings from AF II should be interpreted in line with the findings from AF III.

Last, AF IV, best practices of TVET programs reveal successful TVET practices in 10 AMSs. Often, best practices help explain why specific programs are working under the current TVET system in the country while others are not working as well. They also help countries with different TVET system decide if they can benchmark on the practices.

3. Methodology for the Project

3.1. Development of Analytical Frameworks and their Implementation

First, the research team at KRIVET participating in the project developed the analytical frameworks and the Delphi survey to operationalize the competitiveness of the TVET system. The KRIVET researchers, composed of LM economists, TVET program specialists, and TVET system experts, gathered together in order to develop integrated analytical frameworks that help explore the wide scope of the project. The analytical frameworks are composed of four parts (AF 1~ AF IV) and a Delphi Survey. The analytical frameworks and the Delphi survey have been reviewed by international experts and also endorsed by ASEAN SLOM Working Group before implementation.

National representatives of 10 AMSs played the key role in collecting data for the Delphi survey and completing the questionnaires of the 4 analytical frameworks. Each of 10 national representatives from 10 AMSs, who are National Resource Persons (NRPs) of the project, has worked as the main resource for the country in this project.

In addition to the NPRs, the Regional Consultants (RC) played a critical role in implementing the analytical frameworks. They are invaluable assets to the project. In the process of data collection, they coordinated between KRIVET researchers and the NRPs of the AMSs they are engaged. The RCs, with their expertise in TVET and with their experiences in the ASEAN region, worked closely together with the NRPs in order to collect data and to compile reports of AF I through AF IV.

3.2. Network of Human Resources involved in the project

As mentioned above, partnership with the national representatives and the regional experts constitutes a very important part of implementing the project.

In addition, partnership with the representatives of the proponent countries (the Philippines, Viet Nam and Thailand), the ASEAN sectoral bodies (SLOM-WG in particular), and the Project Steering Committee (PSC) members for the project have played an integral part in conducting this project successfully.

The PSC is composed of representatives from the governmental agencies of 3 proponent countries, ASCC (LCSD) representatives of ASEAN Secretariat, other key representatives that are involved in launching this project.

The ASEAN sectoral bodies including SLOM-WG provided support for data collection, by working closely with the national representatives. The ASEAN SLOM, along with the ASEAN Secretariat, are also involved in reviewing and endorsing the main outputs of the projects, which are 10 country reports for 10 AMSs and 1 integrated regional report.

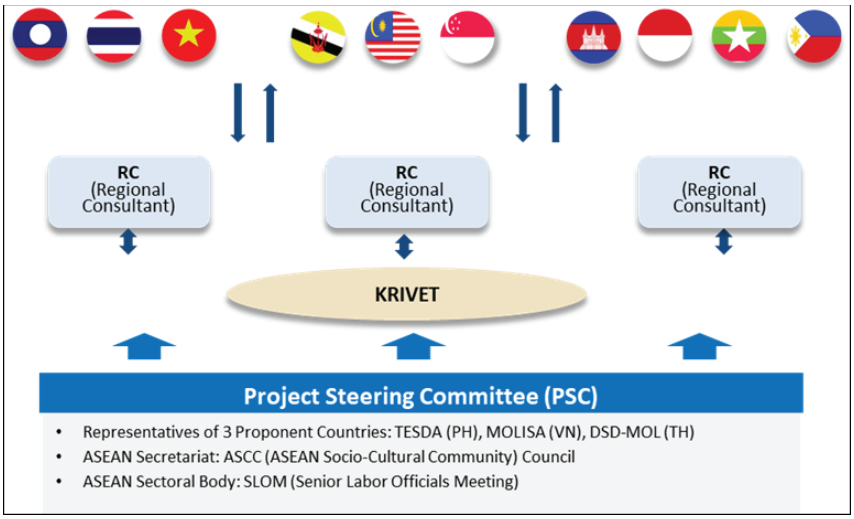


Figure 3. The Network of HRs for Component 1

3.3. Main Deliverables of the Project

Major deliverables of the projects are 10 country reports for 10 AMSs, each of which is compiled from a synthesis of the country reports based on the four analytical frameworks for the AMS, Analytical Frameworks 1 through Analytical Frameworks IV. Each country report also includes a chapter on policy recommendations based upon the findings from AF I to AF IV for the country. A regional report integrating the results from 10 reports is another major output from the project.

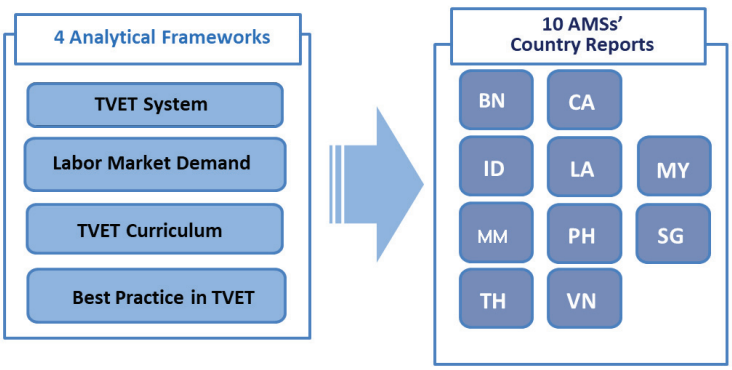


Figure 4. Compilation of the Country Report from Analytical Framework I~IV

4. Organization of the Report

Chapter II of the report deals with the national TVET system in Myanmar. First, the socio-economic context of TVET in Myanmar is reviewed, where information on the socio-economic features of the country such as demographic and economic structures, status of TVET, and recent TVET policy trends is provided. The 2nd section of Chapter II covers the national TVET system, important features of TVET system such as the TVET governance, the TVET

institutions (TVET providers), and national qualification frameworks are discussed as well as the national education system including taxonomies such as normal & non-formal education.

Chapter III of this report analyzes the labor market information system (LMIS) and labor market demands in Myanmar. The 1st section of Chapter III covers information on the policies and practices for collecting LMI on skills demands and skills supply in Myanmar. Additionally, an assessment on the effectiveness of the current LMI on skills demands and skills supply is provided. The 2nd section of Chapter III deals with the industry involvement in the TVET process, thereby providing information on how and at what levels industries are involved in the TVET process. In this section, the impact of employer engagement on TVET is appraised. The 3rd section reveals the most promising job clusters in Myanmar for future employment. Based on the analysis of the Myanmar Delphi Survey questionnaires answered by key TVET experts in Myanmar, the section identifies two most promising job clusters along with an analysis on their job markets in terms of supply and demand for the designated clusters.

Chapter IV of this report touches the subject of the responsiveness of TVET curriculum to the labor markets. This is the central part of this report. The chapter explores two important areas to identify TVET curriculum responsiveness to the LM; first, the process of designing and developing TVET curriculum, and second, the process of implementing TVET curriculum. Such important topics as involvement of industries in developing and updating the TVET curriculum and the pedagogic aspects of TVET such as TVET teachers & trainers and supply of teaching and learning materials are covered along with quality assurance issues of TVET curriculum such as certification of the trainees and accreditation of TVET institutions.

Chapter V of this report reveals the result of information collection on the best practices of TVET programs in Myanmar. The selection has been made according to the criteria provided in the analytical framework IV and in consultation with the domestic TVET experts on TVET programs. The NRP of Myanmar provided documentation on the selected cases. The TVET institutions selected as cases of best practices of TVET programs also reviewed and confirmed the information provided.

Chapter VI, the final chapter, discusses on the overall findings from the report. While contemplating on the major findings and the analyses made, the chapter provides key policy recommendations to enhance the competitiveness of TVET system. The recommendations made in the chapter were drawn from a joint-effort of three parties involved in compiling the country report; the NRP of Myanmar, the Regional Consultant of Myanmar, and the KRIVET researcher participating in Myanmar report. The draft version of recommendations has been reviewed jointly by the national TVET experts and stakeholders in Myanmar, and by international experts who provided valuable comments at the consultation meetings hosted by the KRIVET researcher.

Chapter II. Analytical Framework I: National TVET System of Myanmar

1. Socio-Economic Context of TVET

1.1. Socio-Economic Features of the Country, which has influenced the Current TVET System and its Functioning

i. Demographic and Socio-Economic Structure

The estimated population of the Republic of the Union of Myanmar is approximately about 54.3 million including male population by 28.3 million and female population by 26 million. The rural population is 71 % and urban is 29 %. According to the statistics, the youth, and the working age (40 and below) are focused on the implementation of TVET for the changing world of work and future work.

TVET providers should emphasize demand of rural population for Myanmar's economic trend as well as the increasing demand of vocational trainings focusing on female now and the coming decades. So, TVET policy makers need to consider the needs of females and their perception for TVET in formulating strategy.

The population size will be bigger in 2030 compared with 2019. Consequently, working age population will be larger in 2030 than in 2019.

Table 2. Population by special age groups, 2019 and 2030 (Gender Statics in Myanmar 2020)

Year	Age Group	Number (in Million)		Percent Distribution		Sex Distribution	
		Women	Men	Women	Men	Women	Men
2019	0 -14 (Child Age)	7.3	7.5	25.9	28.8	49.4	50.6
	15 - 64 (working Age)	18.9	17.1	66.8	65.8	52.5	47.6
	65 + (Older)	2.1	1.4	7.3	5.4	59.5	40.5
	Total	**28.3**	**26.0**	**100.0**	**100.0**		
2030	0 -14 (Child Age)	7.3	7.4	23.4	26.2	49.7	50.3
	15 - 64 (working Age)	20.5	18.6	65.7	66.0	52.4	47.6
	65 + (Older)	3.4	2.2	10.9	7.8	60.7	39.3
	Total	**31.2**	**28.2**	**100.0**	**100.0**		

Source: Gender Statistics Myanmar 2018

For TVET providers' developing TVET plan, population size can be considered as shown in Table 2. It can support TVET trends and the flexible approach of TVET implementation for each age group.

Table 3. Union Population Size by age group, 2019 and 2030 (Gender Statics in Myanmar 2020)

Age Group	2019		2030	
	Women	Men	Women	Men
0 - 4	2,469,304	2,533,457	2,400,263	2,473,270
5 - 9	2,368,300	2,416,554	2,425,480	2,488,444
10 - 14	2,480,807	2,556,565	2,433,684	2,487,060
15 - 19	2,486,369	2,550,720	2,356,597	2,392,037
20 - 24	2,338,608	2,269,657	2,358,192	2,380,521
25 - 29	2,228,486	2,033,348	2,386,890	2,378,897
30 - 34	2,150,604	1,939,847	2,243,288	2,106,657
35- 39	2,026,824	1,838,755	2,144,514	1,880,207
40 - 44	1,870,784	1,668,004	2,079,748	1,776,182
45 - 49	1,745,845	1,509,563	1,977,433	1,693,690
50 - 54	1,579,913	1,332,423	1,818,244	1,530,052
55 - 59	1,378,292	1,130,258	167,444	1,352,041
60 - 64	1,101,528	865,980	1,488,591	1,145,834
65 - 69	826,635	618,539	1,249,551	902,933
70- 74	541,758	373,459	934,395	618,989
75- 79	330,080	206,594	617,042	371,711
80+	365,782	206,124	549,257	282,905

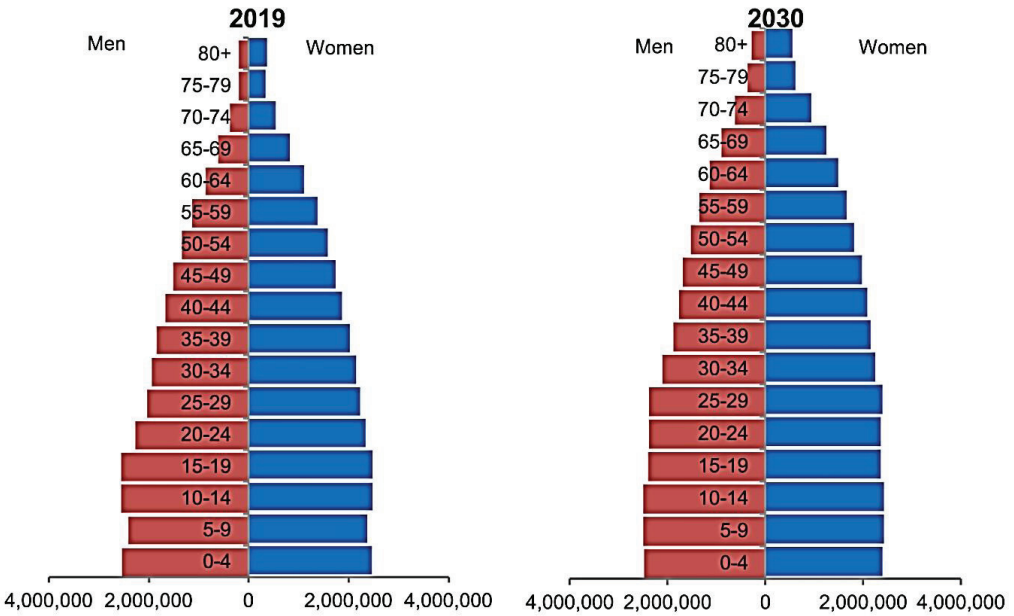
Source: Department of Population, MOL
Note: based on projection of 2014 census

Life expectancy at birth is 69.4 years in union level. The Table 3 shows that life expectancy at birth is 71.9 years in urban and 68.5 years in rural. The life expectancy at birth of females is 73.3 and longer than those of males.

Table 4. Early-age mortality rates and life expectancy at birth by sex, urban and rural areas

Area and Sex	Early-age mortality rate			Life expectancy at birth
	Infant	Child	Under Five	
UNION	30.9	7.0	37.7	69.4
Urban	22.3	4.1	26.3	71.9
Rural	34.1	8.2	42.1	68.5
Male	39.4	9.1	48.2	66.5
Female	21.1	4.4	25.4	73.3

Source: The 2019 Inter-Censal Survey: Union Report



Source: The 2019 Inter-Censal Survey: Union Report

Figure 5. Population pyramid by sex and by age, 2019 and 2030

ii. Labor Market Demands

The labor force participation rate is 63.20 and unemployment rate is 2.70. The labor force participation rate of rural is more than those of urban. Unemployment rate is 2.7 and urban and rural are similar. The States/Regions which are the most labor force participation rate are Shan State, Kayah State and Mandalay Region. The labor force participation rate of Yangon Region has 61.6 but it is the source of job seeking place by internal migration from other States and Regions.

Table 5. Labor force participation rate, unemployment rate and employment to population ratio by sex, State/ Region and urban and rural areas

State/Region and Area	Labour force participation rate (15+)			Unemployment rate (15+)			Employment to Population Ration (15+)		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
UNION	63.2	75.7	52.7	2.7	2.1	3.4	61.5	74.1	50.9
Urban	58.9	70.8	49.1	2.6	2.4	2.8	57.3	69	47.7
Rural	65.1	77.8	54.2	2.7	1.9	3.6	63.3	76.3	52.3
Kachin	60.6	72.6	49	1.7	1.3	2.3	59.5	71.7	47.9
Kayah	70.7	81	61	0.7	0.7	0.6	70.2	80.4	60.7
Kayin	52.8	66.7	40.5	2.7	2.2	3.4	51.3	65.2	39.2
Chin	60.1	66.2	55.2	3.1	3.1	3.1	58.3	64.1	53.5
Sagaing	65.7	75.8	57.5	1.3	1.2	1.4	64.9	74.9	56.7
Tanintharyi	58.3	76.3	41.8	1.3	1.1	1.7	57.6	75.5	41.1
Bago	59.4	75.4	46	1.5	1.2	1.9	58.5	74.5	45.2
Magway	66.1	76.1	58.4	1	1.1	1	65.4	75.3	57.8
Mandalay	68.9	79.6	60.3	1.3	1	1.7	68	78.8	59.3
Mon	55.4	71.8	42.3	2.1	1.5	2.9	54.3	70.7	41.1
Rakhine	56.6	68.4	47	19.8	12.6	28.5	45.4	59.8	33.6
Yangon	61.6	74.4	51	2.8	2.6	3.1	59.9	72.4	49.4
Shan	70	78.4	62.3	1.1	1.1	1.2	69.2	77.5	61.6
Ayeyarwaddy	61.9	78.3	47.3	1.6	1.2	2.1	60.9	77.3	46.3
Nay Pyi Taw	65.1	77.8	54	2	1.7	2.5	63.8	76.5	52.7

Source: The 2019 Inter-Censal Survey: Union Report

Own account workers (without regular employees) and employees (private) are the most percentages of employment status by 45.1 % and 27.7 % respectively. Helping without pay in a household/ family business is 13.1 %. It assumes that only paid apprentice/ intern (4.2 %) is related to TVET. If their employers provide work related trainings, employees from private sector can be accessible to TVET but its possibility is still less. According to the current trend, very few employers and employees emphasize trainings and the majority of employers and employees intend to link TVET channel if only their benefits are larger than investment for TVET.

Table 6. Employed population aged 15 years and over by status of employment

Employment Status	Percentage
Total	100.0
Employee (Government)	4.3
Employee (Private)	27.7
Paid apprentice/Intern	4.2
Worked as an employer (with regular employees)	5.6
Own account worker (without regular employees)	45.1
Helping without pay in a household/family business	13.1
Others	0.1

Source: The 2019 Inter-Censal Survey: Union Report

Generally, male workers are employed more than female workers. But female workers are dominant in professionals, services and sales workers, and clerical support workers. The majority of males are working in the field of technicians, skilled workers, craftsmen, managers, operators, assemblers, and elementary occupations.

Table 7. Main Occupational Category of employed persons aged 15 years and over by sex

Major occupational category	Number	Percentage			Sex Ratio
		Both Sexes	Male	Female	
Total	22,911,215.0	100.0	100.0	100.0	122.8
Managers	108,197.0	0.5	0.5	0.4	165.0
Professionals	727,723.0	3.2	1.7	5.0	40.3
Tehnicians and Associate Professinals	504,211.0	2.2	2.3	2.1	133.8
Clerical Support Workers	860,396.0	3.8	3.1	4.5	85.9
Services and Sales Workers	4,220,262.0	18.4	12.0	26.3	56.2
Skilled Agricultural Forestry and Fishery Workers	9,448,823.0	41.2	43.9	38.1	141.5
Craft and Related Trade Workers	3,141,403.0	13.7	14.9	12.2	149.4
Plant and Machine Operators and Assemblers	1,227,562.0	5.3	8.8	1.1	957.8
Elementary Occupations	2,649,800.0	11.6	12.6	10.3	151.0
Other	22,838.0	0.1	0.2	*	2,596.3

Source: The 2019 Inter-Censal Survey: Union Report

Table 8. Proportion of employed persons aged 15 years and over by major industrial category by sex

Major industrial category	Both Sexes	Male	Female
Total	100.0	100.0	100.0
Agriculture, forestry and fishing	45.3	47.9	42.0
Mining and quarrying	0.6	1.0	0.2
Manufacturing	9.5	6.3	13.4
Electricity gas steam and air conditioning supply	0.2	0.3	*
Water supply; sewerage waste management and remediation activities	0.1	0.2	0.1
Construction	5.3	8.9	1.0
Wholesale and retail trade; repair of motor vehicles and motorcycles	15.7	11.4	20.9
Transportation and storage	4.5	7.9	0.3
Accommodation and food services activities	4.0	2.7	5.6
Information and communication	0.3	0.3	0.3
Financial and insurance services	0.3	0.3	0.5
Real estate activities	*	*	*
Professional scientific and technical activities	0.1	0.1	0.1
Administrative and support service activities	3.0	3.0	3.1
Public administration and defense; compulsory social security	0.3	0.5	0.1
Education	2.6	1.0	4.5
Human health and social work activities	0.8	0.5	1.1
Arts entertainment and recreation	0.4	0.4	0.3
Other service activities	5.1	5.6	4.5
Activities of households as employers; undifferentiated goods and services	1.7	1.6	1.7
Activities of extraterritorial organizations and bodies	*	*	*
Not stated	0.2	0.1	0.3

Source: The 2019 Inter-Censal Survey: Union Report

Myanmar, as a developing country, needs skilled workforce in every sector and the role of both in hard skills and soft skills with a focus on digital literacy are on increasingly high demand. Most Myanmar employers demand the skilled workers who have critical thinking skills, foreign language skills, writing skills, technical skills, managerial and leadership skills, problem solving skills, reading skills, computer or general IT skills, interpersonal and communication skills, numeracy skills and work ethic and commitment.

During COVID-19 Pandemic, Digital Institution is booming for Regional Trade Route and Supply Chain Process because of the stipulation of age. Since there is an urgent need to implement HRD or skills development of workers who participate in this mechanism as key players, Literacy Skills are essential to be equipped with today's workers.

Regarding the implementation of educational and training systems that promote 21st century skills, the Myanmar Sustainable Development Plan includes one of the goals with a focus on human resources and social development for 21st century society. According to MSDP, the line ministries, private organizations and employers are collaborating for our youths to be equipped with 21st century skillsets to serve the nation as drivers of a competitive, innovative, and creative economy.

According to the current situation of Myanmar, labor-intensive industries can generate more jobs especially for agriculture, energy and mining, tourism, financial sector, infrastructure, manufacturing, and telecommunication sector. Myanmar also needs to implement educational and training systems that promote 21st Century Skills for low-skilled and middle-skilled occupations.

The technology rapidly changes; however, unskilled jobs will remain in labor market of Myanmar. There will need more technicians/ experts for health services, tourism, export business, banking, insurance, IT, statistics, food processing and textile, hairdressers, beauticians, fashion designers, footwear experts, elderly caregivers, and pre-school teachers. The competent person who simultaneously works with hard skills and soft skills will get employment opportunities in the future.

Since Myanmar is the country currently undertaking educational and economic reform with accelerated momentum, HRD is crucial as it undergoes a significant process of transformation period in development, regardless of the most recent political changes.

The most demanded industry sectors are Construction, Agriculture, Textile and apparel, Electrical, IT, Garment, Manufacturing, Automotive, and Healthcare.

Working at local labour market without skills recognition certificate hinders local workers to seize future work in the long run. Digitalization and Industrial Revolution 4.0 are big challenges as well as green skills and green jobs for job security of workers. In some cases, foreign investors bring their workers to work in local labour market with a reason that local workers have no skills recognition certificate. Some developing countries in ASEAN may face the same situation as Myanmar. The low skilled workers from the developing country need to be aware the value of National Skills Recognition Certificate. The project on the promotion of

the value of the National Skills Recognition Certificate through skills development system is beneficial especially to low skilled workers from Cambodia, Laos, and Myanmar.

iii. Status of TVET in the Country

The status of TVET in Myanmar was in the developing stage during last ten years. Now, TVET is progressing. The objective of job seekers, workers, and unemployed workers to TVET is to get jobs.

The non-formal TVET provided by international and local NGOs is generally targeted at vulnerable groups: the unemployed, underemployed, the illiterate, women, young people (particularly those who did not have access to or did not complete lower secondary education) and ethnic young people from border and conflict areas.

Myanmar is closely cooperating among the relevant ministries and between public and private sectors in order to achieve the key reforms strategies for the development of TVET sector.

Moreover, the Ministry of Science and Technology is also cooperating with international development partners and organizations such as the Asian Development Bank, ASEAN, Japan International Cooperation Agency, German Corporation for International Cooperation (GIZ), KFW Banking Group, as well as the Chinese and Singaporean governments.

Some examples of programs are shown in Table 9.

Table 9. Examples of programs cooperating with international development partners and organizations

ADB and SWISS Development	Development of competency-based modular short-term courses for dropouts and unemployed people.
GIZ and KFW	Improving TVET personnel at all levels. This includes developing management systems and pedagogical training, as well as the establishment of a Continuous Professional Development Centre in all TVET schools under the Ministry of Science and Technology.
Singapore	Establishment of a Singapore-Myanmar Vocational Training Institute (SMVTI) for delivering short-term competency-based courses according to local needs.
China	Assistance in the development of teaching and learning materials, and the implementation of a scholarship program for TVET personnel and students.
SEAMEO VOTECH and Colombo Plan Staff College (CPSC)	Conducting training programs for improving TVET personnel and strengthening regional cooperation.

Source: TVET Country Profile Myanmar 2018

Most ministries relate to TVET activities and approximately, 28 ministries are directly involved in TVET. Out of 13 ministries, a total of six ministries have implemented TVET based on their own policies without a set of common definitions or inter-ministerial coordination.

Through findings from personal interviews with government departments and business membership organizations, coordination and cooperation among state bodies have much room for improvement. A similar situation exists between the public and private sectors.

According to the restructuring of the country's ministries, TVET was divided into three categories:

- Formal TVET leading to an academic award (diploma).
- Non-formal TVET wherein each ministry provides vocational training in order to achieve policy goals.
- Private TVET with no official registration or certification system with higher fees than the above categories.

The six leading state bodies and government ministries are:

1. Ministry of Science and Technology
2. Ministry of Agriculture, Livestock & Irrigation
3. Ministry of Border Affairs
4. Ministry of Labour
5. Ministry of Industry,
6. Ministry of Social Welfare, Relief & Resettlement

Furthermore, the Ministry of Health, the Ministry of Natural Resources and Environmental Conservation are also active in HRD through the establishment of TVET schools in their respective ministries.

Additionally, there is a Union Civil Service Board that provides training for all government officers for promotion and advanced job-related education and training in the country as well as for overseas education programs provided by international cooperation partners and donors.

Table 10. TVET schools under leading government ministries

Sr.	Ministry	Number of Schools
1	Ministry of Science and Technology	57
2	Ministry of Agriculture, Livestock & Irrigation	55
3	Ministry of Border Affairs	50
4	Ministry of Labour	7
5	Ministry of Industry	6
6	Ministry of Social Welfare, Relief & Resettlement	9
	Total number of TVET schools	**183**

Cooperation between state bodies and external stakeholders and organizations

The Ministry of Science and Technology and the Ministry of Labour are in charge of the development, implementation, monitoring and updating of the HRD/LLL strategy.

At the state level, coordination and cooperation among government actors were desired by all relevant parties. However, a systematic platform and a mechanism to improve coordination and cooperation were lacking. Regardless of the clear objectives and goals in the Myanmar Sustainable Development Plan (MSDP) and the National Education Strategic Plan (NESP 2016-2021), effective implementation failed due to weaknesses in cooperation and collaboration between stakeholders.

The inaugural and only TVET Forum to date was held in 2016. A National Skills Development Forum (NSDF), scheduled to take place every three years, was hosted by the Ministry of Labour for the first time in 2016. However, although the NSDF was not held in 2019, its relaunch is planned for 2021.

A conference on the Implementation of Higher Education Development 2019 was held to explore further opportunities for cooperation between the Ministry of Science and Technology and external stakeholders such as representatives from universities, students, teacher associations, and stakeholders from the private sector.

Some platforms for regular meetings and conferences with international development partners are in operation (for example, the Economic Annual Forum) but no specific platforms or forums have been formalized for cooperation with external partners, including international organizations. Currently, the Ministry of Labour aims to work with the International Labour Organization to implement and plan for a Mutual Recognition of Skills program between Myanmar and Thailand as well as between Myanmar and ASEAN.

The Multi-Partner Trust Fund is also a platform for cooperation with external partners such as UNESCO, Denmark, the UK, and Finland for HRD/LLL and has supported teacher education development since 2014. Several actors are involved in the country including ADB, RECOTVET ASEAN, UNDP, UNESCO, UNICEF, UNFPA, AOTS, HIDA, JICA, KOICA, GIZ as well as a group of 35 INGOs.

Among government bodies, the CSO (Central Statistical Organization) under the Ministry of Planning and Finance has the role of collecting national statistics and data. As CSO is not a data producer itself, it faces challenges collecting data from data producers in several ministries. This is in part due to a lack of trust and the lack of a cooperation mechanism within government bodies. The missing data is on child labour in the employment sector and from identified vulnerable groups.

Legislative provisions

To date, there is neither an "HRD law" nor a "TVET law" in Myanmar. Myanmar may require support from an ASEAN framework, as well as guidance or encouragement from the ASEAN community, to enable the development and enforcement of an "HRD law".

Developing the political will to develop such an "HRD Policy" at state level would be a positive initial step. By taking a step-by-step approach, once "HRD Policy" is highlighted, follow-up actions promoting HRD would become feasible for both the public and private sectors.

A TVET law based on the Comprehensive Education Sector Review (CESR) under the National Education Strategic Plan (NESP) is currently under deliberation in parliament.

The TVET law notes the organization of a TVET Council and a requirement to coordinate TVET across all the different line Ministries. The Law needs to be approved in order to implement the establishment of a TVET Council and initiate implementation of the required actions in building a formalized TVET system.

There is an effective example from the Engineering Council in Myanmar. The establishment of the Council was drafted in 2002. The approval took more than ten years but since this Council was set up, the Engineering Society has been able to decide and implement required actions independently without having to go through a bureaucratic process.

Currently, school is compulsory to Grade 5 (aged 10). The Basic Education Law 2019 provides compulsory free education for all children until the age of 12 with the aim of completing lower secondary education in the formal education sector. Alternative education has been provided for those youths, specifically out-of-school children (OOSC) and out-of-school youths over the age of 15, numbering about 3.5 million with opportunities to gain competencies, credentials, access to higher wages and life-long learning.

All citizens have the right to train at a government TVET School after successful attainment of Grade 8 (Lower Secondary). Government technical high schools provide 30,000 MMK (approximately USD 22) as a monthly allowance to all students.

There is no provision of credit or access to financial loans for attending educational programs. Also, there is no availability of joint public-private funding for the delivery of training in the public or private sectors.

TVET teachers and trainers

MOE is mandated as the leading TVET ministry to provide teacher trainings and has training facilities at a technical TVET teacher training center, but it only focuses on training of trainers (TOT) programs. Short-term in-service training courses such as practical and technical skill-based trainings, pedagogic or teaching and learning method trainings, applied didactics training, resource maintenance 5S training and ICT courses are conducted every year for teachers of GTI and GTHS.

The main objective of these TVET teacher training programs is to upgrade the quality of teaching and technical skills for TVET education. There are various short-term courses of 4-10 weeks duration which focus on technical competencies in mechanical, electrical, civil or electronic domains and others. Neither standards nor competency models are planned and arranged in place for these training courses for future vision in line with National Education Strategic Plan.

Though in the past time DTVET has only one teacher training center TPTC (Baelin) at the northern Myanmar, now newly established (not operational yet) TVET Teacher Training Institute (TTTI- Yangon) in southern Myanmar funded by KOIKA. It is not only established as a Teacher Training Centre but also serves as a Model GTI School. The main idea behind its establishment is to attach the applicability of teaching and didactics skill directly into real classrooms as well as to include research areas for future teacher training development.

Following the highly decentralized structure of Myanmar's TVET system, curriculum development and certification for TVET teacher training is also under the auspices of different ministries and their training institutions. Curricula as well as certificates are not standardized, and a coordinated quality assurance is not in place.

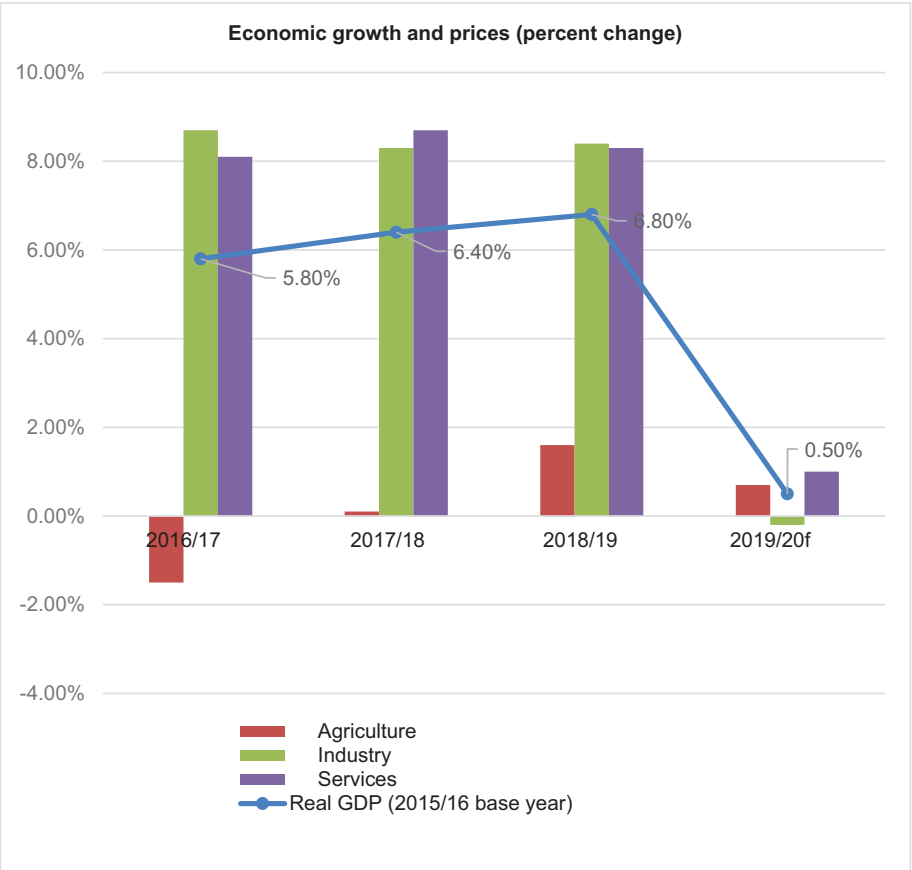
1.2. Recent Socio-Economic Developments

i. Pace and Trends of Economic Development and Other Significant Socio-Economic Development

Impact of COVID-19 Pandemic in Myanmar Socio-economic Status

Myanmar's GDP growth rate is expected to fall from 6.8 percent in FY2018/19 to 0.5 percent in FY2019/20 in the baseline scenario affected through both external and domestic channels. The pandemic and associated containment measures are weakening aggregate demand and disrupting the supply of labor and inputs with negative effects on wholesale and retail trade, tourism-related services, and manufacturing and construction activities. (IMF)

The COVID-19 shock has affected the economy's key growth engines. Myanmar has seen a sharp decline in exports, remittances, and tourist arrivals. At the same time, domestic economic activity has been constrained by measures taken to control the spread of the virus. Such disruptions have affected households and businesses, including in agriculture, which comprises a fifth of the economy and over half of employment. Furthermore, nearly four out of five workers in Myanmar are employed in the informal sector, with limited access to social safety nets. There is high uncertainty around growth in the short term, also reflecting the intensity and duration of containment measures, and the evolution of external conditions. (World Bank)



Source: World Bank

Figure 6. Myanmar GDP Focus for FY2019

Depressed economic activity is inhibiting private consumption and investment, putting further downward pressure on economic growth. The revised FY2019/20 growth forecast is 5.9 percentage points lower than the pre-Covid-19 forecast for FY2019/20 of 6.4 percent. In the downside scenario growth could be as low as -2.5 percent. In other words, economic output could contract by as much as -2.5 percent in FY2019/20 compared with FY2018/19. This would be equivalent to a loss of national income of K 5.2 trillion (US$3.7 billion) relative to the pre-crisis counterfactual. (World Bank)

Due to the pandemic, Myanmar's GDP growth forecast for FY2019/20 has been revised downward from 6.4 percent to just 0.5 percent as all sectors are hit, with adverse effects of varying intensity projected across all sectors.

The impacts of the crisis transmit through external and domestic channels, and are not evenly distributed across sectors: tourism-related services and transportation activities are highly exposed to the pandemic, while the agriculture and information and communications technology (ICT) sectors have proven relatively resilient. Indeed, the ICT sector is experiencing a surge of activity driven by a sudden increase in telecommuting and e-commerce.

Precautionary behavior and travel bans continue to negatively impact wholesale and retail trade, tourism-related services, and transportation, and the service sector (which represents 42 percent of the economy) growth rate is expected to fall to 1 percent. Meanwhile, industrial production (36 percent of the economy) is expected to contract by -0.2 percent in FY2019/20 as lockdown measures restrict access to labor, the closure of the overland border with China disrupts the supply of industrial inputs, and both domestic and international consumer demand remains soft. Agriculture (22 percent of the economy) has proved resilient with growth estimated to slow by less than in other sectors, to 0.7 percent, thanks to strong crop production offsetting a weakening livestock and fisheries sector. (World Bank; Myanmar Economic Outlook 2020)

Economic outlook and risks

Economic Outlook and Risks Under the baseline scenario, the GDP growth rate is expected to recover to 7.2 percent in FY2020/21 but it will take time for the economy to recover to the size it would have been if Covid-19 had not struck. As Covid-19-related shocks dissipate, a combination of infrastructure investment, increased activity in the service sector, stronger exports, and resurgent private consumption is projected to return the GDP growth rate to its pre-crisis trend. In addition, several electricity and transportation infrastructure projects are expected to begin commercial operation over the near term. As demand and investment recover, the continued development of the e-commerce and insurance subsectors is expected to accelerate the growth of services. Despite the strong growth rebound anticipated in FY2020/21, Myanmar's GDP is forecast to remain 5.1 percent below the level that it would have achieved had the Covid-19 pandemic not occurred.

Downside risks dominate the growth outlook. Under a downside scenario in which the Covid-19 pandemic continues to inhibit domestic and global economic activity, Myanmar's GDP growth rate is projected to fall to - 2.5 percent in FY2019/20 before recovering to 7.6 percent in FY2020/21. An uncontrolled domestic outbreak could delay the resumption of economic activity in key sectors, especially tourism, transportation, manufacturing, and retail. Despite the government's quick efforts, within its fiscal means, to mitigate the pandemic's impact, the balance sheets of households, banks, and corporations could suffer lasting damage. Domestic risks are compounded by heightened external uncertainty, including the possibility of a deeper global recession. (World Bank; Myanmar Economic Outlook 2020)

Impact of Current Political Situation

Additional to COVID-19 situation, current political situation changes in Myanmar government puts the growth of Myanmar GDP and overall socio-economic status in uncertain period for the time being.

A World Bank forecast showed that Myanmar's economy is expected to contract by 10% this year, a sharp reversal from the previous prediction of 5.9% growth in October 2020.

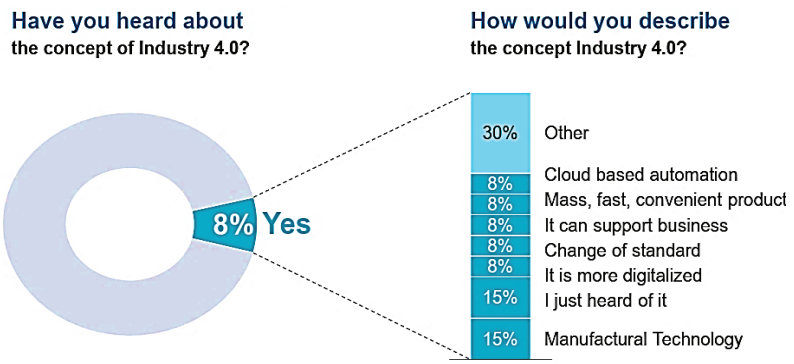
Myanmar has been heavily affected by recent political changes which reduced mobility, and logistical inefficiencies in essential public services, including banking, logistics and internet services.

ii. New Policies Relevant to TVET

Industry 4.0 and TVET in Myanmar

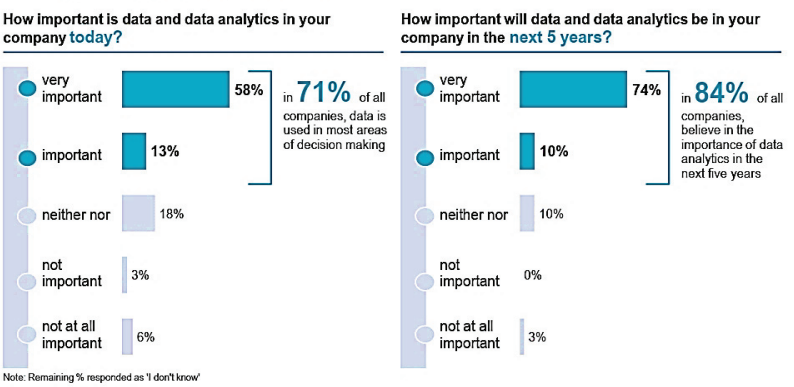
According to survey conducted among 154 SME manufacturing companies in Yangon and Mandalay by the Delegation of German Industry and Commerce in Myanmar (AHK Myanmar), Myanmar Survey Research (MSR) and Roland Berger, the full understanding of the Industry 4.0 concept has not yet reached Myanmar manufacturing businesses.

Only 8% of business survey respondents claimed to know about the term, and the understanding of the concept varied largely. 15% of the businesses perceived Industry 4.0 as a manufactural technology, whereas other answers were evenly distributed between various understanding.



Source: MSR Survey, Industry 4.0 in Myanmar – Whitepaper

Figure 7. Familiarity with the concept of Industry 4.0 among Myanmar SMEs



Source: MSR Survey, Industry 4.0 in Myanmar – Whitepaper

Figure 8. Importance of data today and in the next five years

However, the survey reveals that companies see the importance of data and data analytics for their business since 71% stated that data and analytics are important for them. The relevance of data is expected to increase over the next five years, since 84% of surveyed companies stated that data will become more important for their company. In highly automated industries like pharma, 100% of all respondents emphasized the importance of data, whereas in more traditional industries like textile (50%) or timber (40%) the importance was perceived significantly lower.

Along with the importance of data, companies in Myanmar also intend to be more flexible in serving their customers, aiming for a high customizability of their products. 82% of the companies stated that in the next five years, their products should be fully customizable, and customers can ask for any configuration or any changes to their order (this compares to 75% of the companies today). However, those results might be driven by the fact that particularly small and medium-sized companies may have been more capable to adapt of their products, simply given their small size.

In Myanmar, the technical skills level particularly regarding digital manufacturing is still considered low, which is mostly due to the fact that the Myanmar education system and business sector were largely isolated from global ties and new R&D for decades. When considering Industry 4.0 as a concept to grow the economy, a common concern globally is the replacement of manual “people” labor by machines.

Compared to industrialized countries, Myanmar is in a particularly unique situation since it has a young, “digital native” population that is eager to learn and apply new skills for the overall improvement of the country. This is the ideal ground to promote Education in the areas of Industry 4.0 and not only leapfrog factory design but also peoples' skills. Myanmar can be at the forefront of developing and educating entirely new professions e.g. robotics mechanic.

German companies are already cooperating with Myanmar education institutes on this: The new School of Industrial Training and Education (SITE) in Yangon, which was masterminded by the Myanmar Ministry of Education and the local company Sea Lion, works with the German companies Festo Didactic, Siemens and Bosch to bring Industry 4.0 to the classrooms and learn future technology with the latest German machines and software solutions.

International and Internal Labour migration Governance and TVET in Myanmar

The people of Myanmar have long used migration as a survival strategy, for safe refuge and for livelihood. Those who have migrated not only support themselves but also try to remit enough money to allow their families and communities to manage.

Most people from Myanmar migrate spontaneously, using brokers for new or dangerous routes. Since 2009 gradually more channels have opened for migrants to migrate with pre-arranged jobs and with the necessary documents. Nevertheless, the vast majority of migrants from Myanmar continue to be migrants who left the country without going through those channels.

During the latest rounds of registrations of undocumented migrants in Thailand, approximately 1.6 million migrants from Myanmar have applied for documents in Thailand, while only around 200,000 have gone through the process from Myanmar (the MOU process).

According to the 2014 Myanmar Population Census, 70.2% of all migrants were in Thailand. Smaller but still significant numbers of migrants are working in Malaysia, China and Singapore. Other countries of destination not specified in the Census include South Korea, Japan, Qatar, Saudi Arabia, and the UAE. Regular migration has not as yet been able to guarantee migrants their rights or freedom from exploitation, corruption, extortion and fraudulence.

New patterns of internal migration are also developing in response to the major transitions in the country. With the growth of older industrial zones and the development of new Special Economic Zones, there is increased work available in manufacturing in urban centers, drawing young people, especially young women, away from the rural areas. Traditional movements of children, girls into domestic work, boys into tea shops and other manual work, continue although new trends will develop with changes in laws and attitudes to child labour and with the growing need for service workers.

In Myanmar, internal migrants have been shown to be vulnerable to migrating into situations of substandard working and living conditions, with a smaller percentage migrating into situations of forced labour and trafficking. The ILO recognizes that the vulnerability of internal migrants directly relates to two major factors, one is the recruitment process and the second is the type of work at destination. The sectors which have been identified as most exposing the migrants to situations of forced labour or severe exploitation are mining, fishing, construction, and domestic work.

It is therefore a dynamic time to support the development of effective services for potential, current and returned migrants, including access to up-to-date accurate information, recruitment and job matching services, complaints mechanism, social protection, access to financial services, vocational skills and accreditation, justice and counselling throughout the migration cycle. It is also a critical time to support the improvement of labour migration governance to ensure that migration is not a goal into itself, but that migration is a means to a goal. For individuals the goal may be to support the education of their children thereby moving their families out of the cycle of poverty, or to support their families or communities to invest locally for long term local development, or a whole range of goals.

For the country, migration can be one means to accelerating the development of the country, providing employment to the unemployed, foreign exchange, increased skills and education and closer ties with countries of destination. Without a long-term vision on the part of individuals and the country, migration will become an ever increasing phenomenon which only provides for today.

Since the national TVET Law itself is still in draft stage, official national TVET policies regarding Industrial 4.0, as well as Migrant workers, Green Economy and aging population are

not established yet in Myanmar. However, related ministries and organizations are taking initial steps for TVET in cooperation with local and international bodies and development partners.

Government priorities for TVET

The NESP 2016–2021 articulates a strategic direction for TVET. It outlines three core priorities:

1. Dramatically expanding access to TVET.

2. Strengthening the quality and relevance of TVET.

3. Improving TVET management.

Collectively, realization of these priorities will facilitate a transformational shift whereby more learners can access TVET and graduate from quality-assured and labor market-responsive TVET programs under a more effective TVET management system. However, Myanmar TVET system faces the following challenges as per the inputs provided by Directorate of TVET, Ministry of Science and Technology Myanmar.

Table 11. Challenges of Myanmar TVET System

Lack of pathways and an integrated TVET system	The current TVET system does not have many pathways between streams. Accordingly, an integrated system that bridges programs, including TVET to higher education needs to be developed.
Ensuring the quality of TVET programs	The ability of public and private TVET providers to cater to the demands of the modern labor market is limited. Therefore, the quality of providers will need to be enhanced, including pedagogical elements, demand-orientated training, and ensuring access to TVET programs to various target groups. Polytechnics will need to be established by the private sector and responsible ministries and offered programs closely linked to local labor market needs and will be implemented in collaboration with local enterprises.
Updating the TVET curriculum	The Comprehensive Education Sector Review (CESR) and Education Working Group reports recommend that the current TVET curriculum needs to be updated to meet local needs and provide a balance between practical work and theory. Therefore, a curriculum committee is needed to develop a competency-based curriculum that meets skills standards.
Establishing public-private partnerships	There is a lack of private sector engagement in the development of the TVET sector. TVET ministries and the private sector will need to establish public-private partnerships to expand access to quality TVET and strengthen the partnership between the public and private sector.
Improving the governance structure	The current TVET governance structure is weak. To this effect, the ministries involved in TVET, and the private sector will need to establish a TVET council that will include senior officials from relevant ministries, employers, non-government representatives and external experts.

Source: TVET Country Profile Myanmar 2018

TVET for youth employment in Myanmar during the pandemic

Following Myanmar's first two COVID-19 cases on March 23, 2020, the MoE called for the closure of all schools, higher education institutions (HEIs), and TVET institutions. The closure of HEIs and TVET institutions is expected to affect 1.5 million and 15,712 students, respectively (MoE, 2020). In addition, the number of dropouts and out-of-school children is likely to increase, as both students and teachers have limited exposure to distance learning (MoE, 2020).

In this context, the MoE, in collaboration with UNESCO and partners for the Education and TVET Sector Coordination Group, has developed a national response and recovery plan for the education sector, aligned with the overarching aims of the current 2016–2021 National Education Strategic Plan (NESP) to "Improve teaching and learning, vocational education and training, research and innovation, leading to measurable improvements in student achievement in all schools and educational institutions," and providing an opportunity to inform priority setting in the ongoing preparation of the next NESP (MoE, 2020).

In addition to the national response and recovery plan, DTVET has, to a reasonable extent, provided IT infrastructure, and upgraded internet access to its TVET institutions. Moreover, human resource development for TVET leaders, trainers, teachers, students, and trainees has been considerably promoted via online training, blended learning, international webinars, virtual workshops, and online knowledge sharing events in Myanmar during the pandemic. Reopening of TVET institutions is being planned under the guidance of Myanmar's Ministry of Health and Sports.

2. National TVET System

2.1. National Education System

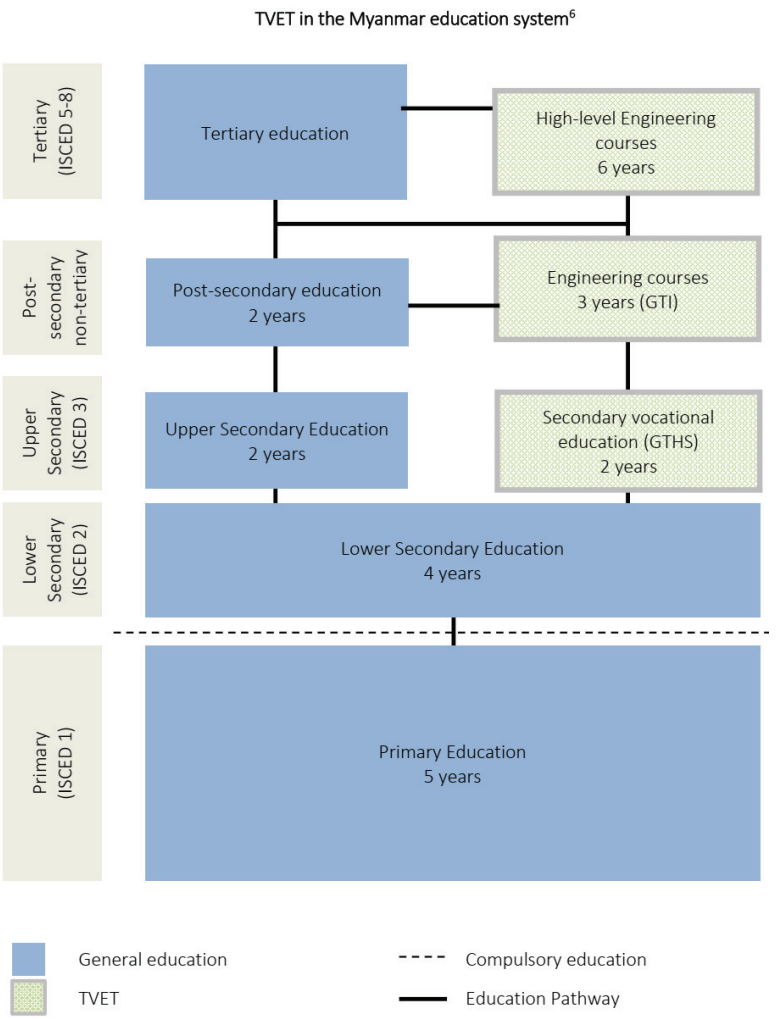
i. Brief Description of Formal and Non-formal Education

The Myanmar education system is currently undergoing explicit reform. In the existing system, preschool is offered from ages 3 to 5, then primary schooling including Kindergarten starts at the age of 5. After five years in primary school, children move on to four years of lower secondary school, followed by two years of upper secondary school, for students aged from around 14 to 15 or 16.

Upon completing middle school (lower secondary), students can choose TVET high schools. However, currently there is only one type of TVET high school in Myanmar. These are the government technical high schools (GTHSs) under MoST.

At this moment, there are only thirty-five GTHSs, and these schools offer only engineering-related courses.

As a result, only a small percentage (0.7%) of students choose to go to GTHSs. As an example, there were only 7,350 GTHS students in the 2017/18 academic year compared with 1,049,444 students in general high schools. At the end of high school, students sit a national examination known as the Matriculation Examination, in March each year. Entrance to tertiary education and the TVET diploma program (Government Technical Institutes, GTI) is mainly decided by the combined merits obtained in the Matriculation Exam.



Source: TVET System Review Myanmar 2018

Figure 9. Progression pathways under the Myanmar education system, academic year 2017/18

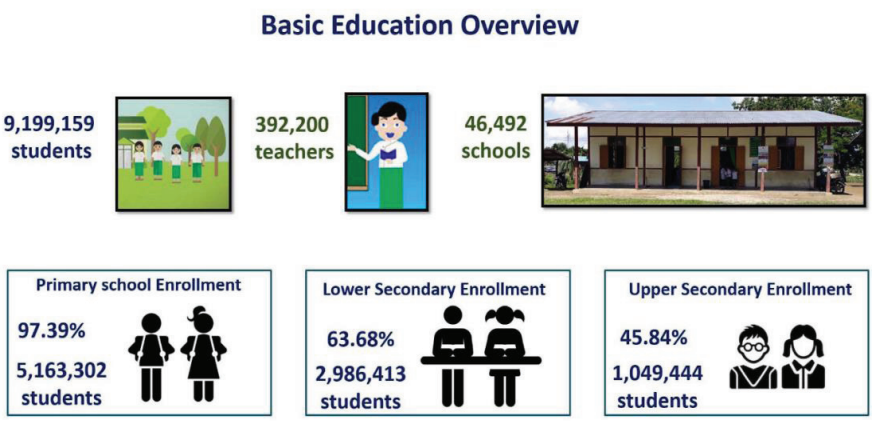
Basic (General) Education

The current basic education system in Myanmar consists of five years of primary education, four years of lower secondary education, and two years of upper secondary education. Basic education in Myanmar is free, and primary education is compulsory for all children.

The existing 5 + 4 + 2 system is under transition to the new KG + 12 (KG + 5 + 4 + 3) system. The new system of KG + 12 was first introduced in 2016, and the system is being replaced phase by phase. The new system will be fully in place for the academic year 2022/23. Following figure compares the old existing system and the new system that is being introduced.

In the new KG + 12 System, Kindergarten at the age of 5 is not compulsory, but primary education starting at age 6 is compulsory for all citizens. National Education Law indicates that compulsory education should be further extended to lower and upper secondary.

There are currently 46,492 basic education schools in Myanmar reaching approximately 9.2 million students, according to the data provided by MoE in the Annual Performance Review Report 2017–18. The number of schools, teachers and students in basic education under MoE for the 2017/18 academic year can be seen in the following figure. These schools are managed by the Department of Basic Education within MoE.



Source: TVET System Review Myanmar 2019

Figure 10. The number of schools, teachers, and students in basic education under MoE

In addition, a significant percentage of students access basic education through monastic, private, community and other types of school. As of March 2018, there were 730 private schools (585 high schools, 66 middle schools and 79 primary schools) providing basic (general) education to 97,741 high school students, 36,970 middle school students and 44,472 primary students (source: MoE).

The net enrolment rates steadily increased from 2007/08 to 2017/18**.** The net enrolment rate in primary education increased steadily from 83.63 per cent in 2007/08 to 97.39 per cent in 2017/18. Similarly, the net enrolment rate for lower secondary education increased from 45.07 per cent to 63.68 per cent between 2007/08 and 2017/18. However, a different pattern can be observed at the upper secondary level: there was a decrease of 7 per cent from 30.60 per cent in 2007/08 to 23.13 per cent in 2012/13, and then a gradual rise to 45.84 per cent in 2017/18. The age range for calculating the net enrolment rate will be changed when the new system is completely replaced in the academic year 2022/23, and accordingly the gross and net enrolment rates will change.

The student–teacher ratio has also been improved, with some fluctuations over the 10 years to 2018, from 1:29 to 1:20 at the primary school level, 1: 36 to 1:29 at the secondary school level and 1:28 to 1:24 at the upper secondary level.

Higher Education

In the higher education sector, in March 2018 there were 173 public universities, colleges and institutes under eight different ministries. All these universities, colleges and institutes are state-financed and offer a variety of programs at undergraduate, postgraduate diploma, master's degree and doctorate levels. Following figure summarizes the number of universities and colleges under different ministries.

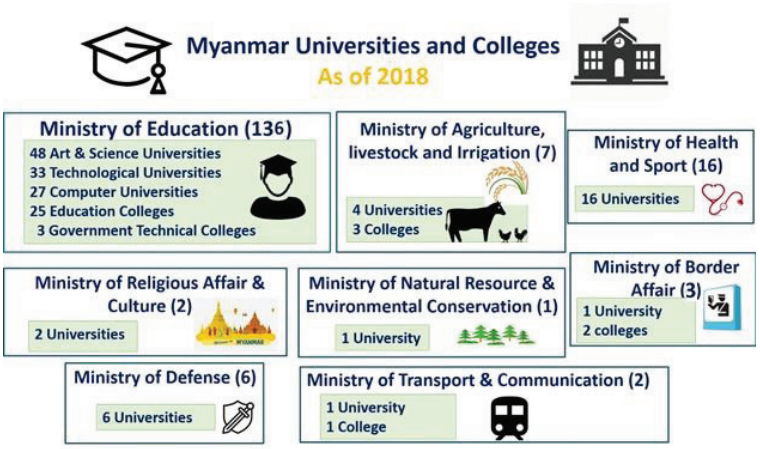


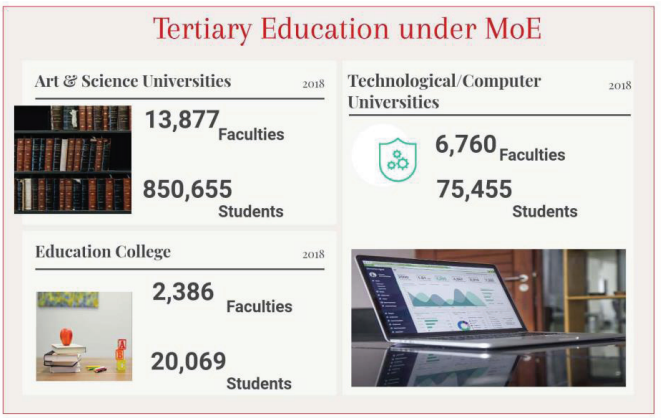
Figure 11. Number of Universities and Colleges under Different Ministries (Technological Universities, Computer Universities, Government Technical Colleges are now under Ministry of Science and Technology)

Most of the universities are highly specialized, for example in economics, teacher education, foreign languages, engineering, computer studies, maritime studies, agriculture, forestry, medicine, nursing and veterinary science, and run by the relevant ministries: for instance, medical universities are managed by the Ministry of Health, and agriculture and livestock-related universities are run by the Ministry of Agriculture, Livestock and Irrigation (MoALI).

Similarly, the Ministry of Natural Resource and Environmental Conversation manages the Forest University, and the Ministry of Defense manages military training universities such as the Defense Service Academy (DSA), Defense Services Technological Academy (DSTA) and Defense Services Medical Academy.

MoE is the only ministry that oversees a large range of universities: specialized universities such as engineering and computer universities, education colleges that offer teaching training for basic education teachers, and art and science universities that offer a range of art and science degree in physics, chemistry, zoology and so on.

It can be observed that the MoE is the leading ministry and its 135 universities, colleges, and institutes account for the biggest percentage of enrolment in tertiary education.



Source: MoE, Annual Performance Report 2017–18.

Figure 12. Tertiary Education Statistics under MoE 2017/2018

ii. Special Features and Characteristics of the Country

TVET within the education system

Entry to TVET may occur upon completion of lower secondary education, and entry to higher-level TVET may occur upon completion of upper secondary education.

MoE is the largest of the public TVET providers in formal TVET education. It manages a national network of GTIs, GTHSs and vocational schools offering diplomas, technical high school qualifications and short courses. Other ministries, together with an increasing number of private-sector providers, also conduct TVET programs, but these are more likely to focus on short-term training skills related to areas of specialist technical need.

The number of students enrolled in TVET is very small compared with the students in basic education.

Access to Universities

Access to universities is mainly decided by the accumulated marks obtained in the Matriculation Examinations. Graduates from TVET high schools do not have access to these universities unless they repeat Grade 10 in general high schools and retake the Matriculation Examination.

In general, students with higher education accumulated marks go to the medical or engineering universities. As a result, access to these universities is very limited and competitive owing to the limited space available in the universities and high interest. The students who have obtained lower Matriculation Examination marks and who cannot afford private education typically choose a university of distance education (UDE) under MoE. The UDE program offers a range of art and science degrees at minimum cost, and students can study through the state-owned media without having to leave their homes and jobs. The students have to come to the universities only for the practical classes and intensive short training before the year-end final examination.

iii. Major Educational Statistics

According to statistics, only 18 percent of children aged 3-4 years were attending nursery/ pre-school at the time of the survey. Nine out of 10 children aged 5-9 years were at primary school and seven out of 10 children aged 10-15 years were currently attending secondary school. It clearly shows that many children dropped out of school after they have attained the primary education. Gender differences were small in terms of current school attendance for all age groups mentioned above (Table 8).

Table 12. Population aged 3 - 29 by current school attendance

Level of education/ Age	Total Population			Current school enrolment (%)		
	Both sexes	Male	Female	Both sexes	Male	Female
Children of nursery age at nursery/ pre-school age (3 - 4)	1,978,073	983,875	994,198	18.1	17.9	18.4
Children of primary age at primary school age (5 - 9)	4,479,179	2,211,422	2,267,757	91.7	92.9	90.4
Children of secondary age at secondary school age (10 - 15)	5,726,901	2,848,734	2,878,167	72.9	72.5	73.2
Post-secondary age group at (16-29)	12,044,782	5,771,094	6,273,688	10.5	9.6	11.4

Source: The 2019 Inter-Censal Survey; the Union Report

In Table 12, almost half (47%) of the population aged 25 years and over had completed only primary level of education while 22 percent for middle school level and 13 percent for high school level. Only 11 out of 100 persons reported they had graduated or completed some years in the university.

Table 13. Population aged 25 years and over by highest level of education completed and sex

Level of education/ Age	Total Population			Current school enrolment (%)		
	Both sexes	Male	Female	Both sexes	Male	Female
Total population	25,169,127	11,589,504	13,579,623	100.0	100.0	100.0
Not Completed	961,554	448,681	512,873	3.8	3.9	3.8
Pre-primary/Primary	11,833,141	4,902,655	6,930,486	47.0	42.3	51.0
Middle school	5,468,910	2,918,100	2,550,810	21.7	25.2	18.8
High school	3,348,926	1,761,503	1,587,423	13.3	15.2	11.7
GTHS	42,678	26,708	15,970	0.2	0.2	0.1
TVET	50,947	38,157	12,790	0.2	0.3	0.1
University	2,867,290	1,119,239	1,748,051	11.4	9.7	12.9
Other	595,681	374,461	221,220	2.4	3.2	1.6

Source: The 2019 Inter-Censal Survey; The Union Report

Table 13 shows, at the national level, 9 in 10 people aged 5 years and over reported they had attended pre-school or at least grade school. The proportion of males (93.5%) was slightly higher than that of females (90.6%). In all states and regions, school attendance rates for males were higher than that of females.

Table 14. Population aged by 5 years and over by school attendance, sex and State/Region

Age group	Total population			Ever attended (%)			Never attended (%)		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
UNION	46,463,288	21,599,086	24,864,202	91.9	93.5	90.6	8.1	6.5	9.4
Kachin	1,421,334	689,768	731,566	93.6	95.2	92.2	6.4	4.8	7.8
Kayah	274,457	133,603	140,854	90.3	93.1	87.6	9.7	6.9	12.4
Kayin	1,394,544	662,338	732,206	80.5	80.9	80.1	19.5	19.1	19.9
Chin	434,771	203,148	231,623	89.5	94.3	85.3	10.5	5.7	14.7
Sagaing	4,825,520	2,201,129	2,624,391	92.8	94.2	91.5	7.2	5.8	8.5
Tanintharyi	1,274,648	614,117	660,531	95.5	95.5	95.5	4.5	4.5	4.5
Bago	4,405,382	2,041,553	2,363,829	94.4	96.1	92.9	5.6	3.9	7.1
Magway	3,482,646	1,552,684	1,929,962	91.2	93.5	89.3	8.8	6.5	10.7
Mandalay	5,651,056	2,571,124	3,079,932	94.3	96.6	92.6	5.7	3.4	7.5
Mon	1,725,612	786,566	939,046	90.6	92.0	89.4	9.4	8.0	10.6
Rakhine	2,914,274	1,344,292	1,569,982	93.4	95.6	91.6	6.6	4.4	8.4
Yangon	7,210,589	3,329,940	3,880,649	96.8	97.6	96.1	3.2	2.4	3.9
Shan	4,814,943	2,308,861	2,506,082	77.0	79.3	74.9	23.0	20.7	25.1
Ayeyarwaddy	5,561,255	2,655,437	2,905,818	95.0	95.9	94.2	5.0	4.1	5.8
Nay Pyi Taw	1,072,257	504,526	567,731	94.1	96.8	91.7	5.9	3.2	8.3

Source: The 2019 Inter-Censal Survey; The Union Report

The data from the table 14 shows that among children between age 10 and 14, 98 percent reported they had attended school. The results also revealed that school attendance has improved over time. About 83 percent of those aged 50 years and over reported they had been to school while younger groups (between aged 5 and 49) had higher proportions (all above 90%). The proportion of population who had never been to school increased with age. Only 1.6 percent of the population aged 10-14 had never been to school but it increased to 16.8 percent for population aged 50 years and over.

Table 15. Population aged 3 years and over by school attendance and sex

Age group	Total population			Ever attended (%)			Never attended (%)		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
3 - 4	1,978,072	983,874	994,198	20.3	19.4	21.1	79.7	80.6	78.9
5 - 9	4,479,179	2,211,422	2,267,757	92.3	91.8	92.7	7.7	8.2	7.3
10 - 14	4,728,542	2,346,403	2,382,139	98.4	98.3	98.6	1.6	1.7	1.4
15 - 19	4,722,780	2,337,488	2,385,292	97.4	97.1	97.7	2.6	2.9	2.3
20 - 24	4,322,313	2,078,068	2,244,245	96.2	96.1	96.3	3.8	3.9	3.7
25 - 29	3,998,053	1,857,872	2,140,181	94.7	94.6	94.8	5.3	5.4	5.2
30 - 34	3,849,013	1,777,178	2,071,835	93.7	94.2	93.4	6.3	5.8	6.6
35- 39	3,643,948	1,688,816	1,955,132	92.4	93.3	91.7	7.6	6.7	8.3
40 - 44	3,341,665	1,534,783	1,806,882	91.3	92.6	90.2	8.7	7.4	9.8
45 - 49	3,079,287	1,391,862	1,687,425	90.6	92.4	89.2	9.4	7.6	10.8
50+	10,298,507	4,375,193	5,923,314	83.2	88.6	79.2	16.8	11.4	20.8

Source: The 2019 Inter-Censal Survey; The Union Report

The population currently attending school by special age groups and sex is presented in Table 16. The purpose of this table is to show some of the indicators of Myanmar Sustainable Development Plan (MSDP) – National Indicator Framework (NIF). For instance, indicators for children aged 3 to 8 years are for NIF indicator 4.3.11, "access to early childhood care and development services". Out of 5.5 million children aged 3 to 8 years, about 65 percent were currently attending school or pre-school. Sex difference for this indicator was minimal; 64 percent for boys and 66 percent for girls.

Table 16. Population aged 3 years and over by current school attendance, special age groups and sex

Age group	Total population			Current school enrolment (%)		
	Both sexes	Male	Female	Both sexes	Male	Female
3 – 8	5,500,468	2,733,359	2,767,109	64.8	64.1	65.5
6 – 9	3,610,160	1,771,157	1,839,003	96.9	96.4	97.3
10 – 13	3,825,246	1,892,816	1,932,430	93.4	93.0	93.9
14 – 15	1,901,658	955,921	945,737	76.0	72.8	79.2
15 – 24	9,045,093	4,415,556	4,629,537	31.6	29.2	33.9
25+	28,210,473	12,625,704	15,584,769	0.3	0.4	0.3

2.2. National TVET System

2.2.1. TVET Institutions

The Ministries providing TVET in terms of both formal and non-formal training, include Ministry of Science and Technology, Ministry of Agriculture, Livestock and Irrigation, Ministry of Labour, Ministry of Science and Technology, Ministry of Industry, Ministry of Border Affairs and Ministry of Social Welfare, Relief and Resettlement.

The two leading Ministries that provide the TVET in terms of both formal as an institution-based training and non-formal training are the Ministry of Science and Technology and Ministry of Agriculture, Livestock and Irrigation (MoALI).

The Ministry of Science and Technology offers both post-secondary level diploma program in Government Technical Institutes (GTI) and upper secondary TVET in Technical high schools. The MoALI offers post-secondary level diploma TVET in Agriculture. GTI Programs provided by the Ministry of Science and Technology are also offered in the Institutes under the Ministry of Border Affairs.

Under MoST, DTVET is the responsible department for TVET. As of March 2018, DTVET is providing TVET under the formal program in thirty-five Government technical high schools (at upper secondary level) and twenty-two GTIs and three government technological colleges (GTCs) for the post-secondary diploma level. Details of schools and students in formal TVET (programs under MoST are shown in Figure.)

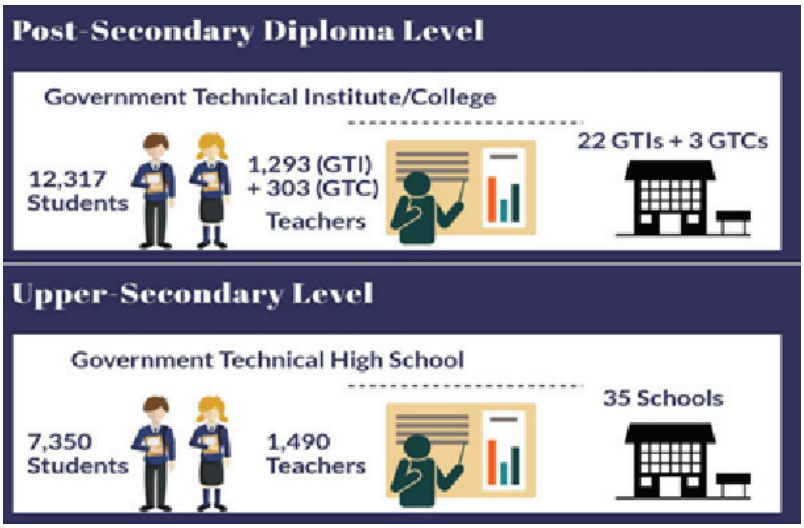
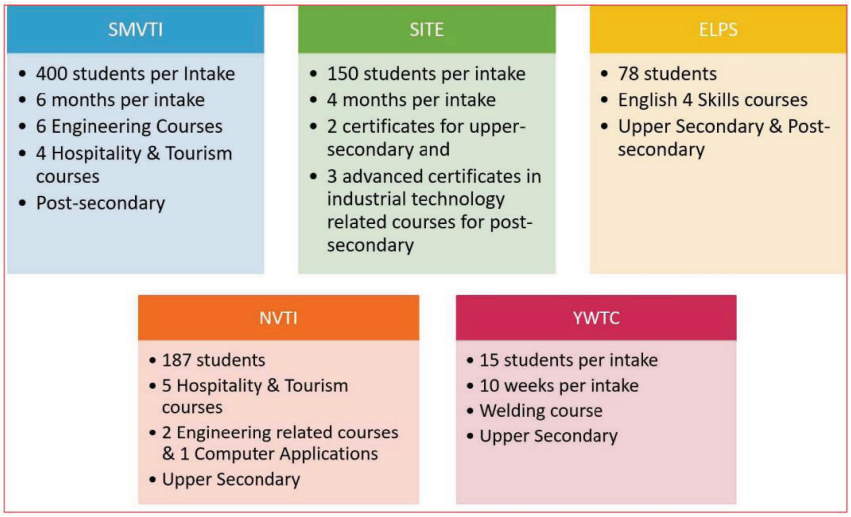


Figure 13. Schools and Students in TVET Programs Under MOST

TVET specialized courses in both engineering and other fields such as hospitality and tourism are offered in five specialized vocational institutes under MoST. DTVET also provides competency-based short course training to young people and adults who are looking for jobs.

Under this programme, there are five training institutes: Singapore Myanmar Vocational Training Institute (SMVTI), Nyaungshwe Vocational Training Institute (NVTI), School of Industrial Training and Education (SITE), English Language Proficiency School (ELPS) and Yadanar Welding Training Center (YWTC) which specialize in providing short courses.

These institutes were mainly set up with local and international collaboration, and typically run from three-month to one-year courses. They target post-secondary and upper-secondary students. The courses offered and the curricula differ from the formal TVET courses offered at GTIs and GTHSs. For instance, SMVTI was set up in collaboration with the Government of Singapore and the curricula were adopted from the Institute of Technical Education, Singapore. An overview of these five institutes can be seen in Figure.



Source: TVET System Review Myanmar 2019

Figure 14. Summary of specialized vocational schools and institutes

Six Ministries including Education, Industry, Labor and Agriculture also offer non-formal TVET training for the different target groups of youths and workers. For instance, MOALI, MOI, MOL offers the non-formal training for the pre-employment and upgrading the skills of labor. The Ministry of social welfare offers the TVET training for vulnerable youths and adults whereas the Ministry of Border affairs focuses on the ethnic minority groups and women. The duration of the training program can vary from 1 week to 2 years.

Other 7 ministries including the Ministry of Health, Ministry of Hotel and Tourism, provide in-service and pre-service training for their staff. For instance, the Department of Human Resources for Health (DHRH) within the Ministry of Health oversees the pre-service training of all health workers in Myanmar. As of 2018, it managed twenty-five nursing schools, twenty-two midwifery training schools and three other schools: a Nursing-Related Field Practice Training Center, Central Domiciliary Midwifery Training Center and Lady Health Visitor Training School.

Most of these schools are located in the states and regions and aim to retain the health workers in rural areas. These schools and two nursing universities train about 2,000 nurses and midwives every year. However, the Myanmar Human Resources for Health Strategy highlighted that the intake is not sufficient, and more health workers are needed in the country (Ministry of Health and Sport and ICF, 2017).

Table 17 summarizes the types of schools and programs offered by TVET providers under MOALI, MOL, MOI, Ministry of Border Affairs and Ministry of Social Welfare, Relief and Resettlement. These ministries offer certificate-level TVET courses in the specialized institutes under their governance. These training courses range in duration from one week on topics such as computer literacy to a one-year certificate program for engineering-related topics.

Table 17. TVET provided by Line Ministries (as of 2018)

Ministry	Names and Types	Number	Target
MOALI	Agricultural Institutes Lacquarware Technical College Cooperative Training Schools Weaving and Vocational Schools Fishery Schools Vocational Schools (Livestock) Livestock Training School	15 1 7 14 3 14 1	Post-sec (Formal) Post-sec (Formal) Post-sec (Non-formal) Pre-Employment Workers Workers Workers
Mol	Industrial Training Centers	6	Pre-employment
MOL	Training Centers	6	Re-skilling
Ministry of Social Welfare	Early Child Care and Development Resource Center (ECCD Resource Center) Vocational Training Schools for Adults with disability Home Science Schools Vocational Training School for Women Sign Language Supporter Training Elderly caregiver training center	1 1 1 11 4 1 1	Pre-Primary School Teachers /Early childhood care givers Persons with Disability Vulnerable Adults Community People Vulnerable Women People who support to hearing impaired persons / Community People
Ministry of Border Affairs	Vocational (Home Science Schools) Technical Schools Vocational Training Center	42 9 1	Women Ethnic Young people Ethnic Young people

Source: TVET System Review Myanmar 2019

2.2.2. TVET Governance

i. Types of VET institutions under the governance of Ministries

At the policy level, responsibility is split between the Ministry of Science and Technology (MOST), which is responsible for formal TVET, and the Ministry of Labor (MOL), which is responsible for non-formal skills development. Coordination and cooperation among the various line ministries involved in the provision of TVET and/or skills development barely took place in the last decades but has been improving in recent years. A functioning overarching central body or legal entity to regulate and manage the entire scope of formal and non-formal TVET has, however, not been established yet.

Within the MoE, the Department of Technical and Vocational Education and Training (DTVET) was the responsible department for TVET, headed by the Director General. It was previously named DVET (Department of Vocational Education and Training) and belonged to the Ministry of Science and Technology (MOST). However, in June 2015, the entire department and related TVET institutions under MOST were transferred to MoE, and after the election in November 2015, MOST and MOE were merged into one Ministry. Then, in June 17 2021, MOST was divided from MOE and reconstructed again with the order of State Administration Council.

DTVET oversees 35 Government Technical High Schools and 25 Government Technical Institutes which provide technical education and training of the country's youth to become engineers, technicians and other skilled workers. Private training providers are increasingly more common in Myanmar. Within MOL, the Department of Labor headed by the Director General, and more specifically, the Skills Development Division are responsible for overseeing

all activities related to skills development. The division also provides backstopping for the National Skills Standards Authority (NSSA), which is responsible for the development of skills standards, assessments and certification.

The Myanmar TVET system is currently undergoing a process of decentralization, with an emphasis on public-private partnerships and the involvement of the private sector in the development of the TVET sector. Although the Ministry of Science and Technology is the focal point of the TVET system, 13 other ministries also run their own TVET programs. For example, the Ministry of Hotel and Tourism is responsible for vocational training programs for hotel and tourism fields, and the Ministry of Agriculture provides formal and non-formal programs for the agricultural sector. The other Ministries include Ministry of Industry, Ministry of Labour, Ministry of Transport and Communication, Ministry of Commerce, and the Ministry of Natural Resources and Environmental Conservation, Ministry of Border Affairs, and Ministry of Health.

The courses offered by their training institutes differ in duration (ranging from short-term with a duration of several weeks to long-term), skills delivery level, mode of delivery, and expected outcome. Amongst these, the training programs offered under the Ministry of Industry (MoI) are more important as they are provided through six Industrial Training Centers (ITC), which have been established and are supported by different international development partners.

Financing

For the fiscal year 2016-17, the government expenditure on education was 8 percent of the total government expenditure, with post-secondary non-tertiary vocational education receiving only 0.12 percent of total government expenditure (or 1.58 percent of the education budget), according to Citizen's Budget 2016-2017. (TVET Country Profile Myanmar 2018)

Public TVET institutions receive resources from the ministry to which they correspond. They currently have no say in the number of resources allocated to them, since this is budgeted for by the respective ministry. Current expenditures for TVET institutions under the DTVET are mainly used for teacher salaries, with capital expenditure for facilities, equipment, and teaching materials being constrained. In order to improve the quality of education and the high dropout rate, the budget for these purposes should be increased (ILO).

The new Employment and Skills Development Law (ESDL), which was promulgated in 2013, foresees the establishment of a workers' skills development fund. Such a fund would be an essential step towards ensuring sustainable financing of demand-oriented training initiated by the industry. The fund has, however, not been established yet. According to the ESDL, the fund may be established for the skills development of workers from industrial and service sectors, and be used for a) skills development training and skills upgrading of workers; b) provision of necessary re-training of workers due to their termination of work or desire to transfer to another job (ESDL, Chapter VIII, 26). Employers from industry and service sectors are expected to pay a minimum of 0.5% and a maximum of 2% of total wages or salaries of workers (supervisor level and below) to the fund on a monthly basis (ESDL, Chapter VIII, 30).

Donor assistance in the TVET sector is still limited to the provision of grants, with ADB, Germany and Switzerland as major donors. However, the ADB and the Myanmar Parliament approved a first loan of US$98 million for the provision of cohesive secondary education subsector and TVET reform support to TVET Institutes only under MoE at the end of 2016.

ii. Vocational Educational Institutions and Vocational Training Institutions

All VET programs under MoE are Educational Institutions and the rest of all other ministries cover programmes as Training institutions.

(See reference: 2-2-1. TVET Institutions (Types of TVET institutions, qualifications and programs)

iii. The Myanmar National Qualifications Framework (MNQF)

The Myanmar National Qualifications Framework (MNQF) is in draft and in the early stages of consultation. The proposed MNQF is an eight-level framework that includes a volume measure and a set of qualification type descriptors for each qualification type identified on the framework, e.g., bachelor. The eight-level framework is based on three domains (i.e., knowledge and skills, context, and attributes). The attribute domain outlines key attributes for a Myanmar citizen, e.g., integrity and citizenship.

The MNQF aims to align with the ASEAN Qualifications Reference Framework (AQRF) and also to link with the National Skills Qualifications Framework (NSQF) in the Skills Sector (a sector qualification). The MNQF incorporates the Skills Sector qualifications within its structure and acknowledges that formal qualifications can be gained through education and training sectors and a range of pathways. A preliminary analysis undertaken has aligned the 4 levels of the NSQF to the lower 4 levels of the MNQF.

Table 18. Correlation of MNQF levels to education systems of Myanmar (TVET Country Profile 2018)

Sectors				Lifelong learning
Level	Basic education	TVET	Higher education	
8			Post-Doctoral Studies/ Doctoral Degrees	Recognition of Prior Learning (assessment and validation) Non-formal/ informal
7			Post-Master Studies/ Master Degree Degree	
6			Post Graduate Diplomas/ Bachelor Degrees	
5		Advanced Diploma	Advanced Diplomas	
4		Diploma/ V&T C/SC4*		
3	High School	V&T C/SC3		
2	Middle School	V&T C/SC2		
1	Primary School	V&T C/SC1		

*V&T C/SC = Vocational & Technical Certificate / Skill Certificate

The MNQF is linked to a set of quality standards pertaining to accreditation of qualifications against the MNQF and also provider standards. The accreditation of qualification standard indicates that there is an accreditation period for which it must be reviewed and re-accredited. The quality standard does not specify the duration of the period as this will be set in policy. The guidelines related to the development of occupational standards include the oversight of a sectorial committee, a strong consultation process and an endorsement process. There is a process for the review of these occupational standards which will follow similar lines.

Recently, work has been undertaken in the Skills Sector to consider how to strengthen the linkages with the MNQF and reflect on key quality assurance documents. As noted previously the MNQF includes a volume measure to describe how 'big' a qualification is. Note that the level descriptors are the metric for how 'complex' a qualification is. The NSQF has level descriptors but does not include a volume measure. The recent work has included analysis of sector occupational standards and their competencies and has proposed a methodology to trial the allocation of credit points to individual competency standards (and therefore to the occupation standard or certificate). This work should inform the credit values to be included in the MNQF at levels 1 – 4 and will be refined to be included in the guidelines for the development of the occupational standards (and therefore the certificates). Once the process is confirmed and endorsed, all past occupational standards will be reviewed to include this information and will inform any future development of occupational standards.

The Myanmar NQF is still a developing tool and does not yet clearly identify progression pathways, even for formal TVET programs. The outstanding TVET learners in formal education are allowed to progress vertically but have restricted access to academic qualifications at the post-secondary level. A limited number of graduates from GTHSs under MOST can proceed to continue to the post-secondary TVET under MoE but they do not have access to other postsecondary institutes under either MOST or other line ministries.

This is different from many other countries in the Asia-Pacific region, where the articulation of TVET pathways is an emerging theme. Many countries have been attempting to offer multiple entry points to qualifications and to facilitate transitions between academic, formal TVET and non-formal TVET programs. In Malaysia, the NQF contains eight levels and provides flexible pathways for all learners, allowing both horizontal and vertical movement between qualifications (Grainger et al., 2016). Similarly, Indonesia and the Republic of Korea have increased the permeability from TVET to higher education.
The qualifications offered through non-formal TVET have not yet been incorporated into the NVQ structure.

Hence, the majority of this TVET learning is not credited and recognized. Non-formal and informal (personal) learning needs to be institutionalized by accrediting the learning outcomes of programs based on the national competency standards.

For enhancing decent work within the nation and overseas and ensuring to be safe migration and conducting skills training to upgrade the competitiveness of the workforce, MOL

participated in the initiative of Skill Recognition System in ASEAN project for Cambodia, Lao, Myanmar, Vietnam and Thailand of CLMVT, with the aid of the cooperation development program of Asian-Australia since 2004. The follow-up of this project, the National Regulatory Body is established for skills recognition.

National Skills Standards Authority (NSSA) was first set up under MOL in 2007 to provide standards in terms of level of skill qualification and expected learner skill set on completion of training. NSSA was chaired by the deputy minister of MOL, and the members included the directors-general from relevant ministries such as the Ministry of Science and Technology, Ministry of Industry (MOI), MOALI, and the private sector.

After the Employment and Skill Development Law was established, NSSA became an independent body that develops skill standards, assessments, and certification for skilled labor. There are 15 sectorial committees (Metal and Engineering Industry, Construction, Woodworking Industry, Agricultural, Livestock and Fishery, Transport Industry, Mining Industry, Information Technology, Health Services, Social Welfare Services, Manufacturing industry, Commercial and Business services, Hotel and Tourism, Oil and Natural Gas, Electrical Engineering) that includes the experts from both private and public organizations: companies, associations, and relevant Ministries.

Referring the key features in the NSSA through non-formal learning which aims to produce 'Fit for purpose' qualifications, a key strength of the NSSA certification system is the introduction of qualifications that meet industry's needs (employment skills match) and individuals' needs (portable skills to move across the labor market and support lifelong learning).

NSSA was established with representatives of various stakeholders (government ministries and private organizations) as part of the ASEAN Skills Recognition Project within ASEAN countries towards the implementation of the ASEAN Economic Community (AEC). Since then, MOL has been acting as a focal ministry to further strengthen NSSA with the aim to establish a National Unified Skills Development, Recognition and Certification System as a provision for skilled labor movement within ASEAN, principally revolving around mutual recognition of skills (MRS).

As a regulatory body stipulated in ESDL, NSSA was formed with four main committees: an Assessment and Certification Committee (ACC) chaired by Ministry of Industry, a Training Committee chaired by DTVET/MOST, and a Competency Development Sectorial Committee with fifteen subcommittees chaired by appropriate ministry and private sector representatives. Skill Development Fund Committee is yet to be established according to ESDL.

The NSQF provides an avenue for those outside the traditional education and TVET sector to gain formal recognition and hence a qualification through assessment only processes. Currently the quality assurance attached to the provision of assessment services includes strong development process for competency standards and occupational outcomes (attached to a Certificate), recognition of assessment centers, requirements for assessors, moderating or

quality assuring the assessment decisions, record/data management and certification processes. It is proposed that the system will be expanded to include the recognition of training centers and trainers.

Within the Skills Sector, the National Skills Qualifications Framework is a four-level framework (and four certificate types) closely aligned to the skill level of a worker (e.g., supervisor, advanced skilled, skilled, and semi-skilled).

Certificate 1	=	Semi-skilled worker
Certificate 2	=	Skilled worker
Certificate 3	=	Advanced skilled worker
Certificate 4	=	Supervisor

National Skills Standards Authority (NSSA) has developed National Occupational Competency Standards (NOCS) for 185 occupations and revised NOCS for 67 occupations among those occupations. Currently, NSSA focuses on Recognition of Prior Learning (RPL) with the aim of accreditation of skilled workers who have no skills recognition certificate. NSSA is able to conduct skills assessments for Level 1 in (24) occupations and Level 2 in (9) occupations. NSSA issued National Certificate of Occupational Competency to (13407) workers as recognition of Semi- skilled Workers and (1083) workers as recognition of Skilled Workers from 2014 to December 2019.

This framework was developed cognizant of the ASEAN Qualifications Reference Framework (AQRF) and it preceded the development of the proposed MNQF. Each level descriptor focuses on areas such as teamwork, communication, problem solving skills, and use of technologies. The NSQF has been implemented in that it is linked to the development of competency standards and informs the level of the occupational outcomes. It is proposed that the NSQF will be expanded to include at least 1 further level.

Moreover, NSSA has recently established and implemented a Quality Management System (QMS), and ISO 9001:2015 certification was awarded in February 2019. Along with this QMS, NSSA is currently facing challenges to increase NOCS-based short-term reskilling training as well as RPL-based assessment for workers in selected priority occupations, and a continuous quality improvement of its services through collaboration with industries and employers.

Various development partners such as GIZ, SwissContact, JICA, ADB and Lux Development Agency, and the Aung Myin Hmu programme funded by Lift have been supporting the institutional development of NSSA and its services for better fulfilling its role as regulatory body for skilled workforce development as envisaged in the 2013 ESDL. The better linkage between the vocational and technical skills certificates at Levels 1–4 in the MNQF and the NSQF is under discussion between National Academic and Quality Assurance Committee (NAQAC) led by MOST and NSSA led by MOL.

Laws related to TVET in Myanmar

The primary law concerning TVET in Myanmar used to be "The Agriculture, Technical, and Vocational Education Law" (enacted in 1974, amended in 1989 and in 1991). The law was originally created to sustain the socialist state; however, it was amended in 1989 to adjust to the market economy. The main purpose of its amendment was 1) to train engineers and skilled laborers to establish a solid manufacturing industry and 2) to develop human resources for the modernization of the agriculture and livestock industry.

In order to achieve such objectives, "The Council for Agriculture, Technical, and Vocational Education" and supporting committees were organized. However, TVET was transferred to MOST from MOE in 1996, and currently, "National Education Policy Commission (NEPC)" takes the role of the main decision-making organization. Reflecting the achievement of CESR (Comprehensive Education Sector Review) in 2012, the new TVET law (hereinafter referred to as TVET law) is currently under parliament deliberation.

The first TVET Law was drafted in 2014 and outlines the formation of a TVET Committee with thirty members, chaired by the minister of education and with members from relevant ministries, private industries and TVET experts. This committee will be the highest policy-making body for TVET, and its role and responsibilities include, but are not limited to, setting TVET policies, planning qualifications, accreditation and regulating both government and TVET providers. The law (in draft) is now under the review of the Union Attorney General Office (UAGO) and DTVET is assisting UAGO to refine the draft. Once the UAGO agrees it, the law has to be submitted for approval in the Parliament.

Under the TVET law, TVET council is organized, and the related government organizations will coordinate the overall TVET. TVET council will be established after the parliament passes by-laws. This procedure may take a long time. Therefore, TVET council may only be effective much later than the enactment of the law itself. Further, the establishment of the National Skills Standards is one of the most important advancements for TVET. In order to respond to the liberation of human resources in ASEAN in 2015, Myanmar started establishing more educational institutions, and skill exams based on the ASEAN standards. NSSA and committee were established in 2007 to support the movement, and MOL created the Employment and Skills Development Law (ESD law) in 2013. The structure based on the ESD law is as follows.

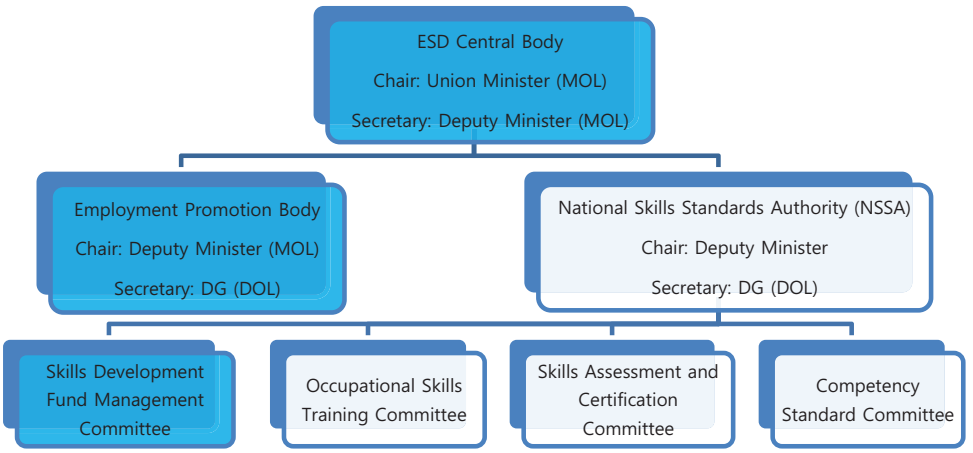


Figure 15. Legal Structure Based on ESD Law

2.2.3. Main Features of the National TVET

i. Main features of the national TVET that is noteworthy in particular compared to other ASEAN country

ii. Other Features in the TVET System

- At the policy level, responsibility for National TVET is split between the Ministry of Science and Technology, which is responsible for formal TVET, and the Ministry of Labor, (MOL), which is responsible for non-formal skills development. Coordination and cooperation among the various line ministries involved in the provision of TVET and/or skills development barely took place in the last decades but have been improving in recent years. A functioning overarching central body or legal entity
- to regulate and manage the entire scope of formal and non-formal TVET has, however, not been established yet.
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3. Summary and Implications

Myanmar, as a developing country, needs skilled workforce in every sector and the role of both in hard skills and soft skills with a focus on digital literacy are on increasingly high demand. The most demanded industry sectors are Construction, Agriculture, Textile and apparel, Electrical, IT, Garment, Manufacturing, Automotive, and Healthcare.

The status of TVET in Myanmar was in the developing stage during last ten years. Now, TVET is progressing. The perception of job seekers, workers, and unemployed workers to TVET is to get jobs.

The formal TVET system is provided by Ministry of Science and Technology at present through Government Technical high Schools (Certificate Level) and Government Technical Institutes (Diploma Level) for Engineering and Technological skills. The non-formal TVET provided by international and local NGOs is mostly market oriented and generally targeted at vulnerable groups: the unemployed, underemployed, the illiterate, women, young people (particularly those who did not have access to or did not complete lower secondary education) and ethnic young people from border and conflict areas.

Myanmar is closely cooperating among the relevant ministries and between public and private sectors in order to achieve the key reforms strategies for the development of TVET sector. Moreover, the Ministry of Science and Technology is also cooperating with international development partners and organizations such as the Asian Development Bank, ASEAN, Japan International Cooperation Agency, German Corporation for International Cooperation (GIZ), KFW Banking Group, as well as the Chinese and Singaporean governments.

The Ministry of Science and Technology and the Ministry of Labour, are in charge of the development, implementation, monitoring and updating of the HRD/LLL strategy.

At the state level, coordination and cooperation among government actors was desired by all relevant parties. However, a systematic platform and a mechanism to improve coordination and cooperation were lacking. Regardless of the clear objectives and goals in the Myanmar Sustainable Development Plan (MSDP) and the National Education Strategic Plan (NESP 2016-2021), effective implementation failed due to weaknesses in cooperation and collaboration between stakeholders.

The National Education Strategic Plan (NESP) 2016–2021 articulates a strategic direction for TVET. It outlines three core priorities:

1. Dramatically expanding access to TVET.

2. Strengthening the quality and relevance of TVET.

3. Improving TVET management.

Collectively, realization of these priorities will facilitate a transformational shift whereby more learners can access TVET and graduate from quality-assured and labor market-responsive TVET programs under a more effective TVET management system.

A TVET law based on the Comprehensive Education Sector Review (CESR) under the National Education Strategic Plan (NESP) is currently under deliberation in parliament. The TVET law notes the organization of a TVET Council and a requirement to coordinate TVET across all the different line Ministries. The Law needs to be approved in order to implement the establishment of a TVET Council and initiate implementation of the required actions in building a formalized TVET system.

In Myanmar, the technical skills level particularly regarding digital manufacturing is still considered low, which is mostly due to the fact that the Myanmar education system and business sector were largely isolated from global ties and new R&D for decades. When considering Industry 4.0 as a concept to grow the economy, a common concern globally is the replacement of manual "people" labor by machines.

Compared to industrialized countries, Myanmar is in a particularly unique situation since it has a young, "digital native" population that is eager to learn and apply new skills for the overall improvement of the country. This is the ideal ground to promote Education in the areas of Industry 4.0 and not only leapfrog factory design but also peoples' skills. Myanmar can be at the forefront of developing and educating entirely new professions e.g., robotics mechanic.

Due to the pandemic, Myanmar's GDP growth rate is expected to fall from 6.8 percent in FY2018/19 to 0.5 percent in FY2019/20 in the baseline scenario affected through both external and domestic channels. The pandemic and associated containment measures are weakening aggregate demand and disrupting the supply of labor and inputs with negative effects on wholesale and retail trade, tourism-related services, and manufacturing and construction activities.

Additional to COVID-19 situation, current political situation changes in Myanmar government puts the growth of Myanmar GDP and overall socio-economic status in uncertain period for the time being. A World Bank forecast showed that Myanmar's economy is expected to contract by 10% this year, a sharp reversal from the previous prediction of 5.9% growth in October 2020.

Chapter III. Analytical Framework II: Analysis of Labor Market Information System (LMIS) and Labor Market Demands for 10 AMSs

1. Introduction

This chapter aims to assess the current labor market information system (LMIS) of ASEAN member states through accurate understanding of the demand and supply of skills in each state, for the formation and implementation of an effective skills policy. In order for the TVET system in each country to effectively handle the changing labor market conditions, it is necessary to collect and analyze information about the present and future skill demand and supply from various angles and provide the results to various stakeholders involved in education and training, such as relevant institutions, students and trainees, and even government agencies. To develop this LMIS, various institutional, material, and human infrastructures must be established beyond conducting one-time statistical surveys. This chapter comprehensively inspects the current state of LMISs in ASEAN member states prior to the actual implementation of related policies. More specifically, this chapter is subdivided into four sections as follows.

Section 2: Policies and practices for tracking skill demand

Section 3: Policies and practices for tracking skill supply

Section 4: Policies and practices for employer engagement

Section 5: Delphi survey results regarding the most promising sectors for job creation

Section 2 and section 3 deal with the statistical aspects of skill demand and supply. These sections offer either statistical (quantitative) or qualitative information about the demand and supply of skills in the present and the future.

Section 4 is about employer engagement, which is critical to capture the concrete skill needs of employers and thus ensure the relevance of the whole TVET system. This is because to secure the relevance of TVET, employers, who are supposed to be the final users of human resources cultivated by TVET, need to engage systematically in the planning and implementation of TVET policy.

Section 5 summarizes the results of the Delphi survey on the most promising industries and occupations for job creation in each country. Around 3 to 5 most promising sectors are presented for each country to identify commonalities and/or differences among the 10 AMSs.

After then, this chapter will be closed with the summary on the current situation of LMIS and some suggestions for improvement in terms of enhancing the responsiveness of TVET.

2. Policies and practices for tracking skill demand

2.1. Overview

Table 19. Situation of the surveys and researches on skills demand

Classification of topics covered by surveys and researches	Name of all the relevant survey	Coverage ① Whole country ② Certain Region (Please specify) ③ Certain Industry (Please specify) ④ Certain demographic group (Please specify)	Level of Segregation: ① By 1 digit industry occupation only (e.g. manufacturing, service, manual workers, etc.) ② By 2 digit industry occupation or in more detail ③ By region ④ By sex ⑤ By age group ⑥ By level of education and training ⑦ By fields and/or major of education and training	Periodicity: ① Less than a month ② Monthly ③ Quarterly ④ Annually ⑤ By several years ⑥ Not regularly, Occasionally	Key information obtained
Current Skills Demand					
Statistics on employment: Number of employed people, level of wage and/or income	Thematic Report on Labour Force: 2014 Census, Department of Population, June 2017	Whole Country	(1) (2) (3) (4) (5) (6)	(5) By Several Years (interval: 10 years)	- Labour Force statistics based on 2014 Nationwide Census
	Joint Survey on the impact of Business operations in Myanmar, Foreign Chambers of Commerce, April 2021	(4) Foreign Chambers of Commerce Member Companies	By 2-digit industry	(6) Not regularly, Occasionally	- Impact of Covid 19 and current political situation on businesses in Myanmar regarding activities
	2019 Intercensal Survey, Department of Population, December 2020	(4) Random sampling	(1) (2) (3) (4) (5) (6)	(6) Not regularly, Occasionally	- Demographic data including labour force, and other household information
		(1) Whole Country	(1)(2) (3) (4) (5)	(4) Annually (due to pandemic and political	- Labour force information including total labour force, labour force participation rate,

Classification of topics covered by surveys and researches	Name of all the relevant survey	Coverage ① Whole country ② Certain Region (Please specify) ③ Certain Industry (Please specify) ④ Certain demographic group (Please specify)	Level of Segregation: ① By 1 digit industry occupation only (e.g. manufacturing, service, manual workers, etc.) ② By 2 digit industry occupation or in more detail ③ By region ④ By sex ⑤ By age group ⑥ By level of education and training ⑦ By fields and/or major of education and training	Periodicity: ① Less than a month ② Monthly ③ Quarterly ④ Annually ⑤ By several years ⑥ Not regularly, Occasionally	Key information obtained
	Labour Force Survey, Ministry of Labour, Immigration and Population with technical support from ILO			situations, the last survey was conducted in 2017.)	employment rate, unemployment rate, labour under utilization
Statistics on establishment: number of companies and establishment, number of salaried workers; working hours; salary and labor cost.	Myanmar Salary Survey 2020, CCI France	(2) (4)	(2) By 2 Digit Industry	(6) Occasionally	- Salary and Wages level of Myanmar in 2020 collected by random survey
	Myanmar MSME Survey 2017, CSO and UNU, May 2018	(1) Whole Country	(2) By 2 Digit Industry	(4) Annually	- Information of Myanmar MSMEs including the income, labour information, wages and types
Statistics on job vacancy: Number of vacant jobs, recruited workers and unfilled vacancy; reason of such vacancy; level of labor shortage.	Not available				

Classification of topics covered by surveys and researches	Name of all the relevant survey	Coverage ① Whole country ② Certain Region (Please specify) ③ Certain Industry (Please specify) ④ Certain demographic group (Please specify)	Level of Segregation: ① By 1 digit industry occupation only (e.g. manufacturing, service, manual workers, etc.) ② By 2 digit industry occupation or in more detail ③ By region ④ By sex ⑤ By age group ⑥ By level of education and training ⑦ By fields and/or major of education and training	Periodicity: ① Less than a month ② Monthly ③ Quarterly ④ Annually ⑤ By several years ⑥ Not regularly, Occasionally	Key information obtained
Statistics on training led by companies: Number of companies providing training; number of trained workers by companies; training expenditure of companies.	Technical Discussion Paper: Apprenticeship and Company-based Training in Myanmar, Swisscontact and INBAS, Jan 2016	Yangon and Mandalay	2 Digit Industries	(6) Occasionally	- About a third of all companies provide initial work-based training in one form or another. - Less firms but still a sizeable number combine on-the-job skills acquisition with off-the-job training (about 25 % according to the Swisscontact/INBAS study). - Another sizeable number of firms provides further training to staff already employed. The key actors in providing in-company training are supervisors/experienced workers and other senior staff of the company. - In-company training duration varies significantly between 1 week and 3 years.

Classification of topics covered by surveys and researches	Name of all the relevant survey	Coverage ① Whole country ② Certain Region (Please specify) ③ Certain Industry (Please specify) ④ Certain demographic group (Please specify)	Level of Segregation: ① By 1 digit industry occupation only (e.g. manufacturing, service, manual workers, etc.) ② By 2 digit industry occupation or in more detail ③ By region ④ By sex ⑤ By age group ⑥ By level of education and training ⑦ By fields and/or major of education and training	Periodicity: ① Less than a month ② Monthly ③ Quarterly ④ Annually ⑤ By several years ⑥ Not regularly, Occasionally	Key information obtained
Skills requirement: Required knowledge, competency and/or physical features for specific occupations.	Women and Digital Skills; What's Driving Myanmar's Growth , 2017	(2 and 4) Young women in 330 townships in Myanmar	(1) IT Workers only	(6) Not regularly, Occasionally	- A study on the mismatch in skills and opportunities that young women in Myanmar. - Recommendations for civil society, government, and donors on how to address this widening gap and promote inclusion. - A Problem-Driven Political Economy Assessment of the Gender Digital Divide in Myanmar. - The report points out to the need to invest in gender sensitive skills development to ensure that the industry continues to provide decent employment for the hundreds of thousands of women workers that power the industry.
	-Automation and Digitalization in the Myanmar Garment Sector, ILO 2020	(4)Garment sector	(2)Garment sector only	(6) Not regularly, Occasionally	
	Skilled Workers Matter , ILO 2020	(4)Garment Sector	(2)Garment sector only	(6) Not regularly, Occasionally	The paper reviews the current situation and implications for market strategies, investments and skill policies associated with

Classification of topics covered by surveys and researches	Name of all the relevant survey	Coverage ① Whole country ② Certain Region (Please specify) ③ Certain Industry (Please specify) ④ Certain demographic group (Please specify)	Level of Segregation: ① By 1 digit industry occupation only (e.g. manufacturing, service, manual workers, etc.) ② By 2 digit industry occupation or in more detail ③ By region ④ By sex ⑤ By age group ⑥ By level of education and training ⑦ By fields and/or major of education and training	Periodicity: ① Less than a month ② Monthly ③ Quarterly ④ Annually ⑤ By several years ⑥ Not regularly, Occasionally	Key information obtained
	State of Skill, Myanmar, ILO, 2019	(1) Whole Country	(2) By 2 Digits Industry	(6) Not regularly, Occasionally	increased automation and technological changes in garment industry of Myanmar. This study clearly demonstrates the need for employers to take absenteeism and turnover in their factories seriously. The existing situation poses a significant risk to workforce productivity and the competitiveness of Myanmar's garment industry on the global market. The paper briefly explores the socio-economic context, development and employment policies and the skills system in Myanmar (including skills anticipation and skills development). It also addresses the social inclusion and lifelong learning aspects. It presents the key challenges faces in Myanmar and maps the way forward to become a skill-oriented economy.

Classification of topics covered by surveys and researches	Name of all the relevant survey	Coverage ① Whole country ② Certain Region (Please specify) ③ Certain Industry (Please specify) ④ Certain demographic group (Please specify)	Level of Segregation: ① By 1 digit industry occupation only (e.g. manufacturing, service, manual workers, etc.) ② By 2 digit industry occupation or in more detail ③ By region ④ By sex ⑤ By age group ⑥ By level of education and training ⑦ By fields and/or major of education and training	Periodicity: ① Less than a month ② Monthly ③ Quarterly ④ Annually ⑤ By several years ⑥ Not regularly, Occasionally	Key information obtained
Future Skills Demand					
Statistics on the future labor demand: Number of employment.	Myanmar Future Jobs: Embracing Modernity 2018	(1)Whole Country	(1)One Digit Industries	(6) Occasionally	The Notes in this report present the nature of jobs in each sector (except the public sector), the challenges to improving these sectors, and recommended policies to develop sector-specific jobs strategies. This study has reviewed the Government of Myanmar's policies and strategies geared towards jobs creation, particularly reviewing the trade-related institutional arrangements and operations. To understand different perspectives at different levels, this study carried out interviews with government representatives, private sector, and development partners at union-level and regional-level.
	Job Creation in Myanmar's Trade Agenda , ILO 2020	(1)Whole Country	(1)One Digit Industries	(6) Occasionally	

Classification of topics covered by surveys and researches	Name of all the relevant survey	Coverage ① Whole country ② Certain Region (Please specify) ③ Certain Industry (Please specify) ④ Certain demographic group (Please specify)	Level of Segregation: ① By 1 digit industry occupation only (e.g. manufacturing, service, manual workers, etc.) ② By 2 digit industry occupation or in more detail ③ By region ④ By sex ⑤ By age group ⑥ By level of education and training ⑦ By fields and/or major of education and training	Periodicity: ① Less than a month ② Monthly ③ Quarterly ④ Annually ⑤ By several years ⑥ Not regularly, Occasionally	Key information obtained
Required skills in the future: Required knowledge, competency and/or physical features for specific occupations.	Industry 4.0 in Myanmar, AHK, MSD and Roland Berger, May 2019	(3) Manufacturing Industry	(1) Manufacturing	(6) Occasionally	This whitepaper assesses how companies, and the public sector could leverage this potential, highlights the advantages that Industry 4.0 could entail for Myanmar and explores the main barriers that would need to be overcome to foster Industry 4.0 technologies. It also shows that in a developing country such as Myanmar, the concept of Industry 4.0 needs to be defined more broadly and also include customer centered applications.

2.2. Assessment of current situation and proposed policies

a) Sufficiency:

Degree of sufficiency: 2.5

Explanation: (Coordination)-

- Coordination between the government bodies responsible for TVET is weak in Myanmar.
- Policies and procedures to achieve a concrete labour information database needs to be improved in specific work fields as several government ministries involved in that process.
- Additionally, current political changes and country's situation hinder the progress of the whole coordination process.

b) Accuracy:

Degree of Accuracy: 2.5

Explanation:

- Majority of the research and surveys were done by government ministries relying on previous surveys especially 2014 National Census which was eight years ago. No further updated official statistics on skills demand.
- Industrial and sectorial surveys were done mostly with small sample size. Neither nation-wide survey nor regional survey was conducted yet by private sector.

c) Proposed (required) policies: Please suggest in detail all the government policies that can be implemented to improve the current situation.

Suggestion and Recommendation

(a) Establishment of advisory and counselling service centers regarding skills demand in labour market at national and regional levels. Consideration must be taken that due to the current situation in Myanmar, as this may not be feasible without financial support from international development partners.

(b) Proposed development of a "coordination and cooperation" mechanism among government bodies as well as between private and public sectors for LMIS.

(c) The ASEAN framework and guidelines on LMIS in future will lead Myanmar to adapt to maximum efficient pathways. ASEAN can offer guidance on implementing the framework in collaboration with all respective stakeholders.

2.3. The most representative and comprehensive survey and research

Research Name: Labour Force Survey 2017, Myanmar

(Labour Force Survey is the annual survey conducted by MOL with technical support from ILO. It is the most representative survey for Myanmar labour force demand as well as supply by a government body.)

a) Legislation and regulations
Myanmar Labour Law, Myanmar Statistics Law

b) Financial Resources
National Government Budget

c) Trends over the last 5 years
Mostly Projection from 2014 Census

d) Responsible organization
Department of Labour, MOL and ILO

e) Frequency
Annual survey

f) Methodology
Survey and Projection from 2014 National Census

2.4. Collecting information about overseas skills needs

Research Name: (Not Available)

Currently, Myanmar government's policy regarding migrant workers is focusing on protection of Myanmar workers from illegal migration, human trafficking, dangerous working conditions, and unjust treatments by oversea employers. Myanmar government also does not target skills development of Myanmar migrant workers for overseas labour markets. Government perceives migration of workers to overseas as a loss of national productivity (a negative issue) rather than an issue for employment opportunity.

a) Responsible Organization

b) Scope

c) Methodology

d) Cross-border collaboration

3. Policies and practices for tracking skill supply

3.1. Overall situation

Table 20. Situation of the surveys and researches on skills supply

Classification of topics covered by surveys and researches	Name of all the relevant survey	Coverage: ① Whole country ② Certain Region (Please specify) ③ Certain demographic group (Please specify) ④ Certain level and/or type (please specify): Secondary education, post-secondary, higher education, adult training	Level of Segregation: . ① By region ② By sex ③ By age group ④ By level of education and training: Basic, secondary, higher, adults, etc. ⑤ By Fields/majors of education and training	Periodicity: ① Less than a month ② Monthly ③ Quarterly ④ Annually ⑤ By several years ⑥ Not regularly, Occasionally	Key information obtained
a. Statistics on labor supply: Number of total population and economically active population.	2014 National Census : Thematic Report on Labour Force Labour Force Survey 2017, Myanmar, MOL and ILO	To (6) (1) The whole country	(1) to (5) (1) to (5)	(5) By Several years (10 years interval) (3) Annually	- Labour Force statistics based on 2014 Nationwide Census - Labour force information including total labour force, labour force participation rate, employment rate, unemployment rate, labour under utilization
b. Statistics on education and training: Number of school graduates and adult training participants.	Data Collection Survey on Technical and Vocational Education and Training: Final Report, JICA, November 2016	(4) Government Technical High Schools and Government Technical Institutes	(5) Government Technical High Schools and Government Technical Institutes	(6) Occasionally	The objective of the study is to collect basic information regarding formal TVET (eligible for academic diploma) at higher secondary and at bachelor level, and in non-formal TVET (ineligible for academic diploma) for pre-employed and existing workers by focusing on the 5 following points. The compiled information is expected to contribute

Classification of topics covered by surveys and researches	Name of all the relevant survey	Coverage: ① Whole country ② Certain Region (Please specify) ③ Certain demographic group (Please specify) ④ Certain level and/or type (please specify): Secondary education, post-secondary, higher education, adult training	Level of Segregation: . ① By region ② By sex ③ By age group ④ By level of education and training: Basic, secondary, higher, adults, etc. ⑤ By Fields/majors of education and training	Periodicity: ① Less than a month ② Monthly ③ Quarterly ④ Annually ⑤ By several years ⑥ Not regularly, Occasionally	Key information obtained
					to effective cooperation by achieving the following criteria. 1) Clarify policies, systems, current situations, and challenges concerning TVET and the general education sector. 2) Clarify policies, systems, current situations, and challenges concerning industrial promotion and economic development. 3) Clarify policies, systems, current situations, and challenges concerning labour and employment. 4) Capture human resource demands of industries. 5) Suggest an effective cooperation approach for TVET in accordance with human development needs of industries in Myanmar based on the collected information and analysis.
c. Surveys and researches on learning to work transition: Possibility of finding	Myanmar Labour Force, Child Labour, and School to Work Transition	Whole Country	(4) School leaving age	(6) Occasionally	- The main objective was to collect the latest information on the size, structure, distribution and characteristics of the labour force,

Classification of topics covered by surveys and researches	Name of all the relevant survey	Coverage: ① Whole country ② Certain Region (Please specify) ③ Certain demographic group (Please specify) ④ Certain level and/or type (please specify): Secondary education, post-secondary, higher education, adult training	Level of Segregation: . ① By region ② By sex ③ By age group ④ By level of education and training: Basic, secondary, higher, adults, etc. ⑤ By Fields/majors of education and training	Periodicity: ① Less than a month ② Monthly ③ Quarterly ④ Annually ⑤ By several years ⑥ Not regularly, Occasionally	Key information obtained
jobs after school graduation and degree of skills mismatch in the youth labor market.	Survey 2015, Central Statistics Organization, Ministry of Labour, Employment and Social Security, ILO,				employment, unemployment and other economic characteristics of the population as well as aspects relating to child labour and the school-to-work transition.
d. Statistics on job seeker: Number of active job seekers or unemployed people; number of underemployed workers.	Not available				
e. Evaluation on the quality of education and training: Level of satisfaction of employers and/or learning participants to education and training.	TVET Teacher Survey Report Myanmar, GIZ, January 2018 Myanmar – Swiss Centre of Excellence for Vocational Education and Training Tracer Study , March 2016	(4)TVET Teachers (3)CVT partner companies and graduates	(6)TVET Teachers (6)CVT Graduates only	(6) Occasionally (6) Occasionally	The report illustrates the results of a comprehensive survey and informs the relevant ministries and Development Partners about strengths and weaknesses of technical teachers and helps target the needs for improvement. - The satisfaction of the partner companies on the efficiency and productivity of CVT graduates has increased up to 98% (95% in 2014) (Outcome 2, Indicator >85%). The

Classification of topics covered by surveys and researches	Name of all the relevant survey	Coverage: ① Whole country ② Certain Region (Please specify) ③ Certain demographic group (Please specify) ④ Certain level and/or type (please specify): Secondary education, post-secondary, higher education, adult training	Level of Segregation: . ① By region ② By sex ③ By age group ④ By level of education and training: Basic, secondary, higher, adults, etc. ⑤ By Fields/majors of education and training	Periodicity: ① Less than a month ② Monthly ③ Quarterly ④ Annually ⑤ By several years ⑥ Not regularly, Occasionally	Key information obtained
					percentage of companies, which believe that the capacity of CVT graduates has increased after graduation, has slightly declined (93% in 2015 and 99% in 2014). - Over half of CVT graduates received a rise in pay or a promotion after CVT training (58% in 2015 and 70% in 2014) (Overall Goal, target >45%). Only 2% of CVT graduates earn less than 100,000 MMK per month after training (Overall Goal, target 2%). While the percentage of CVT graduates who expressed that CVT training increases their employability is still high at 96%, the figure is slightly lower than it was in 2014 at 98.6%. The unemployment rate among CVT graduates is 3% in 2015.

3.2. Assessment on current situation and required policies

a) Sufficiency

Scale of Sufficiency: 2

Explanation:

- Coordination between the government bodies responsible for LMIS is weak in Myanmar and there is very limited cooperation between Industry and Public TVET training institutions.
- This leads to the lack of defining clear strategies and policies for future LMIS.

b) Accuracy

Scale of Accuracy: 2

Explanation:

- Majority of the research and surveys were done by government ministries relying on previous surveys especially 2014 National Census which was eight years ago. No further updated official statistics on skills demand.
- Industrial and sectorial surveys were done mostly with small sample size. Neither nation-wide survey nor regional survey was conducted yet by private sector.

c) Proposed (required) policies

(a) Increase and promote social understanding of TVET and the need for TVET through broadly accessible awareness campaigns. These campaigns could be formalized as standardized programs in general education (e.g., TVET introduction days at secondary schools) or as incentives for youth through the use of competitions.

(b) Promote the existence of the TVET program to high school students and their parents. Due to Myanmar's inclusive familial culture, parents often determine the direction for their children and retain decision-making power. With an awareness of the benefits that TVET programs can offer, parents may support and encourage their children's enrolment into the TVET program. Specific job opportunities for potential TVET students could be identified in advance and presented as pathways through the early years of secondary education in public campaigns.

(c) An assessment on currently running TVET programs and the employment market's needs via "match-making" can be conducted to match ongoing TVET programs and employment market demands.

3.3. The most representative survey and research

Research Name: Labour Force Survey 2017, Myanmar

(Labour Force Survey is the annual survey conducted by MOL with technical support from ILO. It is the most representative survey for Myanmar labour force demand as well as supply by a government body.)

a) Legislation and regulations
Myanmar Labour Law, Myanmar Statistics Law

b) Financial Resources
National Government Budget

c) Trends over the last 5 years
- Mostly Projection from 2014 Census

d) Responsible organization
Department of Labour, MOL and ILO

e) Frequency
Annual

f) Methodology
Survey and Projection from 2014 National Census

4. Policies and practices for employer engagement

4.1. Overall situation of employer engagement

Table 21. Situation of the employer engagement

Scope of engagement	Mode of engagement	Name of meetings and organizations (Most important one in terms of effect to TVET)	Name of the Law or regulation specifying employer engagement	The Degree of Influence of meeting or organization to TVET (Please select the scale from 5 to 1) 5 Crucial 3 Average 1 Minimal	The Degree of Influence of the employers to TVET (Please select the scale from 5 to 1) 5 Crucial 3 Average 1 Minimal
1) National level	Meetings (decision making)	National Skills Development Forum	Employment and Skills Development Law, 2013	5	3
		National TVET Forum		5	3
		Meeting on the establishment of skills development fund	Employment and Skills Development Law, 2013	3	3
	Meetings (advisory on practical issues)	Formation of Sectorial Committee (Sector Skills Council)	Employment and Skills Development Law, 2013	3	3
	Management of organization	Regional/State Skills Development Supportive Body/ Group	Employment and Skills Development Law, 2013	3	3
2) Regional level (By region, local, province)	Regional councils /bodies	Proposing the prioritized occupations for the development of National Occupational Competency Standard (NOCS) and skills assessment and certification	Employment and Skills Development Law, 2013	3	3
	Meetings (advisory on practical issues)	Supporting NOCS development and skills assessment	Employment and Skills Development Law, 2013	5	3

Scope of engagement	Mode of engagement	Name of meetings and organizations (Most important one in terms of effect to TVET)	Name of the Law or regulation specifying employer engagement	The Degree of Influence of meeting or organization to TVET (Please select the scale from 5 to 1) 5 Crucial 3 Average 1 Minimal	The Degree of Influence of the employers to TVET (Please select the scale from 5 to 1) 5 Crucial 3 Average 1 Minimal
	Management of organization	Occupational Skills Standard Sectorial Committee	Employment and Skills Development Law, 2013	5	3
3) Sectoral level (By industry, occupation or both)	Sectoral councils/bodies	Identification and selection on the prioritized occupations for NOCS development	Employment and Skills Development Law, 2013	5	3
	Meetings (advisory on practical issues)	Proposing and supporting technical experts to develop NOCS and conduct skills assessment	Employment and Skills Development Law, 2013	5	3
	Management of organization	Meeting with employers and trainers for curriculum development and providing trainings	Employment and Skills Development Law, 2013 Regulation of National Skills Standards Authority (NSSA)	5	3
Individual institutions	Meetings	Only Individual Institutions	Regulation under the respective department and laws	5	3
	Management of organization		Regulation under the respective department and laws	4	3

4.2. Detailed information about employer's influence at each level

4.2.1. Employer's influence at the national level

TVET Forum 2016

15th to 16th July 2016, Nay Pyi Taw, Myanmar

The inaugural and only TVET Forum to date was held in 2016. State Counsellor, Madam Aung San Suu Kyi, attended the forum to promote vocational education in Myanmar with the premise that education provides the ability to overcome life's challenges and obstacles. She addressed students and parents on the topic of valuing vocational training as it was an educational path that met students' interests and could enhance their lives. She also pointed out that countries focusing on vocational training have achieved development, and mirroring this could drive the transformation of the nation into a developed economy. Ms. Aung San Suu Kyi went on to emphasize the need to increase public awareness and understanding about vocational education to help all citizens understand that vocational education is a first-class education. The requirement of public-private partnerships in developing a vocational education system in the country was also highlighted.

During the two-day forum, seminars and talks were conducted on improving TVET access, quality control and better management to promote employment and economic modernization. The forum included 90 exhibiting galleries (90 exhibition booths) from 13 ministries and a total of 247 training schools from both the public and private sectors. Several international agencies, development partners, and UN organizations supported and contributed to the forum.

2-2-1-a. Participation to meetings

a) What is the history of the meeting?
   It is the one and only TVET related national level forum with all stakeholders conducted in Myanmar.

b) What are the main agendas of the meeting?
   Not available

c) Is the meeting regular or irregular?
   It is supposed to be an annual event but due to various situations, it is not continued. The only TVET forum was in 2016.

d) How many times are the meetings held per year?
   Initially, it is planned to be conducted once a year as a national level forum. The only TVET forum was in 2016.

e) Who is the chair of the meeting?
   Ministry of Education leads the forum since MoE is the leading organization for Myanmar's TVET.

f) Who participates besides employers?
Government Ministries, Government TVET Schools, Private TVET Schools and international development partners.

g) Who is the employers' representative?
Representatives from trade organizations under the umbrella of Union of Myanmar Chamber of Commerce and Industry (UMFCCI) attended the forum.

h) How does such participation take place? (for example, whether it is decided by the government or elected by employers' organizations)
Employer organizations were invited by Ministry of Education and the representative or representatives from each organization attended the forum.

i) What is the actual role of employers, i.e., actively leading the meeting or passively participating?
The employers presented their industry related data through active participation in the forum and also contributed labour market requirements oriented to TVET system.

2-2-1-b. Management of organization

a) What is the history of the organization?

Under Ministry of Science and Technology, Department of Technical and Vocational Education and Training (DTVET) is the responsible department for TVET.

As of March 2018, DTVET is providing TVET under formal programme in thirty-five Government Technical High Schools (GTHSs) at upper secondary level and twenty-two Government Technical Institutes (GTIs) and three Government Technical Colleges (GTCs) for the post-secondary diploma level. The courses offered at these formal TVET schools mainly focus on the engineering-related field, but department is now in the process of expanding to other courses such as hospitality and services.

Building technology, Electronics technology, Electrical technology, Auto mechanics technology and Machining technology are offered in all thirty-five GTHS schools, Metal processing technology is offered only in one GTHS school, whereas the refrigeration and air conditioning technology is offered in four GTHS schools and Information Technology courses are only offered in seven GTHS schools.

Civil, Electronic, Electrical and Mechanical engineering are offered in all GTIs and GTCs. The Information Technology is only offered in eight GTIs and Industrial engineering is offered in only two GTI schools.

b) What is the role of the organization?

Ministry of Science and Technology is the main decision maker for developing TVET curriculums and responsible for providing TVET programs in thirty-five Government Technical High Schools (GTHSs) at upper secondary level and twenty-two Government Technical Institutes (GTIs) and three Government Technical Colleges (GTCs) for the post-secondary diploma level.

c) What is the financial resource of the organization?

Ministry of Science and Technology is financed by National Government Budget of Myanmar.

d) What is the actual role of employers, i.e., actively leading the organization or participating only at the board meeting?

Currently, the employers are not in the position participating in leading the organization. Employers can give inputs to TVET bodies including MOST and Development Partners for consideration in developing and implementing TVET policies.

4.2.2. Employer's influence at the regional level

TVET Regional Councils are planned to be established after TVET Law is approved by parliament. Further information is not available as national TVET law has not been approved yet by Parliament.

4.2.3. Employer's influence at the sectoral level

TVET Sectoral Councils are planned to be established after TVET Law is approved by parliament. Further information is not available as national TVET law has not been approved yet by Parliament.

4.2.4. Management of organization at regional or sectoral level

TVET Regional and Sectoral Councils are planned to be established after TVET Law is approved by parliament. Further information is not available as national TVET law has not been approved yet by Parliament.

4.3. Role of employers' engagement in TVET policy-making and the implementation

4.3.1. Employers involvement in the provision of labour market information

Employers are primary source of labour market information but due to lack of coordination for LMIS among government bodies and the private sector, the input from the employers was not formally recorded and analyzed systematically to contribute in guiding and engagement in TVET policy.

4.3.2. Engagement of employers in developing/accrediting/assuring qualifications

Currently, developing/ accrediting/ assuring qualifications for public TVET was done only by Government bodies especially National Skills Standards Authority (NSSA), led by MOL. For private or NGO-based TVET training bodies, the input from employers was utilized to develop the courses. Private or NGO-based TVET training bodies cannot officially develop or accredit qualifications on their own in the labour market but it can be accredited by NSSA if the

curriculum and assessment criteria will be met the standards of National Competency Standard (NCS).

4.3.3. Sector councils' engagement in the development of TVET curriculum or national competency standards

TVET Regional and Sectoral Councils are planned to be established after TVET Law is approved by parliament. Further information is not available as national TVET law has not been approved yet by Parliament.

The employers cannot provide inputs in TVET curriculum development or National Competency Standards Development. They are, for the time being, done by government bodies only.

4.3.4. Engagement of sector councils or regional councils in program operation

TVET Regional and Sectoral Councils are planned to be established after TVET Law is approved by parliament. Further information is not available as national TVET law has not been approved yet by Parliament.

Myanmar does not have many leading business membership organizations of employers equipped to provide TVET related services. Among existing organizations, some of the following offer management related training, seminars and talks. The financing of these usually comes from membership fees and training/seminar fees paid by participants.

- Union of Myanmar Federation of Chambers of Commerce and Industry
- Myanmar Engineering Societies
- Myanmar Construction Entrepreneurs' Association
- Mandalay Region Chamber of Commerce & Industry
- Myanmar Industrial Association
- Myanmar Women Entrepreneurs' Association
- Myanmar Young Entrepreneurs' Association
- Myanmar Hotel & Tourism Association
- Myanmar Garment Manufacturers' Association

4.3.5. Career guidance to TVET graduates from sector councils or regional councils

TVET Regional and Sectoral Councils are planned to be established after TVET Law is approved by parliament. Further information is not available as national TVET law has not been approved yet by Parliament.

Currently, career guidance system for TVET graduates is not available yet.

4.3.6. Issues and obstacles to employer engagement in TVET

Coordination between the public and private sectors for TVET is weak in Myanmar.

Additionally, current political changes and country's situation hinder the progress of the whole coordination and cooperation process due to lockdown of COVID-19 pandemic and Civil Disobedience Movement (CDM) in several government ministries.

For the time being, there is no incentive provided by the state to employers from the business sector for investing in TVET. Neither tax exemptions nor training funds are provided by the state and there are no specific regulations obliging employers to invest in TVET.

While many business owners, entrepreneurs and startups have the motivation and willingness to invest in TVET, the current situation does not allow them to proceed due to the economic and political situation in Myanmar. Evidence shows that many micro and SMEs are struggling to survive during the COVID crisis and political changes.

4.4. The Level of Collaboration of Training Providers and Employers in TVET

4.4.1. Any active organization in the collaborative relationship between employers, government, and training providers

At the state level, coordination and cooperation among government actors were desired by all relevant parties. However, a systematic platform and a mechanism to improve coordination and cooperation were lacking. Regardless of the clear objectives and goals in the Myanmar Sustainable Development Plan (MSDP) and the National Education Strategic Plan (NESP 2016-2021), effective implementation failed due to weaknesses in cooperation and collaboration between stakeholders.

4.4.2. Budget plan or support for employers' collaboration among themselves or with training provider

Currently, there is no specific budget planned for supporting employers' collaboration among themselves or with training providers. There is also no incentive provided by the state to the business sector, neither tax exemptions nor training funds. Specific regulations obliging employers to invest in HRD should be implemented once the TVET law is approved by the parliament. Employers who actively collaborate among themselves and training providers for TVET development are occasionally given opportunities for oversea study visits and delegations of related industry visits.

4.5. Assessment on the Impact of Employer Engagement

4.5.1. Government support to employer engagement

According to Employment and Skill Development Law 2013, a Skill Development Fund for training of employees was planned by contributions from three parties, that is, employers, employees and the government. The initial plan was to set up Skill Development Fund Committees in national, regional, and sectoral levels, and manage the fund, i.e., a specific percentage of the wage or salary collected from the employers, employees, and the contribution from government. This part of the law is currently not active yet.

A TVET law based on the Comprehensive Education Sector Review (CESR) under the National Education Strategic Plan (NESP) is currently under deliberation in parliament.

The TVET law notes the establishment of a TVET Council with representatives from all stakeholders, including employers, and the council should coordinate TVET programs all across the different line Ministries and the private sector. The Law needs to be firstly approved to implement the establishment of a TVET Council and then, initiate the required actions for set up of a formalized TVET system in Myanmar.

There is an effective example from the Engineering Council in Myanmar. The establishment of the Council was drafted in 2002. The approval was in 2014, which took more than ten years. However, since this Council was set up, the engineering society has been able to decide and implement required actions independently without a complex bureaucratic process.

4.5.2. Efficacy of employer interactions with state government, regional councils, and training providers

Table 22. Effectiveness of the interactions between employers and concerned partners in drawing concrete information about the skills needs of employers

	Extremely Effective	Very Effective	Moderately Effective	Slightly Effective	Not at all Effective	Remark
a) Interactions among employers and the State government				✓		
b) Interactions among employers and regional councils						- Regional TVET councils will be set up once the TVET law is approved.

	Extremely Effective	Very Effective	Moderately Effective	Slightly Effective	Not at all Effective	Remark
c) Interactions among employers and training providers				✓		There are significant interactions between employers and TVET schools supported by development partners and private. (CVT supported by Swiss Agency for Development and Cooperation, and SMVTI supported by Singapore government)

4.5.3. Efficacy of interactions between employers and concerned partners in actually improving the quality of TVET.

Table 23. Effectiveness of the interactions between employers and concerned partners in actually improving the quality of TVET

	Extremely Effective	Very Effective	Moderately Effective	Slightly Effective	Not at all Effective	Remark
a) Interactions among employers and the State government				✓		
b) Interactions among employers and regional councils						- Regional TVET councils will be set up once the TVET law is approved.
c) Interactions among employers and training providers				✓		- More support by training providers for employees is needed. - More effective training conductions needed. - Training curriculums need to be in line with labour market needs to be more effective.

4.5.4. Policy related to employers' engagement that has been successful in achieving the intended results

The TVET law is still under deliberation in the parliament. It foresees the establishment of a TVET council supposed to develop strategy and mechanisms for improving cooperation and collaboration amongst all stakeholders. It shall also conduct broad-reaching awareness campaigns on TVET programs, and match-making assessments for TVET school curricula and employment market needs.

5. Most Promising Job Clusters for Future Employment

5.1. JOB CLUSTER A: Garment Cluster

5.1.1. Summary of job creation potential

Firms in textile and garment industries employ the largest share of workers in Myanmar's non-farm, non-government, non-micro enterprise in private sector, and contributed the most job creation.

In 2015, Myanmar Garment Manufacturers Association (MGMA) initiated a 10-year Strategy with support from ILO to create more jobs and increase potential to become USD 10 Billion Industry with 1.5 million job opportunities for people in 2024.

Between 2012 and 2018, the value of garment exports rose by 500%, from around USD 900 million to USD 4.6 billion by 2018. In 2019, the Myanmar apparel industry exported US$5.7 billion worth of garments and a further US$1 billion of footwear and handbags. There was also an increase of 26% revenue in the previous year.

The high volume of FDI aimed at the garment export sector is creating many job opportunities for the Myanmar workforce. At the start of 2020, Myanmar Garment Sector employed approximately 1 million employees with expectation to employ up to 1.5 million employees in 2024.

Due to current country's political situation and pandemic, Myanmar garment sector was in uncertain situation, however, according to Eurocham reports and Industrial experts' opinions, the market is expected to bounce back to a positive direction in a near future.

5.1.2. Assessment on the potential of labor supply to meet the demand

There is an opportunity for global brands and suppliers to avail themselves of Myanmar's 33 million strong but low-skilled labour pool.

Training for sewing workers is generally carried out by factories themselves. There is a programme run by the Japanese development organization HIDA through the MGMA training school, the Myanmar Garment Human Resources Development Centre (MGHRDC). This reaches around 500 new sewing workers and 120 supervisors per year. The Ministry of Border

Affairs runs a sewing training course every three weeks graduating 120-140 trainees who usually move to the Yangon area to work.

5.1.3. Assessment on the required skills in the future

Basic Skills

Basic Sewing skills and related skills for entry level workers are usually carried out by factories themselves.

The Myanmar Garment Human Resources Development Center (MGHRDC) is a full-time training facility in North Yangon. MGHRDC offers two regular courses free-of-charge for garment sector workers:

- 10-day basic sewing training
- 10-day supervisor training course

Workers who complete these foundational skills courses are better able to qualify for higher paying positions in the garment sector. Additionally, MGMA's member factories benefit from a steady stream of qualified sewers and trained floor supervisors.

Technical Skills

In today's global industry, speed is of the essence. Factories that do not have CAD/CAM systems in place will end up being severely disadvantaged both in speed and in technical capability. MGMA will invite suppliers of CAD/CAM soft and hardware to Myanmar on scoping visits to encourage them to set up training schools.

Another commonly cited challenge that factories face when automating production is the lack of skilled workers. When asked about skills needed for the continued automation of garment factories, maintenance and repair skills were amongst the most often cited.

Business Skills

By working with factories to improve business skills including languages, communication, and IT, factories will be able to attract orders and to deliver those orders more effectively.

Vocational training schools dedicated to the garment sector will need to be established in every industrial zone. These include working with factories, brands, suppliers and government to identify which areas are of priority now and going to be targeted for development in the future and supporting SEZs.

5.2. JOB CLUSTER B: Manufacturing (Food Processing)

5.2.1. Summary of job creation potential

The Myanmar processed food industry is a developing industry with large potential and room for developments although it will require investment from both local and foreign investors. Currently, Myanmar processes basic raw commodities such as rice, beans, maize, and other agricultural products.

According to Myanmar Micro, Small, and Medium Enterprises Survey 2017 by Ministry of Finance, Planning and Industry, majority of Myanmar's MSMEs are involved in the food processing sector (63.51% of MSMEs).

5.2.2. Information on the labor demand and supply

Currently, Myanmar has very limited capacity to meet the increased labour demand, especially for skilled labour sector in Manufacturing. TVET sector is still under development and mostly focusing on technical and engineering sectors. Although these skills are important for all manufacturing sectors, food processing sector will require certain specialized skills that are currently not available in Myanmar's TVET community yet.

5.2.3. Information on the required skills and current situation of TVET

Technical Skills

In today's global industry, speed is of the essence. Factories that do not have automation system in place will end up being severely disadvantaged both in speed and in technical capability. The skilled workers to serve in automation systems will also be crucial for the industry in future.

Business Skills

By working with factories to improve business skills including languages, communication, and IT, factories will be able to attract orders and to deliver those orders more effectively.

5.3. JOB CLUSTER C: Construction

5.3.1. Summary of job creation potential

In 2018, the construction industry had a value of more than US$ 9.5 billion. This is a share of around 16.5 percent of the country's GDP and a major driver of the economy in 2019.

Both major economic centers of the country, Yangon and Mandalay, have a strong demand for middle-class condominiums. The demand in Mandalay is especially high for property worth around US$ 300,000 per apartment. Yangon's population is estimated to grow by 3 million within the next ten years requiring massive housing investments.

The Asian Development Bank (ADB) estimates the infrastructure gap between 2018 and 2030 to be worth US$ 120 billion. All infrastructure sectors like roads, railways, harbors, and airports require massive investments where international developers can get involved with joint venture operations or as a supplier.

5.3.2. Information on the labour demand and supply

For the infrastructure development projects estimated, the requirement of skilled labour as well as semi-skilled labour will be proportionately increased. Currently, Myanmar TVET sector (public training centers under MOST, MOL and other ministries, Private training schools and training programs by development partners) has training courses in metal works, welding, bricklaying, machine operating and maintenance, logistic operations, electrical installation and workplace safety trainings.

5.3.3. Information on the required skills and current situation of TVET

To meet the skill requirements for the increasing demand, Myanmar needs to develop strategy to increase the supply of certified semi-skilled and skilled labour in metal works, welding, bricklaying, machine operating and maintenance, electrical installation, logistic operations, etc. For civil engineering courses, the total of 33 Government Technical institutes are providing three-year AGTI diploma courses.

5.4. JOB CLUSTER D: Hotel and Tourism

5.4.1. Summary of job creation potential

In 2016, the Union of Myanmar Tourism Association (UMTA) estimated that travel and tourism directly supported 804,000 jobs (or 2.7% of total employment). Including indirect employment, that figure rose to 1,662,000 jobs (5.7% of total employment). Over the next ten years, it is forecasted that direct employment from travel and tourism will increase by 4.8% annually and the indirect employment will also grow by 3.8%, totaling 1,296,000 and 2,387,000 jobs in 2027 respectively (WTTC, 2017).

5.4.2. Information on the labor demand and supply

Established in 1992, the Ministry of Hotels and Tourism's (MOHT) Tourism and Training School offers courses for tour guide training and tourism management. MOHT and the Ministry of Education introduced a four-year degree programme in tourism beginning in the 2012/13 academic year at the National Management Degree College in Yangon and Mandalar Degree College in Mandalay, as well as collaborating on capacity building for Yangon University's tourism department.

In June 2016, the Hospitality Training School was opened, under the guidance of the Ministry and with the assistance of the Myanmar Tourism Federation and Luxembourg Agency for

Development Cooperation. It offers front office, housekeeping, and food and beverage courses. Various vocational programmes are also offered around the country. These initiatives for fostering the development of travel and tourism are important for driving growth and development, as the sector can be a significant creator of jobs and income.

5.4.3. Information on the required skills and current situation of TVET

The top four competencies demanded which are related to customer contact experiences are:

- Language skills
- Customer care/ Customer service skills
- Public speaking skills
- Time management skills

Also, there are specialized skills required by the market, especially for tour guides.

- Cultural interpretation
- Heritage and history
- Trekking
- Cooking

Currently, Ministry of Hotel and Tourism conducts basic tourism training courses in states and regions of Myanmar where tourism is affected by COVID-19 pandemic. The 4-week trainings will train 20 trainees per batch and include Communication and Introduction of Foreign Language Module, Service Attitude Module, Health and Hygiene Module, and Safety and Security Module.

5.5. JOB CLUSTER E: ICT

5.5.1. Summary of job creation potential

Estimates as to the economic contribution of Myanmar's ICT sector are difficult to ascertain, but a 2013 McKinsey Global Institute report forecast that the sector would grow from $100m in 2010 to $6.4bn in 2030. World Bank estimates suggest the sector generated $1bn, or 1.5% of GDP in 2018, while the wider digital economy, including ICT, was worth around $1.2bn. Detail quantity of ICT workers requirement are difficult to estimate.

5.5.2. Information on the labour demand and supply

In Myanmar, ICT skills are mainly provided by the 24 computer colleges and two universities with computer studies departments under the jurisdiction of the Ministry of Science and Technology. Private sector with over 90 computer training centers and schools (70 in Yangon), have also contributed to the increased number of ICT workers. Informal certification programs,

such as the Japanese Information Technology Engineer Examination provides IT training opportunities to those who cannot afford to participate in formal education programs.

At the professional level, however, skilled ICT workers are in short supply. Although the number of training and research staff has steadily increased from 1995 to 2011, the number of enrollees and graduates in the computer courses in higher education institutes has declined from about 18,000 enrollees and 6,000 graduates in 2006–2007 to 10,000 enrollees and 4,000 graduates in 2010–2011. As this trend continues, the current supply of ICT skilled workers could cause disruptions to various ICT services.

5.5.3. Information on the required skills and current situation of TVET

Skills required for the three most popular ICT businesses in the country are:

- Software development skill
- Hardware knowledge
- System integration skill

The lack of workers with higher ICT knowledge and skills in Myanmar is a major issue that needs to be addressed as ICT becomes an integral part of the development process. Only few of the country's IT graduates qualified to the standards set by IT companies.

The exodus of qualified ICT professionals to Thailand, Japan, Australia, and Singapore worsens the problem. Despite increasing public awareness of ICT, general knowledge on the sector continues to be deficient especially on how ICT can bridge the digital divide between countries and therefore support the domestic economy. Myanmar will require qualified ICT graduates to support the country's growth and its ability to leapfrog in development.

6. Summary and Implications

Myanmar has implemented labor market information system concerning national skills demand and supplies. However, the current state for its LMI calls for improvement, for example, stronger coordination between the government bodies and more frequent research terms with more comprehensive research frame.

The most representative survey for skills demands and supplies is Labour Force Survey, conducted by Ministry of Labour with technical support from ILO. For overseas skills research, the country has more imminent concerns such as illegal migration, unjust

treatments by oversea employers and so on. Thus, research on overseas labor demand has yet to be implemented.

National TVET Forum in 2016 is the only major event for boosting employer engagement with TVET. It was planned as annual event, but not to be held ever since. Implement of regional and sectoral level initiatives are waiting for approval of TVET law from Parliament. The

relevant governmental body for employer engagement is Ministry of Science and Technology, Department of Technical and Vocational Education and Training (DTVET). Low level of coordination between the concerned parties raises problem on employer engagement with TVET as well, which hinders employers' possible contribution in guiding and engagement in TVET policy. Situational factors such as Covid-19 and Civil Disobedience Movement add further difficulties.

Along with higher degree of collaboration between TVET stakeholders, broadly accessible awareness campaigns for increasing and promoting social understanding of TVET and the need for TVET might be helpful for the country's more elaborated TVET policy implementation. Incentives for employers for investing TVET might be another effective solution for boosting TVET. Approval of TVET law will enable effective policy instruments for Skills and TVET, and therefore Myanmar's skills policies and practices will be expected to be improved a great degree.

Chapter IV. Analytical Framework III: Responsiveness of TVET Curriculum to the Labor Markets of Myanmar

1. Identifying the LM demands

1.1. Analysis of Labor Market demand for the Sector (or the program)

1.1.1. Skill shortage (mismatch) in the sector

Manufacturing Sector

The Myanmar manufacturing industry is a developing industry with large potential and room for developments although it will require investment from both local and foreign investors. The biggest potential lies in the food processing sector. Currently, Myanmar processes basic raw commodities such as rice, beans, maize, and other agricultural products.

According to Myanmar Micro, Small, and Medium Enterprises Survey 2017 by Ministry of Finance, Planning and Industry, majority of Myanmar's MSMEs are involved in the food processing sector (63.51% of MSMEs).

Hospitality and Tourism Sector

In 2016, it was estimated that travel and tourism directly supported 804,000 jobs (or 2.7% of total employment). Including indirect employment, that figure rose to 1,660,000 jobs (5.7% of total employment). Over the next ten years, it is forecasted that direct employment from travel and tourism will increase by 4.8% annually and that indirect employment will grow by 3.8% a year, totaling 1,296,000 and 2,387,000 jobs in 2027 respectively (WTTC, 2017). As many of these positions will require specific skills, training programs will need to be a central plank of the sector's development and growth.

1.1.2. Shortage in skill supply in quantitative and qualitative terms

Table 24. Skill Shortage in Myanmar Key Business Sectors

	All sectors	Key sectors		
		Manufacturing	Construction	Hotels and restaurants
Lack of skilled workers is a severe or very severe obstacle to operations (% of firms)	41*	43*	34* (Equal with lack of technology and corruption)	42*
Experienced shortage of skilled workers (% of firms)	57	59	66	61
Experienced technical or professional skills problems (% of firms)	44	45	55	40
Top-3 ranked skills gaps**	1. Computer and ICT 2. Technical skills 3. Creativity and initiative	1. Computer and ICT 2. Technical skills 3. Creativity and initiative	1. Computer and ICT 2. Technical skills 3. Creativity and initiative	1. Computer and ICT 2. Creativity and initiative 3. Technical skills

Notes:

*top ranked of all obstacles.

** Respondents chose from a list of nine potential skills gaps: management and leadership; creativity and initiative; analytical thinking and problem solving; technical skills; finance, accounting and budgeting; computer and ICT; selling and customer service; 80communications, interpersonal and work ethics, teamwork; and foreign language capability.

Source: Myanmar Business Survey, OECD, UMFCCI and UNESCAP (2014)

Manufacturing

Currently, Myanmar has limited capacity to meet the increased labour demand especially for skilled labour sector in Manufacturing. TVET sector is still under development and mostly focusing on technical and engineering sectors. Although these skills are important for all manufacturing sectors, food processing sector will require certain specialized skills that are currently not available in Myanmar's TVET community yet.

The top three ranked skills required for manufacturing industry, according to Myanmar Business Survey by OEDC, UMFCCI and UNESCAP are:

1. Computer and ICT

2. Technical skills

3. Creativity and initiative

Hospitality and Tourism

The top three ranked skills required for hospitality and tourism industry, according to Myanmar Business Survey by OEDC, UMFCCI and UNESCAP are:

1. Computer and ICT
2. Creativity and initiative
3. Technical skills

Among technical skills, the top four skills needed in Myanmar tourism sector which are related to customer contact experiences according to Union of Myanmar Tourism Association (UMTA) are:

- Language skill
- Customer care/ Customer service skill
- Public speaking skill
- Time management skill

Also, there are some specialized skills found to be lacking in the market, especially for tour guides.

- Cultural interpretation
- Heritage and history
- Trekking

1.1.3. Emerging jobs at the sector

Manufacturing

In Myanmar manufacturing sector, there will be requirement for skilled workers especially manufacturing technicians. The GTI's Industrial Engineering course is a response for this demand.

Hospitality and Tourism

For Myanmar, there will be a large demand of skilled professional workers for both direct (hospitality professionals, tour guides, tour operators, etc.) and indirect jobs (cooks, waitstaffs, etc.) of hospitality industry.

TVET sector shall prepare to develop professionals to serve the increasing demand of the market in hospitality sector, such as, tour guides, waitstaff, cooks, tour operators, front office personnel, housekeepers, etc. at a nationally certified professional level.

1.2. Key statistics on the program

For this report, Industrial Engineering Course of Government Technical Institute (Insein) and Hospitality Professional Course of Center of Vocational Training, (CVT) Myanmar are selected to provide the insight of TVET programs in Myanmar for the Manufacturing sector and Hospitality and Tourism sector respectively.

Government Technical Institute (Insein)

Government Technical Institute (Insein) was established in 1895, initially as Government Engineering School in Yangon, Lanmadaw Township. It is the earliest technical school in Myanmar. In 1908, the school was renamed as Government School of Engineering and Technical High School and relocated to current location in Insein township, Yangon. In 1912, the school was renamed as Government Technical Institute (GTI) till today. The school was closed in 1996 and the school building was under management of Yangon City Development Council till 2016. Starting from 2017, the GTI Insein was reopened as a technical institute under Ministry of Education and offered 3-year diploma courses, six courses annually.

The courses offered by GTI (Insein) are-

1. Civil Engineering
2. Electrical Power Engineering
3. Information Technology
4. Mechanical Engineering
5. Industrial Engineering
6. Electronic Engineering

CVT Myanmar

CVT Myanmar is a registered INGO of the Swiss Association: “Verein für Berufsbildung in Myanmar” located in Sarnen, Switzerland. The Swiss association supports the organization in Myanmar in financial, managerial, methodical, and logistical terms. Experts and board members are unsalaried consultants, who dedicate their support either during their holidays or in their spare time. One of its main activities is collecting money from donors, sponsors, and partners to sustain the operation in Myanmar.

CVT Myanmar currently offers five VET courses below.

1. Business administrator training
2. Electrician training
3. Furniture technician training
4. Hospitality professional training
5. Metal technician training

i. Number of students enrolled in the program

GTI: Industrial Engineering Course

There are total of 33 GTI schools in Myanmar. For Industrial Engineering courses, GTIs recruit 40 trainees per school annually. However, the dropout rate of GTIs is high (30 – 50%) according to statistics by MOST.

CVT: Hospitality Professional Course

CVT Myanmar recruits 20 to 30 trainees per course annually and currently it has only two training centers in Yangon, Myanmar.

ii. Destinations of the graduates by school type/employment status

GTI: Industrial Engineering Course

Majority of GTI graduates joined private sector in companies in Industrial zones or construction companies as junior recruits (Technicians or junior engineers). Graduates can join engineering degree courses (Bachelor of Technology) in Technical Universities for further education.

CVT: Hospitality Professional Course

Graduates from CVT hospitality professional training can join local hotels and restaurants as apprentices and climb the career ladder. Also, many graduates seek to go abroad after getting certificates since the oversea income opportunity is greater than local businesses.

2. Designing the Curriculum

2.1. Designing and developing curriculum (sequences of the process)

2.1.1. Procedures involved in developing curriculum for the program

GTI: Industrial Engineering Course

All Government Technical Institutes (GTIs) are under the MOST's administration and offer three-year Associate of Government Technical Institute (A.G.T.I) diplomas in six different courses. GTIs usually have the following major departments: civil engineering, electrical power engineering, mechanical power engineering, industrial engineering, computer numerical control engineering, English, mathematics, science, and a workshop for practical sessions. The curriculum of GTIs is designed and developed by Department of Technical and Vocational Education and Training (DTVET), Ministry of Science and Technology (MOST).

DTVET provides a fixed national curriculum, syllabus, instructional materials and equipment. It does not allow schools to make any revision of the curriculum and syllabus at their discretion.

However, training equipment varies school by school as each GTI has different background of establishment. For instance, GTI Mandalay opened in January 2016. The building was constructed as a technical high school in 1967 and it was closed in 1996. The building was used as a TVET office of upper Burma and then renovated to current GTI. The workshop on the same premises used to be a staff dormitory of Mandalay TU and it became vacant as another dormitory was built on other premises. Thus, it began to be used again as workshop. Because the building was once used for other purpose, there was no training equipment in the building at that time. As it opened in January 2016, it has only first-year trainees. No training equipment was available then except for a few in the workshop.

CVT Myanmar: Hospitality Professional Course

"Hospitality Professional" courses at CVT Myanmar enable the trainees to learn the trade and graduate either in Food & Beverage Operation or in Front Office & Housekeeping Operation.

The curriculum for the course is developed by Swiss TVET Experts, based on the ASEAN Competency Standard for the Hospitality Industries and Swiss Dual-Training system. A mixture of theory and practical training will equip the trainee with a wide range of knowledge and skills to become a qualified player in the hospitality environment.

i. Identification of the training needs & reflecting them in the curriculum

GTI: Industrial Engineering Course

The curriculum is designed by using industrial data surveys in Yangon and Mandalay as references. Program educational objectives are clearly designed in line with DTVET's vocational vision and mission. Moreover, surveys on expectations of three-year diploma graduates of Industrial Engineering Program were conducted. Based on the results of industrial data survey and in line with Vocational vision and mission, program educational objectives are refined.

CVT: Hospitality Professional Course

CVT's curriculum is developed according to the industrial skill demand and revised with the requirements to meet the skill demand in labour market and national competency standards.

ii. How to infer task competencies which constitute the job domain

GTI: Industrial Engineering Course

Based on the results of industrial data survey on skill demand and in line with DTVET's vocational vision and mission, program education objectives of industrial engineering course are defined to produce technicians (within three years of graduation) who will be able to-

- apply principles of engineering
- use, maintain and draw design of Pneumatic and Hydraulic Systems.

- apply Auto CAD
- use Industrial Motor Control
- write CNC program
- operate CNC
- write PLC program
- plan operational management

CVT: Hospitality Professional Course

To effectively fill the increasing labour market demand and skill requirements of Myanmar hospitality sector, a hospitality professional graduate of CVT shall know how to:

- take reservations, carry out hosting functions, handle full-house situations, take and serve orders
- cultivate customer rapport, manage their needs and expectations
- service guestrooms, perform night-turn down service and complete end-of-shift activities
- manage and supervise duty rosters and room cleaning schedules
- prepare, cook and present dishes and food

2.1.2. Organization of the curriculum

i. Organization of the curriculum: general vs. vocational subjects, core vs. elective subjects (among vocational subjects), hours spent in theory training vs. in practice training.

GTI: Industrial Engineering Course

Duration: Three Years

Certification: AGTI Diploma in Industrial Engineering

Industrial Engineering is the branch of engineering that concerns the development, improvement, implementation, and evaluation of integrated system of people, knowledge, equipment, energy, material, and process. Industrial engineering draws upon the principles and methods of engineering analysis and synthesis. It eliminates waste of time, money, materials, energy, and other resources. Industrial engineering is also known as operation management, production engineering, or manufacturing engineering depending on the viewpoint or motives of the user.

Moreover, Industrial Engineering curriculum is one of the subjects approved by National Education Policy Council (NEPC).

Course structure

The curriculum is designed by using industrial data surveys in Yangon and Mandalay as references. Program educational objectives are clearly designed in line with vocational vision and mission. Moreover, surveys on expectations of three-year diploma students out of Industrial Engineering Program were conducted. Based on the results of industrial data survey and in line with Vocational vision and mission, program educational objectives are definedas follows.

Program Educational Objectives

Industrial Engineering Course is well organized in cooperation with private industry and government to provide the students with practical experience in industrial engineering. Based on the results of industrial data survey and in line with Vocational vision and mission, program education objectives of industrial engineering are to produce technicians (within three years of graduation) who will be able to-

- apply principles of engineering
- use, maintain and draw design of Pneumatic and Hydraulic Systems.
- apply Auto CAD
- use Industrial Motor Control
- write CNC program
- operate CNC
- write PLC program
- plan operational management

Table 25. Course duration details: Industrial Engineering

No.	Year	Subjects	Code	Hours
1	A.G.T.I (Year I)	Myanmar	M-11011,12011	30 hrs
		English	E-11011,12011	90 hrs
		Engineering Mathematics	EM-11011,12011	90 hrs
		Engineering Science	ES-11011-12011	120 hrs
		Engineering Mechanics	ME-11015,12015	90 hrs
		Basic Technical Drawing	ME-11011,12011	180 hrs
		Industrial Safety and Workshop Technology	IE-11012,12012	240 hrs
		Principles of Electrical and Electronic Technology	IE-11011,12011	210 hrs
2	A.G.T.I (Year II)	English	E-21011,22011	90 hrs
		Engineering Mathematics	EM-21021,22021	90 hrs
		Computer Aided Design	IE-21013,22013	150 hrs
		Control Engineering	IE-21013,22013	210 hrs
		Theory of Machines	ME-21015,22015	90 hrs
		Industrial Wiring and Installation and Motor Control	IE-21011,22011	150 hrs

No.	Year	Subjects	Code	Hours
		Digital Electronics	EcE-21022,22022	150 hrs
		Industrial Field Trip		120 hrs
3	A.G.T.I (Year III)	English	E-31011,32011	90 hrs
		Operational Management	IE-31018,32018	150 hrs
		Programmable Logic Controllers	IE-31021,32021	210 hrs
		Computer Numerical Control (CNC)	IE-31022,32022	210 hrs
		Industrial Automation	IE-	150 hrs
		Industrial Field Trip		210 hrs
Total				3150 hrs

Class Timing

35 hours/week, 30 weeks/ year

Teaching Methods

- Students centered learning
- Problem based learning
- Project based learning

Table 26. Learning Outcomes

No.	Subject	Learning Outcomes
1	Industrial Safety and Workshop Technology	To know the industrial safety, Get the skill for handling and application of basic mechanical tools and equipment Get skills on welding and machining
2	Principles of Electrical and Electronic Technology	Understand electrical and electronics theory Know electronics components and power source Use measuring instruments appreciate the components
3	Computer Aided Design	Read and create engineering drawings using Auto CAD Draw, edit and manipulate drawings using Auto CAD Plot and publish scaled, fully annotated, and dimensioned Auto CAD drawings Use advanced tools to create complex and sophisticated Auto CAD drawings Create and render three-dimensional objects using specialized techniques within Auto CAD
4	Control Engineering	Explain the meaning of fluid power. List the various applications of fluid power. Differentiate between fluid power and transport systems. List the advantages and disadvantages of fluid power. Explain the industrial applications of fluid power. List the basic components of the fluid power. List the basic components of the pneumatic systems. Differentiate between electrical, pneumatic and fluid power systems. Appreciate the future of fluid power in Myanmar

No.	Subject	Learning Outcomes
5	Theory of Machines	Provide the foundation for the study of displacements, velocities, accelerations, and static and dynamic forces required for the proper design of mechanical linkages and moving parts in all machines. They can control and repair the gear trains and belt drive used in most industries
6	Industrial Wiring and Installation and Motor Control	Know generation of electricity. Draw standard NEMA control symbols Connect a manual motor starter. Connect a relay in a circuit. Connect Star Delta Control Circuit Construct forward, reversed control circuit and Sequence control Know soft starter
7	Digital Electronics	Understand binary number system, conversion of number systems, arithmetic operations. Understand the functions of a digital electronic component IC with its datasheet. Understand the function of digital combinational circuits and sequential circuits given by schematics. Know about the multivibrator circuit working process and functions. Draw the timing chart of a digital sequential circuit. Know about the working process of shift registers and memory.
8	Operational Management	Understand the business process and analyze the operations Acquire knowledge of production planning and resource management
9	Programmable Logic Controllers	Identify the main parts of a PLC and describe their functions List and describe the function of the hardware components used in PLC systems Define the decimal, binary, octal, and hexadecimal Convert relay ladder schematics to ladder logic Describe the PLC program scan sequence Create mini automation machine using PLC
10	Computer Numerical Control (CNC)	Understand the conception of CNC and main structure Know all list of command words & operate with the control panel Make programming & how to setup of Coordinates by SIEMENS Mode Understand and further promote the friendly with CNC machine &programming
11	Industrial Automation	Understand the conception of CNC and main structure Know all list of command words & operate with the control panel Make programming & how to setup of Coordinates by SIEMENS Mode

Source: Insein GTI school, Yangon

CVT: Hospitality Professional Course

Duration: Two Years

Certificate: CVT Hospitality Professional Certificate

"Hospitality Professional" courses at CVT Myanmar enable the trainees to learn the trade and graduate either in Food & Beverage Operation or in Front Office & Housekeeping Operation. The curriculum for the courses is based on the ASEAN Competency Standard for the Hospitality Industries. A mixture of theory and practical training will equip the trainees with a wide range of knowledge and skills; the trainees will become a qualified player in the hospitality environment.

A Hospitality Professional shall know how to (Objectives):

- take reservations, carry out hosting functions, handle full-house situations, take and serve orders
- cultivate customer rapport, manage their needs and expectations
- service guestrooms, perform night-turn down service and complete end-of-shift activities
- manage and supervise duty rosters and room cleaning schedules
- prepare, cook and present dishes and food

The corresponding vocational training for Hospitality Professionals at CVT is based on training and learning at the vocational school, the training company and the practical training center (PTC). The training course takes two years. Students will get a certificate as CVT Hospitality Professional when they pass the final exam of the second year.

After successfully completing the vocational training, several courses for further education (ICT, English, ToT, etc.) can be attended.

Core competences of a Hospitality Professional:

1. Business administration and organization
2. Hygiene, occupational safety, fire and health protection
3. Logistics (Goods management from procurement to disposal)
4. Guest Services
5. Room design
6. Maintenance
7. Laundry service
8. Machinery, equipment, utensils
9. Myanmar language and the various forms of communication
10. English in a professional setting
11. IT competences – computer literacy
12. Methodological, social, and personal competences

Subjects

- Theory
  - Front Office & Housekeeping Operation Course
    - Front Office
    - Housekeeping
    - Opera Property Management System
    - Hospitality Industrial Knowledge

- Food & Beverage Operation Course
  - Food Production (Kitchen)
  - Food & Beverage Service
  - POS (Point of Sales) system
- Hospitality Industrial Knowledge

○ English

- Business and Hospitality English, Level A2-B1

○ Information/Communication/Administration

- International Computer
- Driving License
- ICDL-Modules: Computer Essentials, Word Processing, On-line Essentials, Excel

○ Myanmar/Social Skills

- Mastering of mother tongue and self-competences

Table 27. Additional lessons for Hospitality Professional Course by CVT Myanmar

PTC for Front Office	Guest care (taking reservations, check in/out, guest payments, escorting, handling guest requests)
PTC for Housekeeping	Room service (room preparation, cleaning, checking, administration), guest care (laundry, pick up, delivery)
PTC for F&B service	Presenting and serving skills for traditional and international dining room and buffet services
PTCs for F&B kitchen	Preparation of food, cooking, Western and Asian style
Supervised learning	Self-determined computer practice, supervised by a teacher

Table 28. Two parts of the hospitality professional training program

Part	Description
Intensive Introduction Course IIC	Ten weeks, five days a week, of intensive training at school preparing for the apprenticeship program
Apprenticeship Course AC	21 months of dual training: five days working and practicing at the training company, one day per week at the vocational school

The Intensive Introduction Course (IIC) gives students the necessary knowledge and skills to join the main course (AC) and successfully apply for the vocational training in a company.

The Apprenticeship Program provides the comprehensive vocational training at school and the training company to get the diploma as a certified CVT Hospitality Professional.

* The all-inclusive fees (300,000 MMK (approximately 200 USD) for IIC Course and 300,000 MMK for AC Course) cover cost for course books, course material, ICDL-modules, exams, diplomas etc.

Table 29. Intensive Introduction Course IIC

Duration	10 weeks / 9 lessons per day
Schedule	Monday – Friday
Subjects	F&B: Cuisine, Food and Beverage Service, Practical Training Room Division: Front office, Housekeeping, Practical Training Industrial Knowledge, MSG, PMS – Business English – ICA (Information / Communication/ Administration) – Myanmar & Social Skills
Admission requirements	Minimum age 17 years Basic Education High School Level ID card copy, family registration copy, criminal check record, health recommendation letter
Objective	IIC Certificate CVT and ICDL certificates
Perspective	Students who have passed the IIC test are allowed to join the subsequent Apprenticeship Program.

Table 30. Course schedule Apprenticeship Course First year (Terms 1 and 2)

Duration	9 months
Schedule	One weekday, 8 lessons
Subjects	F&B: Cuisine, Food and Beverage Service, Practical Training Room Division: Front office, Housekeeping, Practical Training Industrial Knowledge, MSG, PMS – Business English – ICA (Information / Communication/ Administration) – Myanmar & Social Skills
Admission Requirements	Passed IIC test (IIC Certificate)
Objective	Promotion to second year and ICDL certificates
Perspective	Promoted students are allowed to continue with the second year of the Apprenticeship Program.

Table 31. Course schedule Apprenticeship Course Second year (Term 3 and 4)

Duration	12 months
Schedule	One weekday, 8 lessons
Subjects	F&B: Cuisine, Food and Beverage Service, Practical Training Room Division: Front office, Housekeeping, Practical Training Industrial Knowledge, MSG, PMS – Business English – ICA (Information / Communication/ Administration) – Myanmar & Social Skills
Admission Requirements	Promotion first year
Objective	CVT certified Hospitality Professional and ICDL certificates
Perspective	Access to further education program CVT, specialization courses and courses in business studies, accounting, ICT and languages

Source: CVT Myanmar Website

2.2. Stakeholder involvement in developing curriculum

2.2.1. Role of the key stakeholders in development of the curriculum (the government, employers, TVET teachers, TVET experts, etc.)

i. Describe all the parties (institutions) who are involved in the process. (Government, employers, TVET teachers, TVET experts, etc.)

GTI: Industrial Engineering Course

The Department of Technical and Vocational Education and Training (DTVET), MOST is responsible for development of all curricula for pre-university TVET (GTHS and GTI).

Industrial stake holders and TVET teachers are not in position to participate directly in the development of curriculum.

CVT: Hospitality Professional Course

Partner Companies of CVT Myanmar provide inputs for the process of developing the curriculum and its revision such as labour market information, skill demands, and employers' expectations.

Swiss TVET Experts and Consultants of CVT Myanmar provide course structure based on Swiss Dual-Training and Apprenticeship system of the curriculum development.

ii. What is the role of industries, government, teachers, instructional designers, etc.? (i.e., teachers, employers, government)

GTI: Industrial Engineering Course

Industry sector does not participate in the development of GTI's curriculum currently although the drafted TVET law will provide opportunities for industrial representatives to be a part of TVET Council in future, which will become the leading body of TVET including GTI courses.

Department of Technical and Vocational Education and Training (DTVET), Ministry of Science and Technology is the mandated leading body for Myanmar TVET and the sole provider of curriculum for GTI courses. DTVET has a curriculum development committee of qualified and oversea-trained personnel for curriculum development.

TVET teachers follow the curriculum and are not in position to actively influence the process of curriculum development for the time being.

CVT: Hospitality Professional Course

CVT Myanmar's partner companies in hospitality industry provide inputs for curriculum development regarding labour market demands and skill requirements.

Government bodies do not directly involve in the curriculum development of CVT. However, the CVT's training curriculum was developed in line with National Occupational Competency Standards (NOCS) set up by National Skills Standards Authority (NSSA).

iii. Who leads the process?

GTI: Industrial Engineering Course

Curriculum Development Committee of DTVET, MOST leads the process of curriculum development.

CVT: Hospitality Professional Course

TVET experts from Switzerland in cooperation with Myanmar training companies lead the process of curriculum development.

2.3. Role of Industries (sector councils, industries, trade union) in the process

2.3.1. Please describe in detail the role of the industries in the process. Who are involved in the process? (Institutions involved in the development)

GTI: Industrial Engineering Course

Industry sector does not participate in the development of GTI's curriculum currently although the drafted TVET law will provide opportunities for industrial representatives to be a part of TVET Council in future, which will become the leading body of TVET including GTI courses.

CVT: Hospitality Processional Course

CVT Myanmar's partner companies in hospitality industry provide inputs for curriculum development regarding labour market demands and skill requirements.

According to the vision of long-term sustainability, local partnerships and support are being sought by CVT. These goals are pursued by the following strategies:

- Maintain relations with existing partners
  - Industry
  - Chambers
  - Governmental institutions
  - Industry related organizations
  - Professional associations
- Acquisition of new partners in the TVET environment
- Engage Training Companies to support financially
- Approach companies and promote CVT curricula as customized trainings
- Approach Multinationals, Foundations and Institutions for financial support to cover operational and development costs.

2.4. Updating the curriculum and reflecting changes in the LM demands

2.4.1. Do you regularly revise the curriculum, reflecting on the changes in the LM demands? What steps are taken in revising the curriculum?

GTI: Industrial Engineering Course

The curriculum was fixed for the whole nation and not revised on a regular basic. However, due to changes in National Education Law in 2014, course directors from 33 GTIs can apply the proposal of curriculum and syllabus modification to DTVET. For the revision of the curriculum, a consensus of all course directors from GTIs is needed. Together they can apply the proposal to revise it to the curriculum development committee in DTVET. The committee will review the case and can allow the revision if it is in their interest and consideration.

CVT: Hospitality Processional Course

The curriculum is revisable according to the changes in labour market needs and suggestions from partner companies. The curriculum will be revised by experts from CVT in cooperation with other stakeholders from the related industry.

2.5. Link between TVET curriculum, National Competency Standards and National Qualification Framework

2.5.1. Competency-based training and Certification

Competency based training is initiated in Myanmar by both public and private sector. National Skills Standards Authority (NSSA) established the National Occupational Competency Standard (NOCS) which covers the most demanded occupations in the labour market, and it is also responsible for accrediting the skills of existing workforce and potential workers. The trainees for these occupations are assessed and certified by NSSA through its accredited assessment centers.

2.5.2. Application of national competency standards in developing curriculum

National Skills Standards Authority (NSSA) was established in 2007 comprising of various stakeholders (Government Ministries and private organizations) as part of the ASEAN Skills Recognition Project within ASEAN countries towards the implementation of the ASEAN Economic Community (AEC). Since then, Ministry of Labour (MOL) has been acting as a focal ministry to strengthen NSSA. NSSA has the aim to establish National Unified Skills Development, Recognition and Certification System as a provision for skilled labour movement within ASEAN region.

NSSA identifies and promulgates priority occupations to develop NOCS for the most demanded occupations in the labour market and to accredit the skills of existing workforce and potential workers. National Skills Qualification Framework has also been defined with 4 levels:

level 1 for semi-skilled workers, level 2 for skilled workers, level 3 for advanced skilled workers and level 4 for supervisory. NOCSs have been developed and approved by NSSA through collaboration with the respective sectorial committee, private organizations and professional associations as stated knowledge, skill and ability in Qualification Framework.

GTI: Industrial Engineering Course

NOCS of NSSA Myanmar currently does not officially cover the occupation sector of GTI graduates of this course yet. Obviously, there is a gap in cooperation between GTIs and NSSA. However, the learning outcomes of the curriculum of Industrial Engineering Course serve as the competency benchmark for the training course.

CVT: Hospitality Professional Course

The CVT's curriculum of hospitality professional training applies the competency standards of NSSA. The graduates of CVT Myanmar will have opportunity to register for NSSA assessment to get national certification (NSSA Accredited certification).

2.5.3. Completion of program leading to acquisition of national qualification

GTI: Industrial Engineering Course

The GTI students who achieve the required grades in all subjects of the final theory and practical examinations will be awarded A.G.T.I Diploma in Industrial Engineering. NOCS of NSSA Myanmar currently does not officially cover the occupation sector of the graduates yet. However, the learning outcomes of Industrial Engineering Course serve as the competency benchmark for the training course.

CVT: Hospitality Professional Course

The vocational training for Hospitality Professionals at CVT is based on a two-year training and learning at the vocational school, the training company and the practical training center (PTC). Students will be awarded a certificate as CVT Hospitality Professionals when they pass the final exam at the end of second year.

The CVT hospitality professional certificate holders can register and take the NSSA Assessment exam to be certified by NSSA and become national level certified professionals in hospitality.

3. Implementing the curriculum

3.1. Development of Teaching and Learning Materials

3.1.1. Development of curriculum by the courses (subjects) in the curriculum

GTI: Industrial Engineering Course

The learning materials are developed according to the subjects included in the curriculum by DTVET, MOST.

CVT: Hospitality Training Course

The learning materials are developed according to the subjects included in the curriculum by Swiss TVET experts of CVT Myanmar.

3.1.2. Teaching and learning methods (incl. application of e-learning)

GTI: Industrial Engineering Course

The teaching and learning materials are developed by DTVET of MOST according to the approved curriculum. DTVET has a curriculum development committee of qualified and overseas-trained personnel. Detailed information of the participants of the committee is not available.

CVT: Hospitality Professional Course

The learning materials are developed by CVT Myanmar's Swiss and local experts on hospitality sector of Myanmar, according to the curriculum and based on the needs of the labour market.

3.1.3. Process of endorsement for the instruction materials: Standards for endorsement

GTI: Industrial Engineering Course

DTVET develops and endorses the instruction materials.

CVT: Hospitality Professional Course

The instruction materials are developed by CVT Myanmar's experts according to the developed curriculum.

The instruction materials are not directly endorsed by a government body, however, the CVT training center is accredited by NSSA. Hence, the certificate holders of CVT are allowed to take NSSA exams for becoming NSSA certified professionals.

3.1.4. Teaching and learning methods (incl. application of e-learning)

GTI: Industrial Engineering Course

The three-year diploma course is designed through 40% theoretical lectures and 60% practical lessons. The learning methods are student-centered, problem-based and project-based.

For Covid-19 pandemic situation, the GTI is developing e-learning methods for academic subjects by using Zoom application and setting Viber study groups. For practical subjects, social distancing measures are applied; for example, scheduling the timetable for class groups with no more than five trainees per practical session in workshops.

CVT: Hospitality Professional Course

Teachers from CVT Myanmar conducted free online courses for the public in June and July 2021, sharing their knowledge while controlling the spread of the virus. In June, the General Education Department of CVT offered an English grammar and writing course, a personal development course, a computer basics course and in July, various courses related to electricians, metal technicians, business administrators and hospitality professionals. All the courses were offered online using the Zoom application, and thousands of interested people signed up for the above courses.

Starting from August 2021, CVT Myanmar has to temporarily suspend all apprenticeship programs till end of 2021 due to escalating COVID-19 situation in Myanmar.

3.2. TVET Teachers and Trainers

3.2.1. Certification of TVET teachers and trainers for the program (types of qualifications for TVET teachers)

GTI: industrial Engineering Course

There are two TVET teacher training centers under MOST: the Technical Promotion Training Centre (TPTC) at Baelin, near Mandalay and the TVET Teacher Training Institute (TTTI) in Yangon. TPTC offers pre-service and in-service training to upgrade the quality of teachers in both pedagogy and technical skills. The courses usually last from four to ten weeks and are offered on an ad-hoc basic. However, TTTI was established only a few months ago and is not yet fully operational. Both institutes provide training only for TVET trainers under MOST, and the TVET providers under different ministries provide teacher training in their own capacity. Private TVET providers such as international organizations have their own in-house training, and there is no standardization of teacher training among TVET providers. Some of the TVET trainers from other line Ministries also join the TVET training program under MOST based on the request at the working level.

The teachers of TVET under MOST are predominantly (86 per cent) female. One reason is that most of the teachers in GTIs and GTHSs were specially trained as engineers and appointed as

teachers. An almost equal number of male teachers were appointed, but they generally left teaching on account of the lower salary than is available for engineering jobs. Female teachers continued in post owing to the perceived difficulty of their finding engineering jobs, and traditional thinking that teaching is a prestigious female occupation.

The pre-service training and in-service training for TVET teachers, especially TVET trainers under the Ministry of Science and Technology, are provided by the Technical Promotion Training Centre (TPTC). In addition, the specialized training institutes such as SMVTI and SITE in Yangon have close collaboration with industries and have developed industrial attachment programs for their TVET trainers.

CVT: Hospitality Professional Course

CVT trains own trainers with support from Swiss TVET experts by recruiting professionals from the relevant sectors. The trainees for teaching position are given individual coaching and trained in CVT Certificated Teacher Program. The program aims to enable trainees in acquiring knowledge, skills and competencies in teaching as well as in other professional fields to become excellent teachers in vocational education. Applicants of the program are required to hold diplomas and certificates issued by the CVT or other equivalent organizations and have at least three years of working experience in the relevant industry.

The program lasts for 3 months (3 days per week), including 90 class hours of teaching method and educational theory training, 250 class hours of professional curriculum training and four-week workplace practice as well as one week of assessment, certification, and graduation exams.

Individual Coaching

Before and after the teacher's training, personal coaching is offered to the teachers. At the trainee's wish, the coaching expert joins the teacher in class and offers individual feedback and coaching for the session. Strengths and areas for improvement are highlighted. Clarifications on planning, conducting the class and dealing with problems are discussed.

3.2.2. Supply of skilled VET professionals and staff development

i. National plan to secure supply of skilled VET professionals and Staff development (Is there a shortage in the supply of qualified VET teachers? Do you have difficulties in recruiting the qualified VET teachers?)

DTVET has a plan to make TVET students reach as many as 100 times more over the next few years. DTVET outlined plans to achieve this exponential growth by expanding traditional models of education delivery, i.e., essentially learners enrolled in formal institutions (usually GTIs) studying toward for achieving certificates or degrees after years of the study.

The DTEVT Director General described ambitions to add over thirty new TVET institutes and train hundreds of new teachers (mission notes of DTVET, 2019). The most significant barrier in realizing these plans is nurturing qualified teachers.

In response to DTVET's plan, Organization for Economic Co-operation and Development (OECD) also called attention to this potential bottleneck, noting that improved access to education needs to be balanced with the country's capacity to train and hire teachers. When Myanmar rapidly expanded the provision of secondary education, it sometimes opened schools before it could recruit well-qualified teachers, thereby enlarging access at the expense of quality (OECD, 2014). DTVET wishes to avoid this outcome, scale up TVET in a sustainable way and ensure the quality of education.

ii. Plans to secure the supply of skilled TVET teachers in areas of high technology (IT)

Currently, there is no information available for plans to secure the supply of skilled TVET teachers in areas of high technology (IT).

3.2.3. Professional development of TVET teachers and trainers

i. Updating the skills of VET teachers and trainers

GTI: Industrial Engineering Course

MOST is mandated as the leading TVET ministry to provide teacher trainings and has training facilities at a technical TVET teacher training center. However, it only focuses on training of trainers (TOT) programs for TVET teachers of MoST (GTI and GTHS teachers). Short-term in-service training courses such as practical and technical skill-based trainings, pedagogic or teaching and learning method trainings, apply didactics training, resource maintenance 5S training and ICT courses are conducted every year for teachers of GTI and GTHS.

The main objective of these TVET teacher training programs is to upgrade the quality of teaching and technical skills for TVET education. There are various short-term courses of 4-10 weeks duration which focus on technical competencies in mechanical, electrical, civil or electronic domains and others. Neither standards nor competency models are planned and arranged in place for these training courses for future vision in line with National Education Strategic Plan.

CVT: Hospitality Professional Course

Occasionally, CVT conducts in-house trainings for their teachers in teaching skills, language skills, computer skills, technical skills, etc. with trainers from local institutes, oversea experts or CVT's own trainers.

ii. TVET institutions to train TVET teachers and trainers

GTI: Industrial Engineering Course

There are two TVET teacher training centers under MoE: the Technical Promotion Training Centre (TPTC) at Baelin, near Mandalay and the TVET Teacher Training Institute (TTTI) in Yangon. TPTC offers pre-service and in-service training to upgrade the quality of teachers in both pedagogy and technical skills. The courses usually last from four to ten weeks and are offered on an ad-hoc basic. However, TTTI was established only a few months ago and is not yet fully operational. Both institutes provide training only for TVET trainers under MoE, and the TVET providers under different ministries provide teacher training in their own capacity. Private TVET providers such as international organizations have their own in-house training, and there is no standardization of teacher training among TVET providers. Some of the TVET trainers from other line Ministries also join the TVET training program under MOST based on the request at the working level.

CVT: Hospitality Professional Course

CVT trains the trainers in their own two training centers in Yangon.

3.3. Supply of facilities, equipment, and materials to provide quality VET

3.3.1. Installation of equipment and practice materials to provide VET

GTI: Industrial Engineering Course

Required teaching materials at GTHS and GTI are clearly indicated in their curriculum and syllabus. However, the number of equipment is not adequate for the number of students. Therefore, the instructors have no other option but to explain the process by writing on the blackboard, and the students take notes instead of having hands-on practical training opportunities with proper equipment. Teachers of GTHS and GTI complained about their equipment being too old; however, the survey team by JICA observed even such old equipment can be utilized under proper maintenance. Thus, the priority should be given to establish a proper maintenance system for available equipment. In addition, the registration system of equipment and machines is not well organized, and this should be developed for their better maintenance.

CVT: Hospitality Professional Course

CVT is well equipped with sufficient machines and equipment for the related courses, which were sponsored by the government of Switzerland and private sponsors.

Source: Myanmar Data Collection Survey on TVET, JICA, 2016

3.3.2. National regulations (any other standards) on instalments of practice equipment and materials (specific standards): installation standards for the program

GTI: Industrial Engineering Course

Based on information available from the study survey by JICA (Myanmar Data Collection Survey on TVET, JICA, 2016), there is a standardized list of equipment for each academic year of the 3-year diploma course for each subject.

CVT: Hospitality Professional Course

CVT Myanmar is a training and assessment center accredited by NSSA for hospitality professional courses. By this accreditation, the CVT is sufficiently set up with standard equipment to meet NSSA criteria. Also, in previously cited survey by JICA in 2016 (Myanmar Data Collection Survey on TVET, JICA, 2016), CVT is stated to be well equipped and supported by government of Switzerland and private donors.

3.3.3. Ratio of the currently installed to the installation standards (for each item)
Information not available.

3.3.4. Up-to-datedness of the equipment/ Reasons for the shortage in supply
Information not available.

4. Assessments, certifications, and other measures to assure quality

4.1. Assessment of student performance at the course (program)

4.1.1. Means of assessment of VET students and trainees during the course

GIT: Industrial Engineering Course

The GTI's assessment of the students' performance includes the theory examination and the practical operation evaluation. In each school year, the GTI organizes two theory examinations, respectively, in the first semester and the second semester; all students must sit and pass the theory examination to meet the graduation requirement. The theory examination and the practical operation evaluation, respectively, account for 30–40% and 60–70% of the total score. For some subjects that do not involve testing in practice, the students' performance in daily assignments shall be taken as the basis for the final scoring.

Assessment Methods

- Practical Work (60-70 %)
- Examination (Theory) (30-40%)
- Other Assessments

- Semester Examination
- On Job Training
- Industrial field trip and project

CVT Hospitality Professional Training

CVT Myanmar has examination sessions (theory and practical) every year in March for Apprenticeship programs.

4.1.2. Specify the assessment process and methodology

GTI: Industrial Engineering Course

Practical Work (60-70%)

Learners must successfully complete a series of practical exercises throughout the courses. The assessor will gather a collection of work that demonstrates evidence of a range of techniques.

Examination (Theory) (30-40%)

Learners must successfully pass the theory examinations to advance to next year and to graduate.

CVT: Hospitality Professional Course

For Hospitality Professional course, theory and practical knowledge of the Front Office & Housekeeping subject or Cuisine & F&B subject is assessed in final exam together with ICT, Industrial Knowledge, English and General Education subjects.

After passing CVT's exam, the trainees will be awarded CVT's Hospitality Professional Certificate. The graduates can take NSSA Assessment exam to become NSSA certified professionals.

4.2. Certifying the graduates

4.2.1. Mechanisms for certifying the graduates (assessment process if applicable)

GTI: Industrial Engineering Course

The students' performance in the assessments is graded with the following system. The students who achieved the passing grade in all subjects are awarded the diploma of the course.

i. Grading System

Passing grade is "50%" for Academic subjects and "40%" for Practical subjects.

- 81-100 Grade "A"
- 61-80 Grade "B"

- 41-60 Grade "C"
- 21-40 Grade "D"
- 0-20 Grade "E"

CVT: Hospitality Professional Training

Students will get a certificate as CVT Hospitality Professionals when they pass the final exam. For Hospitality Professional course, theory and practical knowledge of the Front Office & Housekeeping subject or Cuisine & F&B subject is assessed in final exam together with ICT, Industrial Knowledge, English and General Education subjects.

However, to achieve a national level professional certificate, the graduates will need to take and pass NSSA assessment exam for the related profession.

ii. Type of certificates awarded to the graduates

GTI: Industrial Engineering Course

A.G.T.I (Associate of Government Technical Institute) Diploma in Industrial Engineering is awarded to graduates.

CVT: Hospitality Professional Training

CVT Hospitality Professional Certificate is awarded to graduates.

CVT certificate holders can register for NSSA assessment to become NSSA certified professionals in hospitality.

4.3. Satisfaction of the VET students with the program

4.3.1. Drop-out rates from the program, by reasons for dropouts

GTI: Industrial Engineering Course

For each GTI school, the seats of each engineering course are 40 per year. As there are some candidates who do not enter after passing the entrance exam and some students drop out in the second and third year, the number of students in third year decreases by approximately 30% to 50%. Majority of the dropouts are due to financial reason.

CVT: Hospitality Professional Training

No information available for dropout rate.

4.3.2. Measures taken to reduce dropouts

GTI: Industrial Engineering Course

To reduce dropout rates due to financial reasons, all GTI schools provide monthly study grant 30,000 MMK (approximately 20 USD) to students. Industrial cooperation for career counseling and employment after graduation is still under discussion between DTVET and various industrial stakeholders.

CVT: Hospitality Professional Course

No information available.

4.3.3. Provision of Industry safety training course[3]

GTI: Industrial Engineering Course

"Industrial safety and workshop training" was included as a core subject in the first-year curriculum.

CVT: Hospitality Professional Training

Hygiene, occupational safety, fire and health protection are among core competencies for hospitality professional graduates of CVT and the curriculum contains relevant lessons to achieve it.

4.3.4. Other measures taken to increase the satisfaction of the students and trainees (career-counseling, support of adjustment at the job (workplace))

GTI: Industrial Engineering Course

Currently, no additional service targeting satisfaction of students and trainees was carried out.

CVT: Hospitality Professional Course

Further educational opportunities are available for the graduates to advance their careers.

5. Apprenticeships and traineeships and Work-based training programs

i. Work-based training programs in your country: describe types, extensiveness of such programs, and best working examples

Although majority of Myanmar companies have interns or trainees in their workforce, formal apprenticeship system is not well established yet in Myanmar.

3 All industries have safety issues that are specific to the industries. Industry safety is a concept that can be applied in a broad range of industries, not just limited to manufacturing. Many service-area jobs such as cooking and serving food at restaurants and installing electricity to new homes also involve safety concerns.

Many companies provide on-job-training for new recruits or newly promoted staffs. There is a practice for companies to pay the fees of trainings for their employees if the courses are relevant and beneficial for the company.

CVT Myanmar's training programs and Vocational Skills Development Program (VSDP) by Swisscontact are based on Swiss dual-training system. They also use formal apprenticeship as an effective training system for the trainees.

ii. Work-based training for the programs (and sectors): Status of WBT for the sector (programs)

GTI: Industrial Engineering Course

For GTIs, collaboration with local industry was not a common practice. However, the collaboration between some GTI schools and companies based in the nearby industrial zones has become essential because of the rapid economic development of industrial zones within the country.

There are some good practices in GTI Kyaukse and GTI Mandalay. In GTI courses, students are required to have 2-week field visits at the end of the first and second years. Due to the active communication and interaction between the principals of these two schools and companies based in the nearby industrial zones, their students can get opportunities for on-job-trainings in the companies.

CVT: Hospitality Professional Course

CVT offers Dual vocational education which is a two-tiered training program adapted from the Swiss model, which has been guaranteeing a high employability and a high quality of skills in Switzerland for over 100 years.

One part takes place in a vocational school (ten weeks, five days a week, of intensive training at school preparing for the apprenticeship program), and the other part is an apprenticeship at a company (21 months of dual training: five days working and practicing at the training company, one day per week at the vocational school)

At the CVT school, the trainees learn about the theoretical knowledge for the specific job as well as about general education subjects. Everything they learn corresponds to the National Skills Standards.

What they learn at school, they can practice at the company. The great thing is, that during an apprenticeship, they get nationally certified and recognized training, and at the same time they are already earning money: "Earn while you learn".

Ideally, the training companies have CVT-certified instructors or In-Company Trainers who know exactly, what the students´ curriculum is. This way, the practical learning process goes along with the theory at school.

In dual vocational education, it is particularly important that, besides academic knowledge, also gain other practical and personal skills at the company. As a full-fledged employee, the trainees will later manage their own projects within the company, or even in their own company one day.

iii. Industry-Academia Co-operation (for school-based TVET programs): support system to promote cooperation between industries and TVET institutions at the institution level.

GTI: Industrial Engineering Course

Currently, DTVET is in discussion with various stakeholders, including development partners, foreign TVET organizations, Universities, and local and foreign enterprises to develop an effective Industry-Academia Co-operation at national level.

CVT: Hospitality Professional Course

CVT Myanmar's training courses are set up as a Dual-training, Apprenticeship style based on Swiss model and cooperation with the industrial partners is major part of all courses. Ideally, the larger part of all training courses was designed to be in the real work situation under guidance of a CVT certified in-company trainer so that the trainees will gain the hand-on experience of their career choice and social and problem-solving skills needed for their own endeavors.

6. Summary and Implications

The following two industries and respective TVET programs for Analytical Framework for 'Responsiveness of TVET Curriculum to the Labor Market' are chosen for Myanmar.

1. Manufacturing (Food Processing): Industrial Engineering Course by GTI (Government Technical Institute)
2. Hotel and Tourism: Hospitality Professional Course by CVT Myanmar (Center for Vocational Training)

Manufacturing Sector

The Myanmar manufacturing industry is a developing industry with large potential and room for development although it will require investment from both local and foreign investors. The biggest potential lies in the food processing sector. Currently, Myanmar processes basic raw commodities such as rice, beans, maize, and other agricultural products.

In Myanmar manufacturing sector, there is a high demand of skilled workers especially for manufacturing technicians. The GTI's Industrial Engineering course is a response for this demand. It is a newly established diploma course, started in 2017/2018 academic year and provided in only two GTIs (Yangon and Mandalay cities).

Government Technical Institutes (GTIs) are formal TVET schools under the Ministry of Science and Technology's administration and offer three-year diploma courses. The curriculum of GTIs is designed and developed by Department of Technical and Vocational Education and Training (DTVET), Ministry of Science and Technology (MOST).

The courses offered by GTIs are-

1. Civil Engineering
2. Electrical Power Engineering
3. Information Technology
4. Mechanical Engineering
5. Industrial Engineering
6. Electronic Engineering

Hospitality and Tourism Sector

In 2016, it was estimated that Myanmar travel and tourism directly supported 804,000 jobs (or 2.7% of total employment). Including indirect employment, that figure rose to 1,660,000 jobs (5.7% of total employment). Over the next ten years, it is forecasted that direct employment from travel and tourism will increase by 4.8% annually and that indirect employment will grow by 3.8% a year, totaling 1,296,000 and 2,387,000 jobs respectively in 2027 (WTTC, 2017).

These new jobs creation will require specific skills and training programs which will be essential for sector's development and growth. The market will need a large supply of professionally certified tour guides, tour operators, cooks, waitstaffs and front office personnel.

"Hospitality Professional" courses at CVT Myanmar enable the trainees to learn the trade and graduate either in "Food & Beverage Operation" or in "Front Office & Housekeeping Operation".

CVT Myanmar is a registered INGO of the Swiss Association: "Verein für Berufsbildung in Myanmar" located in Sarnen, Switzerland. The Swiss association supports CVT Myanmar in financial, managerial, methodical, and logistical terms.

CVT Myanmar currently offers five VET courses below.

1. Business administrator training
2. Electrician training
3. Furniture technician training
4. Hospitality professional training
5. Metal technician training

Number of students enrolled in each program

There are total of 33 GTI schools in Myanmar. For Industrial Engineering courses, GTIs recruit 40 trainees per school annually.

CVT Myanmar recruits 20 to 30 trainees per course annually and currently it has only two training centers in Yangon, Myanmar.

Curriculum for the program

All Government Technical Institutes (GTIs) are under the Ministry of Science and Technology's administration and offer three-year Associate of Government Technical Institute (A.G.T.I) diplomas in six different courses. DTVET provides a fixed national curriculum, syllabus, instructional materials and equipment. Revision of the curriculum in response to the changes in the labour market requires official application from course directors of all GTI schools which will be reviewed by DTVET and allow or deny according to their consideration.

"Hospitality Professional" courses at CVT Myanmar enable the trainees to learn the trade and graduate either in Food & Beverage Operation or in Front Office & Housekeeping Operation. The curriculum for the course is developed by Swiss TVET Experts, based on the ASEAN Competency Standard for the Hospitality Industries and Swiss Dual-Training system. Revision of curriculum can be done by CVT's expert team in response to change in the labour market demand or national standards.

Work-based training

For GTIs, collaboration with local industry was not a common practice. However, the collaboration between some GTI schools and companies based in the nearby industrial zones has become essential because of the rapid economic development of industrial zones within the country.

CVT offers Dual vocational education which is a two-tiered training program adapted from the Swiss model, which has been guaranteeing a high employability and a high quality of skills in Switzerland for over 100 years.

Type of certificates awarded to the graduates

A.G.T.I (Associate of Government Technical Institute) Diploma in Industrial Engineering is awarded to graduates of GTI: Industrial Engineering Course.

CVT Hospitality Professional Certificate is awarded to graduates of CVT Myanmar Hospitality Professional course. CVT certificate holders can register for NSSA assessment to become NSSA certified professionals in hospitality.

Chapter V. Analytical Framework IV: Identifying and sharing best practices of TVET in AMSs

1. Case 1: CVT Myanmar: Hospitality Professional Course

1.1. Introduction of the case

1.1.1. Rationale for the selection

Center for Vocational Training (CVT) Myanmar is a non-profit Swiss Association founded and registered in Myanmar as an NGO in 2002, following the sample of Swiss and German "Dual Vocational Education" where practice and theory are combined. CVT is working together with its partner companies to train higher skilled labour in Myanmar with the aim of poverty reduction through skills development.

CVT's Hospitality Professional Training enables trainees to learn the trade and graduate either in "Food & Beverage Operation" or in "Front Office & Housekeeping Operation." The Apprenticeship Program, a mixture of theory and practical training, will equip the graduates with a wide range of knowledge and skills not only to get the diploma as a certified CVT Hospitality Professional but also to become an experienced and qualified players in the hospitality environment.

1.1.2. TVET in the sector and in the field of the program

In 2016, it was estimated that Myanmar travel and tourism directly supported 804,000 jobs (or 2.7% of total employment), including indirect employment, that figure rose to 1,660,000 jobs (5.7% of total employment). Over the next ten years, it is forecasted that direct employment from travel and tourism will increase by 4.8% annually and that indirect employment will grow by 3.8%, totaling 1,296,000 and 2,387,000 jobs respectively in 2027 (WTTC, 2017).

These new jobs creation will require specific skills and training programs in hospitality sector which will be essential for sector's development and growth.

1.2. Description of the Case

1.2.1. Mission

Mission of CVT is to offer a high quality standard vocational model education inspired by the Swiss dual educational system. CVT contributes to significantly improve the vocational education in Myanmar by CVT/E4Y Programs, providing a bridge to reintegrate young people and enables them to start a professional career.

1.2.2. Management

CVT Myanmar is a registered NGO of the Swiss Association: "Verein für Berufsbildung in Myanmar" located in Sarnen, Switzerland. The Swiss association supports the organization in Myanmar in financial, managerial, methodical and logistical terms. Experts and board members are unsalaried consultants, who dedicate their support either during their holidays or in their spare time. While the CVT Board still consists of Swiss members, to be closer to the needs and industry in Myanmar, it is planned to build up the Myanmar Board in 2021.

1.2.3. Finances

CVT Myanmar is financed by training fees collected from the students as well as support from the Government of Switzerland and other donors. Being a non-profit organization, one of CVT's board's main activities is collecting money from donors, sponsors and partners to sustain the operation in Myanmar.

1.2.4. Curricula

The curriculum of "Hospitality Professional Course" at CVT Myanmar enables the trainees to learn the trade and graduate either in "Food & Beverage Operation" or in "Front Office & Housekeeping Operation." Hospitality Professionals graduates from CVT Myanmar shall know how to:

- take reservations, conduct hosting functions, manage full-house situations, take and serve orders
- cultivate customer rapport, manage their needs and expectations
- service guestrooms, perform night-turn down service and complete end-of-shift activities
- manage and supervise duty rosters and room cleaning schedules
- prepare, cook and present dishes and food

The review and revision of the curriculum can be done by CVT's experts if there are any changes in the skill standards or labour market demands.

1.2.5. Instructional Delivery

The program is divided into two parts.

The first part is the 10-week Intensive Introduction Course (IIC), five days a week, of intensive training at school preparing for the apprenticeship program. IIC gives students the necessary knowledge and skills to join the main part, 21-month Apprenticeship Course (AC).

The main part AC is 21-months dual training: five days working and practicing at the training company as apprentices, one day per week learning at the vocational school. The apprentices can learn the skills and knowledge at the school and apply them at their work in the company. During this apprenticeship, the trainees are trained in the nationally certified and recognized

training center (CVT), and at the same time, they are already earning money in the company, "Earn while you learn."

CVT Myanmar is well equipped with training materials and equipment for both theory and practical trainings with support from the Government of Switzerland and other private donors. Currently, CVT Myanmar has only two training centers in Yangon city.

1.2.6. Instructional Personnel

CVT trains own trainers with support from Swiss TVET experts by recruiting professionals from the relevant sectors. The trainees for teaching position are given individual coaching and trained in CVT Certificated Teacher Program. The program lasts for 3 months (3 days per week), including 90 class hours of teaching method and educational theory training, 250 class hours of professional curriculum training and four-week workplace practice as well as one week of assessment, certification, and graduation exams.

1.2.7. Admission and Student Services

CVT recruits youths from the related fields over 17 years of age annually. Hospitality professional course recruits 20 to 30 trainees per batch, approximately 4 batches annually. Partner companies also send their employees for either apprenticeship programs or for short courses.

Currently, there is no credit system in Myanmar education sector including TVET. CVT Certificate holders do not earn credits that can be transferred to other TVET or educational pathways. However, the CVT certificate holders can take National Skills Standards Authority (NSSA) assessment to become NSSA accredited professionals. NSSA's framework is a part of Myanmar National Qualification Framework, which will be integrated with ASEAN Qualification Framework in near future. When this happens, it will open many employment opportunities for the graduates.

1.2.8. Program Evaluation and Learner Assessment

CVT Myanmar has examination sessions (theory and practical) every year in March for Apprenticeship programs. For Hospitality Professional course, theory and practical knowledge of "Front Office & Housekeeping subject" or "Cuisine & F&B subject" are assessed in final exam together with ICT, Industrial Knowledge, English and General Education subjects. After passing the final examination, the graduates will be awarded CVT's Hospitality Professional Certificate. The certificate holders can take NSSA Assessment examination to become NSSA certified professionals.

1.3. Conclusion and Implications

In summary, CVT Myanmar's Hospitality Professional Course provides Myanmar's youths with high quality training and market's skills demand. It is also one of the available and limited courses in Myanmar which are modelled after European dual training system.

Furthermore, the course is designed to meet ASEAN and Myanmar skill standards with inputs from local entrepreneurs, business professionals, young people and students active in the sector. Additionally, the CVT Myanmar has a large network of partner companies which is a reliable source of labour market information. This strong customer base is crucial for recruiting trainees as well as employment security for graduates once they successfully completed the program. Through Swiss Dual-training and Apprenticeship model of vocational education training, CVT Myanmar is recognized as a good example of European vocational training system in Myanmar TVET community.

1.4. Sources of Information

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Japan International Cooperation Agency (November 2016), Data Collection Survey on Technical and Vocational Education and Training: Final Report. 1000036280.pdf (jica.go.jp)

National Skill Standard Authority (NSSA) (2021), NSSA Official Website (www.nssa.gov.mm)

1.4.2. Information on Key contact persons (i.e., contact information on the key persons in the institution)

- Mr. Heini Portmann, President, CVT Myanmar Management Board
- Ms. Khin Myant Sandar, Chief Executive Office, CVT Myanmar
- Ms. Yamin Aye, Public Relation and Communication Team, CVT Myanmar

2. Case 2: Government Technical Institute (Insein): Industrial Engineering Course

2.1. Introduction of the case

2.1.1. Rationale for the selection

In Myanmar manufacturing sector, there is a high demand of skilled workers especially for manufacturing technicians.[4] The GTI's Industrial Engineering course is a response for this demand. It is a newly established diploma course, started in 2017/2018 academic year and provided in only two GTIs (Yangon and Mandalay cities).

Government Technical Institutes (GTIs) are formal TVET schools under the administration of Department of Technical and Vocational Education Training (DTVET), Ministry of Science and Technology and offer three-year technical and engineering diploma courses. With total of 33 GTI schools, the GTI Network of Myanmar is developed with aim to form a nation-wide network of TVET-trained professionals.[5]

Among the GTIs, GTI(Insein) in Yangon city is chosen for this case. It is the first technical school opened in Myanmar (established in 1895 as Government School of Engineering by British government.) It is one of the only two GTIs (among 33 schools) providing Industrial Engineering course, specifically targeting the manufacturing sector.

2.1.2. TVET in the sector and in the field of the program

The Myanmar manufacturing industry is a developing industry with large potential[6] and room for developments although it will require investment from both local and foreign investors. The biggest potential lies in the food processing sector. Currently, Myanmar processes basic raw commodities such as rice, beans, maize, and other agricultural products.

In Myanmar manufacturing sector, there is a high demand of skilled workers especially for manufacturing technicians. The GTI's Industrial Engineering course is a response for this demand.

Government Technical Institutes (GTIs) are formal TVET schools under the Ministry of Science and Technology's administration and offer three-year diploma courses. The curricula of GTI courses are designed and developed by DTVET.

4 WENDY CUNNINGHAM AND RAFAEL MUÑOZ, EDITORS, (2018), Myanmar's Future Jobs: Embracing Modernity Main Report, World Bank Group. http://documents.worldbank.org/curated/en/958621536141390299/Myanmars-Future-Jobs-Embracing-Modernity-Main-Report

5 Japan International Cooperation Agency (November 2016), Data Collection Survey on Technical and Vocational Education and Training: Final Report. 1000036280.pdf (jica.go.jp)

6 Roland Berger, Myanmar Survey Research and the Delegation of German Industry and Commerce in Myanmar (AHK Myanmar) (2019 May), Industry 4.0 in Myanmar, leapfrogging across sectors and how to overcome the barriers!

The courses offered by GTIs are-

1. Civil Engineering
2. Electrical Power Engineering
3. Information Technology
4. Mechanical Engineering
5. Industrial Engineering
6. Electronic Engineering

2.2. Description of the Case

2.2.1. Mission

GTI's mission is to provide the high quality TVET programs in accordance with the needs of the local labour market and train the students to become highly competent human resources essential for the socio-economic development of the country. [7]The mission also focuses on cooperation between institutes and industries to best fulfil the industrial needs and promote the higher employability of the students.

To fulfil these missions, the institute plans to create the flexible learning pathways and life-long learning opportunities for students and employees in the region in accordance with their interests, abilities and individual goals.

Additionally, GTI (Insein) will strive to provide opportunities to boost interpersonal and leadership skills of students and develop social awareness and responsibility for serving the society and improve the environment.

2.2.2. Management

GTI (Insein) is under the administration of DTVET, MOST for development of the curriculum, learning and teaching materials and appointment of the staffs. At the school operational level, it is managed by management board of 8 department heads led by the principal.

2.2.3. Finances

GTI (Insein) is financed by Ministry of Science and Technology's National Education Budget. Although the school collects tuition fees, it is only a nominal fees of 6,000 MMK per semester (6 months), total of 36,000 MMK (approximately 24 USD) for a three-year diploma. The

7 Government Technical Institute (Insein) (2021), Official Website (https://gtiinsein.tvet.edu.mm/index.php/course/courses-category/course/industrial-engineering)

school provides monthly study grant of 30,000 MMK (about 20 USD) per student as a support to reduce dropout rate.[8]

2.2.4. Curricula

DTVET provides a fixed national curriculum, syllabus, instructional materials and equipment for GTI. DTVET has a curriculum development committee of qualified and overseas-trained personnel. Detail information of the participants of the committee is not available. Revision of the curriculum in response to the changes in the labour market requires official application from course directors of all GTI schools which will be reviewed by DTVET and allow or deny according to their consideration.

The industrial engineering curriculum is based on the results of industrial data survey on skill demand and in line with DTVET's vocational vision and mission. Program education objectives of industrial engineering course are defined to produce technicians (within three years of graduation) who will be able to-

- apply principles of engineering
- use, maintain and draw design of Pneumatic and Hydraulic Systems.
- apply Auto CAD
- use Industrial Motor Control
- write CNC program (Computerized Numerical Control)
- operate CNC
- write PLC program
- plan operational management

A.G.T.I (Associate of Government Technical Institute) Diploma in Industrial Engineering is awarded to graduates of Industrial Engineering Course.

2.2.5. Instructional Delivery

The three-year diploma course is designed through 40% theoretical lecture and 60% practical lessons. The learning methods are student-centered, problem-based and project-based. The Industrial Engineering course of GTI (Insein) is conducted with timetable of 35 hours/week, 30 weeks/ year. The teaching and learning materials are developed by DTVET of MOST according to the approved curriculum.

For Covid-19 pandemic situation, the GTI is developing e-learning method for academic subjects by using Zoom application and setting Viber study groups. With support from UNEVOC, digital learning platform and infrastructure installation for GTI is in initiation

8 Japan International Cooperation Agency (November 2016), Data Collection Survey on Technical and Vocational Education and Training: Final Report. 1000036280.pdf (jica.go.jp)

stage.[9] In practical sessions, social distancing measures are planned to be applied; for example, scheduling the timetable for class groups with not more than five trainees per practical session in workshops. Since March 2020, campuses of all public educational institutions including GTIs are closed until further notice due to Covid-19 situation and political changes in Myanmar.

To promote the TVET sector, youth employment, and continued learning in Myanmar during the pandemic, a digital learning management system (DLMS) has been introduced in TVET institutions for regular full-time students. Additionally, digital campuses and IT infrastructure, including affordable access to computers/laptops and the internet for teachers, have been established. Furthermore, digital learning content of TVET programs has been made available via the Myanmar Digital Education Platform (MDEP) website. However, since the political changes of the country on 1st February 2021, most of the government ministry's websites are not well functioning.

2.2.6. Instructional Personnel

Teachers for GTI (Insein) are trained in two TVET teacher training centers under MoE: the Technical Promotion Training Centre (TPTC) at Baelin, near Mandalay and the TVET Teacher Training Institute (TTTI) in Yangon. TPTC offers pre-service and in-service training to upgrade the quality of teachers in both pedagogy and technical skills. The courses usually last from four to ten weeks and are offered on an ad-hoc basic. Even though TTTI was established only a few months ago, the program has not been operationalized yet. Both institutes (TPTC and TTTI) provide training only for TVET trainers who are employed under MoE.

2.2.7. Admission and Student Services

The Industrial Engineering program in GTI (Insein) recruits 40 students annually. The recruitment is open to public (announced in nation-wide newspapers), and the applicants can apply to GTI (Insein) directly. The applicant who successfully passed the matriculation exam with Mathematics, Physics and Chemistry subjects are allowed to apply to the program. The admission will depend on the grades of the matriculation exam, especially English and Mathematics grades. (Detail information for the grade requirement is not available.) The applicants also need to take admission exam in both subjects.

2.2.8. Program Evaluation and Learner Assessment

The GTI's assessment of the students' performance includes the theory examination and the practical operation evaluation. In each school year, the GTI organizes two theory examinations, respectively, in the first semester and the second semester. All students must sit and pass the theory examination to meet the graduation requirement. The theory examination and the practical operation evaluation, respectively, account for 30–40% and 60–70% of the total score.

9 Ministry of Education, Myanmar (May 2020 – October 2021), Myanmar COVID-19 National Response and Recovery Plan for the Education Sector.

For some subjects that do not involve testing in practice, the students' performance in daily assignments shall be taken as the basis for the final scoring.

Assessment Methods

- Practical Work (60-70%)
- Examination (Theory) (30-40%)
- Other Assessments
  - Semester Examination
  - On Job Training
  - Industrial field trip and project

2.2.9. Covid-19 Response Plan for GTI

As response to escalating Covid 19 situation in Myanmar, all education institutions including TVET schools were closed since March 2020. Despite considerations to reopen the schools by Government, the continuous waves of pandemic made the risk too high. It is expected that GTIs closure will continue until the pandemic is under control.

Continuing TVET in pandemic times

Given the nature of TVET, which combines theoretical learning and practical training, DTVET's decisions on content and mode of dissemination of learning materials will be made in close collaboration with the heads of institutions including GTI (Insein). This may require a reorganization of the curriculum to prioritize theoretical components and soft skills and postpone the practical components until TVET institutions can be reopened again.

Additionally, for the prioritization of training curriculum to better match the changing demand, a labour market analysis will be conducted to assess immediate training needs for the skill demand during the response phase.

Effective measures for nation-wide continuity

To ensure education continuity, DTVET will coordinate efforts to scale up existing distance learning materials. In the development of distance learning materials and modalities for GTHSs and GTIs, the limited internet access of some students and the need of special support of specific groups (such as IDPs, ethnic minorities, and students with disabilities) will need to be considered to allow for equal access to distance learning. Therefore, TVET institutions will ensure options of digital, low tech and no tech solutions are available to students. Partnerships with internet providers to zero-rate education platforms and student's internet access are planned. TVET courses of GTHS and GTI Schools are included in Myanmar Digital Education

Platform (MDEP) by MOE.[10] (MDEP is MOST's E-learning website, serving as a platform for online learning of Basic Education courses, TVET courses and related information for students.) Low tech and off-line learning solutions such as lectures broadcasted via national television, radio, lessons and worksheets in newspapers, distribution of hard copies of learning materials are already an established practice in Myanmar's basic and higher education sector and now they will be used as an effective tool for TVET as well.

Administrative issues for TVET institutions

Administrative adaptations will be undertaken to ensure safe, equitable and transparent admission procedures in GTHSs and GTIs during the response period. For example, measures such as taking regional challenges into account, and the student registration period to TVET institutions will be extended including late submissions due to the delay of middle school and matriculation exam results.

Teachers' training and skills upgrade

Providing training and support to TVET teachers for "Distance Learning Program" will lead them in having new experiences, opportunities and create motivation. Capacity upgrade trainings of TVET teachers and trainers will be designed to upgrade their skills for the delivery of the restructured curriculum via offline and online distance training to the students. TVET teachers will be provided with laptops and internet packages (DTVET plans to provide IT support for 5,000 TVET teachers and trainers.)[11]

Stakeholder communication strategy

Finally, it is necessary for TVET institutions to set up an effective communication strategy among stakeholders at all levels. These strategies shall include different communication channels between GTHSs and GTIs of different regions, education institutions, students, private companies, UMFCCI and representatives of major industries. This should also be able to exchange updates and information on the latest developments and mitigate the impact of COVID-19 in the TVET sector.

2.3. Conclusion and Implications

GTI's Industrial Engineering course is a response for the demand of industrial technicians in Myanmar's growing manufacturing sector. The three-year diploma program provides the graduates theory and practical knowledge to fulfil the industrial skill demand of the labour

10 MDEP is MOE's E-learning website, serving as a platform for online learning of Basic Education courses, TVET courses and related information for students.

11 Ministry of Education, Myanmar (May 2020 – October 2021), Myanmar COVID-19 National Response and Recovery Plan for the Education Sector.

market. However, regular labour market analysis and curriculum updates will be required to satisfy the changing demands of fast-paced industrial developments and impacts of pandemic.

Hence GTI's main campus has been closed to prevent spread of COVID-19, DTVET is planning and implementing alternative learning pathways for the continuity of education. Online learning and offline learning systems are being established with support from development partners, industrial community and other TVET institutions.

The chosen school (GTI Insein) for this case is Myanmar's first engineering and technological training center in the history. The graduates of this esteemed institute helped in building Myanmar's growing industrial sector. The industrial engineering course provided in GTI (Insein) is targeted to meet the new skills demanded by Myanmar industrial market and contribute to the development of the Myanmar's national economy.

2.4. Sources of Information

2.4.1. List of references

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Government Technical Institute (Insein) (2021) , Official Website (https://gtiinsein.tvet.edu.mm/index.php/course/courses-category/course/industrial-engineering)

2.4.2. Information on Key contact persons (i.e., contact information on the key persons in the institution)

- Mr. Myat Ko, Director and Principal
- Mr. Min Min Oo, Head of Department, Industrial Engineering

3. Case 3: Aung Myin Hmu Garment Skills Training Center: Sewing Machine Operator Course

3.1. Introduction of the case

3.1.1. Rationale for the selection

Firms in textile and garment industries employ the largest share of workers in Myanmar's non-farm, non-government, non-micro enterprise in private sector, and contributed the most job creation.

In 2015, Myanmar Garment Manufacturers Association (MGMA) initiated a 10-year Strategy with support from ILO to create more jobs and increase potentials to become USD 10 Billion Industry with 1.5 million job opportunities for people in 2024. Between 2012 and 2018, the value of garment exports rose by 500%, from around USD 900 million to USD 4.6 billion by 2018. In 2019, the Myanmar apparel industry exported US$5.7 billion worth of garments and a further US$1 billion of footwear and handbags. There was also an increase of 26% revenue in the previous year.

The high volume of FDI aimed at the garment export sector is creating many job opportunities for the Myanmar workforce. At the start of 2020, Myanmar Garment Sector employed approximately 1 million employees with expectation to employ up to 1.5 million employees in 2024.[12] Due to current country's political situation and pandemic, Myanmar garment sector was in uncertain situation, however, according to Eurocham reports and Industrial experts' opinions, the market is expected to bounce back to a positive direction in a near future.

Aung Myin Hmu Project is Garment Skills Training Center operated by Care International Myanmar since 2017, offering livelihood programs and support services to women migrant workers in order to go into a proper and secure profession in Yangon. At the end of the course, it will connect the trained workers to the employment. Aung Myin Hmu is providing courses such as sewing machine operator, quality control, cutting, spreading, mechanic, finishing/ironing and CAD/CAM. Additionally, the trainees are trained in technical knowledge, relationship, salary management, labour contract, etc.

12 Myanmar Garment Manufacturers Association (MGMA), (2014 November), Myanmar Garment Industry 10-year Strategy 2015 – 2024

3.1.2. TVET in the sector and in the field of the program

Training for sewing workers is conducted by factories themselves.

There is a programme run by the Japanese development organization through the MGMA training school, the Myanmar Garment Human Resources Development Centre (MGHRDC).[13] This reaches around 500 new sewing workers and 120 supervisors per year. The Ministry of Border Affairs runs a sewing training course every three weeks graduating 120-140 trainees who usually move to the Yangon area to work.

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3.2. Description of the Case

3.2.1. Mission

Aung Myin Hmu Project is offering livelihood programs and support services to women migrant workers in order to go into a proper and secure profession in Yangon with following missions.

- Safe Migration and Empowerment for Migrant Women in Urban Centers
- To improve quality of employment for urban migrant
- women through technical and vocational skills
- To reduce migration risks and foster safe migration
- To improve workplace safety in factories with focus on prevention of sexual harassment

3.2.2. Management

Aung Myin Hmu is managed by a project consortium formed by Business Kind Myanmar and CARE International in Myanmar.[14] Aung Myin Hmu is also provided help by Legal Clinic Myanmar, a local non-profit organization for labour law related issues.

With the financial assistance from Livelihood and Food Security Trust Funds, Aung Myin Hmu Project is working in partnership with the Ministry of Labour, private organizations and CSOs.

13 Myanmar Garment Manufacturers Association (MGMA), (2014 November), Myanmar Garment Industry 10-year Strategy 2015 – 2024

14 Consult Myanmar (2020 January), Article: Aung Myin Hmu helps develop garment sector in Myanmar. https://www.consult-myanmar.com/2020/01/20/aung-myin-hmu-helps-develop-garment-sector-in-myanmar/

3.2.3. Finances

Aung Myin Hmu is a project of CARE International in Myanmar, funded by the Livelihoods and Food Security Trust Fund (LIFT)[15] and works in close cooperation with the Myanmar Ministry of Labour, (MOL), the private sector, and civil society organizations. The courses are free of charges for the target population (Migrant workers, women, and basic garment factory workers).

3.2.4. Curricula

Among the training courses of the AMH training center, Sewing Machine Operator (SMO) Training is most popular and impactful for the workforce of Garment factories, especially migrant women workers. It provides the basic skills necessary for the worker to operate basic machines of a garment factory, thus increasing the career development opportunity and contributing to their livelihood improvement.

The curriculum is a 40-days training curriculum comprised of theoretical basics, practical hand-on exercises, and maintenance basics training for the machines used in garment factories (Single needle sewing machine, 4 and 5 threads overlock machines, bar tack machine, button machine and buttonhole machine).

The curriculum is developed by consulting various stakeholders of Myanmar garment industry, including Myanmar Garment Manufacturers Association, NGOs, Department of Labour. It is also complied to the National Skills Standards Authorities (NSSA) Qualification framework for Sewing Machine Operators. Thus, the trainees completed the course are able to sit NSSA qualification assessment to be nationally recognized.

15 LIFT is managed by the United Nations Office for Projects Services (UNOPS) and has received funding from 16 international donors. The current donors are the United Kingdom, the European Union, Switzerland, Australia, the United States of America, Canada, New Zealand, Ireland and Norway.

Aung Myin Hmu Training Center				
Sewing Machine Operator (SMO) Training Course Curriculum (40-day Training Course) **Duration Total - 40 Days, 180 hrs** **Theory 15 %** **Practical Exercise 80%** **Machine Maintenance 5%**				
Days	**Total**	**Subject**	**Duration per Day**	**Total Training Time**
Day 1 - 7	7 days	Single Needle Sewing Machine (SN) Basic Training	4.5 hrs / 270 mins	31.5 hrs /1890 mins
Day 8 - 11	4 days	SN 1	4.5 hrs / 270 mins	18 hrs /1080 mins
Day 12 - 15	4 days	SN 2	4.5 hrs / 270 mins	18 hrs /1080 mins
Day 16 - 19	4 days	SN 3	4.5 hrs / 270 mins	18 hrs /1080 mins
Day 20 - 23	4 days	4 threads overlock Machine Training	4.5 hrs / 270 mins	18 hrs /1080 mins
Day 24 - 27	4 days	5 threads overlock Machine Training	4.5 hrs / 270 mins	18 hrs /1080 mins
Day 28 - 31	4 days	Bar Tack Machine Training	4.5 hrs / 270 mins	18 hrs /1080 mins
Day 32 - 35	4 days	Button Machine Training	4.5 hrs / 270 mins	18 hrs /1080 mins
Day 36 - 39	4 days	Buttonhole Machine Training	4.5 hrs / 270 mins	18 hrs /1080 mins
Day 40	**1 day**	**Evaluation day**		

3.2.5. Instructional Delivery

The 40-days course is designed through15% theoretical lecture, 80% practical lessons and 5% of Machine Maintenance basics. It is conducted with timetable of 180 hours/course, 30 weeks/ year. The teaching and learning materials are developed by Trainers according to the approved curriculum.

3.2.6. Instructional Personnel

AMH Training center selects and recruits trainers from local professionals with at least 4 years' experience as a supervisor or line in-charge of a garment factory, and it is an advantage if they have training experience and participated in supervisory competency trainings. The trainers need to be familiar with the NSSA skill standards and competency requirements. Additionally, they are also expected to have effective communication skills, good teamwork and organizational development-oriented mindset.

3.2.7. Admission and Student Services

The potential trainees of AMH garment Training Center must be 18 years old with less than 6 months of experience in Garment factory. The training is free of charge. One training will run for 40 days during which technical knowledge is provided. When the course finishes, the project will connect trained workers to factories.

Each SMO Course trains twenty trainees per batch which is recruited and trained monthly since 2017.

3.2.8. Program Evaluation and Learner Assessment

The assessment is done on day-40 of the training center for Practical skills and Theoretical Knowledge. Also, the daily assessment by the trainers is included in the final assessment. If the trainee passed the assessment, they receive a certificate by AMH Training center. They will also have the opportunity to enter NSSA assessment for Sewing Machine Operators to be recognized at national level.

Assessment Methods

- Practical Work (80%)
- Examination (Theory) (20%)

3.3. Conclusion and Implications

Aung Myin Hmu's courses focus on technical knowledge intended for the workers to go into a worksite quickly. These courses are aimed not only at providing employment to those who are in search of jobs but also at fulfilling the requirement of skilled workers.

The project enabled over 5,000 Sewing Machine Operators, Supervisors, Trainers, Industrial Engineers, QCs and Merchandisers to receive high quality training from 2017 to 2021.

The training has significant impact for the workers. Those who have attended the trainings are able to communicate their skills and requirements more confidently. They are ready to enter employment as they are trained and practiced well compared to before the training. 97% of the trainees successfully applied and employed in a Garment Factory.[16]

Care Myanmar ended the project implementation in June 2021. However, the training center and the curriculum are handed over to Department of Labour, MOL and they will be operating the same courses for Myanmar garment workers. The Training courses are currently suspended due to pandemic and logistical arrangements, but the DoL is planning to re-open the courses in 2022.

16 Hnin Phyu Phyu Aye, Ms., Manager, AMH Training center (2020) , Powerpoint Presentation.http://dds.ait.ac.th/wp-content/uploads/sites/19/2019/07/Panel-2_Presenter-1_Hnin-Phyu-Phyu-Aye.pdf

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Aung Myin Hmu Garment Skill Training Center (2020) ,Trainer's note: SMO Training Curriculum (Excel File).

3.4.2. Information on Key contact persons (i.e., contact information on the key persons in the institution)

- Ms. Hnin Phyu Phyu Aye, Manager, AMH Training Center
- Department of Labour, Ministry of Labour, Immigration and Population

4. Summary and Implications

Analytical Framework IV (AF4 Summary):

Identifying and sharing best practices

of TVET in AMSs

Name of Country: Myanmar

Case	Sector	Name of Institution (With address)	Name of the Program	Other characteristics of the program
1	Hotel and Tourism	CVT Myanmar (Center for Vocational Training) No.27, Arnandar Paya Road, Thingangyun Yangon, Myanmar. Postal code: 11071 Phone: +95 (0)9 73166206 Email: info@cvtmyanmar.com	Hospitality Professional Course	- Certificate level course - Alumni of over 200 hospitality professionals - Recruitment: 20 to 30 trainee per batch - Fees – 600,000 MMK (Approximately 400 USD) for 2-Year program
2	Manufacturing	Government Technical Institute (Insein) East Ywama Quarter, Insein Township, Yangon, MYANMAR Phone: +95-9401084093 Email: gtiisn@dtve.org, inseingti@tvet.edu.mm, inseingtiadmin@tvet.edu.mm	Industrial Engineering Program	- Diploma level course - New program started in 2017-2018 Academic Year, in two GTI schools (Yangon and Mandalay cities) - Recruitment: 30 trainee per batch - Fees – nominal tuition fees of 6,000 MMK per semester (6 months) (Approximately 4 USD)
3	Manufacturing (Garment)	Aung Myin Hmu Garment Skill Training Center Pin Lon Hall, No.43 Quarter, Min Ye' Kyaw Swar Road, North Dagon Township Yangon, Myanmar, 11421 Phone: +95 9 44410 9911 Email: admin@aungmyinhmu.org	Sewing Machine Operator Course	- Certificate Level Course - The program started in 2017 by Care International Myanmar in cooperation with Local and International organizations, Government and Private sector stakeholders. - Recruitment: 20 trainees per batch - Fees: FOC

For Identifying and sharing best practices of TVET in Myanmar, following cases were chosen.

- Case 1 (Common case: Hotel and Tourism Sector)
  - CVT Myanmar: Hospitality Professional Course
- Case 2 (Issue case: Manufacturing Sector, Distant and online learning)
  - GTI (Insein): Industrial Engineering Course
- Case 3 (Issue Case: Manufacturing Sector, Vulnerable population – Internal Migrant Workers)
  - Aung Myin Hmu Garment Skill Training Center: Sewing Machine Operator Course

According to the analytical framework guidelines, we need to choose one common case and two issue cases. For the four issues mentioned in the guide, we have one program (Case 2) that is initializing to address Distant learning issue in their TVET program and for TVET for migrant workers, Aung Myin Hmu Training Center target at Internal Migrant women workers.

For elderly care, Myanmar has nursing institutes under Government ministry, providing elderly care training as one of their subjects. Technically, they can be regarded as TVET schools providing diploma courses, however, they are not recognized as TVET schools by DTVET of MOE yet. Apart from nursing institutes, Myanmar also has Nursing Universities providing nursing degree courses (higher education level). The nursing universities and nursing institutes are both managed by Ministry of Health. Due to current pandemic and political situations in Myanmar, the nursing schools are closed and the information regarding the course detail, curriculum and instructional delivery is not available to public.

Case 1

CVT Myanmar: Hospitality Professional Course

Category	Contents
Name of training industry/profession	CVT Myanmar (Center for Vocational Training)
Name of the programme	Hospitality Professional Course
Aim of the programme	To offer a high quality standard vocational model education inspired by the Swiss dual educational system
Main subjects	"Front Office & Housekeeping subject" And "Cuisine & F&B subject"
Main trainees (Features of trainees)	Youths from the hospitality field over 17 years of Age
Hours of training	Intensive Introduction Course IIC - 450 hrs. in Vocational school Apprenticeship Course (Term 1 & 2) – 288 hrs. in Vocational School, 1440 hrs. practical training in training company Apprenticeship Course (Term 3 & 4) – 384 hrs. in Vocational School, 1920 hrs. practical training in training company
Course duration	Two-year program
Training level (including an ISCED level)	Certificate Level (ISCED 3)
Features of providers (Public, private..)	Private (NGO)

Category	Contents
Representative providers and contact information	CVT Myanmar (Center for Vocational Training) No.27, Arnandar Paya Road, Thingangyun Yangon, Myanmar. Postal code: 11071 Phone: +95 (0)9 73166206 Email: info@cvtmyanmar.com

Center for Vocational Training (CVT) Myanmar is a non-profit Swiss Association founded and registered in Myanmar as an NGO in 2002, following the sample of Swiss and German "Dual Vocational Education" where practice and theory are combined.

Mission of CVT is to offer a high quality standard vocational model education inspired by the Swiss dual educational system. CVT contributes to significantly improve the vocational education in Myanmar by CVT/E4Y Programs, providing a bridge to reintegrate young people and enables them to start a professional career.

The Swiss Dual-training system curriculum of "Hospitality Professional Course" at CVT Myanmar has two parts. The first part is the 10-week Intensive Introduction Course (IIC), five days a week, of intensive training at school preparing for the apprenticeship program. IIC gives students the necessary knowledge and skills to join the main part, 21-month Apprenticeship Course (AC). The course enables the trainees to learn the trade and graduate either in "Food & Beverage Operation" or in "Front Office & Housekeeping Operation."

Furthermore, the course is designed to meet ASEAN and Myanmar skill standards with inputs from local entrepreneurs, business professionals, young people and students active in the sector. Additionally, the CVT Myanmar has a large network of partner companies which is a reliable source of labour market information and a strong customer base for recruiting trainees.

According to the TVET Law currently under development, some key aspects of the draft law are:

- Promote the involvement of the private sector in skills development
- Develop the TVET system in accordance with international standards
- Expanding TVET training programmes that respond to the needs of local industry, as well as future economic developments

The Swiss Dual-Training and Apprenticeship system employed by CVT Myanmar will strengthen the mentioned aspects of Myanmar TVET law since the training system involves the private employers (Training companies) as major part of the training of the employees. Through Swiss Dual-training and Apprenticeship model of vocational education training, CVT Myanmar is recognized as a good example of European vocational training system in Myanmar TVET community.

Case 2:

GTI (Insein) Industrial Engineering Course

Category	Contents
Name of training industry/profession	Government Technical Institute (Insein)
Name of the programme	Industrial Engineering Course
Aim of the programme	To produce technicians (within three years of graduation) who will be able to- • apply principles of engineering • use, maintain and draw design Pneumatic and Hydraulic Systems. • apply Auto CAD • use Industrial Motor Control • write CNC program • operate CNC • write PLC program • plan operational management
Main subjects	• Basic Engineering Subjects • Operational Management • Programmable Logic Controllers • Computer Numerical Control (CNC) • Industrial Automation
Main trainees (Features of trainees)	The applicant who successfully passed the matriculation exam with Mathematics, Physics and Chemistry subjects are allowed to apply to the program.
Hours of training	
Course duration	Three-year program
Training level (including an ISCED level)	Diploma Level (ISCED 5)
Features of providers (Public, private..)	Public
Representative providers and contact information	Mr. Myat Ko Director and Principal Government Technical Institute (Insein) East Ywama Quarter, Insein Township, Yangon, MYANMAR Phone: +95-9401084093 Email: gtiisn@dtve.org, inseingti@tvet.edu.mm, inseingtiadmin@tvet.edu.mm

Government Technical Institutes (GTIs) are formal TVET schools under the administration of Department of Technical and Vocational Education Training (DTVET), Ministry of Science and Technology and offer three-year technical and engineering diploma courses. With total of 33 GTI schools, the GTI Network of Myanmar is developed with aim to form a nation-wide network of TVET-trained professionals.

Among the GTIs, GTI(Insein) in Yangon city was chosen for this case. It is the first technical school opened in Myanmar (established in 1895 as Government School of Engineering by British government.). It is one of the only two GTIs (among 33) providing Industrial Engineering course, specifically targeting the manufacturing sector.

The GTI's mission is to provide the high quality TVET programs in accordance with the needs of the local labour market with a focus to train the students to become highly competent human resources essential for the socio-economic development of the country. This also enhance cooperation between institute and industries to best fulfil the industrial needs and promote the higher employability of the students.

The 3-year industrial engineering curriculum is based on the results of industrial data survey on skill demand and in line with DTVET's vocational vision and mission.

For Covid-19 pandemic situation, the GTI is developing e-learning methods for academic subjects by using Zoom application and setting Viber study groups. With support from UNEVOC, digital learning platform and infrastructure installation for GTI is in initiation stage. In practical sessions, social distancing measures are planned to be applied; for example, scheduling the timetable for class groups with not more than five trainees per session in workshops. Since March 2020, campuses of all public educational institutions including GTIs are closed until further notice due to Covid-19 situation and political changes in Myanmar.

Case 3:

Aung Myin Hmu Garment Skill Training Center: Sewing Machine Operator Course

Category	Contents
Name of training industry/profession	Aung Myin Hmu Garment Skill Training Center
Name of the programme	Sewing Machine Operator Course
Aim of the programme	Supporting women migrant workers in order to go into a proper and secure profession in Yangon
Main subjects	• Single Needle Sewing Machine (SN) Basic Training • 4 threads overlock Machine Training • 5 threads overlock Machine Training • Bar Tack Machine Training • Button Machine Training • Buttonhole Machine Training
Main trainees (Features of trainees)	Women migrant workers, over 18 years of age and with experience less than 6 months in Garment sector
Hours of training	175.5 hrs
Course duration	40-day program
Training level (including an ISCED level)	Certificate Level (ISCED 3)
Features of providers (Public, private..)	Private-Public Partnership (Care Myanmar (NGO) and MOL (Government Ministry))
Representative providers and contact information	Ms. Hnin Phyu Phyu Aung Manager Aung Myin Hmu Garment Skill Training Center Pin Lon Hall, No.43 Quarter, Min Ye' Kyaw Swar Road, North Dagon Township Yangon, Myanmar, 11421 Phone: +95 9 44410 9911 Email: admin@aungmyinhmu.org

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Aung Myin Hmu Project is offering livelihood programs and support services to women migrant workers in order to go into a proper and secure profession in Yangon with following missions.

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- To improve quality of employment for urban migrant
- women through technical and vocational skills
- To reduce migration risks and foster safe migration
- To improve workplace safety in factories with focus on prevention of sexual harassment

The project enabled over 5000 Sewing Machine Operators, Supervisors, Trainers, Industrial Engineers, QCs and Merchandisers to receive high quality training.

The training has significant impact for the workers. Those who have attended the trainings are able to communicate their skills and requirements more confidently. They are ready to enter employment as they are trained and practiced well compared to before the training. 97% of the trainees successfully applied and employed in a Garment Factory.[17]

Care Myanmar ended the project implementation in June 2021. However, the training center and the curriculum are handed over to Department of Labour, MOL and they will be operating the same courses for Myanmar garment workers. The Training courses are currently suspended due to pandemic and political situations, but the DoL is planning to re-open the courses in 2022

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Chapter VI. Policy Recommendations

1. Summary and Discussion

1.1. Summary & Discussion

Technical and vocational education and training (TVET) plays a critical role in the national economic and social growth. While there could be variation among countries in the best model of TVET for the country, there exist some salient points that are common to and critical in successful national TVET strategies.

Myanmar is one of the fastest growing economies in ASEAN, which has maintained its high economic growth rate, ranging between 6% and 9%, during the period of 2010-2019, up until right before the outbreak of COVID-19.

Myanmar also has abundant human resources with its population of 54 million in 2019. It has a quite young population with the proportion of those aged 0 to 14 reaching 25.9%, which is among the highest in ASEAN, and with the proportion of those aged 15~24 (the youth) reaching 18.1%. Meanwhile, Myanmar has an annual population growth rate of 0.6% (Average Population Growth of ASEAN is 1.6%), which is one of the lowest among AMSs. As in other AMSs, the population growth rate has continued to decrease during the last decade in Myanmar, which, in the long run, can cause ageing of the population, as well as ageing of the labor force.

Myanmar is a rapidly changing country, where the state is accelerating reforms in the key policy areas including human resource development (HRD). The proportion of those working in the agricultural sector is still quite high in Myanmar, which was 48.9% in 2019, while the share decreased by 4.3%P during the period 2011-2020. The fast growing sectors in Myanmar are construction and manufacturing, in particular the garment & textile industry and the food processing industry.

In globalizing world, Myanmar needs a skilled workforce to effectively deal with such issues as digitalization and Industrial Revolution 4.0. However, often the workforce is being brought in from overseasto fill the jobs in the global companies in Myanmar, which, if replaced with domestic workers, could raise the employment of domestic workers in skilled jobs.

In terms of the TVET governance, Department of TVET in Ministry of Science and Technology in Myanmar is the major governmental agency looking over TVET in Myanmar. However, other ministries such as the Ministry of Agriculture, Livestock & Irrigation(MOALI), the Ministry of Labor, Immigration & Population (MOLIP), and the Ministry of Social Welfare also have TVET institutions such as TVET colleges and training centers to train the workforce needed in their own fields.

There are 35 Government Technical High Schools (GTHS), and 25 Government Technical Institutes (GTI) under the Ministry of Science and Technology. Other ministries also have

formal and non-formal vocational institutions, where the graduates of courses can acquire diplomas or certificates.

Participation in TVET programs is relatively low in Myanmar. It accounts for about 0.7% of the total enrolment at all the high schools, which is the ISCED 3 level. There are only 35 GTHSs, which are vocational high schools, compared to the 585 private high schools under Ministry of Science and Technology in Myanmar. There is criticism that Myanmar's relatively low participation in TVET has to do with the fact that TVET governance in Myanmar is decentralized and TVET programs are undertaken in Ministries other than the Ministry of Science and Technology, which are considered non-formal TVET.

The description made in Chapter II and Chapter III of the report shows that the involvement of industries in the TVET process is still weak in Myanmar, while the government is planning to introduce the training levy system for the companies to boost-up vocational training and involvement of industries in TVET. The participation of industries in the process of developing the curriculum and operating the curriculum is still at the beginning stage in Myanmar.

The labor market information (LMI) is being collected in Myanmar to analyze the demand and supply of the labor market for the sectors. However, the analysis is not sufficient enough yet to be applied to predict the future demand for the sectors in the market.

The Department of TVET under Ministry of Science and Technology is the main actor that is engaged in designing the national curricular and developing the learning materials for the curricular for formal TVET institutions such as GTHSs and GTIs. Curricular for TVET institutions under other Ministries are developed and operated by other ministries.

TVET in Myanmar is curriculum-based. Curricular that are operated in vocational training centers are developed by respective training centers in accordance with National Skill Standard Authority (NSSA) guidelines

1.2. Summary of Stakeholders' Feedback

Feedbacks are collected from major stakeholders in TVET in Myanmar. The respondents range from those affiliated in the Ministry of Labour, Ministry of Industry, and Ministry of Hole and Tourism to those in the Myanmar Chamber of Commerce and Industry (UMFCCI) and in training organizations such as GTI and CVT.

Their feedbacks by and large converge regarding the directions toward which Myanmar's TVET system should evolve. So, we have included their major feedbacks in this section.

First, Myanmar's TVET system needs to be situated in tune with the current settings Myanmar is faced with. This is so because the national TVET system of Myanmar has to support the current economic development based upon the developmental stage of the country.

Second, diverse pathways of TVET need to be prepared in order to best serve the diverse learners in Myanmar. In particular, more training centers to promote lifelong learning are

needed in addition to the limited number of formal TVET institutions. To add a little comment to this view, governmental support to vocational training is always coupled with strong interest of the nation in TVET. Where the training centers are well developed, there are strong supports from the government in TVET.

Also, there is a need to reduce the gap between the TVET planning and its implementation in Myanmar. In order to accomplish this, establishing a long-term plan based upon exact analysis of information on diverse settings of TVET in Myanmar is needed rather than establishing a short-term plan based upon ad-hoc information collected. In addition, the quality of TVET institutions need to be improved to improve the quality of TVET.

It is important for the stakeholders participating in the process of TVET curriculum development, industries and TVET practitioners for instance, to cooperate closely. For this to be realized, incentives need to be provided to the employers for their participation in the TVET process.

Decentralization is also a common issue pointed out by multiple stakeholders. The line ministries involved in TVET need to come together to improve the quality of TVET.

Also, diversifying the fields of TVET programs is an issue pointed out by several stakeholders. Currently, the training programs in governmental TVET institutions are provided mainly in key sectors. Therefore, extending the fields of TVET programs that are provided in TVET institutions is needed.

Establishing the MNQF, which is currently under enactment, is important. By establishing the national qualifications system, which span and bring together multiple HRD-related sectors, the TVET system can work much better through co-ordination of sectors involved in TVET.

There is also need for increased attention and focus in TVET, not only at the governmental level but also at the level of all the country including the people. Low investment in TVET, which is an issue in Myanmar can be improved by increased awareness of the government and the people with regard to importance of TVET.

Additionally, analysis of the labor market information and TVET demands for the migrant workers is suggested since there are many migrant workers in Myanmar who go abroad for jobs.

In order to improve the responsiveness of TVET curriculum, the need for all the stakeholders to co-operate closely is suggested, where all the individual stakeholders perform their role right so that the combined output turns out successful.

Cases of best practices are found, stakeholders say, in places where there exists linkage between the TVET programs and industries. This seems to be true not only in Myanmar, but in cases of best practices in other AMSs.

Finally, need for close cooperation among the line ministries is suggested. In particular, the MNQF is said to be able to take the role of bringing together different industries involved in TVET by linking TVET qualifications existing across line ministries. Also, the need for providing more diverse fields of TVET program in formal TVET is suggested.

Additionally, there are several national policies and guidelines which can affect the TVET policy development and its implementation. Some examples are the policy for the revitalization of the state-owned industries and the policy for private sector development. These policies can affect TVET. Nevertheless, there could be also other national policies that can affect TVET, and these other national policies need also to be considered in setting up TVET policy, in order to avoid a possible conflict of interest among diverse policies.

Also, not only most demanded sectors such as hotel, tourism, and garment sectors, but also more diverse industry sectors need to be included in the scope when developing the policies. For long-term development of the industrial sector, TVET policies shall put less emphasis on state-owned production operations and more focus on managing and providing guidelines for TVET training and services. In this way, the TVET sector will achieve more effective utilization of national human resources.

2. Policy Recommendations

With its young population and abundant human resources, Myanmar is a country with a high growth potential. During 2010~2019, it has been growing faster than any other ASEAN Member States. Also, the industrial structure is in rapid transition in Myanmar, which requires rapid adjustment in the HRD system.

Myanmar is in need of skilled labor force more than ever that can contribute to further growth of the economy and the industries. The description in the previous chapters shows more rapidly growing sectors in Myanmar. At the same time, Myanmar still has a quite high proportion of workers employed in the agricultural sector. There are also fast growing sectors within manufacturing in Myanmar, such as the food processing industry and the garment and apparel industry, for which more investment in human resource development could be needed.

Based upon the descriptions in the report and observations made in the summary sections and 1st section of this chapter, we have the following recommendations that could be applied for TVET policymaking.

First, the LMI on demands and supply needs to be analyzed and applied in setting up plans for workforce development both in terms of quantity and quality. Analysis of the labor market demand for the industries and the occupations is critical in setting up plans for technical and vocational education & training for the country. Therefore, the information on the demand and supply in the labor market needs to be analyzed in a systematic fashion and applied in the process of setting up plans for developing the workforce and in the process of designing the curriculum. Enactment of the TVET Law, which is currently under the review of the Union Attorney General Office (UAGO), will help facilitate this process. The new TVET law, if approved, will make a coordinated implementation of TVET policies possible.

Second, coordination among the various ministries that are involved in workforce development is needed. In Myanmar, the major governing ministry of TVET is Ministry of Science and

Technology. However, other ministries are also autonomously involved in the workforce development, by operating education & training institutions under themselves. While multiple ministries can get involved in work-force development at the same time, a hub governing TVET is needed, under which all the ministries and functions related to TVET can gather together and get coordinated. This also has to do with the national plan of workforce development in TVET. By setting up a national workforce development plan based upon the coordinated needs for workforce development in various ministries and sectors, the state can have more efficient and effective TVET system.

Third, the state needs to encourage involvement of industries in the TVET process. Industry involvement in the process of TVET curriculum design and implementation is very important to make TVET more effective. However, sometimes it's not so easy to get the industries involved in the process. In particular, the small and medium-sized companies do not have sufficient resources to invest in future work-force development. Therefore, it is important to provide incentives to get the industries involved in TVET process. The laws and regulations reinforcing industry involvement can be important.[18] In fact, the Myanmar government is planning to introduce the training levy for the companies.

For this plan to be initiated, it is important to persuade the industries regarding the importance of human resources at the firm level, as well as at the national level. At the same time, providing incentives for industries to get involved in TVET could be also important.

Last but not least, awareness of the significance of TVET needs to be enhanced at the national level and at the individual level. TVET has played a very important role in economic development of countries around the world. Still, the TVET participation in Myanmar is quite low, compared to other AMSs and also to other countries around the world. TVET is critical in providing the skills demanded in the industries at the middle level as well as at the high level. Therefore, the state needs to invest more in TVET in financial terms. Also priority needs to be given to setting up comprehensive national strategy for skilled workforce. Also, at the individual level, the advantage of TVET in equipping the individual for jobs demanded in the labor market, along with its payback to the investment in a form of high payment and promising job, needs to be shared among all the people. Public awareness campaigns are required to educate all citizens for understanding the benefits of TVET program as a first-class education path that meets students' interests and employment opportunities

The state policymaking plays an important role in a well-functioning TVET system. It is encouraged that the importance of TVET policies and their implementation be shared by policy makers and stakeholders. It is important that the state has strong will and autonomous plan established for workforce development, based upon labor market informatio

18 The proposed Employment and Skill Development Law(ESDL) request that employers from industry and service sectors pay a minimum of 0.5% and a maximum of 2% of total wages or salaries of workers. The law, if enacted, will help participation of industries in TVET.

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