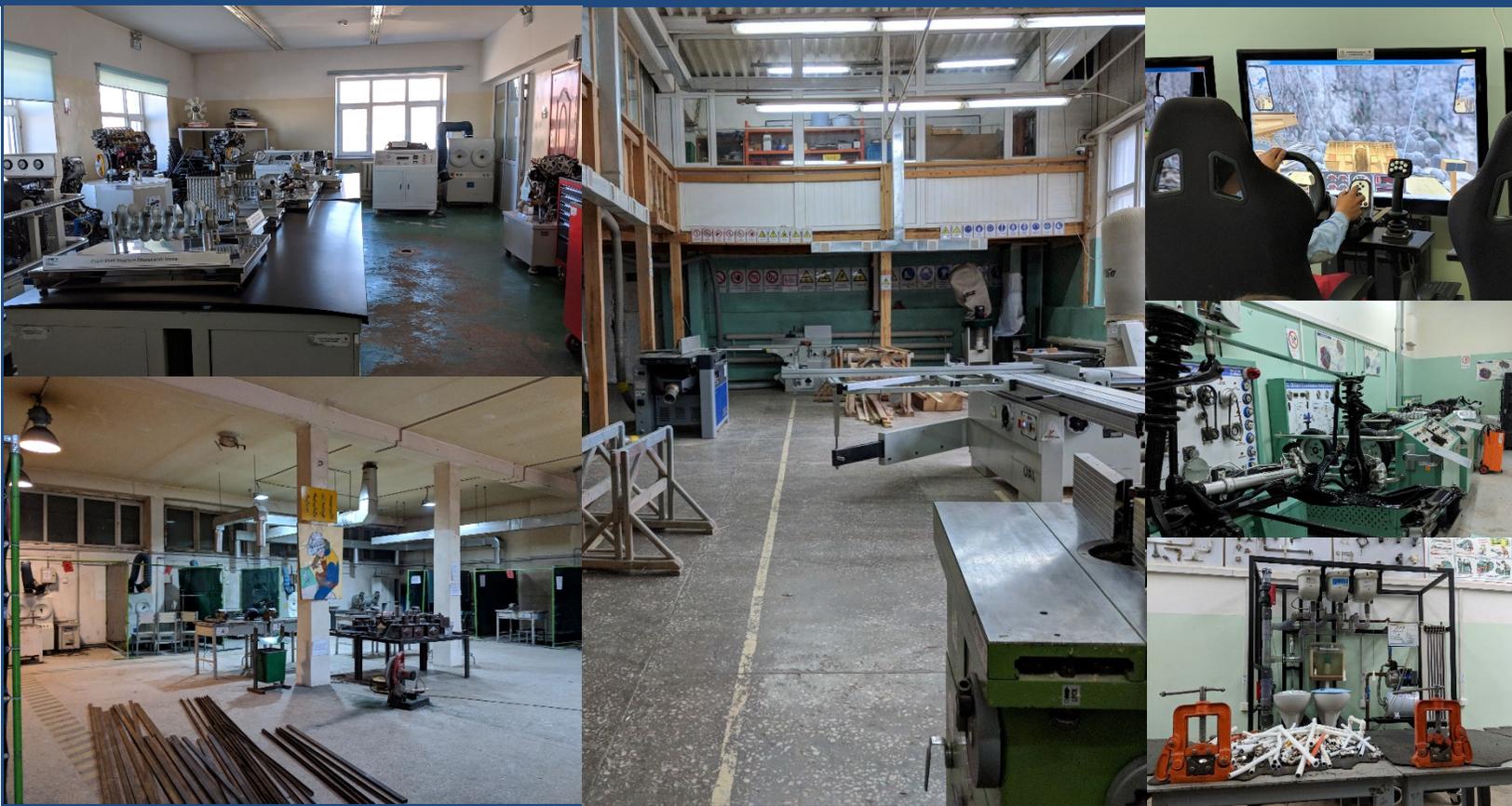


FINAL EVALUATION REPORT

Evaluation of the Mongolia Vocational Education Project

MCC | July 2019



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ADVANCING DEVELOPMENT EFFECTIVENESS

IMPACT EVALUATION | STRATEGY, PERFORMANCE & LEARNING

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ACRONYMS

ADB	Asian Development Bank
ATVET	Agency for Technical and Vocational Education and Training
CBA	Cost-Benefit Analysis
CBT	Competency-Based Training
CGS	Career Guidance System
CoE	Center of Excellence
CP	Condition Precedent
DO	Direct Observation
EDR	Evaluation Design Report
EMC	Evaluation Management Committee
ERR	Economic Rate of Return
ET	Evaluation Team
EQ	Evaluation Question
EU	European Union
FER	Final Evaluation Report
GIZ	German Society for International Cooperation
GoM	Government of Mongolia
IE	Impact Evaluation
ILO	International Labor Organization
IPA	Innovations for Poverty Action
IRB	Institutional Review Board
IT	Information Technology
ITI	Industrial Training Institutions
ITT	Indicator Tracking Table
LECO	Labor Exchange Central Office
LMI	Labor Market Information
LMIS	Labor Market Information System
MCA	Millennium Challenge Account
MCA-M	Millennium Challenge Account - Mongolia
MoE	Ministry of Education
MCC	Millennium Challenge Corporation
MLSP	Ministry of Labor and Social Protection
MoL	Ministry of Labor
M&E	Monitoring and Evaluation
NCS	National Competency Standard
NCVET	National Council for Vocational Education and Training

NGO	Non-Governmental Organization
NLRC	National Learning Resource Center
NSO	National Statistics Office
NTQ	National Technical Qualification
NTQA	National Technical Qualification Act
NQAF	National Quality Assurance Framework
NQF	National Qualifications Framework
NVQF	National Vocational Qualifications Framework
PI	Principal Investigator
PIU	Project Implementation Unit
PE	Performance Evaluation
RMC	Regional Methodological Center
PPP	Public-Private Partnership
SDC	Swiss Development Corporation
SI	Social Impact
TVET	Technical Vocational Education and Training
VEP	Vocational Education Project
VET	Vocational and Educational Training
VTPC	Vocational Training and Production Center

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EXECUTIVE SUMMARY

1. Overview of Compact

Background

The Millennium Challenge Corporation (MCC) and the Government of Mongolia (GoM) implemented a five-year Compact from 2008 to 2013 to address Mongolia's binding constraints to economic growth. The Compact, with a value of US\$284.9 million, consisted of five projects across the property rights, health, vocational education, energy and environment, and transportation sectors. The original Compact was amended in 2010 to remove the originally planned rail project, and the funds were reallocated to other projects, including the Vocational Education Project (VEP).

Vocational Education Project

This report shares the results of an ex-post performance evaluation focused on the VEP. The VEP consisted of five key activities:

1. Reforms to Technical Vocational Education and Training (TVET) Policy and Operational Framework Activity
2. Creation of Skills Standards and Competencies System Activity
3. Competency-Based Training (CBT) System Activity
4. Career Guidance and Labor Market Information Systems (LMIS) Development Activity
5. Improvement of Learning Environments Activity (*added through the Compact reallocation*)

Under these activities, numerous sub-activities were implemented, aimed at four overall outcomes:

- Improving the quality of TVET education
- Improving the relevance of TVET education to employer needs
- Increasing employment
- Increasing incomes

2. Evaluation Overview

MCC places high importance on demonstrating results from its investments and conducts an independent evaluation of every Compact project (MCC, 2017b). MCC contracted with Innovations for Poverty Action (IPA) to conduct an impact evaluation (IE) of the VEP. However, IPA determined that only the equipment upgrades components of *Activity 5. Improvement of Learning Environments* were suitable for an IE.

To capture the results of the remaining VEP sub-activities, MCC awarded Social Impact, Inc. (SI) a contract to conduct a performance evaluation (PE) of the VEP. This Final Evaluation Report (FER) summarizes key details of project implementation, the evaluation design, and shares the evaluation findings. This evaluation was prepared independently by a team led by Dr. Kari Nelson on behalf of Social Impact. The evaluation team had no conflicts of interest. The results are the independent assessment of the authors and do not necessarily represent the views of MCC or the United States government.

Evaluation Questions and Methodology

In consultation with the Evaluation Management Committee (EMC), the Evaluation Team (ET) finalized a list of 30 evaluation questions (EQs) to be assessed during the evaluation, focusing on the project's four key outcomes: improving TVET quality and relevance, and increasing graduate employment and income.

To answer the 30 evaluation questions, the ET designed a mixed-methods evaluation that combined interviews and direct observations with secondary data from the GoM and from IPA's IE. Table 1 summarizes the evaluation questions and the methods used.

Table 1: Evaluation Question Summary

VEP Outcome	# of Evaluation Questions	Qualitative Data Collection Methods	Quantitative Data Collection Methods
VEP Implementation	2	- Interviews - Document Review	
Objective 1: Increased Employment	4	- Interviews	- Secondary data
Objective 2: Increased Income	3	- Interviews	- Secondary data
Outcome 1: Improved TVET System Quality	12	- Interviews - Observation	- Secondary data
Outcome 2: Increased Relevance of the TVET System	7	- Interviews - Observation	
Other Outcomes (TVET enrollment)	2	- Interviews	- Secondary data

3. Implementation Summary

The VEP comprised numerous sub-activities. Table 2 outlines the five primary activities, their intended purpose, and key sub-activities that were implemented under each (SI's Evaluation Design Report provides a list of all known sub-activities; only key sub-activities are noted below).

Table 2: VEP Activities

VEP Activity	Purpose (as described in Compact Amendment)	Key Sub-Activities
1. Reforms to Technical, Vocational Education, and Training (TVET) Policy and Operational Framework Activity	Strengthen the policy and operational framework to create an efficient governance and standard-setting mechanism and to secure private sector participation for TVET.	<ul style="list-style-type: none"> • Implement competitive public-private partnerships (PPPs) grants • Support regulatory reforms • Establish National Council for Vocational Education and Training (NCVET) • Build capacity of TVET administrators and educators • Conduct public awareness campaign supporting TVET
2. Creation of Skills Standards and Competencies System Activity	Identify, install, and operationalize occupational and skills standards and a competency-based training (CBT) system, including standardization of competencies.	<ul style="list-style-type: none"> • Develop competency-based curriculum and training materials • Create the Vocational Education Training and Research Facilitation Center • Establish the National Vocational Qualifications Framework (NVQF) and competency standards • Establish National Learning Resource Center (NLRC)

3. Competency-Based Training (CBT) System Activity	Implement a new CBT system, including competency-based assessment in TVET schools, colleges, and training centers.	<ul style="list-style-type: none"> • Train instructors in priority trades, English technical language, and other capacity-building areas • Certify instructors in international standards of excellence • Develop on-the-job training pilot program
4. Career Guidance and Labor Market Information Systems (LMIS) Development Activity	Assist in the installation of a LMIS including the procurement of information technology (IT) equipment and related software. Also provide career guidance and employment information services.	<ul style="list-style-type: none"> • Conduct LMIS Labor Market study • Develop the LMIS system • Develop career guidance system and conduct training of trainers for career guidance counselors
5. Improvement of Learning Environments Activity	Selectively upgrade and modernize up to 15 centers, including three that will be upgraded and strengthened to Center of Excellence (CoE) status.	<ul style="list-style-type: none"> • Construct or rehabilitate 17 TVET schools, including three CoEs • Provide improved equipment for TVET programs

4. Findings

The sections below summarize the key findings for each of the 30 evaluation questions, divided into the six key groupings by outcome: implementation effectiveness and effects on TVET quality, TVET relevance, enrollment, employment, and income. Each section includes an overview followed by a more detailed table outlining summary conclusions to each evaluation question.

Implementation Effectiveness

The Compact Amendment in 2010 was the most significant change noted during implementation, nearly doubling the budget and adding *Activity 5. Improvement of Learning Environments*. This change was broadly well received by stakeholders. Despite strengths with strong staff and good collaboration with TVET stakeholders, several internal and external challenges were noted during implementation. Major challenges included political change within the GoM as well as difficulties managing an overly ambitious and complex project design.

Table 3: Implementation - Key Findings

Evaluation Question	Key Findings
1. To what extent was the project implemented as originally designed?	Aside from the Compact Amendment, the VEP was largely implemented as designed, albeit with enough flexibility to allow for small modifications in activities intended to improve effectiveness.
2. What worked well in project implementation? What were the key challenges?	What worked well: <ul style="list-style-type: none"> • Strong staff • Stakeholder collaboration • Good internal project coordination among the Project Implementation Unit (PIU), MCC, and the Millennium Challenge Account (MCA) • Project adaptability Challenges: <ul style="list-style-type: none"> • Political challenges/influence • Complexity/ambitiousness of the project

Evaluation Question	Key Findings
	<ul style="list-style-type: none"> • Poor contextualization • Insufficient staff experience in TVET • Lack of coordination between activities

Effects on TVET Quality

Near unanimous agreement among stakeholders suggests that the quality of TVET training has improved substantially since before the VEP, and the VEP is commonly seen as a strong driver of that change. Nonetheless, not all the quality-focused sub-activities were sustainable; the National Learning Resource Center (NLRC) and Centers of Excellence (CoEs), for example, were not successful in establishing a process to extend learning and collaboration across TVET schools. But other activities such as establishing CBT curriculums and providing equipment and improved facilities were widely praised (despite some challenges).

Table 4: TVET Quality - Key Findings

Evaluation Question	Key Findings
3. To what extent have the TVET school and CoE facilities been maintained since the end of the Compact? Why/why not?	The facilities have generally been well maintained. However, funding for maintenance was an issue, resulting in school staff and students performing most of the maintenance tasks.
4. To what extent has the training equipment provided by the Compact been used and maintained since the end of the Compact? Why/why not?	Where the equipment is still operational, it appears well used and maintained to the extent possible. Key challenges include: <ul style="list-style-type: none"> • Maintenance issues (licenses and replacement parts) • Outdated equipment • Insufficient access/equipment is still not enough • Insufficient training • Poor quality since delivery
5. What is the status of the National Vocational Qualification Framework (NVQF) and associated competency standards? To what extent are they utilized by TVET programs and students/graduates? Are the certifications valued?	As of the end of the Compact, the NVQF had been drafted and approved but not yet implemented. Other donors continued the work until the NVQF was formally implemented. However, many stakeholders (including teachers, students, and private sector respondents) were unaware or only partially aware of the NVQF, indicating that more work remains to ensure full adoption and utility. The certificates are often valued as documentation of program completion, but they are not yet fully valued as a representation of graduates' skills. In some cases, other standards and certifications are valued more highly for this latter purpose.
6. How do the changes in the national qualification framework affect the overall functioning and operations of the TVET system?	The NVQF has improved the sector by making it more standardized and comparable around the country.
7. To what extent have the competency-based training (CBT) curriculums created by the project been fully adopted and implemented in TVET schools across the country?	Based on the initial work of the VEP, and the work of other donors, CBTs are becoming commonplace. Though more work is needed to ensure CBTs are used by all schools and to further unify curriculums across the sector, the sector now has a "common language" as well as a transition to more practical training and increased private sector involvement.

<p>8. What factors have enabled and/or constrained the effective adoption and implementation of the CBT curriculums?</p>	<p>Key enablers:</p> <ul style="list-style-type: none"> • Seeing the CBT benefits on student learning • Training (instructors, administrators, others) • Involvement of instructors in curriculum development • Government requirements to use CBT • Provision of equipment to enable practical training <p>Key challenges:</p> <ul style="list-style-type: none"> • Insufficient resources (particularly for funding equipment/facilities) • Individual resistance to change • Excessive paperwork • Lack of a single curriculum • Additional workload due to the frequency of updates • Insufficient private sector engagement
<p>9. To what extent has the TVET sector updated materials or developed new CBT materials post-Compact?</p>	<p>The CBT curricula have often been updated post-Compact, with respondents believing that the updates have:</p> <ul style="list-style-type: none"> • Improved quality • New trades added
<p>10. To what extent are the NLRC and Regional Methodological Centers (RMCs) utilized by TVET centers and instructors/staff?</p>	<p>The NLRC is no longer functioning due to its unclear funding and legal status and after the new administration arrived in 2012 and political priorities changed.</p> <p>The RMCs are all still functioning and fulfilling some roles within the TVET system, though not to the extent originally envisioned in the VEP. They face several challenges related to how they are structured.</p>
<p>11. To what extent are the CoEs taking on the role and function of a center of excellence? Why/why not?</p>	<p>Though the CoEs are still in operation, they are not fulfilling the intended role in sharing and expanding high-quality TVET training practices.</p>
<p>12. To what extent do students/graduates and teachers perceive the curriculum and training materials are of high quality?</p>	<p>Overall, instructors, students, and graduates are more positive than members of the private sector regarding TVET quality.</p>
<p>13. To what extent has the quality of teaching improved since the start of the project?</p>	<p>Nearly all stakeholders agree that the quality of teaching and training provided by the TVET schools has increased significantly since the inception of the Compact. Key drivers of this improvement include:</p> <ul style="list-style-type: none"> • Facility and equipment improvements • VEP • Addition of more practical training
<p>14. To what extent have other TVET centers used materials or trainings developed through the VEP to improve teaching quality?</p>	<p>Almost all stakeholders were well aware of the VEP interventions. As noted above, one of the top drivers of the change in quality was facility and equipment improvement (mostly from the VEP) as well as the VEP project in general, including the trainings it provided.</p>

Effects on TVET Relevance

As with TVET quality, stakeholders share strong agreement that engagement between the private sector and the TVET sector has improved substantially since before the VEP, with schools and private sector partners interacting through multiple forms. Today, however, much of that engagement occurs at the local rather than the national level. After the political transition of 2012, the Agency for Technical and Vocational Education and Training (ATVET) was dissolved and the NCVET lost substantial authority to carry out its mandate.

Table 5: TVET Relevance - Key Findings

Evaluation Question	Key Findings
15. What were the effects of the Agency for Technical and Vocational Education and Training (ATVET) committee on private sector engagement in TVET? What happened after the ATVET was dissolved, and what impact did that have on private sector engagement?	<p>The creation of the NCVET and ATVET brought private sector representatives into a high-level decision-making body for TVET and generated a lot of interest and energy for TVET development early in the Compact. However, after the political transition in 2012, the ATVET was reduced to a department in another ministry and was no longer able to support the NCVET as effectively as it had previously. Private sector engagement since has been more active at the local level, with limited activity at the national level.</p>
16. Are the Labor Market Information System (LMIS) and Career Guidance System (CGS) websites still functioning? Why/why not?	<p>The LMIS and CGS stopped operating shortly after the Compact, due to the political transition that reorganized ownership of the systems and undermined their operations.</p>
17. To what extent has the LMIS and CGS website content been updated since the Compact ended?	<p>Though the LMIS and CGS websites were closed, other donors recognized the need for career guidance support and have worked to develop a new online system.</p>
18. To what extent has the private sector been able to effectively engage with and influence the TVET sector as a result of the project?	<p>Most respondents agree that private sector engagement has increased over time since the VEP, with TVET schools and private sector partners increasing the depth and breadth of their partnership into various types of interaction at the local level. However, many respondents also report that collaboration was almost nonexistent before the MCA project, so despite the increases since the start of the Compact, its current level is still far below where it needs to be. Policies put in place to support more partnership have not come to fruition, deterring partnership with larger private sector entities.</p>
19. To what extent have the CBT curriculums been updated since the end of the project? Why/why not?	<p>Schools are actively seeking private sector input into curriculum updates. The primary reasons for updating CBTs include updating to reflect input from employers and new technology needs. Private sector partners are observing increases in skills, but not attributing those increases to changes in the curriculum.</p>
20. What are the key factors enabling and/or restricting private sector engagement in TVET?	<p>A shift in understanding of the importance of partnership—for both TVET schools and potential business partners—has been the primary enabler for increased partnerships. Major challenges include a limited ability to contribute from smaller, local companies and a lack of engagement by larger businesses.</p>
21. To what extent have TVET schools been engaged in PPPs since the end of the Compact? Why/why not?	<p>Instances of direct funding from private sector partners to schools, or joint projects, are extremely limited. Schools believe they are effectively engaging in PPPs due to the assortment of other types of interaction that are not funding-related. Though these other types of engagement are active locally, they do not move the sector toward MCC's vision of TVET schools reaching a broader funding base. The sector faces major barriers to private sector investment in schools due to unclear policies around TVET financing.</p>
22. To what extent do private sector actors feel that TVET education teaches the skills they need as employers? To what extent has this changed since the Compact was implemented?	<p>Employers believe TVET quality has improved as well as TVET's ability to match the skills needed by employers, particularly on the technical side. A greater focus on practical training that accompanies CBT is a contributor to this. Poor soft skills, on the other hand, continues to be a major gap in TVET training and a challenge for potential employers.</p>

Effects on Enrollment and Graduation

Total enrollment in TVET schools has declined since a peak in 2012–2013. Despite the decline in total enrollees, the total number of graduates each year has continued to rise year-over-year and is currently up 38 percent over pre-Compact figures.

Table 6: Enrollment - Key Findings

Evaluation Question	Key Findings
23. To what extent, if at all, has enrollment in TVET schools increased?	<p>Enrollments in TVET schools have been on the decline. However, the total number of graduates from TVET schools remained above pre-Compact levels. Significant influencing factors include the provision (or halting) of TVET student subsidies and the general negative perception of the TVET sector as a poor alternative to university education.</p> <p>Despite the decline in enrollment, the number of TVET graduates has increased over time.</p>

Effects on Employment

Long-term effects of the VEP on graduate employment are unclear. While interviewees believe employment rates are rising and the documented employment rates at the schools visited are increasing, national-level data suggest that the employment rate of graduates is declining.

Table 7: Employment - Key Findings

Evaluation Question	Key Findings
24. To what extent, if at all, has the employment rate of TVET graduates changed since the program began?	<p>Conflicting data exist on employment. While interviews generally report increased employment rates for graduates, the national-level statistics on employment rates for TVET graduates (see Figure 21) don't support this and show a notable decrease in the employment rate. Unclear data combined with the many external factors influencing employment rates means it is not possible based on current data to determine the extent to which the VEP may have contributed to changes in employment for graduates.</p>
25. What have been the biggest drivers of the change (if any) in the employability of students and graduates?	<p>Employment has varied over time, affected by the factors described below. Each factor could affect employability positively or negatively, depending on the circumstances.</p> <p>Key factors:</p> <ul style="list-style-type: none"> • Skills of graduates (top response by the private sector) • General economic situation • Quality of the school • The number of students continuing to higher education • Practical training • Family influence • Age of graduates • School partnerships • Gender differences
26. To what extent, if at all, have students used guidance counselors and/or the online guidance system to make career decisions? How useful have these resources been for their ability to obtain employment? Why/why not?	<p>Guidance services exist, to a limited extent, in TVET schools compared with before the Compact when guidance services were limited to non-existent. However, other donors have dedicated more efforts and resources to this than the VEP. Given the limited nature of the services provided, the usefulness was also limited. More students found employment through other teachers, internships, or through family connections.</p>

27. To what extent, if at all, has the employment rate in Mongolia changed?	No change observed in the national employment rate between 2008 and 2018, but this is unsurprising given the myriad factors affecting national-level statistics.
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Effects on Income

The effect of the VEP on incomes is unclear. Interviewees largely report that incomes are increasing, but it is difficult to disentangle the effect of the VEP from the overall economic situation and wage policies.

Evaluation Question	Key Findings
28. To what extent have the incomes of TVET graduates increased since the project was implemented?	The extent to which the VEP contributed to changes in graduate incomes is unclear. Although interviewees report that graduate incomes are increasing, numerous intervening variables make income growth difficult to confirm.
29. What have been the biggest drivers of the change (if any) in the incomes earned by TVET students and graduates?	Incomes have overall gone up, affected by a variety of factors- each of which could either push incomes up or down, depending on the circumstances. Key factors: <ul style="list-style-type: none"> • Skills of graduates • Overall economic situation • Trades selected • Wage policies • Gender differences
30. To what extent have the incomes of the unemployed and underemployed changed since the project began?	GNI per capita has been declining since 2013, though it is still higher than pre-Compact. GNI adjusted for purchasing power parity, however, has increased. Incomes specific to the formerly unemployed and underemployed, however, cannot be measured using available national statistics.

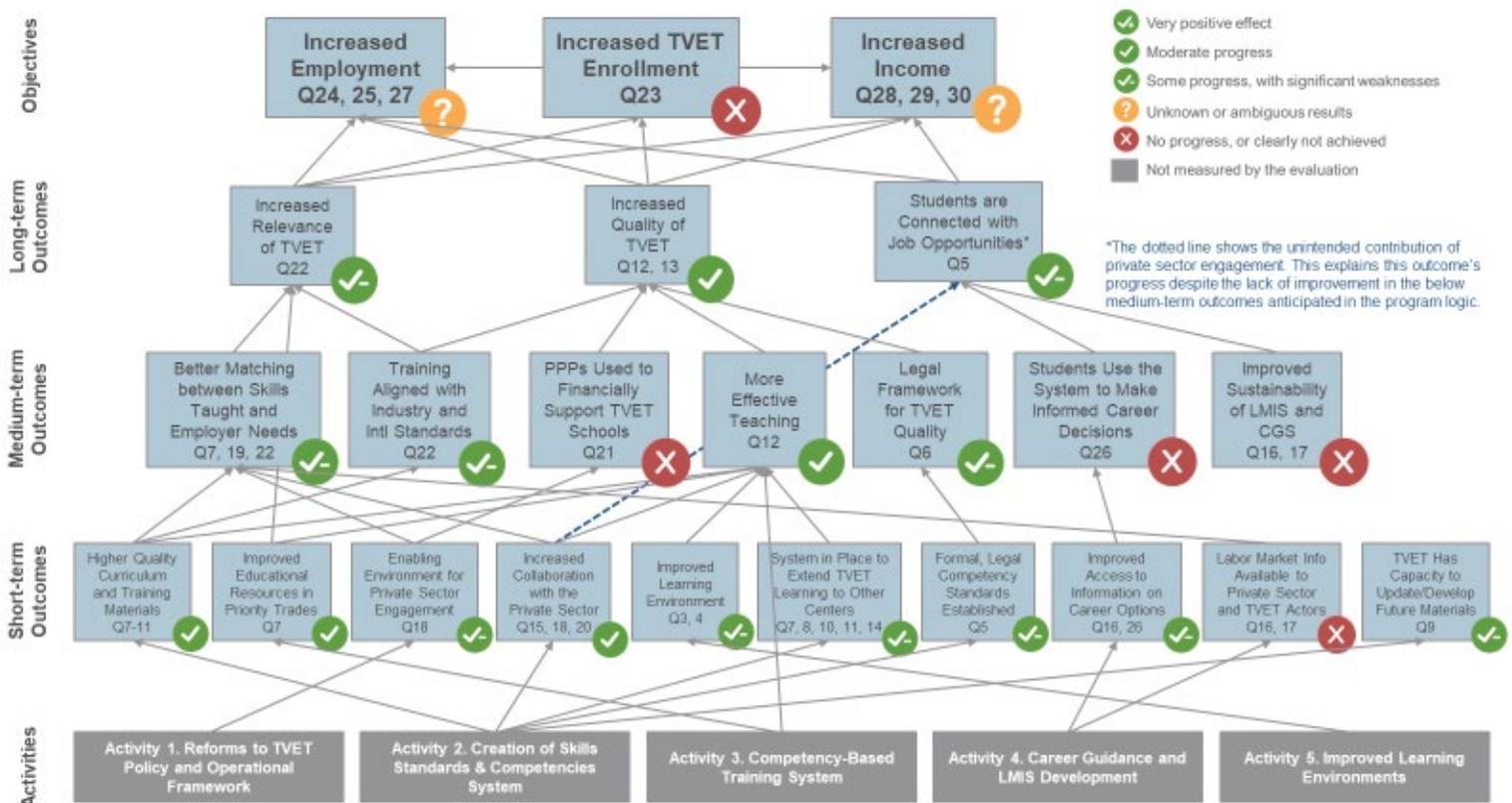
5. Conclusion

The VEP was an ambitious project – both in the scope and number of activities, as well as in the intended outcomes. The VEP aimed to transform Mongolia’s TVET sector from an underperforming, centralized, misaligned, and undesirable alternative to academic education into a sought-after provider of high-quality technical and vocational education. As described in the Compact, the VEP’s goal was to increase employment and income among underemployed and unemployed Mongolians. Outcomes in support of this goal included improving the quality and relevancy of the TVET system, with indicators measuring financial sustainability (through the amount of non-governmental funding for TVET) and enrollment rates along with employment rates and incomes of TVET graduates.

The VEP was not 100 percent successful in this ambitious undertaking. The project’s effect on employment and income for TVET graduates is unclear, and TVET enrollment did not reach MCC’s expectations for an increased number of students. One influencing factor was a series of political transitions, beginning with the election of 2012, that undercut work done by the VEP to build capacity among TVET stakeholders and to build momentum toward change. Other challenges in implementation, in global economic factors, and in the sheer complexity of the project also affected results or made it difficult to trace the impact of the VEP. Several components failed entirely, either during or shortly after the end of the Compact, such as the NLRC and the LMIS and CGS websites. Others were only partially successful in achieving their intended goals, such as the move toward private sector collaboration (and increased private sector investment), implementation of PPPs, and empowerment of the Regional Methodological Centers (RMCs) and Centers of Excellence (CoEs) to take a strong leadership role.

Nonetheless, despite the challenges, the VEP’s collective activities made a strong push toward its key long-term outcomes of improved TVET quality and relevance. The VEP also provided a new base for TVET development. It supported policy reforms that started the TVET sector on a path to accessing a greater resource pool and becoming a major contributor to Mongolia’s skilled labor market. It introduced new concepts and created a common language for a modern TVET system based on private sector engagement and CBT. And it helped put in place the building blocks that other donors have since used to continue advancing and improving the sector. All these areas continue to experience challenges, and some have fallen far short of MCC’s envisioned result. However, nationwide, the VEP served as a turning point for the overall sector, which continues to move toward a more modern, skilled workforce. This sequence of at least partial gains toward most of the VEP’s intended short-, medium-, and long-term outcomes can be seen below in Figure 1.

Figure 1. Program Logic with Results Assessment (*measured outcomes only*)



6. Next Steps

Upon final clearance by MCC, this final report will be shared publicly on MCC’s Evaluation Catalogue. In addition, dissemination presentations will be offered at MCC’s offices in Washington, DC and for local stakeholders in Ulaanbaatar, Mongolia. The Executive Summary will be translated into Mongolian to disseminate key findings within Mongolia. No further data collection efforts or analyses are anticipated.

1 INTRODUCTION

The Millennium Challenge Corporation (MCC) and the Government of Mongolia (GoM) implemented a five-year Compact from 2008 to 2013 to address Mongolia's binding constraints to economic growth. The Compact, with a value of US\$284.9 million, consisted of five projects across the property rights, health, vocational education, energy and environment, and transportation sectors. The original Compact was amended in 2010 to remove the originally planned rail project because of a lack of sufficient cooperation from the Government of the Russian Federation. The funds were reallocated to the other portions of the portfolio, including the Vocational Education Project (VEP).

MCC places high importance on demonstrating results from its investments and conducts an independent evaluation of every Compact project (MCC, 2017b). MCC contracted with Innovations for Poverty Action (IPA) to conduct an impact evaluation (IE) of the VEP, including administering surveys of school administrators and Technical Vocational Education and Training (TVET) graduates. Impact evaluation was intended to be the primary type of evaluation, according to the initial Monitoring and Evaluation (M&E) Plan and the Investment Memo. However, only the equipment upgrades components of the *Activity 5. Improvement of Learning Environments* were determined to be suitable for a rigorous IE.

MCC's approach to evaluation evolved over time; in 2013, the Closeout M&E Report introduced performance evaluation for the first time as an option for supplemental evaluation. To adequately capture the results of the remaining VEP sub-activities that were not covered in the impact evaluation, MCC awarded Social Impact, Inc. (SI) with a contract to conduct a performance evaluation (PE) of the VEP. This Final Evaluation Report (FER) summarizes the findings of the VEP performance evaluation.

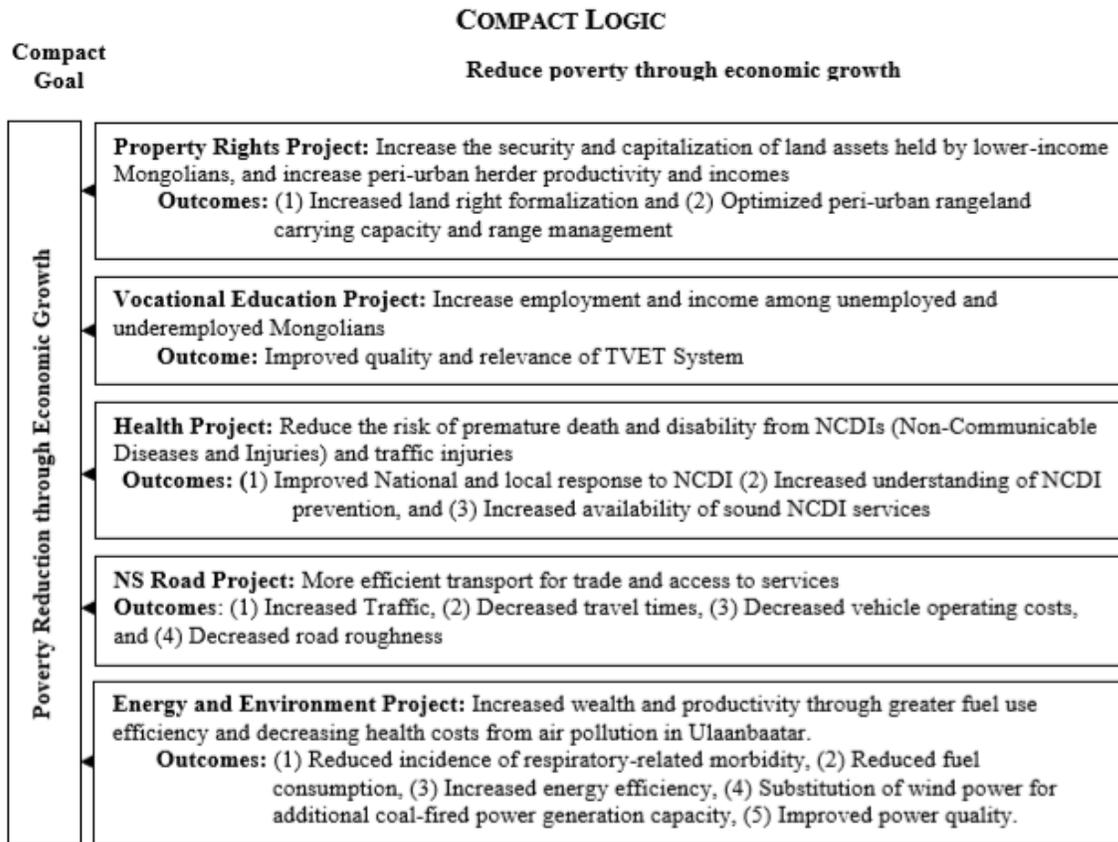
2 OVERVIEW OF COMPACT & INTERVENTIONS

In this section, the evaluation team (ET) provides an overview of the Mongolia VEP program logic, the interventions, and beneficiaries targeted by the project.

2.1 Compact Program Logic

Between 2008 and 2013, MCC and the GoM implemented a five-year Compact to address Mongolia's binding constraints to economic growth. The Compact, with a value of US\$284.9 million, consisted of five projects across the property rights, health, vocational education, energy and environment, and transportation sectors, as shown in Figure 2.

Figure 2: Program Logic, Closeout Monitoring and Evaluation (M&E) Plan (MCC, 2013)



2.1.1 Project-Level Logic

As shown in Figure 2, the official VEP program logic is simple and concise and did not change throughout Compact implementation. The logic includes two objectives and two outcomes:

1. Objective: Increased employment for the unemployed and underemployed
2. Objective: Increased income for the unemployed and underemployed
3. Outcome: Improved quality of the TVET system
4. Outcome: Improved relevance of the TVET system

2.1.2 Activity-Level Logic

The official VEP program logic included only high-level, long-term outcomes, its simplicity belying what became a large and complex project with five primary activities and hundreds of sub-activities. The roles of specific VEP components such as aligning training to employer needs, increasing public-private partnerships (PPPs), the competency-based training (CBT) curricula, the Labor Market Information System (LMIS), and facility and equipment upgrades, are not made explicitly clear.

For this reason, as a part of the evaluation design process, the ET developed a more complete Program Logic that includes both the five main activities and sub-activities. This detailed Program Logic, created for this evaluation, was approved by the Evaluation Management Committee (EMC) and is in Annex 1.

2.2 Link to the ERR and Beneficiary Analysis

MCC’s cost-benefit analysis (CBA) and Economic Rate of Return (ERR) calculations rely on several assumptions about project outcomes:

1. The time required to fully implement the new CBT training curriculums
2. The increase in the total number of TVET students
3. The gain in wages for TVET graduates
4. The increase in probability that graduates will be employed after graduation

Gains in wages and employment are covered in the official program logic as intended outcomes. Assumptions about the time required to implement the new curricula and the increase in number of TVET students are captured in the expanded Program Logic elaborated by the ET (see Annex 1).

TVET graduates were the intended program beneficiaries and were expected to accrue benefits related to wages and employment “over the next 20 years.” Approximately 170,000 beneficiaries were anticipated. Compact documentation and program materials reiterate the project’s goal to “improve the wage and employment prospects of approximately 170,000 TVET graduates” (MCC, 2009). Under the amended Compact, beneficiaries were expected to see wages and employment rates rise by 5-10 percent, resulting in an estimated ERR of 10.3 percent (MCC, 2013).

2.3 Program Participants

TVET graduates as beneficiaries constitute a sub-group of the broader VEP participant pool. Participants include all individuals and entities who were involved in implementing the program and its sub-activities. Table 8 shows the likely participants for each activity within the VEP. These participants, who did not take TVET courses, were not expected to see income or livelihood benefits from the project.

Table 8. VEP Participants by Activity

VEP Activity	Participants (outside the Millennium Challenge Account, Project Implementation Units, and implementing organizations)
1. Reforms to TVET Policy and Operational Framework Activity	<ul style="list-style-type: none"> • The Government of Mongolia (including relevant ministries) • The National Council for Vocational Education and Training (NCVET), Agency for Technical and Vocational Education and Training (ATVET), and any successor agencies • Private sector companies and associations • TVET schools and administrators/staff • Centers of Excellence and their Australian counterpart institutions (Twinning Program) • Competitive grant recipients • PPP partners
2. Creation of Skills Standards and Competencies System Activity	<ul style="list-style-type: none"> • The Government of Mongolia (including relevant ministries) • Employers and private sector representatives • CBT pilot TVET schools and administrators/staff • Centers of Excellence • Regional Methodological Centers • TVET schools receiving book donations • National Learning Resource Center

3. Competency-Based Training System Activity	<ul style="list-style-type: none"> • The Government of Mongolia (including relevant ministries) • TVET schools and administrators/staff trained in the CBT curriculum • Centers of Excellence • Regional Methodological Centers • National Learning Resource Center • TVET instructors receiving English training • Instructors receiving training in heavy machine servicing
4. Career Guidance and Labor Market Information Systems (LMIS) Development Activity	<ul style="list-style-type: none"> • The Government of Mongolia (including relevant ministries) • The Labor Exchange Central Office • The National Data Center • TVET schools and administrators/staff • TVET students • Private sector companies and associations
5. Improvement of Learning Environments Activity	<ul style="list-style-type: none"> • The Government of Mongolia (including relevant ministries) • TVET schools receiving upgrades • Centers of Excellence • National Learning Resource Center • Regional Methodological Centers

2.4 Geographic Coverage

The VEP conducted activities at 58 of Mongolia’s 72 TVET schools, including hard investments in equipment or infrastructure in 28 schools (Millennium Challenge Account-Mongolia, 2013). The 28 CBT packages were shared directly with 22 TVET schools. The MCC Compact activities focused primarily on the Vocational Training and Production Centers (VTPCs), both public and private; however, some college and university sub-branches and secondary vocational schools also participated. Other activities included training and capacity building of TVET instructors and school administrators, which also supported specific schools. These facilities have a presence in every region, with specific activities focused on strengthening the Regional Methodological Centers (RMCs).

Additional activities outside of schools – such as establishing a National Learning Resource Center (NLRC), developing a multi-media campaign on TVET issues, and supporting legal and policy changes in the Mongolian TVET system – expanded impacts countrywide.

2.5 Implementation Summary

The VEP consisted of five core activities, as outlined in Table 9 below, with a budget of close to US\$48 million (approximately 16 percent of the total Compact value).¹

¹ The sub-activities listed in Table 9 are demonstrative examples taken from the full list of activities that was compiled by SI and approved by MCC. The Evaluation Design Report provides the full list of identified sub-activities.

Table 9: Summary of VEP Activities

VEP Activity	Purpose (as described in Compact Amendment)	Key Sub-Activities
1. Reforms to Technical, Vocational Education, and Training (TVET) Policy and Operational Framework Activity	Strengthen the policy and operational framework to create an efficient governance and standard-setting mechanism and to secure private sector participation for TVET.	<ul style="list-style-type: none"> • Implement competitive PPP grants • Support regulatory reforms • Establish National Council for Vocational Education and Training (NCVET) • Build capacity of TVET administrators and educators • Conduct public awareness campaign supporting TVET
2. Creation of Skills Standards and Competencies System Activity	Identify, install, and operationalize occupational and skills standards and a CBT system, including standardization of competencies.	<ul style="list-style-type: none"> • Develop competency-based curriculum and training materials • Create the Vocational Education Training and Research Facilitation Center • Establish the National Vocational Qualifications Framework (NVQF) and competency standards • Establish National Learning Resource Center (NLRC)
3. Competency-Based Training (CBT) System Activity	Implement a new competency-based training system including competency-based assessment in TVET schools, colleges, and training centers.	<ul style="list-style-type: none"> • Train TVET instructors in priority trades, English technical language, and other capacity-building areas • Certify instructors in international standards of excellence • Develop “on-the-job training” pilot program
4. Career Guidance and Labor Market Information Systems (LMIS) Development Activity	Assist in the installation of a LMIS including the procurement of IT equipment and related software. Also provide career guidance and employment information services.	<ul style="list-style-type: none"> • Conduct LMIS Labor Market study • Develop the LMIS system • Develop career guidance system (CGS) and conduct training of trainers for career guidance counselors
5. Improvement of Learning Environments Activity	Selectively upgrade and modernize up to 15 centers, including three that will be upgraded and strengthened to Center of Excellence status.	<ul style="list-style-type: none"> • Construct or rehabilitate 17 TVET schools, including three Centers of Excellence (CoEs) • Provide improved equipment for TVET programs

2.5.1 Implementers

After the Compact was amended in 2010, the addition of *Activity 5. Improved Learning Environments* with its many equipment and facility upgrades increased the number of contractors involved in the VEP. This included small suppliers and local construction firms that were responsible for supplying only small amounts of goods or services. Given the large number of contractors responsible for small portions of the project, the below list focuses on the largest, main contractors.

Table 10: VEP Main Contractors

VEP Activity	Contractor Name	Contract Description	Contract Duration
1. Reforms to Technical, Vocational Education, and Training (TVET) Policy and Operational Framework Activity	Institute of Finance and Economics	Education and training contractor for management capacity building plan	08/2011–03/2013
	Arigumedia LLC, Star TV, Mongolia	Public outreach program on increasing public awareness of the social value and impact of TVET	12/2010 – 12/2012
	Holmesglen – Australia; Central Queensland Institute of TAFE	Twinning program for three TVETs	11/2011 – 11/2012
	Mongolian Employer’s Federation, Mongolia	Introduction of activity-based costing technique to support levy system in TVET-Mongolia	04/2012 – 10/2012
2. Creation of Skills Standards and Competencies System Activity	ABU Consult Berlin GbmH	National Vocational Qualifications Framework, competency-based curriculum and national learning resources development in support of a demand-driven TVET system	3/2010 – 9/2012
	Summit Computer Technology LLC, Mongolia; MCS Electronics, Mongolia	Instructional media equipment for 10 TVET schools	12/2011 – 07/2012
	Interactive LLC, Mongolia	National Learning Resource Center (NLRC) online platform development for the TVET sector of Mongolia	12/2011 – 06/2012
	Mongolian-Korean Technical College, Mongolia	Establishment of NLRC, Mongolia-Korean Technical College	03/2012 – 08/2012
3. Competency-Based Training (CBT) System Activity	Wagner Asia Equipment LLC, Mongolia	Training of six trainers in heavy machinery service technician	04/2011 – 09/2012
	Gopa Consultants, Germany	Implementation of a competency-based training system in Mongolia: professional development training for administrators and instructors	11/2011 – 07/2013
5. Improvement of Learning Environments Activity	Egel LLC, Culuttin Bagsh LLC, Baldans LLC, Bridge Construction LLC, Ochirtaab LLC	Design and oversight consultant for new construction and rehabilitation of TVET schools and Centers of Excellence	12/2010 – 12/2012
	Ogawa Seiki, Ltd, Japan; ED Corporation, Korea; Nomin Holding LLC; Interscience LLC	Supply of core technology equipment for 5 TVET schools	12/2011 – 05/2012
	Nomin Holding LLC, Interscience LLC, Medimpex LLC, KPM LLC, ED Corporation (Korea), MCS Electronics LLC, Anun LLC	Supply of training equipment and furniture for 17 TVET schools	06/2011 – 07/2012
	Tsagaansumber LLC, Agayin LLC, Uran Okhid LLC, Burkhan Hyasaat LLC, Sinchi Oil LLC, DC LLC, Bersum LLC, Ekbis LLC, Naran Ord LLC, PGS LLC, Delger Construction LLC, Gurvan Khajinga Trade LLC, Sindicat LLC, B Soft LLC, Dugant Bar LLC, NAB LLC	Civil works contracts for 12 workshop rehabilitations and 5 workshop constructions	07/2011 – 07/2012
	MUST, Mongolia	Multimedia technical instructional content development	10/2011 – 10/2012

2.5.2 Projected and Actual Costs

The budget for the Amended Compact included five core activities with a total budget of approximately US\$47.5 million. This represented an increase of US\$22 million from the original Compact, accompanying the addition of *Activity 5. Improvement of Learning Environments* and the expansion of other activities.

Actual costs for the project exceeded US\$49 million, due to additional allocation of funding near the end of the Compact. Costs per activity varied significantly from the budgeted amounts, as shown by Table 11. Both *Activity 1. TVET National Framework* and *Activity 5. Improvement of Learning Costs* exceeded their budgeted costs by several million dollars, while *Activity 2. Creation of Skills Standards and Competencies* used only 33 percent of its budget.

Table 11: Comparison of Budget vs. Actual Costs, by Activity

VEP Activity	Original Budget (2007)	Amended Budget (2009)	Actual Costs	% of Budgeted
1. TVET National Framework	\$500,000	\$1,000,000	\$5,559,434.16	556%
2. Creation of Skills Standards and Competencies	\$8,200,000	\$9,680,000	\$3,197,482.20	33%
3. Competency-Based Training System Implementation	\$14,300,000	\$14,300,000	\$13,837,759.65	97%
4. Career Guidance System	\$850,000	\$1,850,000	\$1,883,535.53	102%
5. Improvement of Learning Environments		\$18,200,000	\$21,795,970.84	120%
Project Administrative Costs	\$1,662,856	\$2,562,856	\$3,048,554.71	119%
TOTAL	\$25,512,856	\$47,592,856	\$49,322,737.09	104%

2.5.3 Selection of Participants

As outlined above, participants included a wide range of individuals and entities connected to the TVET sector, including instructors, administrators, government officials, and private companies. These groups are not expected to experience an increase in income and thus are not beneficiaries.

The available documents do not provide significant information on how particular participants were selected.² Government entities can reasonably be inferred to have been selected based on their involvement and relevance to the TVET sector. However, for other individuals and entities, including how schools were selected to receive equipment or the criteria for establishing Centers of Excellence (CoEs) or the National Learning Resource Center (NLRC), no information is known.

2.5.4 Monitoring Targets and Monitoring Plan

The Closeout Monitoring and Evaluation (M&E) Plan in 2013 included 32 monitoring indicators. Of the 32 final indicators, the final Indicator Tracking Table (ITT) reports achieving 27. Two indicators progressed more than 75 percent targets, while the remaining four showed either minimal progress or a negative change—including higher-level results of income and employment (see Table 12).

² One exception is how students were randomly admitted into trades that received equipment upgrades as part of the impact evaluation by Innovations for Poverty Action (IPA). IPA's evaluation design provides detailed information on how these students were selected.

Table 12. Monitoring Indicator Targets and Actuals

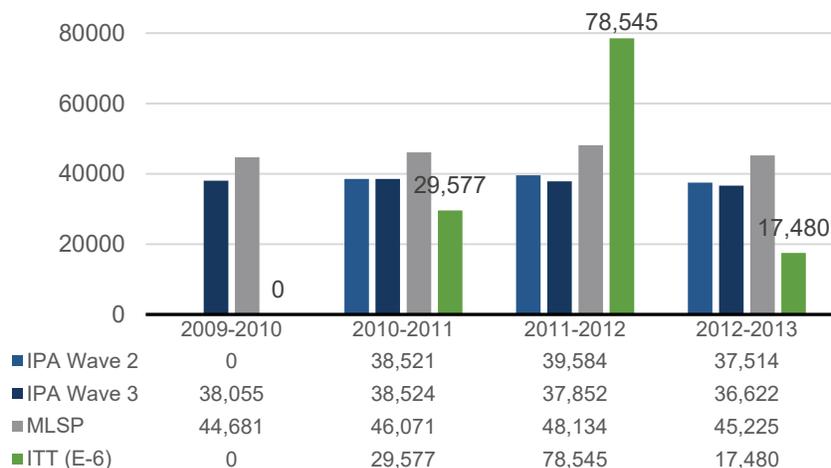
Indicator	Baseline	Compact Target	Actual (Final ITT)	% Complete (Final ITT)*
Overall TVET Indicators				
Annual salary	\$1,237.00	\$1,336.00	\$887.82	-353%
Rate of employment	71%	75%	57%	-350%
Graduates from MCC-supported educational facilities	0	15,800	11,967	76%
Students participating in MCC-supported education activities	0	50,000	17,480	35%
ICT & multimedia labs installed and upgraded	0	40	54	135%
LMIS online web-based service established	-	3/16/2012	3/16/2012	Complete
Policy reform and competency-based training (CBT) system implementation				
% of PPP funding contributed to TVET schools	1%	16%	2%	7%
Administrative staff trained on CBT system implementation and operation	0	600	609	102%
New skills standards of priority trades developed and approved	0	28	28	100%
New and modern curricula developed	0	28	28	100%
Legal, financial, and policy reforms adopted	0	5	5	100%
PPP agreements established	0	39	901	2310%
MOU with MECS and MLSW signed	-	12/1/2008	12/19/2008	Complete
National Council for Vocational Education and Training (NCVET) established	-	3/31/2009	8/6/2009	Complete
TVET legislation passed	-	2/1/2009	2/13/2009	Complete
TOR for creating new curricula and establishing media support center	-	5/31/2010	3/1/2010	Complete
Professional development and retraining				
Certified vocational education teachers	0	300	972	324%
Instructors trained	0	1500	1370	91%
School rehabilitation activity				
Educational facilities constructed or rehabilitated	0	18	18	100%
Practical training sites upgraded	0	90	106	118%
Value of signed educational facility construction, rehabilitation, and equipping contracts	\$0.00	\$19,000,000	\$28,179,328	148%
\$ of construction, rehabilitation, and/or equipping contracts disbursed	\$0.00	\$15,200,000	\$27,490,984	181%
% disbursed of facility construction, rehabilitation, and equipping contracts	0%	80%	98%	122%
Inspection/assessment of equipment and infrastructure improvement needs	-	7/1/2010	7/31/2010	Complete
Labor market information system				
Career guidance counselors trained	0	132	145	110%
Labor market assessment completed	-	3/1/2010	9/14/2010	Complete
Public outreach activities				
Change in proportion of families by income: high Income	14.7%	16.0%	20.0%	408%
Change in proportion of families by income: mid Income	30.5%	32.0%	33.4%	193%
Change in proportion of families by income: low Income	38.2%	40.0%	42.6%	244%
Public awareness of the TVET system	75.0%	77.0%	88.6%	680%
Knowledge of local TVET provider	78.0%	80.0%	95.3%	865%
TVET quality assessment	51.0%	53.0%	33.9%	-855%
Expression of interest in TVET	40.3%	42.0%	46.5%	365%
Public outreach plan developed	-	4/30/2010	4/30/2010	Complete

*The % Complete values are calculated by the following: (Actual – Baseline) / (Target – Baseline).

Based on the ITT monitoring data, the project met most of its short and medium-term indicators but fell far short in meeting its longer-term indicators of increasing enrollment in TVET schools (and the associated MCC indicator of “Students participating in MCC-supported education activities”), increasing the number of graduates from MCC-supported educational facilities, perceptions of TVET quality, and increasing income and employment. However, some of these reported results are contrary to this evaluation’s findings below. Several factors intervene to potentially explain the divergent results:

1. **The period of exposure for longer-term outcomes.** The ITT data were reported as of the end of the Compact in 2013. However, given that Compact activities continued up until the very end of the Compact, longer-term outcomes that relied on multiple levels of short- and medium-outcomes to be realized may not have had sufficient time to be realized by the end of the Compact. This evaluation was conducted five years post-Compact, thus providing additional time for longer-term outcomes to be realized.
2. **Data sources.** The sources of the ITT data are different from the data relied on for this evaluation. The ITT data for these indicators reportedly come from Waves 2 (2012-2013) and 3 (2013-2014) of IPA’s IE survey or from Millennium Challenge Account-Mongolia’s (MCA-M) public perception survey. This evaluation relies more heavily on interview data and administrative data from the Ministry of Labor and Social Protection (MLSP). In addition to potential differences in collection methodology, the IPA data include only the 50 schools that were understood to have benefited from the VEP whereas the MLSP data include all TVET schools. Regarding the public perception survey, the ET does not have access to the data or reports underlying these ITT statistics.
3. **Data quality.** Particularly for the enrollment and graduate figures, a side-by-side comparison of the different data sources suggests there may be data quality concerns with the ITT. For instance, the enrollment data from each source are shown below in Figure 3. While the IPA data and the MLSP data roughly align given that IPA collected data on only a subset of schools, the ITT data show vastly different results from the other data sources. Additionally, according to the M&E Plan, the E-6 indicator was supposed to be cumulative, which is not reflected in the data.

Figure 3. TVET Enrollment Data Differences Across Data Sources



3 LITERATURE REVIEW

3.1 Existing Evidence

TVET, also known as career and technical education, is used throughout the world to provide vocational skills at the secondary and post-secondary levels. This literature review focuses on literature addressing each of the project activities in the Compact as amended: (1) reforms to the TVET policy and operational framework activity, (2) creation of skills standards and competencies system activity, (3) competency-based training system activity, (4) CGS activity, and (5) improved learning environments. In addition, the literature review also covers studies addressing the impact of vocational education on employment and earnings. The literature review covers implementation and policy pieces rather than solely impact studies.

Section 3.1.1 covers studies of reforms to policies and the operational framework activity. This is followed in Section 3.1.2 by a review of studies on the creation of the skills, standards, and competencies system activity, which also includes studies of the CBT activity.³ Section 3.1.3 reviews the career guidance activity, Section 3.1.4 reviews literature on the impact of TVET on employment and earnings, and Section 3.1.5 reviews literature improved learning environments. Section 3.2 summarizes gaps in the evidence.

3.1.1 Reforms to TVET Policies and Operational Framework Activity

Although TVET programs in many countries—both developed and developing—were established and regulated by central governments, there has been increasing recognition that the content of and occupations trained for through TVET courses should be driven by local needs to fulfill the skills requirements of jobs available. The World Bank’s World Development Report (2018b) concludes that TVET serves as a feasible path to employment only when “programs are designed and implemented in partnership with employers.” This conclusion is based on the idea that the public sector cannot effectively and efficiently provide TVET without local stakeholder participation, as well as cooperation between schools and businesses at the institutional level (Munbodh et al. 1999). Additionally, the spread of democratic values such as accountability and civic engagement has encouraged TVET policymaking that involves societal participation. The studies reviewed in this section cover a range of policies and operational framework activities. The ET could not identify any competency-focused studies.

Studies of several TVET reform agendas and efforts have emphasized the failure of central planning to fully address the needs of developing economies. The World Bank’s (2008) analysis of India’s vocational education and training system recognized the country’s awareness that its “reliance on central planning is largely irrelevant to the needs of the labor market.” For its TVET reforms to be successful, the government of India needs to play a “key role in policy development, standards setting, financing and monitoring, and evaluation,” while also permitting the close involvement of the private sector at all levels. The World Bank’s report noted that the current vocational education system in India has resulted in fairly poor labor market outcomes for graduates, and employers struggle to find employees with the requisite skill sets (Dar, 2008). To make the existing TVET system relevant to the needs of India’s market, the 2008 report calls for reforms including ensuring private sector participation in management of institutions

³ Both the creation of skills standards and competencies system and competency-based training system activity focused on the CBT curricula. Thus, relevant literature for these activities is discussed together.

and curriculum design and moving from a system financed exclusively by the government to one financed increasingly by both the private sector and students paying user fees. Mongolia's TVET system has also faced low private sector involvement in providing training and education to prepare students with relevant skillsets. However, this failure stems from the lack of a proper quality assurance system within the nation's broader education policies, resulting in many low-quality, privately-operated vocational institutions (World Bank, 2007).

Just as in India and Mongolia, in Xinjiang, China, TVET policy reforms are also the focus of government efforts to resolve the mismatch between the labor supply and demand for a higher-skilled regional workforce. Mongolia's TVET system has not evolved with the country's increasingly industrialized economy, resulting in a skills gap between the labor market and industry demands for workers with greater analytical and technical skills (World Bank, 2007). Conversely, Xiao and Song's (2013) report on the TVET system revealed that although Xinjiang's system has expanded rapidly, it has yet to meet the demand for a more skilled workforce. For example, the region's developing coal industry faces a shortage of professional technicians and managers, when compared with the national average in the larger coal mines. This is the main constraint for further developing the coal industry. The report attributes such failure to the Xinjiang TVET program's weaknesses in involving stakeholders such as employers in the policymaking and implementation processes (Xiao & Song, 2013). In the short run, the authors state that Xinjiang's TVET programs should be expanded through strengthened coordination and governance improved and more efficient public school management, and more engaged and more closely supervised private institutes. The report also identifies the importance of improving the quality of Xinjiang's TVET system in the medium to long term by enhancing governance through stakeholder collaboration, quality assurance, monitoring and evaluation, and improved connections with quality basic education. Improvements in the TVET system's quality can be accomplished by improving the quality assurance mechanism and setting up a systematic and comprehensive monitoring and evaluation system (Xiao & Song, 2013).

Many countries with TVET programs have identified a need for reforms to better match the labor supply to demand. However, findings as to the specific reforms necessary to achieve this goal vary by country, and there is limited research available that investigates the outcomes of such reforms. For example, while studies on India's TVET operational policies and operational framework activity reveal a need for private sector financing of TVET, research on Xinjiang's TVET identifies the need for quality assurance and evaluation systems to ensure that program objectives are being met.

In summary, the ET identified a limited number of studies that address TVET planning and operational framework activity. The reviewed studies stress the importance of having the government work closely with the private sector to ensure that TVET programs are responsive to employer needs.

3.1.2 Creation of Skills Standards and Competencies

In addition to addressing the value of stakeholder involvement in the TVET policy process and structural framework, some countries are attempting to improve the relevance and quality of their TVET systems through skills standards or competencies to ensure that vocational training produces graduates with the skills desired by employers within the country's labor market. A system of skills standards in a country is often referred to as a national qualifications framework (NQF), although the United States has used the

term skills standards, and current programs refer to industry-recognized credentials. There are countries where the skills standards system developed is considered successful, including developing countries like Sri Lanka and developed countries like Scotland. Conversely, many countries have chosen not to develop skills standards or have struggled to establish them. In a recent review of TVET in seven countries (a mix of seven developing and developed countries), the World Bank (2015) recorded that while five of the countries studied have or are developing NQF frameworks, the remaining two countries (China and Brazil) have no plans to develop an NQF (Macdonald & Dunbar, 2015).

The countries that have developed strong qualifications frameworks have found that developing a good system requires many years and strong cooperation between stakeholders within both the private sector and the educational system (Macdonald & Dunbar, 2015). The Asian Development Bank (ADB) (2011) noted that the development of the NQF in Sri Lanka required eight years—two to develop the standards and six to complete system development. Upon deciding that NQF was to be implemented as a government policy, the report finds that political commitment to expanding TVET through a qualifications system, promotion of the NQF among private and public sector organizations, integration of the qualifications into the government’s recruitment system, and the demand for system-qualified employees from industries supported the development of a sustainable and successful qualifications system (ADB, 2011). Today, the majority of TVET institutions in Sri Lanka offer qualifications according to the nation’s NQF system, lessening the complexity of selecting a competent employee.

Nonetheless, the process of developing such a system will likely vary by country, depending on each country’s education and social systems, labor market demand, and other factors, and will require a great deal of cooperation among actors in both the public and private sectors. Unlike Sri Lanka, Korea’s National Technical Qualification (NTQ) system has been criticized for its inflexibility in meeting the country’s industrial demand (Cho, 2016). The country enacted the National Technical Qualification Act (NTQA) in 1973 to consolidate its qualifications system under the NTQ management system. However, according to Cho, the failure of the NTQ system “stems from the government-led NTQ system, which failed to adopt the market driven approach.” The government introduced its National Competency Standards (NCSs) in 2013, which are developed by industry experts and are expected to lead to a genuine industry-led NTQ (Cho, 2016).

Although skills standards are not necessary for the proper functioning of a country’s TVET system, when countries invest the time and resources to develop such a system, it can be helpful in ensuring that the training provided meets employer needs and will increase the employability of the participants. Brewer and Comyn (2015), in a report prepared for the International Labor Organization (ILO), note that integrating “core skills” into TVET systems contributed to the employability of graduates. Core skills in this context are defined as skills such as abilities to learn and adapt to change; to read, write, and compute competently; and to communicate effectively. Arthur-Mensah and Alagaraja (2013) concluded that due to Ghana’s changing labor market, students of the country’s TVET system require more than just technical skills to be successful and employable, and therefore students must be required to obtain other generic “core skills”—such as literacy and numeracy—to enhance their marketability.

The World Bank cites findings from an ILO report (Allais, 2011), noting that NQFs are not “magic bullets as instruments of reform.” The countries that are successful in implementing qualifications standards have developed the standards by considering institutional conditions, rather than developed as a

substitute for institutions or a way of reforming institutions. Hart and Rogojinaru (2007) note that Romania is developing a NQF in conjunction with a National Quality Assurance Framework (NQAF) to ensure that the education provided through its vocational and educational training (VET) system is of high quality.

Much of the literature discussing a skills standards framework for TVET systems has consisted of relatively informal evaluations, discussing the strengths and weaknesses of individual systems' frameworks (Cho, 2016; ADB, 2011). The countries deemed to be successful in implementing skills standards are largely those that rely on input from industry, as opposed to being comprehensively developed by the public sector. Furthermore, skills standards frameworks that emphasize competency in core skills required by the country's labor market, and that are tailored to the conditions of the country's educational system are more likely to be effective.

In summary, the development of skills standards and competency systems is characterized by a great deal of diversity in approaches and success. While many countries have adopted skills standards or qualifications frameworks, some countries have been successful without such systems. Among countries that have adopted such systems, some have been successful while others have not. The literature suggests that approaches to developing successful skills standards systems are likely to vary among countries, successful implementation of a skills standards system may require many years, and input from industry is essential to developing a good system.

3.1.3 Career Guidance Activity

In both developing and developed economies, both employers and job seekers require information on labor supply and demand for labor markets to operate efficiently. Labor market information (LMI) and career guidance are particularly necessary for informing TVET systems and the students they serve of the skills and education needed. LMI includes information on the prospective job openings and expected salary levels for various occupations along with the knowledge, skills, and abilities required for these jobs. Conversely, career guidance in the form of counseling and assessment helps current and prospective workers determine which jobs interest them and what education and training is needed in these fields.

A RAND Corporation (2015) report on improvements to the Mongolian labor market noted how the country has already engaged in many reforms to its TVET system and how LMI—including regular surveys of employer needs—could help sustain the progress of the nation's TVET system. Although many individuals who graduate from TVET programs in Mongolia do well in the labor market in terms of salaries relative to traditional secondary school graduates, there is still evidence of skill mismatch (Shatz et al. 2015). Further assessment of market needs could boost the success of other reforms such as the creation of apprenticeship programs and improvements to curricula (Shatz et al. 2015).

UNESCO-UNEVOC's 2013 report on TVET discussed LMI's capacity to overcome youth unemployment and information asymmetry problems in countries' labor markets when TVET institutions provide incentives to businesses to share their information. The Philippines' Trainer Training Program provides free training to local companies and led to improved access to LMI, with many firms sharing their employee requirements. Moreover, the course strengthened partnerships between the TVET programs and local business, leading to greater company involvement in curriculum design and increased job placements for TVET students and graduates.

In Ghana, Arthur-Mensaah and Alagaraja (2013) cite LMI and career guidance as potentially important components in Ghana's efforts to improve their TVET system, which is plagued by low levels of enrollment and high incompleteness rates. The report asserts that for the country's TVET system to attract and retain students, "both students and employers must have a clear understanding of what counts as quality vocational education and its credibility as a career pathway." This understanding can be achieved through effective career guidance and LMI that will help students avoid irrelevant occupations.

Despite these assertions, there appears to be little information available on evaluating the effectiveness of LMI and career guidance in TVET systems. While there is a 1982 National Center for Research in Vocational Education report on a guidance and counseling program in Jordan, the report lacked specific information on both the program's characteristics and its impacts. Similarly, in Kosovo, Butler et al. (2009) note that LMI and career guidance can be important for the improvement of the country's workforce development system; however, they do not provide details on the incorporation of this information into the country's TVET system. The recommendation on LMI and career guidance is only one of the 10 recommendations they offer for serving in-school youth. Specifically, they call for the country to "pilot an effective labor exchange system that goes beyond registration and offers genuine assistance with career planning and job placement."

In summary, studies often note the importance of a well-developed LMIS to improve labor market function, and several examples of development of LMISs were noted. Unfortunately, little information is available regarding the impact of LMI on how well labor markets function. Even in countries with advanced economies such as the United States, it is difficult to assess the effects of LMISs on the labor market.

3.1.4 Impact of TVET on Employment and Earnings

There are many studies analyzing TVET impact on employment and earnings, as well as evaluations of specific training programs. The focus here is on evaluations of the former that occurred after 2000. Since it is generally considered both unethical and infeasible to randomly assign students to general versus vocational secondary schools, the evaluations make use of non-experimental techniques such as controlling on a rich set of observable characteristics, propensity score matching, and regression discontinuity design.

Almeida et al. (2015) used propensity score matching to estimate the impact of attending a vocational secondary school rather than a general high school. The authors find that attending TVET schools increases earnings by 9.7 percent relative to a general school. Almeida et al. (2015) also summarized the results from 15 earlier evaluations of the effect of TVET relative to general education in developing countries, mostly from the 1990s. Of the 15 studies reviewed, six found positive effects for TVET, six found no differences between the two approaches or had mixed findings, and three found that general education led to higher earnings than TVET.

Newhouse and Suryadarma (2011) analyzed the impact of TVET versus general education on earnings in Indonesia. The authors attempted to avoid selection bias by including a rich set of control variables in their regression models and by weighting observations to balance the samples from the two types of schools. Overall, they found a 16 percent increase in earnings for attending a TVET school, and the effects were greater for women than men. They also found that the effects of attending a public TVET school are partly explained by selection of students with higher test scores and more educated parents

into the public vocational schools. Finally, men with high test scores receive smaller gains from attending public TVET schools than men with low test scores.

Malamud and Pop-Eleches (2010) used an unusual regression discontinuity design to study the effects of TVET relative to general education in Romania. In 1973 the education system in Romania was affected by a law that shifted a large portion of TVET students into general education instead. The year of birth plays the role of a “forcing variable,” strongly influencing students’ choice of TVET or general program. The authors found that the policy induced changes in occupational field, with a reduction in manual and craft-related occupations, but earnings were not affected by policy. The authors caution that the observed differences in earnings by type of school are likely due to selection into school types rather than the education received.

In summary, evaluations of the impact of TVET on earnings yield mixed results, with some studies finding that TVET increases earnings relative to general education, and others finding the reverse. Since these evaluations cannot use randomized control trials, they instead use non-experimental methods that require strong assumptions. Thus, it is impossible to tell if the diverse findings result from differences in the effectiveness of TVET across countries or differences in the evaluation methods used.⁴

3.1.5 Improvements to Learning Environment

TVET financing plays an important role in moving TVET policy reform in desired directions. The majority of spending among most TVET providers in the East Asia and Pacific region goes toward instructor and staff salaries and other overhead costs (Palmer, 2017). In Mongolia, approximately 70 percent of total expenditures within the public vocational school system are on salaries, bonuses, social insurance contributions, and other allowances (World Bank, 2016). With the bulk of expenditures on salaries and operating costs, little is left for training materials, buildings, and equipment. In Kiribati, there is very little or no funding available for material costs or new equipment (Majumdar & Teaero, 2014), and in Myanmar capital budgets for facilities, equipment, and teaching materials were deemed constrained (CESR, 2013: 18).

In integrating TVET systems into a nation’s broader educational system, one concern is that public institutions often struggle to respond to the needs of the labor market given poor financial management. For example, the Government of India determined that substantial financial investment is required to upgrade the educational facilities and equipment that help build the necessary skills for workforces in the informal sector (Dar, 2008). In India, Industrial Training Institutions (ITIs) often are made up of facilities and infrastructure that are inadequate, with obsolete equipment in facility labs and workshops and poor maintenance efforts. Not only do these deficiencies reflect the lack of resources available to the government, but they have also been exacerbated by the government’s emphasis on creating new institutions rather than directing funding toward improving existing ones. Creative PPPs have been presented as an option for not only matching the skillsets of TVET students with the needs of the informal sector, but also with providing financial and infrastructural support such as identifying technological and equipment needs and assisting with budgeting for capital improvements.

⁴ It is also not possible to assess how choices regarding TVET program design/implementation affect outcomes because there is no clear pattern in the literature, and many factors vary in each country, making it difficult to isolate causal factors.

In Xinjiang, China, TVET policy reforms also emphasized the importance of increasing investment in TVET and improving the effectiveness of expenditures (Xiao & Song, 2013). Reforms sought to encourage financial inputs from private and nonprofit stakeholders to address the financial gap between new and existing institutions, for example, through cash and in-kind donations for facilities and equipment for labs and workshops to improve school conditions. Recommendations emphasized implementation of international cooperation or domestic partnerships to upgrade TVET institutions in Xinjiang, system interventions such as fund allocation and management and school-industry collaboration to determine training equipment and facility needs.

The literature suggests that a primary problem affecting the success of TVET is inadequate quantities of equipment, machines, tools, and instructional materials (Usman et al., 2013). Increased funding for TVET and efficient allocation of funds is necessary for high-quality education and alignment of skills with workforce demand. Innovative PPPs have been identified as a mechanism for targeting funding toward sources of improved TVET systems—adequately equipped laboratories and workshops, updated equipment and facilities for student training and research, and sufficient teaching materials. For example, in Indonesia, an ADB-supported project facilitates partnerships between technical institutions and target industry employers to improve curricula and align teaching and learning environments and equipment with industry needs (ADB, 2012). Additionally, the project established a national skills fund to support direct funding to public and private TVET institutions.

3.2 Gaps in the Literature and Policy Implications

Although some studies were found on all the topics considered, no topics were covered as much as desired. For example, TVET operational policies and operational frameworks are a difficult area to research and to generalize to other nations. Several studies comparing the effectiveness of TVET and general education were identified, but the studies use a wide range of non-experimental evaluation techniques. It is difficult to assess whether the wide range of findings reflects actual differences or different biases in the studies. The area with the fewest studies was career guidance and LMIS. Such studies appear rare in both developed and developing countries. This is an important topic because if students do not pursue opportunities in fields with good job prospects, they may pursue fields where there is little demand and/or low pay. The current study should help fill some of that gap.

3.2.1 Evidence Gaps Filled by the Evaluation

Since this study is not an impact study, it will not contribute to the literature on the impact of TVET as a whole or how specific features of TVET programs affect employment and earnings. However, it will likely address important issues on implementation of TVET policies in Mongolia and features such as reforms to TVET policies, use of skills standards and competencies systems, and labor market information systems that are essential in interpreting impact studies. Given the lack of studies directly relevant to the areas of VEP intervention, this evaluation will add to the evidence base on the effectiveness of the VEP intervention approaches and the challenges encountered.

4 EVALUATION DESIGN

4.1 Evaluation Overview

This report presents results from an ex-post performance evaluation (PE) of the VEP, completed approximately five years after Compact close and the completion of the VEP. In addition to this performance evaluation, MCC contracted Innovations for Poverty Action (IPA) to conduct an impact evaluation (IE) for *Activity 5. Improvement of Learning Environments*. Whereas the IPA IE contributed to the evidence base on the value of upgrading equipment at TVET facilities, this PE seeks to review the VEP in its entirety, assess the VEP Program Logic and assumptions, and generate lessons learned to inform future investments in the TVET sector. This is an independent evaluation funded by MCC. The evaluation team had no conflicts of interest, and the results shared are the independent assessment of the authors and do not necessarily represent the views of MCC or the United States government.

The following sections will provide an overview of the evaluation questions (EQs), methodology, sampling, timeframe, and risks and limitations. For more details on the evaluation design, please see the Evaluation Design Report (EDR) for this same evaluation.

4.2 Evaluation Questions

This PE focuses primarily on the four official outcomes and objectives from the formal program logic: (1) increased employment for TVET graduates, (2) increased income for TVET graduates, (3) improved quality of the TVET system, and (4) improved relevance of the TVET system.

However, to better assess how the project components may (or may not) have influenced these key outcomes, this evaluation also considers the more detailed program logic (see Annex 8.1) that shows the linkages between the project's sub-activities and outcomes. The PE will also touch on additional outcomes of increased enrollment in TVET schools and participation in PPPs.

Based on the detailed program logic, the ET and EMC agreed on a set of 30 evaluation questions that would help explore project effects on these four outcomes. Decisions of which questions to include were based on a combination of factors including the importance of answering the question for learning and accountability, the ease with which the question could be reliably answered, the relative size of the project component, and discussions between SI and the EMC. For each EQ, the ET identified the best methods for answering each that balances the need for rigorous and informative results with resource constraints. See Section 4.2.2 for a complete list of questions along with data collection methods and how these questions relate to the program logic.

4.2.1 Country-Specific and International Policy Relevance of Evaluation

In Mongolia, many donors are still active in the TVET sector. Thus, this evaluation could provide evidence of the approaches used in the past and their effectiveness, which could be used to inform future interventions. It also provides an assessment of the current status of the TVET sector, which could be informative both for donors as well as the GoM.

Internationally, TVET education is often promoted in developing countries as a way to build necessary skills of the domestic workforce and increase employment. Improving the quality of TVET education is a common intended outcome. But the VEP also aimed to improve the relevance of the education provided to ensure the skills trained would better meet the needs of potential employers. Thus, this evaluation offers a perspective on the extent to which these relevance goals were met and what key challenges remain.

4.2.2 Key Outcomes Linked to Program Logic

The detailed program logic developed by the ET during the design process identified a broader range of short-term, medium-term, and long-term outcomes and objectives than were identified in the original program logic. The EQs intentionally targeted the primary VEP outcomes (improving TVET system quality and relevance) and objectives (increased employment and income for TVET graduates) by targeting questions at the related medium- and short-term outcomes identified in the detailed program logic. Additionally, the ET looked at the VEP’s implementation effectiveness.

Table 13 outlines the questions under each outcome, along with details on how the effect was measured through the evaluation and through which data collection method.

Table 13. Evaluation Questions and Related Outcomes, Data Collection Methods, and Data Sources⁵

Key Result	Evaluation Question	Measured Result(s)	Data Collection Method(s)	Data Source(s)
Implementation	1. To what extent was the project implemented as originally designed?	Implementation Fidelity	- Desk Review - Interviews	- MCC, Mongolia Compact, VEP, and Evaluation Documents; relevant industry reports - VEP Contractors; former Millennium Challenge Account-Mongolia (MCA-M); Project Implementation Unit (PIU); and MCC staff
Implementation	2. What worked well in project implementation? What were the key challenges?	Implementation Strengths and Weaknesses	- Desk Review - Interviews	- MCC, Mongolia Compact, VEP, and Evaluation Documents; relevant industry reports - VEP Contractors; former MCA-M; PIU; and MCC staff
Outcome 1. Improved TVET System Quality	3. To what extent have the TVET school and CoE facilities been maintained since the end of the Compact? Why/why not?	Observed and Reported Maintenance of Facilities	- Observation - Interviews	- TVET schools; CoE facilities - Ministry officials; TVET administrators; TVET instructors; students/graduates

⁵ The ordering of questions has changed from the Evaluation Design Report to better reflect the order presented in the findings. However, all questions from the EDR remain.

Key Result	Evaluation Question	Measured Result(s)	Data Collection Method(s)	Data Source(s)
Outcome 1. Improved TVET System Quality	4. To what extent has the training equipment provided by the Compact been used and maintained since the end of the Compact? Why/why not?	Observed and Reported Use and Maintenance of Equipment	- Observation - Interviews	- Training equipment - TVET administrators; TVET instructors; students/graduates
Outcome 1. Improved TVET System Quality	5. What is the status of the National Vocational Qualification Framework (NVQF) and associated competency standards? To what extent are they utilized by TVET programs and students/graduates? Are the certifications valued?	NVQF Status and Perceptions	- Interviews	- Ministry officials; TVET administrators; TVET instructors; Private sector representatives; students/graduates
Outcome 1. Improved TVET System Quality	6. How do the changes in the national qualification framework affect the overall functioning and operations of the TVET system?	Perceptions of the Impact of the NVQF	- Interviews	- Ministry officials; TVET administrators
Outcome 1. Improved TVET System Quality	7. To what extent have the competency-based training (CBT) curriculums created by the project been fully adopted and implemented in TVET schools across the country?	Adoption of CBT Curriculums	- Secondary data - Interviews	- IPA survey data; Ministry data - Ministry officials; TVET administrators; TVET instructors
Outcome 1. Improved TVET System Quality	8. What factors have enabled and/or constrained the effective adoption and implementation of the CBT curriculums?	Perceptions of CBT Adoption Factors	- Interviews	- Ministry officials; TVET administrators; TVET instructors; other donors
Outcome 1. Improved TVET System Quality	9. To what extent has the TVET sector updated materials or developed new CBT materials post-Compact?	Reported Updating of CBT materials	- Interviews	- TVET administrators; TVET instructors; Ministry officials
Outcome 1. Improved TVET System Quality	10. To what extent are the NLRC and RMCs utilized by TVET centers and instructors/staff?	Perceptions of NLRC and RMC Use	- Interviews	- TVET instructors; TVET administrators
Outcome 1. Improved TVET System Quality	11. To what extent are the CoEs taking on the role and function of a center of excellence? Why/why not?	Perceptions of CoE Roles/Functions	- Interviews	- Ministry officials; TVET administrators; TVET instructors
Outcome 1. Improved TVET System Quality	12. To what extent do students/graduates and teachers perceive the curriculum and training materials are of high quality?	Perceptions of Training Quality	- Interviews	- TVET administrators; TVET instructors; students/graduates
Outcome 1. Improved TVET System Quality	13. To what extent has the quality of teaching improved since the start of the project?	Perceived Changes in Training Quality	- Secondary data - Interviews	- IPA survey data - TVET administrators; TVET instructors; students/graduates

Key Result	Evaluation Question	Measured Result(s)	Data Collection Method(s)	Data Source(s)
Outcome 1. Improved TVET System Quality	14. To what extent have other TVET centers used materials or trainings developed through the VEP to improve teaching quality?	Adoption of VEP Trainings and Materials	- Interviews	- TVET instructors from non-VEP schools; TVET administrators from non-VEP schools
Outcome 2. Increased Relevance of the TVET System	15. What were the effects of the Agency for Technical and Vocational Education and Training (ATVET) committee on engagement of the private sector in TVET? What happened after the ATVET was dissolved, and what impact did that have on private sector engagement?	Perceived Effect of ATVET	- Interviews	- Ministry officials; Private sector representatives; other donors
Outcome 2. Increased Relevance of the TVET System	16. Are the Labor Market Information System (LMIS) and Career Guidance System (CGS) websites still functioning? Why/why not?	Observed Functionality of LMIS and CGS Websites	- Observation - Interviews	- LMIS website; CGS website - Ministry officials (Labor Exchange Central Office (LECO), in particular)
Outcome 2. Increased Relevance of the TVET System	17. To what extent has the LMIS and CGS website content been updated since the Compact ended?	Reported Updating of the LMIS and CGS	- Observation - Interviews	- LMIS website; CGS website - Ministry officials (LECO, in particular)
Outcome 2. Increase Relevance of the TVET System	18. To what extent has the private sector been able to effectively engage with and influence the TVET sector as a result of the project?	Perceptions of Private Sector Engagement	- Interviews	- Ministry officials; Private sector representatives; other donors
Outcome 2. Increased Relevance of the TVET System	19. To what extent have the CBT curriculums been updated since the end of the project? Why/why not?	Perceived Relevance of CBT Over Time	- Interviews	- Ministry officials; TVET administrators
Outcome 2. Increased Relevance of the TVET System	20. What are the key factors enabling and/or restricting private sector engagement in TVET?	Perceptions of Factors Affecting Private Sector Engagement	- Interviews	- Ministry officials; Private sector representatives; other donors
Other Outcome: Engagement in PPPs	21. To what extent have TVET schools been engaged in PPPs since the end of the Compact? Why/why not?	Reported Engagement in PPPs	- Secondary data - Interviews	- IPA survey data; TVET administrative data - Ministry officials; TVET administrators
Outcome 2. Increased Relevance of the TVET System	22. To what extent do private sector actors feel that TVET education teaches the skills they need as employers? To what extent has this changed since the Compact was implemented?	Perceived Matching of Skills and Needs	- Interviews	- Private sector representatives

Key Result	Evaluation Question	Measured Result(s)	Data Collection Method(s)	Data Source(s)
Other Outcome: TVET Enrollment	23. To what extent, if at all, has enrollment in TVET schools increased?	TVET Enrolment	- Secondary data	- IPA survey data; TVET administrative data
Objective 1. Increased Employment	24. To what extent, if at all, has the employment rate of TVET graduates changed since the program began?	Employment Rate Perceptions of Changes in Employment	- Secondary data - Interviews	- IPA survey data; TVET administrative data - TVET administrators; students/graduates
Objective 1. Increased Employment	25. What have been the biggest drivers of the change (if any) in the employability of students and graduates?	Perceptions of Employability Drivers	- Interviews	- TVET administrators; TVET instructors; Private Sector Representatives; VEP grantees; students/graduates
Objective 1. Increased Employment	26. To what extent, if at all, have students used guidance counselors and/or the online guidance system to make career decisions? How useful have these resources been for their ability to obtain employment? Why/why not?	Use of Guidance Systems to Influence Employability	- Secondary data - Interviews	- IPA survey data; website/portal usage statistics - Students/graduates; TVET administrators; TVET guidance counselors
Objective 1. Increased Employment	27. To what extent, if at all, has the employment rate in Mongolia changed?	Employment Rate (National)	- Secondary data	- National employment statistics (from the National Statistics Office (NSO))
Objective 2. Increased Income	28. To what extent have the incomes of TVET graduates increased since the project was implemented?	Graduate Income Perceptions of Income Changes	- Secondary data - Interviews	- IPA survey data; TVET administrative data - TVET administrators; graduates
Objective 2. Increased Income	29. What have been the biggest drivers of the change (if any) in the incomes earned by TVET students and graduates?	Perceived Drivers of Income Changes	- Interviews	- TVET administrators; TVET instructors; students/graduates
Objective 2. Increased Income	30. To what extent have the incomes of the unemployed and underemployed changed since the project began?	Employment and Income Rates (National)	- Secondary data	- National level data

4.3 Methodology

The ET has selected a mixed-methods design, relying primarily on qualitative data but triangulated with quantitative data where possible.

4.3.1 Methods

4.3.1.1 Qualitative Approaches

Collecting ex-post qualitative data provides an opportunity to explore whether VEP activities (and related outputs) ultimately affected priority outcomes, how they did so, and whether the gains (if any) are sustainable. This evaluation uses several qualitative methods, as outlined below:

- **Interviews:** The ET conducted 110 semi-structured interviews across 12 categories of respondents, including government officials, former MCC, Millennium Challenge Account (MCA), and Project Implementation Unit (PIU) staff, school administrators, instructors, students, graduates, private sector representatives, and other donors. Interviews with TVET students and graduates are used to assess VEP outcomes related to wages and employment, while the assessment of TVET system quality and relevance is investigated largely through discussions with a broad range of respondents including Ministry officials, TVET administrators and instructors, and private sector representatives.
- **Direct observation (DO):** The ET conducted two forms of direct observation. First, the team conducted five “light” direct observations at TVET schools, RMCs, and CoEs. The ET conducted a rapid appraisal of VEP-provided resources (training equipment, audio-visual equipment, etc.) and noted the general state of infrastructure in VEP-improved classrooms, workshops, and labs. The purpose was to assess the extent to which the resources have been maintained and used as intended. Additionally, the team attempted to observe the LMIS, Career Guidance System (CGS), and the NLRC websites/portals to confirm website/portal functioning, review current content, and assess content quality—but none of these websites were currently active, so observation was not possible.
- **Desk/document review:** The ET also reviewed VEP and other desk review documents to inform answers to each EQ included in this evaluation. Document/desk review provided critical context upon which the Evaluability Assessment and Evaluation Design are based. Documents reviewed by the ET include several categories: MCC documents, Mongolia Compact documents, VEP documents, evaluations including the IPA IE study, and relevant industry reports.

The ET developed semi-structured protocols for each respondent category and observation type noted in Table 14 below. Data collection tools across respondent categories included parallel questions related to relevant EQs to enable greater data triangulation. All data collection tools were translated to Mongolian and back-translated prior to data collection.

4.3.1.2 Quantitative Approaches

This evaluation also used secondary data to triangulate results from qualitative methods and to analyze trends in VEP outcomes. The following quantitative datasets were used:

- **VEP data** collected during implementation, including M&E indicator data for the 32 indicators included in the final ITT.

- **IPA survey data**, which provides significant information relevant to the EQs of this PE. Students were randomly admitted into trades that received equipment upgrades. Students were surveyed at entry into the program and then one year after graduation. For earlier cohorts, annual follow-up surveys were also conducted until 2015.
- **TVET Administrative Data** was collected from the MLSP regarding national-level TVET enrollment, graduation, and employment data. Additionally, these same data were collected (where possible) from each of the schools visited.

The ET also attempted to conduct a short online survey of TVET graduates, drawing on the student information within IPA's survey data. The survey relied heavily on the questions used in IPA's survey and intended to offer an updated data point for 2018 to compare with the data IPA collected. However, due to data quality issues with the email addresses within the dataset and extremely low response rates, the results were insufficient to include in this evaluation.

4.3.2 Data Collection

Fieldwork took place in October 2018, with the ET conducting interviews over approximately three weeks within Mongolia. The ET separated into two sub-teams, each with an interpreter, evaluation specialist, and local TVET specialist. The team members are listed below:

- Dr. Kari Nelson – Principal Investigator
- Sierra Frischknecht – Program Manager/Evaluation Specialist
- Tungalag Chimid – TVET Specialist
- Enkhbaatar Demchig – TVET Specialist
- Sunjee Sodnomtsog – Interpreter and Evaluation Assistant
- Baigalmaa Baljinnyam – Interpreter
- Oyunbat Ayush – In-Country Coordinator

The teams visited nine TVET schools, including one in Ulaanbaatar, four in the Eastern provinces, and four in the Western-Central provinces. See 4.4 for more details on sampling.

Throughout data collection, interview and observation notes were reviewed regularly by the Principal Investigator (PI) to ensure clarity. The PI had the ultimate responsibility to check interview notes for completeness and accuracy during team debriefs and review sessions. Finalized interview and observation notes were anonymized for the protection of respondents prior to uploading into qualitative data analysis software for coding, analysis, and report writing. Qualitative data were handled solely by the ET and SI headquarters team members that participated in the qualitative coding (see more below).

4.3.3 Analysis

Finalized interview notes were coded using Dedoose qualitative analysis software to simplify the process of cataloging and documenting emergent themes from respondents. The ET developed a coding scheme based on the finalized data collection tools, the 30 EQs, and the prioritized outcomes. Coded data was analyzed by reviewing code frequencies, cross tabulations, and co-occurrences, highlighting the most important themes for each of the EQs.

Quantitative data, particularly the data from the IPA survey, were used to generate descriptive statistics of outcome variables by gender, TVET school, and program type. Trends over time were also examined. Stata was used for the IPA data, while Excel was used for the administrative and observation data.

Triangulation of data from multiple sources enabled the ET to cross-verify and cross-validate the findings that emerge to identify areas of concurrence and divergence between findings. In so doing, triangulation strengthens the findings of the contribution the VEP has had toward the intended outcomes. It also helps provide nuance to the findings. All data will be disaggregated by gender, TVET location, and respondent category where relevant.

4.4 Study Sample

Data were collected from nine TVET schools across the country. The schools were purposively selected based on the following criteria: (1) a variety of regions, (2) a combination of schools that participated in VEP and those that did not, and (3) among participant schools, some that received equipment and facility upgrades and some that piloted the CBT curricula.

In general, the selection of respondents for qualitative data collection was primarily purposive, with elements of random, snowball, and convenience sampling based on the established sampling frame. Table 14 outlines each informant category and accompanying sampling strategy.

Table 14. Summary of Qualitative Data Collection Methods and Sampling Strategy

Category	Description	Sampling Strategy	# of Interviews
MCC	MCC staff who managed, supervised, and/or advised VEP	All available staff/former staff were interviewed	7
MCA-M, PIU, and VEP Contractors	Former staff of those involved in implementation in Mongolia	All available former staff with contact information who were willing to be interviewed were interviewed	7
Ministry Officials	Officials from the Ministry of Education, Culture, Science, and Sports, the Ministry of Labor and Social Protection, LECO (former), NCVET, and ATVET (former)	Purposive sampling targeted: <ul style="list-style-type: none"> All pertinent ministries Staff at different levels Both male and female staff 	5
TVET Administrators	TVET school principals, staff, and others at the school level	Purposive sampling targeted: <ul style="list-style-type: none"> Principals/Deputies Training managers Those responsible for private sector engagement 	15
TVET Instructors	TVET instructors at VEP schools	Purposive sampling targeted: <ul style="list-style-type: none"> Both male and female instructors Different fields of study Both newer teachers and those who were present during the Compact 	17

TVET Guidance Counselors	TVET guidance counselors at VEP schools	Convenience sampling based on who is available to speak with the ET (most schools had just one counselor)	8
TVET students	TVET students at VEP schools	In most cases schools were unwilling to provide lists of their students for random sampling. Thus, a combination of purposive and convenience sampling was used targeting: <ul style="list-style-type: none"> • Different age groups • Different trades • Both male and female students 	14
TVET graduates	TVET graduates from VEP schools	Convenience sampling based on which graduates were within the area and available to speak. Graduates were identified by each TVET school for interviews. In some instances the ET visited graduates at their workplace.	14
Private Sector Representatives	Employers, PPP participants, and industry associations in relevant sectors (construction, mining, health, etc.)	Purposive sampling targeted: <ul style="list-style-type: none"> • PPP participants, from contacts provided by each TVET school • Industry organizations (such as the Chamber of Commerce) • A variety of industries 	18
Other Donors	Other donors with programming in the TVET sector including (but not limited to) ADB and World Bank	Purposive sampling targeted those donors who are most active in the TVET sector and/or who are doing similar work to that done by the VEP.	5
Observation – TVET training locations	Direct observation of resources provided by the VEP, including equipment and facilities upgrades	While visiting TVET schools and conducting interviews, the ET also observed any facilities or equipment provided by the Compact. Not all visited schools obtained such equipment or upgrades.	5
Observation – websites/portals	Review the LMIS, CGS, and the NLRC websites/portals	Observation of all three were attempted but not possible as the sites no longer existed	3
TOTAL			118

4.5 Timeframe

4.5.1 Timeframe of Exposure

The official program logic did not clarify the expected time frames for the expected results of the project's many activities to be achieved. Estimating the necessary timeframe of exposure is further complicated by the large number of activities (some of which were completed earlier than others).

The only component for which an estimate is provided is the CBT curriculum. The CBA estimates that it would take three years from Compact end for the CBT curriculum to be disseminated beyond the schools that were directly involved in the Compact to all TVET schools. Thus, all students (per the estimate)

enrolling as of 2016 would be trained under the CBT curriculum. Many would already have graduated through CBT-based curriculums previously, but these last cohorts would then have graduated in 2017 or 2018, depending on the program.

4.5.2 Justification for Proposed Exposure Period to Treatment

Based on the wide range of likely horizons across project components and given that the CBT benefits should be fully accruing by 2018 (per MCC's CBA estimates discussed above), the ET believes that data collection in fall 2018 was appropriate for measuring the expected results and sustainability.

4.6 Risks, Limitations, and Challenges

4.6.1 Contribution versus Attribution

Attribution of project effects requires the identification of a valid counterfactual so that the specific effects of the project can be disentangled from potential confounding factors. During the design phase of their evaluation, IPA determined that, given the VEP's components and how it was implemented, a valid counterfactual could be found only for the equipment improvement components (IPA, 2014). As an ex-post design and without comprehensive baseline data, it is no longer feasible to identify a valid counterfactual (if one had ever existed) and then ensure that contamination does not occur prior to data collection. Therefore, this evaluation focuses on the likely contribution that project activities have had on intended outcomes, rather than attribution. Findings of contribution are strengthened by assessing each of the steps in the program logic. If evidence of contribution exists for each link in the chain, a stronger case for contribution can be made.

In addition to the lack of valid counterfactual, government-level changes near the end of the Compact also influence the ET's ability to disentangle the effects of the project from other factors. Near the end of the Compact, significant changes were made within the TVET system, including the dissolution of the National Council for VET that included private sector participation. Because the ET is aware of this significant change in the structure (which deviates from what the Compact had created), the ET included specific EQs to assess the effects of these changes on project outcomes.

The lack of measurable counterfactual combined with significant external factors—such as major sectoral changes and major macroeconomic shifts—make it difficult to make a determination of contribution regarding some key outcomes. Employment and incomes are highly reliant on the overall economy, for instance. Thus, without an estimated counterfactual, it can be difficult to determine the extent to which observe changes over time are related to the project vs other potential factors.

4.6.2 Accessing Contact Information

This PE relies on the availability of contact information for beneficiaries and VEP participants and a variety of secondary data. The ET was able to leverage the strong internal networks of its local team members to contact and ultimately interview key stakeholders. Unfortunately, however, the quality of the email address data in the IPA dataset proved challenging. Though attempts were made to clean the dataset to improve the number of valid email addresses, errors remained. After an initial attempt to reach out to the valid email addresses, very few responses were received, which likely relates to lingering quality issues

in the contact information. Based on the issues faced and the low response rate, the ET decided to discontinue the e-survey and remove it from the evaluation plan. Because the e-survey was intended to be a supplemental data source for a select number of EQs, its removal does not pose a substantial difficulty to the ET's ability to answer the EQs.

4.6.3 Recall and Response Biases

The ET acknowledges two inherent biases associated with the qualitative data collection. One limitation is the possibility of recall bias among key informants. The ET took steps to reduce recall bias in the data collection tool design phase, including framing questions to aid accurate recall. Where possible, the ET corroborated interview findings with additional data sources such as GoM records.

The ET also acknowledges the potential for bias due to respondent subjectivity and the possibility of collecting only socially desirable responses from interviewees. To address this potential bias, the ET purposively recruited a diverse sample of informants and triangulated responses with other data sources, all while developing data collection tools based on best practices that minimize response bias. Despite best efforts, it would not be possible to prevent all bias. Thus, any cases of known bias in the data are noted in this report.

5 FINDINGS

5.1 Estimated Impacts

The VEP was an expansive project that included a substantial number of small sub-activities. To evaluate the effects of these varied sub-activities, the evaluation assesses 30 distinct EQs, grouped by anticipated outcome: implementation effectiveness, followed by a look at effects along the program logic starting with training quality and relevance and leading to longer-term results on enrollment, graduate employment, and graduate incomes. The findings discussion is preceded by an overview of the sector and a discussion of key challenges that faced the sector during the time of the VEP and today. The conclusion (Section 5.1.8) provides a synthesis of the varied findings across the 30 EQs.

5.1.1 Overview of the Sector and Key Challenges

This section provides an overview of the TVET sector in Mongolia and some of the key challenges facing the sector. Through the interviews for this evaluation, it became clear that several high-level factors influenced the VEP. These factors were outside the direct control of those implementing the project and thus did not result from the intervention, but rather provide important context for the evaluation findings. These key contextual factors include the state of the TVET sector in Mongolia prior to the VEP, political instability, staff turnover, challenges with TVET financing, and the number of TVET schools given enrollments.

Mongolia was heavily influenced by the former Soviet Union, including its operation of the TVET sector. While under Soviet influence, the TVET sector was reportedly very strong. However, after the fall of the Soviet Union, the TVET sector in Mongolia was largely neglected. The legacy of the Soviet system left TVET very centralized, with very little private sector involvement in defining priority trades or the types of

skills that employers need from graduates. In terms of pedagogy and teaching methodologies, instructors were largely responsible for their classes, deciding what needed to be taught and how. Thus, quality could vary substantially. And internships and/or other types of practical training opportunities were limited. Career guidance services were very limited to non-existent.

TVET education in Mongolia has also suffered from a poor reputation, as raised by 12 respondents. Historically, students were filtered into either the academic high school track or the TVET track based on their academic performance. Thus, it was the poor performers who attended TVET schools, which led TVET training to be perceived as being the destination for where students who couldn't perform well went. Though this direct filtering no longer occurs, the poor reputation has continued to hound TVET education in Mongolia and can lead parents to push their children into academic programs rather than TVET programs.

TVET education is offered at both the secondary school level (to grade 9 graduates) as well as at the college and university levels. Though most TVET students are in the 14-18 age range, TVET schools also serve adult learners. The GoM has, at various points, offered stipends to those under age 24 to encourage greater enrollment in TVET schools, which advantages younger students but disadvantages older students.

Political instability was noted numerous times across the interviews (in 27 of 110 interviews) as having influenced the sector and/or the VEP specifically. In Mongolia, when the government administrations change, there are often significant ripple effects throughout the country. Political priorities change, willingness to enforce past agreements can change, ministry structures and staff often change, and many of the individuals in the TVET sector also change, such as school directors who are appointed by the government. Thus, political instability was strongly cited as influencing the direction of the TVET sector.

Insufficient financing for TVET was also raised as a concern. Given the need for tools and equipment to provide practical training plus the need to build and maintain appropriate facilities, the inadequacies of the TVET budget were commonly cited. That being said, seven respondents, particularly within the donor community, voiced concerns that there are too many TVET schools in Mongolia given how many students are enrolled, which exacerbates the funding issue. The concern is that the number of students per school and per trade within each school can be quite low with some classes of just 10 or 15 students. But the costs to maintain adequate facilities and modern equipment are quite high. When the costs are spread over hundreds or thousands of students, it becomes manageable. But, paying such high costs for 10-15 students per year can be untenable. As one respondent noted:

“What you needed was to merge a bunch of the VTPCs and merge some here and get peak institutions. As I say, we did the math, and the max you needed was 8 [TVET schools in Mongolia]. Because a typical TVET institution in a high-income economy would have several thousand enrollments. You have some here with just several hundred. It's too small. You can't have enrollment of 10 in one course. It's silly.”

As will be seen in the following findings discussions, this contextual information about the pre-VEP status of the sector, political instability, and funding and enrollment issues set the stage for what occurred under the VEP and for the results that were (and were not) achieved.

5.1.2 Implementation Effectiveness

5.1.2.1 Implementation Fidelity

Except for the Compact Amendment, which added the equipment and facility investments, an expanded grants program, the career guidance components, and a public awareness campaign, most respondents believed that the VEP was implemented as originally planned (seven interviews noted no major changes to design). Only four respondents noted substantial changes to the project other than the Compact Amendment. The other changes noted were smaller changes to the planned activities occurring as a result of feedback and a desire to improve overall project performance. This adaptability in programming led to incorporation of the Twinning program, the public-private partnership grants program, and English language training. As one former staff member involved in implementation noted the introduction of small grants, *“The challenge there—and that’s when we came up with some redesign stuff, the grant program. But there was no history of TVET and the private sector working together in Mongolia, because the latest was the Russians, you know. [They] controlled government. That’s where the grant program came together to stimulate that engagement.”*

5.1.2.2 Implementation Strengths

Respondents were also asked about what had worked the best during implementation as well as what some of the challenges had been. Out of 15 interviews that covered this topic, the strengths included: strong staff (noted in 11 interviews), strong stakeholder collaboration (noted in 10 interviews), good coordination and collaboration among the various implementing partners (noted in 7 interviews), and an adaptable approach to implementation (noted in 6 interviews). Each is discussed in more detail below.

Strong and dedicated staff was the most frequently cited strength to implementation. References to strong staff included all levels of entities involved in implementation: MCC, MCA, the PIU, and contractors. But a recurring theme was that the project had strong and dedicated staff behind it. For example one former member of the implementation team noted:

“The PMU [PIU] was pretty good. ...It had good leadership. That wasn’t by design but it was by management, in terms of choosing the right people, getting them the support they needed. A lot of strengthening into the PIU so they could be effective. ...A lot of credit had to go to the PIU and the effectiveness it had.”

Strong stakeholder collaboration was also noted as being important during implementation. This included not just collaboration among donors and non-governmental organizations (NGOs), but also collaboration with the private sector. Broad collaboration was seen as a strength for building momentum for change within the sector. As one former implementation staff member noted:

“And that was an important aspect from my point of view, was the coordination between what we were doing and the other players are doing. ...There was some important stuff that came out of that with the other major players. And not just the traditional NGOs and government development partners, but also Oyu Tolgoi [a large employer in the mining sector].”

In addition to collaboration with outside stakeholders, internal collaboration was noted as a strength. The VEP included several different entities involved in implementation: MCC, the MCA, the PIU, and the implementing contractors. In some cases, having many entities involved in oversight and implementation

can be a challenge. However, in the case of the VEP, respondents noted that collaboration and coordination was a strength. These entities worked well together rather than hindering each other.

Adaptability was also noted as a strength. Though most respondents thought the project was implemented as designed, respondents also noted the ability to adapt implementation in small ways as the project progressed. As in any project, lessons can be learned in implementation; some sub-activities might prove particularly effective while others prove ineffective. In other cases, managers might realize that adding an additional component or activity might be beneficial to the project's effectiveness. Respondents noted that the VEP had sufficient flexibility to adjust to these lessons learned during implementation.

“Compared to other projects which were following what was designed, we were able to change/modify—not the whole design, components remained the same, major activities remained the same—but we were able to add some things that were needed from the context. For example, twinning projects, English language training, grants, etc. Besides our main activities we should encourage TVET institutions to become more interested in their improvement. So that's why we decided to give them some financial support [the grant program]. So that they can implement the projects, small-scale projects that they developed themselves.”

Respondents appreciated this flexibility to adjust implementation and add small components as needed to benefit the project's overall effectiveness.

5.1.2.3 Implementation Challenges

Despite the strengths, the VEP implementation was not without its challenges. Most notably, 22 respondents identified factors that had hindered implementation, including the following: political challenges and influence (noted in 13 interviews), the complexity/ambitiousness of the project (noted in 8 interviews), poor contextualization of the design to Mongolia (noted in 7 interviews), insufficient staff experience in TVET (noted in 6 interviews), and poor coordination between activities (noted in 6 interviews). Each is described in more detail below.

In the discussion of the overall context for TVET, political instability was noted as a key challenge for the sector. This instability as well as direct political influence also affected the VEP directly. At various points in implementation, respondents noted that political pressure to alter the VEP design and/or change the TVET Law that was a condition precedent (CP) to the VEP investments was noted. However, the most notable impact on the VEP came from the political transition in 2012. In 2012, a new presidential administration was elected. Though the project staff had worked hard to collaborate with the prior administration and align the project with government priorities, the new administration had its own priorities and thoughts on what should happen with the TVET sector.

First, the new administration moved TVET from within the Ministry of Education (MoE) to the Ministry of Labor.⁶ Around the world, there are debates about where vocational education should reside in governmental structures, with education since TVET serves a primarily educational function or with labor

⁶ The Ministry of Labor was at the time called the Ministry of Social Welfare and Labor, and is now named the Ministry of Labor and Social Protection. It will be referred to as the MLSP throughout this report.

because the intended purpose of TVET is to meet the vocational needs of employers. In Mongolia, until the early 2000's, TVET had resided within the MLSP. Efforts by other donors convinced the government to move TVET to the MoE. The newly elected administration in 2012 then moved TVET back under the MLSP. In addition, the structure changed significantly, with the roles and abilities of the National Council for Vocational Education and Training (NCVET) and the Agency for Technical and Vocational Education and Training (ATVET) changing substantially (see Section 4.1.4.1 for more on these changes). In 2012, Mongolia was facing high youth unemployment rates, and thus the new administration wanted to focus on getting as many youth employed as quickly as possible. Thus, their focus shifted from the longer-term (1 to 2.5 year) TVET programs that were the focus of VEP to shorter-term training programs. For the VEP, this shift happened at a crucial time as the Compact was in the last year of implementation. In many ways, the longer-term effects of this political change in 2012 wouldn't be known for a few years, after the VEP was complete. The impacts of the political change on specific sub-activities of the project are discussed in the corresponding sections of the report. Overall, however, the political transition of 2012 was noted as having had a strong impact on VEP achievements.

Another challenge faced by the VEP was the project's complexity and ambitiousness. This concern arose in two main ways: the number and diversity of project sub-activities and the significant shift that was anticipated in the sector. The VEP comprised numerous sub-activities from policy reform to training to construction. The many different components meant that the project required significant oversight and management, despite its relatively small investment compared to other Compact projects. At the same time, the goals of transitioning Mongolia away from its centralized approach to TVET to one that is both relevant to the private sector and of higher quality required a substantial shift in cultural attitudes and expectations. Combined, these factors posed a challenge to VEP management.

Related to the substantial cultural shift that was required to effectively implement and achieve the VEP's intended benefits, some respondents raised concerns with the extent to which the project was adequately contextualized to the Mongolian environment. As one respondent noted:

“On the policy space, we used some European consultants. ...They want to bring in tried and true models from Western democracies. In many cases, that's not going to work [in Mongolia]. So, with some hindsight, bringing in consultants like that who have a limited range of tricks in their box, and they use those tricks in any country [wasn't a good idea].”

Some respondents were also concerned about the level of experience staff had in the TVET sector specifically (rather than education more broadly). This concern was raised in reference to at least some staff in all the implementing organizations (MCC, the MCA, and the PIU). The general concern was that while individuals were hard working and dedicated, they didn't always have the sectoral knowledge to know how best to approach or structure TVET investments.

Finally, the concern was raised that inadequate attention was paid to the coordination across different sub-activities, both within the VEP as well as between VEP sub-activities and the sub-activities of other projects. Thus, these respondents felt that an opportunity was lost to provide better synergies between the many sub-activities in the Compact.

5.1.2.4 Implementation Effectiveness: Key Findings

Table 15: Implementation Effectiveness - Key Findings

Key Outcomes	Evaluation Question	Key Findings
Implementation	1. To what extent was the project implemented as originally designed?	Aside from the Compact Amendment, the VEP was largely implemented as designed, albeit with enough flexibility to allow for small modifications in activities intended to improve effectiveness.
Implementation	2. What worked well in project implementation? What were the key challenges?	<p>What worked well:</p> <ul style="list-style-type: none"> • Strong staff • Stakeholder collaboration • Good internal project coordination (between the PIU, MCC, and the MCA) • Project adaptability <p>Challenges:</p> <ul style="list-style-type: none"> • Political challenges/influence • Complexity/ambitiousness of the project • Poor contextualization • Insufficient staff experience in TVET • Lack of coordination between activities

5.1.3 Effects on TVET Training Quality

According to the program logic, improved quality relates to the ability of the school to train skilled graduates that would be more likely to be employed and earn a higher income as a result of attendance. However, different stakeholders perceive TVET quality in different ways. For instance, while an instructor may perceive quality as being represented in a student’s ability to successfully perform a trade-related task, an employer might focus more heavily on the soft-skills attained (communication, team work, etc). As this evaluation focuses on stakeholder perceptions of TVET quality, different perspectives on different aspects of quality are included.

Many VEP sub-activities were designed to positively affect the overall quality of training provided at TVET schools in Mongolia. On the one hand, the equipment and facility upgrades were intended to improve quality by providing hands-on training opportunities for students to practice their skills. The National Vocational Qualifications Framework (NVQF) and the CBTs were designed to clarify and standardize learning objectives and resulting qualifications for obtaining employment. The NLRC, RMCs, and CoEs were designed to provide leadership, guidance, and high-quality examples of TVET education for other schools, with an eye towards improving education and the skills of TVET graduates.

The evaluation found that the extent to which each sub-activity was effective at increasing the overall quality varied significantly by sub-activity. Thus, this section will begin by discussing the status and effects of the major quality-focused sub-activities: the provision of improved training equipment and facilities, the CBT curriculums, the NVQF, the NLRC, the RMCs, and the CoEs. This discussion of the sub-activities will be followed by a discussion of the perceptions of TVET quality overall and how that has changed since the beginning of the VEP.

5.1.3.1 Facilities and Equipment

Background

The original Compact between MCC and the GoM had not included substantial investments in infrastructure or equipment out of concerns about long-term maintenance of those investments (MCC, 2007a). However, in 2010, the Compact was amended to include a fifth activity to the VEP, the 5. *Improvement of Learning Environments*.⁷ This activity focused primarily on the provision of training equipment and improved school facilities. In the end, 17 of the 72 TVET schools in Mongolia at the time received equipment and/or facility upgrades.

The facility upgrades included new classrooms for teacher training within the newly created RMCs; computer rooms and audio/video recording studios for creating digital training content; and workshop spaces in trades such as plumbing, electrical, automotive repair, and welding. These facilities were accompanied by training equipment that ranged from small tools like screwdrivers, hard hats, and wrenches to large diesel engines with programmable “errors” for students to diagnose and heavy equipment simulators for dump trucks, road graders, and others. The figures below provide a few examples of the facilities and equipment that were provided.

Figure 4: Electrical Testing Equipment (left)

Figure 5: Automotive Repair Training Systems (upper right)

Figure 6: Heavy Equipment - Backhoe Loader (bottom right)



⁷ No explanation exists in available documents regarding MCC’s shift from the perspective noted in the IM to the addition of facility and equipment upgrades in the amended Compact. However, some interview respondents noted that the upgrades were a priority within the government and the TVET schools, who lobbied for this inclusion. Others noted that equipment hadn’t been part of the original design because it was anticipated that other actors—other international donors, or private sector partners—would fill this gap. When this failed to emerge, the case was strengthened to include equipment in the revised Compact.



Figure 7: Student Electrical Tool Kits (left)

Figure 8: Video Recording Studio (bottom right)

Figure 9: Electric Circuit Practice Board (upper right)

In the project descriptions, high-quality training equipment at TVET schools was linked to overall quality of TVET education because it enables hands-on learning. Electrical students can practice splicing wires and welding students can perfect their technique, for example. Thus, provision of equipment was believed to contribute to higher quality TVET education. It should be noted, however, that it is not just the quality of the provided equipment that matters. The equipment must be relevant to the needs of employers, students must be able to access and practice on the equipment, and instructors must have sufficient training to teach the students how to use it. Facilities and equipment must also be maintained and/or replaced when broken to sustain benefits for the longer-term. These aspects of the facilities and equipment provided by the VEP are discussed in the following sections.

Current Status and Challenges

According to interviews, both the facilities and the equipment are well used. However, funding for maintenance has been lacking, particularly for the equipment investments (only 2 of 9 interviews for the facilities and 5 of 15 interviews for the equipment felt that funding for maintenance was sufficient). Often, maintenance is taken care of by the instructors and students. As one instructor stated, *“As for the equipment maintenance, we have to do that ourselves. There is no fund allocated from the state for the maintenance.”* In some cases, maintenance activities are seen as practical training for the students.

In the interviews, respondents noted a number of key challenges related to the equipment (43 interviews) and facilities (9 interviews) at their schools, including maintenance issues (16 interviews), outdated equipment (14 interviews), insufficient training in how to use the equipment (12 interviews), still not having enough equipment (10 interviews), and poor quality and/or installation of the VEP equipment and facilities (7 interviews on equipment and 5 on the facilities). Each of these key issues is discussed below.

The maintenance issues cited by respondents related primarily to license problems as well as difficulties in obtaining (or paying for) spare parts. Many of the computer-based pieces of equipment such as PCs and heavy machinery simulators require software licenses for continued operation of at least some of the functionality. In the case of many of the computers, for instance, anti-virus software licenses have expired and the schools haven't had sufficient money to renew them. Similarly, many of the heavy equipment and welding simulators require license agreements that have now expired. In some cases, the schools haven't even been able to locate or contact the original manufacturers of some of the simulators and, where they have been able to contact them, they find the prices too high to renew the license, leaving the simulators either unusable or with only limited functionality. Figure 10 shows a school where half the simulators are not usable due to licensing problems; the other half are used regularly.

Figure 10: Simulators and Licensing Challenges



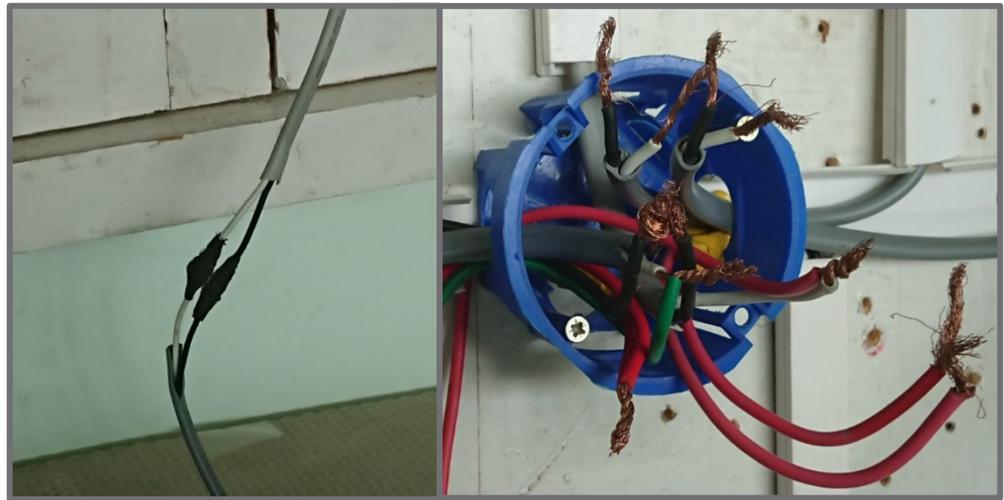
In several cases, respondents noted that the equipment provided by the VEP was great, but that more than five years after it was delivered, the equipment is now outdated. For instance, in one of the welding workshops, the instructors noted that the VEP had provided welders that required external power converters. Modern equipment now includes integrated power converters. Many of the older external power supply units now sit unused in a storage closet. In these cases, though the equipment provided was relevant at the time it was delivered, that is no longer the case today.

Twelve respondents raised concerns about the amount of training received on how to operate and maintain the equipment. In many cases, some respondents say, they never received proper training on how to use the equipment that VEP provided. They may have been provided user manuals or other documentation but were left to figure out the equipment on their own. In other cases, even when training was provided, given that many staff have turned over since equipment delivery, newer staff have often not been provided training on the equipment and have been left to figure it out on their own by the school.

In several interviews, respondents noted that despite the significant benefit provided by the VEP equipment, they still didn't have enough equipment to train their students properly. The maintenance issues discussed above play into this challenge, as does the technological evolution that renders older equipment obsolete. This means that for TVET schools to offer high-quality TVET education, where students can be trained on the same machinery and technology being used in the workplace, that regular investments in new equipment, upgrades, and replacements are necessary.

Another issue, however, is in consumable materials necessary for training such as welding rods or electrodes for welders, copper wire for electricians, or pipes and pipe fittings for plumbers. In many cases, the schools can supply only a small number of these consumable pieces, requiring students either to supply their own consumable materials or use and reuse the same materials. In one electricity workshop, this reuse meant that the circuit demonstration boards the students used had frayed wires and patched cables (see Figure 11).

Figure 11: Frayed Wires and Repaired Cables on Electricity Circuit Practice Board



The final key challenge noted by respondents was the quality of some of the furnished equipment, as well as design and/or installation issues. Reports of equipment quality varied substantially depending on the specific piece of equipment as well as the specific suppliers. In some cases, the respondents applauded the quality of the equipment, particularly those that were manufactured in developed countries. However, numerous complaints were received about some of the Chinese-manufactured equipment, with respondents noting that this equipment often lasted only a year or two before breaking. In one case, a school received electrical multimeters from two different manufacturers. The ones from the Chinese manufacturer broke within a year or so, they reported. But the others were still working. Respondents appeared more satisfied with the quality of products from South Korea and Western nations.

Other equipment was not installed properly or facilities were not properly designed. In one case, in an automotive mechanic’s workshop, a diesel engine simulator had not been fitted with the proper ventilation equipment. As a result, the instructors had jerry rigged some hoses from the simulator to a nearby window. Though this improvised solution helped, it was not a perfect solution, and diesel exhaust fumes still fill the workshop when they run the engine, so it can be used only for very short periods of time (see Figure 12). In other cases, the equipment provided was not well adapted to the Mongolian context. For

Figure 12: Diesel Engine Simulator with Improvised Exhaust Tube



instance, scanning pens were provided that digitized text as a person wrote it. However, the pens did not recognize Cyrillic script and thus the pens have sat unused since they were delivered by the VEP.

In another case, the plumbing and heating utilities were not properly designed in a workshop that was provided by the VEP. Ever since they were constructed, the building has not been properly heated (which can be a significant issue in Mongolia, where temperatures drop to -40 degrees Celsius in the winter) and does not have running water for the bathrooms or utility sinks. Though respondents were largely happy with the equipment and facilities received through the VEP, these challenges continue to hamper their ability to provide high-quality training to their students.

The data collected via direct observation generally support these findings from the interviews. The observations rated the facilities and a sample of the equipment on use, maintenance, and overall status on a scale of 1–3 (with 1 being best). Generally speaking, at least the equipment that is still

operational is well used (with an average score of 1.6, with lower scores being better). And the equipment and facilities are generally well maintained (with an average score of 1.5 for both facilities and equipment, with lower scores being better). However, the challenges noted above with licenses, difficulties in affording consumable materials in the workshops, and replacing broken items were also observed.

Equipment and Facility Upgrades in Context

The contextual introduction raised concerns about the large number of TVET schools in Mongolia vis-à-vis the number of students enrolled. This concern has particularly strong implications for equipment and facilities. Modern equipment and facilities require substantial capital investments and, due to rapid changes in technology, require regular updating (and thereby frequent additional investments). If schools are training hundreds of students a year in a given trade, these costs can be balanced out across students. But when schools have only 10 or 20 students per year in a trade, the expenses required to maintain and invest in the equipment and facilities are impractical. Even significant increases in the equipment and facility budgets for the schools likely wouldn't be able to overcome this challenge.

5.1.3.2 National Vocational Qualification Framework

Background

As noted in the literature review, many TVET systems around the world are moving toward establishing skills standards to improve overall TVET training quality and improve the relevance of the skills taught to

labor market needs. A vocational qualification framework such as the NVQF in Mongolia lays out the many occupational profiles for each trade and identifies the corresponding skills standards for each profile. Detailed information for each skill standard is then compiled to include a description of the skill, the competencies required to demonstrate that skill, assessment criteria for determining if a student has mastered the skill, etc. Then to operationalize this information for the training of students, CBTs can be established that lay out an outline for how those skills should be taught (the qualifications needed to be a trainer, the ratio of theoretical to practical training required for teaching each skill, the equipment and supplies needed, and how the students should be assessed to verify competency).

Thus, for example, the NVQF would lay out in an occupational profile what it means to be qualified as an Electrician Level IV and which skills are necessary to master to reach that qualification level. The skills standards would identify the competencies required for each skill. And the CBT curriculum would establish an outline for how to train Level IV Electricians so they can master each of the skills.

The VEP’s efforts to promote CBTs are discussed below in Section 5.1.3.3. This section will focus on efforts to establish the overall framework at the national level. The classification levels that were approved by the NCVET in 2011 are depicted in Table 16.

Table 16: NVQF Classification Levels

Level	Definition	Qualification Name
Level 6	Perform a profession autonomously (as an employee, or as self-employed person) with mastery of the scientific basis of the profession. Have the developed abilities required to perform the tasks independently. Be able to perform creative jobs, planning, designing, managing or supervising. Graduates will have broad knowledge and skills for paraprofessional/highly skilled work.	Advanced Diploma
Level 5	Performs a range of complicated tasks. Complicated processes can be performed without supervision. Able to supervise the job performance of the others. Perform a profession independently to design / manage / administer, without mastery of the scientific basis of the areas concerned. Graduates will have theoretical and practical knowledge and skills for specialized and/or skilled work.	Diploma
Level 4	Perform chiefly technical work, which can be performed independently, and / or entail executive and coordination duties. Perform a variety of complicated tasks. Complicated processes can be performed without supervision. Able to supervise the job performance of the others to a certain extent. Graduates will have theoretical and practical knowledge and skills for work.	Certificate IV
Level 3	Perform a specific activity and use related tools and techniques. Have the occupational abilities and skills required to perform complicated tasks under general supervision. Graduates will have knowledge and skills for work in a defined context and under general supervision.	Certificate III
Level 2	Perform relatively simple work, requiring very limited theoretical knowledge and practical capabilities. Have the occupational competencies along with the skills required to perform repeated, procedural, tasks with daily routine characteristics. Operate under close supervision. Graduates will have knowledge and skills for routine work under close supervision.	Certificate II
Level 1	Perform simple work, requiring very limited practical capabilities and close supervision. Graduates will have limited skills for routine and repetitive work under close supervision.	Certificate I

Current Status and Challenges

By the end of the Compact in 2013, the NVQF had been written out and had been approved by the NCVET; however, it had not yet begun implementation. A couple of key respondents who had worked on the project during implementation felt that this was a critical weakness of the NVQF effort. They believed MCC should have pushed harder for implementation to also occur during the Compact period rather than relying on the government and other donors to continue to push for implementation of the NVQF after MCC support ended.

In a 2015 review of the sector, the World Bank determined that no NVQF was formally in place in Mongolia. In part, it is likely that the lack of movement on the NVQF from 2013 to 2015 was linked to the change in government that occurred in 2012, which resulted in substantial changes of government priorities for the TVET sector as well as changes in how the sector was structured, as outlined in the sector overview in Section 4.1.1. Since then, the World Bank and other donors have worked to continue pushing the NVQF forward, though it has experienced modifications from what MCC had originally created. Today, respondents note that the NVQF (in its modified form) is in fact in place, though the extent to which it has been fully implemented and sector stakeholders are aware of its details varied. CBT curriculums are aligned with the NVQF, and students receive a certificate upon graduation indicating their qualification level in the framework.

At the time of the ET's visits in 2018, familiarity with the NVQF was mixed. Overall, in 60 interviews where familiarity with the NVQF was discussed, only 28 respondents appeared to have a strong understanding of the framework, compared with 30 who somewhat understood the framework and 13 with little if any knowledge about it (may include multiple respondents in a single interview). This varied substantially between respondent groups, however. In nearly all administrator interviews, for instance (10 of 12 interviews), the respondents showed a strong understanding of the framework, compared to 7 of 17 instructor interviews and only 8 of 28 student and graduate interviews. Particularly among students and graduates, understanding of the framework was largely limited to understanding the certificates resulting from their training and how the different levels compared to one another.

At a national level, the biggest impact of the NVQF, according to respondents, was the standardization of qualifications and certifications. Respondents noted that everyone could benefit from increased standardization; students could rest assured regarding the content of the training and the skills they would learn through training, and employers would better understand what they could expect from potential employees. The establishment of the NVQF started with the VEP; however, other donors continued working to push it forward to the formal framework it is today. Thus, the benefits of the NVQF to date cannot be solely attributed to the VEP.

One of the key, tangible outputs of the framework is the provision of qualification certificates at the end of training, which in the current version of the NVQF are supposed to range from Levels I to VI, with the certificates distributed at secondary-level TVET schools being at levels III or IV. Levels V and VI are offered only through universities and colleges after further training.

The objective of these certificates is for graduates to have documentation of their mastery level and for employers to have a consistent benchmark for understanding the qualifications and skills of prospective employees. When asked if the certificates were useful for employment, respondents within the schools

(such as administrators, instructors, students, and graduates) believed they were more important than did representatives of the private sector (7 of 11 interviews).

Out of 79 interviews where the NVQF was discussed, 50 respondents described benefits of the framework. Key benefits were that the certificates demonstrated skills (noted in 23 interviews) and that they are important for obtaining employment (17 interviews). However, 33 respondents (of 79 interviews discussing the NVQF) also shared challenges, such as conflicts between the NVQF certificates and employer or other industry-specific certification systems (21 interviews), and cases where the certificates weren't particularly useful for employers (11 interviews). Some large employers have their own certification systems that use different terminology; alumni, employer, and instructor respondents indicated that because employers rarely seek to reconcile the two systems, graduates instead go through a supplementary form of employer-specific testing.

Conflicts between the NVQF certifications and other certification systems were noted particularly among private sector representatives. Given the lack of a national qualification system in the past, many businesses have relied on international certification systems instead, such as the Australian certification system. Indeed, one of the VEP sub-activities trained instructors in the use and teaching of particular heavy equipment, which resulted in the participants receiving Australian qualification certificates. These international certificates don't necessarily line up with the skill standards set up under the NVQF in Mongolia, and there is still some distrust within the private sector about what an NVQF certificate really means in terms of the skills and capacities of TVET graduates. In some cases, the private sector representatives indicated that yes, they would ask prospective employees for their certificates, but it was mainly to document that the person had finished their program and studies. Despite the certificates, they felt the need to retrain the people to build their technical skills once they were hired.

Additional work toward an effective and useful NVQF is still needed, particularly from the perspective of the private sector. However, the VEP and other donor interventions have made some progress since 2008. In particular, the European Union (EU)-funded TVET program has expanded upon the NVQF and is working on a National Qualification Framework that incorporates both vocational trades as well as standard academic education in a single framework.

5.1.3.3 Competency-Based Training Curriculums

Background

As described above, CBTs are connected to the overall NVQF as they are the operationalization of the skill standards and provide an outline for how instructors should approach teaching the necessary skills. While the CBTs provide an outline, they do not include actual lesson plans or dictate the content of an instructor's lessons. Rather, they provide key aspects of what the training should include and what its outcomes should be. The curriculums include:

- An Occupational Analysis
- Core Curriculum:
 - Description of the Competency Units
 - Description of the Competency Elements
- Requirements for the Training Environment (such as equipment, supplies, and tools)

- Requirements for Trainers
- A Trainers Guide
- Assessment Criteria

The Competency Units are the key competencies that a graduate would need to master, such as “perform safety practices and housekeeping,” or “analyze signs, symbols, and data.” The Competency Elements provide a more detailed explanation of each Competency Unit, laying out performance criteria for each element. As an example, the Competency Unit of “Prepare Mining Materials and Tools,” consists of three Competency Elements: “Identify Materials and Tools Applicable to a Specific Mining Job,” “Request Appropriate Materials and Tools,” and “Receive and Inspect Materials.”

In addition to more clearly laying out the skill standards and providing an outline of how to teach the material, the transition to CBT included a significant expansion of the time students spend in practical training vis-à-vis theoretical or classroom training. Prior to the VEP and the introduction of CBTs, many programs had limited practical training components. But CBT pushed for a 20/80 split of practical and theoretical training, and there are some efforts to push the share of practical training yet higher than this.

Current Status and Challenges

According to interviews, most respondents believe that the CBTs are being fully adopted and implemented, though a not insignificant number report that adoption has only been partial (23 interviews reporting full adoption versus 14 reporting partial adoption, out of 38 interviews discussing extent of adoption). Similar results were also found in the final wave of the survey conducted by IPA in 2015, which found 50 percent of instructors said that they used CBT for all of their courses and another 36 percent said they use it for at least some of their courses (the remaining said they didn’t use it at all) (Linden & Malamud, 2017).

Additionally, there is some doubt about what this largely self-reported adoption and implementation means in terms of quality and adherence to the model. On the one hand are the 14 respondents like this instructor who noted, *“In my opinion we’re not 100 percent implementing the CBT. We’ve just started and we’re in a position of switching.”* A representative of another international donor went on to note, *“We talked about competency-based training. We talk about social partnership. Now, how real that is, I don’t know. I think CBT is not established in Mongolia. Or, if it is, it’s happening at different speeds in different places.”*

In some cases, the lack of uptake is related to specific trades. VEP created CBTs in 28 priority trades. Projects by other donors have continued to expand this pool of CBT-based trades. To this end, in 2015, the MLSP endorsed a national VET standard creating an approved CBT template for all future curriculums. Despite progress, however, not all trades have yet been reached. Some agricultural trades are among those that have been left out. In the case of one agricultural school, the instructors noted that they had taken it upon themselves to create their own CBT curriculum based on the templates from the ministry. They had such a strong appreciation for the benefits of the CBT approach that they wanted to create one for their trades as well.

Indeed, of the 36 interviews that discussed the benefits of the CBT, seeing the positive benefits of a CBT curriculum was the number one cited factor that helped enable CBT adoption in TVET schools (cited in

13 interviews). The biggest benefits cited by interviewees of the CBT model were: alignment of training with private sector needs, clarity and consistency in the skills transferred to students, an increase in practical training hours, and overall improvements in training quality (noted in 21, 19, 16, and 16 interviews, respectively, out of 36 interviews).

Seeing these benefits helped push sometimes reluctant instructors to adopt CBT curriculums in their classrooms. Other enabling factors included CBT training provided by VEP or other donors, the involvement of teachers in the CBT development and updating process, enforcement of CBT adoption by the ministry, and the provision of equipment (10, 9, 6, and 5 interviews, respectively, out of 23 discussing CBT enablers). The provision of equipment was important not just because it offered schools an incentive for early adoption of new practices. Respondents also noted the enabling effect the equipment had on the school's ability to implement the new practical training requirements. Prior to the VEP, there were no standard requirements for practical training. But CBT curriculums brought a requirement of at least a 20/80 practical to theoretical training split. But many schools didn't have a lot of training equipment to offer their students. The only opportunities to practice what they learned was through internships, which, at best, meant they showed up to their internships without any practical experience and the firms had to train them on the basics of practical application and at worst meant they graduated without ever practicing their trade. The provision of equipment by the VEP provided schools with a new opportunity to train their students using modern equipment and tools. This enabled students to practice their trade even before starting an internship.

CBT adoption has not been without its challenges, however, particularly in the early days of the VEP, as discussed in 33 interviews. The top factors that inhibited CBT adoption were: insufficient resources, particularly for funding the equipment and facilities for the practical training requirements (12 interviews); resistance to change on the part of instructors and administrators (9 interviews); excessive paperwork (8 interviews); the lack of a single curriculum across the country (8 interviews); the high frequency of updates and changes that are required (7 interviews), and limited private sector engagement in CBT development and updates (5 interviews). Each of these key challenges is discussed in more detail below.

As noted above on training equipment, it is both necessary for vocational training but also hard to get right. On the one hand, for example, graduating electricians who have never installed an outlet or light switch could hardly be considered "qualified" to be an electrician. But schools face substantial difficulties in providing the necessary practical training without additional resources, something that is particularly challenging in the current environment of dropping enrollments in TVET schools.

The second major challenge faced, particularly by the VEP, was resistance to the new CBT model. Instructors were used to creating their own curriculums and lesson plans. Though other donors have continued to push CBT curriculums after the end of VEP, VEP was the first to introduce the concept. As one instructor noted, *"In the beginning, it was difficult for us to understand what the goal was. Do we focus on classroom training? Practical training? How do we create assessment criteria to match the skills? And it was hard to break our habits of the old methods of just teaching. Now, we've gotten used to the implementation."* Most respondents who noted this resistance as a challenge also noted that it got easier as people started to become more familiar with the process and started seeing some of the benefits of the new approach.

Excessive paperwork was also a common complaint. As one instructor noted:

“In the beginning, we had a lot of challenges. A lot of documents and paperwork. We are still trying to improve it. With RMC, we are trying to reduce the amount of paperwork. On average, a curriculum for one trade is 60 pages of paper, of which we use/deliver content of only 5 pages that includes objectives, competency elements etc. For the whole academic year, we only use this much. Hopefully the number of papers will be reduced over time. The rest of the 60 pages we don’t use on a daily basis.” (Instructor)

The curriculum documents created by the MCA were quite long (some nearly 200 pages). And this is not including any lesson plans that the instructors need to create themselves. And, in some cases, information is repeated in multiple places, which adds to the bulk of the documents and complicates efforts to update the information consistently. For instance, the CBT curriculums, at least as implemented under the VEP, include information about the qualifications for instructors to teach the particular competency. But that information isn’t stated just once. It’s repeated in several sections of the CBT document, which makes ensuring consistent updates difficult. The length of the documents also adds to the complexity and time necessary for updates, which is directly related to respondents’ concerns about the frequency with which updates were required and the accompanying work load.

Some respondents were also concerned about there not being a single curriculum used by all schools. This lack of a single CBT has two causes: on the one hand, different donors have promoted CBTs, but through somewhat different models, which can confuse schools and duplicate effort. Some of the concern was also about the customization schools do in consultation with the local private sector, which results in some variations in the curriculums across the country. Respondents who noted this as a concern wanted there to be a single, standard curriculum around the country.

Despite the concerns raised with the frequency of updates and some of the variations that are created through the update process, most interviews (20 of 26 where frequency of updates were discussed) indicate that the curriculums are being updated regularly. They also indicate that the process is generally participatory, including teachers, the RMCs (and to a lesser extent, the MLSP itself), and private sector representatives. There are concerns that private sector engagement still isn’t as strong as it could or should be. But that engagement is happening (private sector engagement in TVET is discussed more thoroughly in Section 4.1.3.7).

The major benefits respondents note to this update process are that the quality is improved and that CBTs have been added for new trades, but there are disagreements among respondents on whether the update process increases or decreases the amount of work placed on administrators and instructors. In the ET’s interviews, more respondents indicated that it increased the amount of bureaucracy rather than decreased it (six interviews versus three interviews, respectively). Despite the improvements, though, most respondents (19 of 33 interviews) indicated that further updates would be needed to improve overall quality, mainly in terms of needing to keep the curricula current with technology and skill changes.

Prior to the introduction of the VEP, Mongolia’s TVET schools had an instructor-centric model where each instructor was able to create their own curriculum and lesson plans, which led to significant variations in quality and content. Moving to a CBT-based system presented a large learning curve and resulted in some initial resistance. However, based on the initial work of the VEP, which other donors

have continued to build on, there is now a “common language” of CBT in Mongolia. And the transition toward more practical training and increased involvement of the private sector is in progress, if not yet fully achieved.

5.1.3.4 National Learning Resource Center (NLRC)

Background

Given the large number of TVET schools spread out over a vast countryside, the VEP aimed to create a system of resource centers for schools to learn from. At the regional level, this consisted of the Regional Methodological Centers (which are discussed in more detail in Section 4.1.3.5), and at the national level, the VEP established the NLRC. The NLRC was intended to be a central, national-level repository for curriculum and training, particularly for online and digital resources. Through their online resources, it was anticipated that instructors around the country could benefit from improved multimedia resources, video-based lessons, and online and digital content.

Current Status and Challenges

Unfortunately, the NLRC is no longer in existence. The NLRC was created as an independent entity directly under the MoE (in which TVET was housed for most of the Compact period). When the administration changed in 2012, however, TVET was transitioned to the MLSP and underwent a significant change in priorities. After 2015, the NLRC lacked legal authority, which was not extended by the new administration, and they were no longer able to receive funding from the government. Without a budget, it ceased functioning and dissolved.

Since then, the NLRC has experienced something of a rebirth as the Assessment and Information Center, through support from other donors. However, the new function and purpose of the Assessment and Information Center is not entirely the same as that of the original NLRC; it focuses more on leading assessments in TVET than on promoting multimedia and online instructional resources.

In interviews, though many respondents reported that the NLRC was useful for their online resources and digital training content, just as many respondents indicated that they knew nothing about it.

5.1.3.5 Regional Methodological Centers

Background

The VEP created six RMCs across Mongolia, with the intention that they could serve as resource centers for local schools to promote improved methodological and pedagogical approaches and provide training to instructors to build capacity in the long term. Unlike the NLRC, the RMCs were not established as independent entities but rather were housed within a TVET school in each region. The funding for the RMCs goes through the schools in which they are housed.

Current Status and Challenges

Today, all six RMCs are still operating. Unlike the NLRC, since their funding comes through the schools in which they are housed, the RMCs have not had to deal with an expiration of their legal authority or suffered the elimination of their budgets. The financial dependence on the school, however, does complicate the relationship between the RMC and the school. This relationship is further complicated by

the fact that the RMC managers are selected by the MLSP while the methodologists under the manager are selected by the school director. The ET heard some reports of the RMC budget and/or some of their facilities have been re-appropriated by their schools. For example, classrooms that VEP built to be teacher training classrooms have started to be used for student training by the TVET school, or equipment belonging to the RMC is now being used by the school. Similar instances were reported in a 2016 review of the RMCs funded by the EU (Van Asseldonk, 2016).

Being situated with specific schools may have helped contribute to their continued existence, but respondents also said that it hampered their ability to fulfill their intended mission. As one RMC respondent noted the following:

“When MCA introduced the RMCs, the TVET sector really needed a methodological center. The TVET sector needed someone to reach out to each of the schools and work with them. MCA equipped the RMC and soon after, the project was closed. Now, the challenge in running the RMC is the legal environment. We’re supposed to be outside the schools and be in charge of all the schools in the region. But, today, we are in the pocket [physically and financially] of one of the schools. This has jeopardized our independence. As soon as the RMC started, the project closed.” (RMC staff member)

Despite the challenges, the RMCs are at least partially fulfilling their intended function as central authorities on curriculum development. When they have funding available, they also provide instructor training. However, the largest part of their role currently is as an intermediary between the MLSP and the schools. If the MLSP needs to collect data, they do so through the RMCs. Similarly, if they have new policies or procedures to disseminate, they go through the RMCs. Thus, the RMCs are continuing to operate and serve a function within the TVET system.

Though they continue to serve some functions, the usefulness of their services to end users in the TVET schools is less evident. When respondents were asked about the extent to which they found RMC services useful, about as many said yes as not (9 interviews noted the RMC services as useful compared with 10 that said they were only somewhat or not at all useful, out of 35 interviews discussing the RMCs). Use of services overall appears low, in part because more expansive services like instructor training are largely dependent on outside sources of funding. Of the few that were able to comment on how their use of RMC services has changed over time, three indicated it has declined with none saying it had increased.

The EU is currently supporting the RMC’s work, and in 2016, they conducted a capacity assessment of the RMCs. The assessment identified several weaknesses in the inputs received by the RMCs as well as their operating structure and environment. The biggest complaint about inputs concerned insufficient resources (financial, equipment, and internet bandwidth/speed). The report also noted similar roles and challenges to those noted above from the ET’s interviews (Van Asseldonk, 2016).

5.1.3.6 Centers of Excellence

Background

The VEP established three Centers of Excellence: two in Ulaanbaatar and one in Govisumber. Each school was selected as a specialist in a different sector:

- The Technical and Technological College (Ulaanbaatar): CoE in Construction
- Govisumber VTPC: CoE in Mining
- School of Health Technology (Ulaanbaatar): CoE in Nursing

The CoEs were intended to be exemplary schools in their fields, with highly trained sector specialists as instructors and well-equipped facilities with the most modern equipment. Their role in the sector would be to serve as examples of what well-run, well-equipped TVET school could look like, also producing high-quality students and being diligent about showcasing their efforts as part of building partnerships. Another intended function of the CoEs was that these schools could then spread their expertise to other schools.

Current Status and Challenges

All three schools are still functioning today. The evaluation team visited the CoE in Construction and CoE in Mining, which are still part of the TVET system. The CoE in Nursing is not considered part of TVET and falls under the jurisdiction of the Ministry of Health. Respondents in only 15 of 35 interviews that discussed the CoEs indicated being very familiar with them. Among these interviews, though the CoEs were generally perceived to be providing high-quality education for their own students, respondents disagreed over whether they were really providing benefits to the sector as a whole.

Although respondents within the CoE schools visited thought they were fulfilling their intended objectives of spreading knowledge and capabilities, respondents from outside the CoEs had a very different perspective. From the 35 interviews that discussed the CoEs, only 14 respondents indicated that they both knew of the CoEs and had had substantial contact or interaction with them. In 10 interviews, respondents were not aware of the CoEs at all, and in 9 others, they knew only a little about the CoEs. Often, in this latter group, respondents had heard of the CoEs and knew that the CoEs were supposed to be “very good” in their fields but had never visited the schools or interacted with their staff in any way. In talking about the specific services or trainings received from the CoEs, respondents in 9 out of 13 interviews indicated they had never received any services or training of any kind from the CoEs.

Since the CoEs themselves thought they were doing well in carrying out their role of transferring knowledge, and many non-CoE respondents weren’t well aware of the CoEs, examining the question of why the CoEs were not fulfilling their intended function was challenging. However, incentives and funding are two likely factors, based on limited anecdotal evidence. In one case, it was noted that the CoEs had an incentive to remain the highest-quality and best-equipped school in their field because it attracted more students to their school and, since TVET funding is based on student enrollment, created an incentive for the CoEs not to share their experience and knowledge. Additionally, the CoEs do not receive any particular funding for them to perform in a capacity-building role. Thus, doing so removes resources from other necessary school activities like training students.

5.1.3.7 Perceptions of Training Quality

Background

The prior sections focused on the results of key quality-focused sub-activities. Collectively, these sub-activities were intended to improve the overall quality of training provided by TVET institutions. To

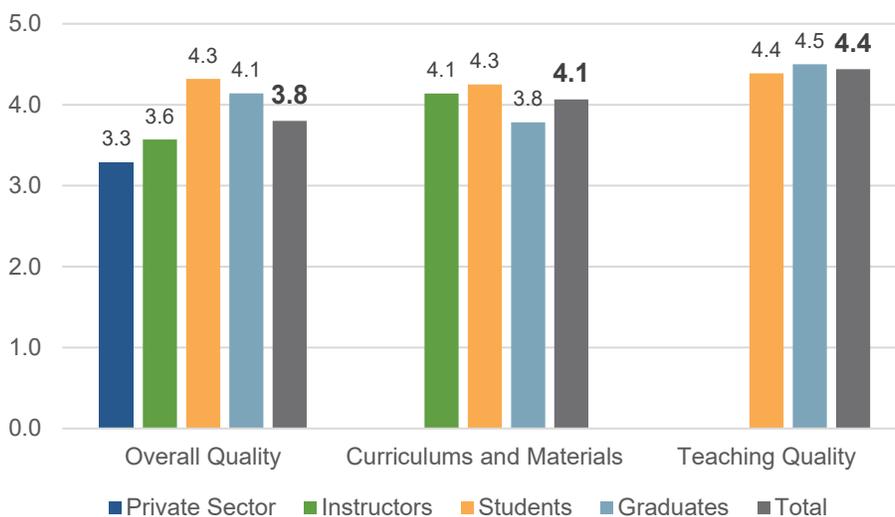
estimate changes in training quality, the evaluation focused on measuring stakeholder perceptions of training quality and how it has changed since the beginning of the Compact.

Current Status

Members of the private sector as well as members of the school community (instructors, students, and graduates) were asked to rate various aspects of the TVET training provided. Private sector representatives were asked only about their perception of overall training quality, as they were less likely to know specifics about the training provided. Instructors were asked about the quality of the curricula and training materials as well as overall quality but were not asked to rate their own performance in teaching quality. Students and graduates were asked to rate the quality of the curricula and training materials as well as the quality of instruction (which were averaged together for an overall score).

As seen in Figure 13, private sector representatives were the most pessimistic of the respondents about overall quality, with an average score (from 1 to 5, with five being best) of 3.3. Students were the most positive group, with an average score of 4.3.

Figure 13: Perceptions of Training Quality



As seen in Figure 13, private sector representatives were the most pessimistic of the respondents about overall quality, with an average score (from 1 to 5, with five being best) of 3.3. Students were the most positive group, with an average score of 4.3.

Teaching quality was consistently ranked higher than the quality of the curricula and training materials. In discussing the curricula and training materials, respondents frequently noted challenges of inadequate training equipment, books, and consumable materials (such as wires for electrical students to practice with or spare pipes and fittings for plumbing students), which likely contribute to the lower scores for curricula and training materials.

The vast majority of respondents (43 of 45 interviews discussing changes in TVET quality over time), across all respondent types, agreed that regardless of how they scored the quality of the training today, the training was substantially improved from that provided prior to 2008. Respondents attributed this change to several key factors: the facility and equipment upgrades, the VEP in general, and the addition of more practical training opportunities such as internships and training in school workshops (24, 9, and 8 interviews, respectively, out of 28 interviews that gave a reason for the changes in quality).

Training Quality Strengths and Weaknesses

In discussing TVET training quality, respondents were asked to comment on the aspects of training quality that were particularly strong as well as the aspects that needed additional improvement. The key strengths of TVET training quality were improved equipment and facilities (largely thanks to the VEP),

the focus on practical training over theoretical training, and the overall skills students were learning as a result of training (reported in 54, 32, and 23 interviews, respectively, out of 65 interviews discussing TVET strengths). The key challenges faced include inadequate facilities and/or equipment, a need for even more practical training, as well as the need for TVET graduates to have more soft skills, and not just trade skills (22, 19, and 15 interviews, respectively, out of 35 interviews discussing TVET challenges).

Equipment and practical training were reported as both strengths and weaknesses in the system, which is likely due to the improvements over time as well as the initial point of comparison. Prior to the VEP, the Mongolian TVET sector relied primarily on theoretical training. Many schools didn't have substantial training equipment and those that did usually relied on outdated Soviet-style equipment. As one instructor noted, "[The] MCA project benefited us. We didn't have anything before. It transformed our training. Before, we only had pictures to show [to demonstrate how to perform trade skills]. Now we have equipment to work on. We didn't have that before." Before the VEP, very little equipment was available, and so students could be "learning" their trade without having substantial experience with the necessary tools or having practiced any of the skills. Electricians were graduating without experience in connecting circuits or splicing wires. Plumbers graduated without ever having installed a toilet or water faucet. As noted in the quality scorings, the current situation isn't perfect, however, and still leaves room for improvement. Thus, though the situation is vastly improved from what it was in terms of access to equipment and tools and time for practical training, the respondents noted there is more work to be done.

5.1.3.8 TVET Quality Key Findings

Table 17: TVET Quality Key Findings

Outcome	Evaluation Question	Key Findings
Outcome 1. Improved TVET System Quality	3. To what extent have the TVET school and CoE facilities been maintained since the end of the Compact? Why/why not?	The facilities have generally been well maintained. However, funding for maintenance was an issue, resulting in school staff and students performing most of the maintenance tasks.
Outcome 1. Improved TVET System Quality	4. To what extent has the training equipment provided by the Compact been used and maintained since the end of the Compact? Why/why not?	Where the equipment is still operational, it appears well used and maintained to the extent possible. Key challenges include: <ul style="list-style-type: none"> ○ Maintenance issues (licenses and replacement parts) ○ Outdated equipment ○ Insufficient access/equipment is still not enough ○ Insufficient training ○ Poor quality since delivery
Outcome 1. Improved TVET System Quality	5. What is the status of the National Vocational Qualification Framework (NVQF) and associated competency standards? To what extent are they utilized by TVET programs and students/graduates? Are the certifications valued?	As of the end of the Compact, the NVQF had been drafted and approved but not yet implemented. Other donors continued the work until the NVQF was formally implemented. However, many stakeholders (including teachers, students, and private sector respondents) were unaware or only partially aware of the NVQF, indicating that more work remains to ensure full adoption and utility. The certificates are often valued as documentation of program completion, but they are not yet fully valued as a representation of graduates' skills. In some cases, other standards and certifications are valued more highly for this latter purpose.

Outcome 1. Improved TVET System Quality	6. How do the changes in the national qualification framework affect the overall functioning and operations of the TVET system?	The NVQF has improved the sector by making it more standardized and comparable around the country.
Outcome 1. Improved TVET System Quality	7. To what extent have the competency-based training (CBT) curriculums created by the project been fully adopted and implemented in TVET schools across the country?	Based on the initial work of the VEP, and the work of other donors, CBTs are becoming commonplace. Though more work is needed to ensure CBTs are used by all schools and to further unify curriculums across the sector, the sector now has a “common language” as well as a transition to more practical training and increased private sector involvement.
Outcome 1. Improved TVET System Quality	8. What factors have enabled and/or constrained the effective adoption and implementation of the CBT curriculums?	Key enablers: <ul style="list-style-type: none"> • Seeing the CBT benefits on student learning • Training (instructors, administrators, others) • Involvement of instructors in curriculum development • Government requirements to use CBT • Provision of equipment to enable practical training Key challenges: <ul style="list-style-type: none"> • Insufficient resources (particularly for funding equipment/facilities) • Individual resistance to change • Excessive paperwork • Lack of a single curriculum • Additional workload due to the frequency of updates • Insufficient private sector engagement
Outcome 1. Improved TVET System Quality	9. To what extent has the TVET sector updated materials or developed new CBT materials post-Compact?	The CBT curricula have often been updated post-Compact, with respondents believing that the updates have: <ul style="list-style-type: none"> • Improved quality • New trades added
Outcome 1. Improved TVET System Quality	10. To what extent are the NLRC and RMCs utilized by TVET centers and instructors/staff?	The NLRC is no longer functioning due to its unclear funding and legal status and after the new administration arrived in 2012 and political priorities changed. <p>The RMCs are all still functioning and fulfilling some roles within the TVET system, though not to the extent originally envisioned in the VEP. They face several challenges related to how they are structured.</p>
Outcome 1. Improved TVET System Quality	11. To what extent are the CoEs taking on the role and function of a center of excellence? Why/why not?	Though the CoEs are still in operation, they are not fulfilling the intended role in sharing and expanding high-quality TVET training practices.
Outcome 1. Improved TVET System Quality	12. To what extent do students/graduates and teachers perceive the curriculum and training materials are of high quality?	Overall, instructors, students, and graduates are more positive than members of the private sector regarding TVET quality.
Outcome 1. Improved TVET System Quality	13. To what extent has the quality of teaching improved since the start of the project?	Nearly all stakeholders agree that the quality of teaching and training provided by the TVET schools has increased significantly since the inception of the Compact. Key drivers of this improvement include: <ul style="list-style-type: none"> • Facility and equipment improvements • VEP • Addition of more practical training

<p>Outcome 1. Improved TVET System Quality</p>	<p>14. To what extent have other TVET centers used materials or trainings developed through the VEP to improve teaching quality?</p>	<p>Almost all stakeholders were well aware of the VEP interventions. As noted above, one of the top drivers of the change in quality was facility and equipment improvement (mostly from the VEP) as well as the VEP project in general, including the trainings it provided.</p>
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5.1.4 Effects on TVET Relevance

Alongside improving TVET training quality, one of the core long-term outcomes of the VEP program logic is strengthening the relevance of the TVET sector to the private sector. A challenge identified during the development of the VEP was that the TVET sector was not responsive to private sector needs, which poorly prepared graduates to enter formal employment and forced private companies to look elsewhere—including abroad—for qualified labor. Following Mongolia’s transition to a market-based economy, TVET had remained with low-quality, Soviet-style training that made the sector largely irrelevant to the major growing economic sectors, such as construction and mining. An overall project goal was, therefore, to make the sector more directly relevant to the private sector, with supporting sub-activities under each of the project’s five primary activities (see Annex 8.1 for the program logic).

The evaluation looked closely at how several sub-activities intended to improve the relevance of the TVET sector. This section will review major sub-activities and the extent to which they affected the relevance of TVET training to private sector needs. First, this section will discuss the ATVET and NCVET, followed by the Career Guidance System (CGS) and LMIS activities. Then the results of these relevance-focused activities will be discussed: the extent of private sector engagement, level of engagement via public-private partnerships and the matching of skills with private sector needs today.

5.1.4.1 ATVET and NCVET

Background

As a CP for VEP implementation, the GoM was required to pass a national TVET law that formalized the National Council for Vocational Education and Training (NCVET), a high-level body with equal representation from both private sector and government representatives, among other reforms to TVET policies. According to the Compact Amendment, “Private sector membership includes non-governmental organizations and professional associations jointly organized by employers and the Chamber of Commerce and Trade.” The Agency for Technical and Vocational Education and Training (ATVET), as a government implementation agency, was also created through the TVET law to support the law’s implementation and to act as the secretariat for the newly founded NCVET.

The role of the NCVET was to act as the highest-ranking TVET authority within the new TVET system. In the first few years after the ATVET and NCVET were established, it was headed by the Deputy Prime Minister and carried high-level decision-making authority that facilitated oversight of the sector’s early developments. A government respondent called the ATVET, “*The peak point of our sector, the guiding agency. Because there was a newly established agency, it had a lot of energy at the time.*”

The ATVET appears to have had a broad mandate, including coordination of the implementation of the MCA project. Respondents report that activities led by the agency included capacity development for members of the NCVET by facilitating study tours to learn about TVET systems and CBT abroad, and

leading implementation of the TVET law. One government representative listed the following activities completed by the ATVET: “[ATVET] appointed the school directors, signed performance agreements, monitored the implementation of CBT. During the operation of ATVET, the sector improved significantly.” The ATVET also supported the NCVET and acted as its secretariat. When asked about the impact of the ATVET, 8 of 13 respondents focused on its role as a convener and facilitator across the TVET sector, while four others discussed its importance as a connector with the private sector.

Effect of Political Transition

Following the political transition in 2012, the ATVET was dissolved, and accordingly, its responsibilities changed substantially from its original form. TVET was not as high of a priority for the incoming administration, and consequently all TVET responsibilities transitioned from the MoE to the MLSP in a much-downsized department with extremely limited capacity. The organization fell in level, losing its agency status and becoming a department between 2012 and 2016.

Losing its agency status and becoming a much smaller department within the MLSP had major ramifications. Because the TVET law remained, the NCVET was legally required to continue, but its operations became significantly diminished. Respondents reported that when it began, the ATVET had a staff of “30 people or so” (according to a government representative) and four separate departments. When it became a department, more than half the staff were lost. After the election of 2016, the incoming government shifted TVET to an even lower level, becoming a division. But in April 2018, the TVET organization was elevated again, moving from a division to the department level within the MLSP, and has a staff of “only eight people” (according to a government representative).

Beyond the reduced size of the staff, the transition also accompanied a loss in capacity and authority. When TVET held agency status, the NCVET was headed by the Deputy Prime minister, giving the council direct access to the Prime Minister when needed. Other original council members included heads from other government agencies or sector ministers as well as members of the major federations or trade unions and large international businesses, making the NCVET a high-level convening of decision-makers. After the transition, both the NCVET and ATVET, as well as many TVET schools, lost many of these original members that had participated in training and capacity-building activities as part of the VEP. Another donor observed, “Agency has much better access than directors. Department head is one level lower. So this department head cannot just go knock on the state secretaries’ door. But if it still remained this agency, the TVET sector would have advanced more than now.”

Interviewees reported that this political transition stalled the National Council’s and the sector’s momentum. It simultaneously lost its influence through the loss of agency status and high-level members and its capacity to implement decisions due to the drastically reduced ATVET staff. One private sector representative commented on the effect of that transition:

“But the NC[VET] almost stopped working after 2012. Before it was active, and there was a separate agency, and the agency was moved inside of the Ministry [of Labor] and the NC[VET] ... There was nothing to do for the National Council, to make a recommendation/consultation, it wasn’t very active. Before it was very active.”

Current Status

Now private sector engagement through the Council is much more limited. Private sector representatives report that while the Council would previously meet monthly, or at least quarterly, meetings today take place perhaps once a year (if at all) and that the Council is much less influential. The NCVET used to be the national level of a series of councils that linked with the private sector, including sectoral councils and regional councils. Whether these lower-level councils are continuing varies depending on the sector and the region. Regardless, connections with the national level are very weak or nonexistent, leaving private sector engagement to take place on a much more local level.

Some interviewees also shared that the Council's constantly changing membership (for those slots held by government representatives) poses a challenge to its effectiveness. Government NCVET members appear to change frequently, while private sector memberships remain much more consistent. A private sector respondent shared, *"Now we're trying to separate it from political influence. NC has 18 members, 9 from government and 9 from private sector. From the private sector side, only 40% of the members changed. But from the Government side, members changed 11 times."* This instability prevents long-term relationship building among members, or between the government and the private sector. Yet despite their long participation, some private sector representatives complain of having insufficient authority within the Council.

While most local private sector partners were not aware of the NCVET, four private sector partners commented that strengthening or restoring such a Council is important in building relationships between TVET and the private sector.

"It should continue working, keeping the level of power, leadership they achieved, instead being forgot, losing the leadership, being diminished, less visible. Maybe more push on this to continue is needed." (Private sector)

5.1.4.2 Career Guidance System and LMIS

Background

Developing an online CGS and LMIS is the major activity under *Activity 4*. Sub-activities as part of the LMIS (conducting a labor market study, developing the LMIS system) were intended to make labor market information more widely available in the sector, ideally to better match the skills taught in TVET schools with the skills needed by employers—a key component of relevance. The CGS was similarly intended to improve access to accurate information, but directly to students and guidance counselors, leading students toward greater understanding of where opportunities are present and in what fields. This would ultimately increase employment and income by guiding students toward areas where jobs are available.

In addition to creating an online CGS, the VEP also developed a counselor service network and training of trainers program for career guidance, being one of the first actors to introduce the concept of career guidance into Mongolia.

Both systems were created within the first few years of the project, under the authority of the Mongolian Labor Exchange Central Office (LECO). The VEP developed both systems and provided equipment (super servers) to LECO to host the systems. Each system had a dedicated website and was designed

to provide online resources to job seekers or other stakeholders, including TVET administrators and private sector partners.⁸

Current Status

Now neither system is functioning. Following the political transition in 2012 when the government reshuffled its agencies, LECO was reformed and ownership of the system was lost during the transition. One interviewee reported that as part of the reshuffling, LECO shifted to a new building and could not transfer the “server and database and everything” to its new facilities. One donor who worked in the project noted that the super-servers were not well used after the end of the Compact and may be unaccounted for. Today, a research center conducts some market-based research but not on the scale anticipated by the LMIS system. A member of the PIU described the situation after the political transition in 2012 and the challenges for the LMIS and CGS systems:

“Yes, it’s very bad that the people have changed and policies are not really following the lasting achievement of the project. It’s not so perfect. Currently, this issue is related to the different departments of the Labor Ministry. And two departments of the Labor Ministry cannot manage this and working together. It’s very complicated. Why, I don’t know. When we are starting to discuss questions about the budgeting, financing, every time there are some problems.” (PIU)

Out of 36 interviews with students, graduates, or guidance counselors, only 4 interviewees said they were aware that the LMIS or online guidance system had ever existed, and of these, only 1 specifically referred to the CGS developed under the MCA project. There is a possibility that the others were referring instead to a newer website from another donor. Some government officials and guidance counselors are aware that it existed, and a few respondents noted that it had been useful in the past for “*the government to have a centralized labor exchange office for career guidance, LMIS, labor market research, data exchange, and so forth.*” (Donor) One guidance counselor claimed that the CGS materials were available in paper format, which s/he continued to use.

Though the systems established by the VEP are not functioning, other donors recognized the need and have taken some steps to fill the gap. For career guidance, the Swiss Development Corporation (SDC) fulfilled a request from LECO and established a complete career guidance center with a library, counseling rooms, group counseling, and new online platform. This project, described below, will end in February, after which control of the system will be transferred to the General Office of Social Welfare and Labor.

“We tried to first revive the system, this website. But then having seen that one it was not really addressing the needs. We decided to set up a new one. More interaction with more comprehensive information not just about your skills, but about opportunities – where can you get the skills.... I would say that all the information was in one place, like a one-stop shop. As far as I know, the platform has over 60 occupations now.” (Donor)

⁸ The CGS was accessed at <http://www.hzzm.mn>. The LMIS website was located at www.labornet.mn. Neither is available.

Other donors are also investing in career guidance; the German Society for International Cooperation (GIZ) has since invested in individual schools by supporting salaries for career guidance counselors and offering a series of career guidance counselor trainings over several years.

For labor market information, progress has been more limited. At the national level, the GoM continues to fund a research institute that does some market research. Other donors are supporting labor market exploration at a more local level:

“We’re working on local level labor market systems. There isn’t a direct link to the national-level LMIS systems. But, in theory, there could be a link to higher level systems. There is no national level LMIS survey. There is nothing.” (Donor)

5.1.4.3 Extent of Private Sector Engagement

Background

Apart from the NCVET and ATVET, the project implemented other sub-activities to increase engagement between the private sector and TVET schools. The new TVET law also included components in support of this goal, such as language around a new “levy system” that would allow private sector partners to contribute directly to TVET schools. Sub-activities included supporting “on-the-job” pilot programs for practical training for students, bringing in private sector partners in the development of the CBT curriculums, hosting employer events, funding social partnership⁹ positions at TVET schools, and a range of other activities. The VEP also hosted a competitive PPP grant program to increase private sector engagement (see 5.1.7.3 Engagement with PPPs).

Current Status

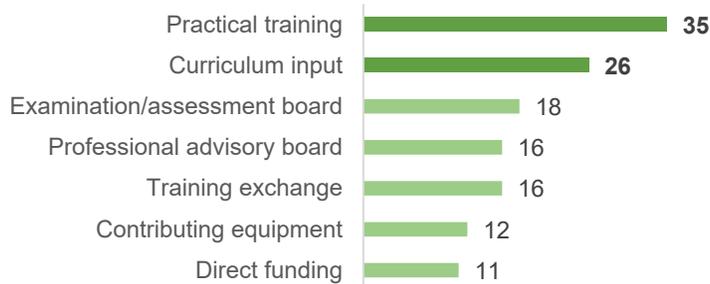
Most respondents agree that private sector engagement has increased since the VEP. Of the 28 interviews that discussed whether private sector engagement had changed over time, 24 reported that engagement has increased, while just 2 said it decreased.

“They became more active. Before, they didn’t know how they could be involved with TVET schools and activities. In 2009, it brought the TVET law. The law had a section on social partnership. And gave them some support from the government if they were to get involved in the TVET sector.... Before, it wasn’t a partnership. Now, they do things together. I think it’s good.” (Government representative)

Within the increasing level of engagement, TVET schools and private sector partners are increasing the depth and breadth of their partnership into various types of interaction. Types of engagement between TVET schools and the private sector were discussed in 49 interviews. Of those, practical training was mentioned most frequently overall (35 of 49) and was also mentioned by 15 of 18 private sector interviews. Curriculum input was the second most common form of interaction, followed by private sector

⁹ Social partnership, as discussed in the TVET law, refers to a partnership between a TVET school (usually public) and private sector entities. The law enabled the private sector to build partnerships with TVET schools, something that had not previously existed under the former Soviet-focused system. In practice, social partnerships were described as any type of collaboration between TVET schools and employers (even public sector employers), regardless of whether financial or tangible resources changed hands.

Figure 14. Frequency of Types of Private Sector Interaction, *by number of interviews*



participation on examination boards and then professional advisory boards, along with training exchanges between private sector partners and TVET instructors. Direct funding and providing equipment were mentioned less frequently (11 and 12 out of 49, respectively). Examples of equipment provided by private sector partners include an excavator donated by a large mining company, two heavy machinery simulators, and other smaller-scale spare equipment or tools no longer in use.

This increased level and range of interaction is largely attributed by respondents to an improved mutual understanding of the value of their partnership. Of 20 respondents that shared enabling factors for engagement with the private sector, 13 (primarily within the private sector and among TVET administrators) reported that the biggest factor enabling private sector input into the TVET system is the change in the schools’ perspective, where schools now appreciate the importance of partnering with the private sector and are reaching out proactively for input. Similarly, 7 of 20 respondents observed that collaboration has increased as employers have gained increased appreciation for TVET as a provider of skilled labor, making them more motivated to partner. Formal mechanisms also support this engagement: the TVET law includes components requiring schools to develop social partnerships, and some schools have a formal working plan or a professional advisory board to facilitate engagement. The VEP encouraged schools to hire staff dedicated to social partnerships, something that has continued to this day in many schools.

“The situation is getting better because employers now have better understanding that this school is providing workforce for them. So we don’t face challenges when it comes to communicating/ collaborating with the employers.” (Guidance counselor)

Although respondents shared near consensus that engagement has increased, collaboration was almost nonexistent before the MCA project, and the large amount of challenges to engagement raised by respondents indicates that despite some improvement, the current level of engagement is still far below its ideal level. This is not surprising considering that the TVET sector operated previously through a Soviet-like model, where private sector engagement was non-existent. So any change was a drastic departure from the status quo, though respondents also held different perspectives on the current level of engagement (Figure 15). Though 18 of 33 interviews noted that current engagement is strong, this view is not universal. Eleven of 33 felt the TVET sector had just *some* engagement with the private sector, and 9 noted that engagement is limited. These responses rely on the perspectives of respondents, as the ET was not able to independently assess the level of engagement. In a post-Soviet model where

Figure 15. Respondent Perceptions of Level of Private Sector Engagement, *by number of interviews*



private sector engagement is just beginning within TVET, what some respondents might consider “strong engagement” may not be the same as an international standard for engagement.

Challenges to Engagement

Respondents also noted several barriers to engagement with the private sector. Challenges to engagement were raised in 34 interviews, including during most interviews with government (4 of 5), private sector (14 of 18), and donor representative (4 of 5) interviews. The most common challenges raised include the low capacity of local businesses, seasonal work cycles, lack of engagement by larger businesses, and a lack of understanding by the private sector of the importance/potential of TVET.¹⁰

The limited capacity of the Mongolian private sector was the most commonly raised challenge, discussed in nine interviews. These respondents noted that the private sector in Mongolia is still young and very local, with limited financial capacity to support TVET schools on a larger scale. Most hire infrequently and in small numbers, meaning that partnership with those businesses don’t often result in direct employment or financing for the school—results that are even less frequent during economic downturn. One private sector representative lamented not having more to offer the TVET schools:

“It’s the economic situation of this province that if we had more developments going on in the sector, we would be happy to employ the graduates of this school, because the quality of the training is keeping increasing. But it’s our situation. This is the bad influence for school. Teachers and schools making effort to partners but no offer from employer’s side.”

This challenge, coupled with an ongoing challenge of engaging larger businesses (named in four interviews), was particularly common among non-UB locations. Partnerships with larger businesses are highly coveted by TVET schools, as explained by one guidance counselor:

“The first thing I want to do is to expand this Advisory Board – not only those 19 members; I want to recruit more reputable big companies... If I can include those big reputable companies into the Advisory board, our graduates will be provided with an opportunity to be hired by better employers.”

As raised by four other respondents, for sectors with seasonal work (such as construction or agriculture), the TVET school year is misaligned with when work must take place, limiting opportunities for practical training or exchange.

Even though an improved understanding of TVET was named in seven interviews (out of 65 interviews discussing private sector engagement) as an important enabler for private sector collaboration, six other interviews countered that a poor understanding of TVET remained a challenge. One added the below assessment of the difficulty in partnering:

“TVET sector has now a very good understanding of the labor market needs. But [private sector]’s understanding is very low, especially newly established enterprises don’t know how to prepare their workers through TVET sector. ... Private sector people don’t have much

¹⁰ An equally common challenge is lack of clarity around financing policies; for more information on financing and private sector partnerships, see 5.1.7.3 Engagement with PPPs.

understanding about capacity building. We are trying to involve these people and associations, but it's not enough. Especially in rural areas it's very difficult."

The lack of independence within the TVET sector is considered a challenge by partners and TVET administrators alike, and a barrier to schools being able to incorporate feedback when provided. Restrictions around the content of the curriculums, financing policies, and the appointment of TVET directors were all mentioned by private sector representatives and other stakeholders as challenges to ongoing engagement. Though the TVET law was intended to create a more favorable legal framework for TVET, lack of clarity around the revised policies or inadequate implementation by the GoM leave the sector without the intended flexibility and independence.

Private sector engagement also remains one of the sector's biggest overall challenges, identified in 12 of 42 interviews discussing sector-wide issues. Concerns around private sector engagement include that the private sector doesn't take initiative in the sector and that TVET is still falling short of meeting private sector needs (see 5.1.7.4 for more on matching skills with private sector needs).

"There's a lot of work to do. There's not much progress in the industry or engagement with the private sector. Of course, they understand a lot. Conceptual framework is there, and the law is there. Only a lack of implementation, efficient action, or attracting the industry/private sector, to bring them on board, is still weak. I wouldn't say bad, but it is still weak." (PIU)

5.1.4.4 Engagement with PPPs

Introducing PPPs into the Mongolian TVET sector was intended to increase private sector engagement in TVET while also broadening the funding base for the schools. To enable more PPPs, the new TVET law contained provisions intended to allow direct investment into TVET schools.

Current Status

Instances of direct funding from private sector partners to schools, major equipment donation, or joint projects are extremely limited. As described in Section 5.1.7.2, most respondents report that private sector engagement has increased since the Compact: 24 of 28 interviewees, compared with just 2 saying it has decreased. However, this engagement includes a broad range of interaction types, where direct investment was listed among the least frequent.

When asked, schools often reported that they are effectively engaging in PPPs. However, when the ET probed about the types of PPPs they were engaged in, it became clear that schools were referring to all manner of private sector engagement and not just that which involved direct investment by the company in the schools. School administrators often referred to partnerships with businesses to offer their students internships or collaboration on the CBT curriculums as "public-private partnerships," as they consider this a partnership between the school and the private sector. However, as laid out in the VEP logic, the intent of the PPP components was more specific to the types of joint programming and direct/joint investment in the schools, as the intended outcome was a broader and more stable funding base. Having private sector partners contribute equipment could be another mechanism, as purchasing modern TVET equipment can be price prohibitive for many TVET schools. Using this stricter definition of PPPs, interviewees shared very few examples of direct PPPs. The confusion over PPPs is demonstrated in the below quote:

“First priority for us is safety. Second thing is PPP. Every year the number of partners is increasing; now we are cooperating with over 240 companies and employers. Employers asking special training for their staff and teachers and employers exchange, jointly working on textbook and curriculum development and updating, practical training for students at work place, donating some equipment and tools these are the ways of partnering. Not only domestic but also foreign invested companies and other donor projects collaborating with us in different ways. We are not limiting locally ... even Mongolian wide partners we have. Apprenticeship training is one of the ways to collaborate.” (TVET administrator)

Examples of large investments made by the private sector included an excavator received by one school, two heavy machinery simulators received by another, and another school that had a workshop rehabilitated through a partnership where three private sector partners contributed funding and cement. Some respondents referenced equipment that had been provided by the private sector during the Compact by Caterpillar and Wagner, but this type of support is quite rare.

Challenges to PPPs

Two reasons shared by interviewees explaining the sector’s failure to create PPPs include (1) the limited capacity of the private sector to give direct funding and (2) the financing structure and lack of clarity around TVET financing policies.

Regarding the limited capacity of the private sector, Section 5.1.7.2 discusses how smaller businesses are less able to contribute to higher levels of private sector partnerships, particularly financial.

But the major challenge to PPPs remains at the policy level, as raised in 15 interviews (out of 34 discussing challenges to engagement). The previous system had prohibited financial contributions to TVET schools, in support of Mongolia’s anti-corruption measures. Though the TVET law includes provisions for private sector donation to TVET and a levy system, those policies are not explained or enforced. The lack of clarity makes stakeholders hesitant to put them to the test, due to potential negative consequences. One donor shared the example of a school director who was jailed after accepting payment on behalf of the school in return for providing training to a company partner. The donor relayed that because the sector lacks guidelines on how to properly receive and use funds from the private sector, school directors didn’t pursue those types of partnership: *“It was a big lesson learned for all the TVET directors to be careful – and maybe just sit and wait until it is solved.”*

Some private sector and government representatives shared concerns that without greater clarity on the policies in the TVET law, private sector contributors have no mechanism to ensure that funding remains within the school or used for its intended purpose, because the current system pulls all revenue for the school into the central Ministry budget. Private sector partners are reluctant to act without a more secure guarantee that their contributions will be used as intended.

“Then companies were asking, I would like to invest in this TVET, and then you change the Director, and my investment is gone. So where is the guarantee that it will stay there and continue? There is no guarantee.” (Private sector representative)

5.1.4.5 Matching of Skills with Private Sector Needs

Background

The higher-level objective of increased engagement with the private sector is to better align TVET training with the needs of the private sector. In the VEP program logic, higher-quality curriculum and training materials would lead to content being more in line with private sector needs. These activities included involving the private sector in CBT development and continuing to operate through the NCVET and ATVET (and sectoral and regional councils) to improve collaboration.

Current Status and Challenges

Overall, employers believe TVET quality has improved since the VEP began, along with the sector's ability to match the skills needed by employers, particularly on the technical side. Almost all (9) of the 11 private sector representatives who commented on changes in private sector needs believe that TVET has improved in matching private sector needs. Only two said that there has been no change in matching needs, and none said that ability to match needs has decreased. Moreover, 13 interviews out of 14 with private sector representatives discussing changes in training quality commented that training quality has increased over time, while only 3 said it decreased. Improvements in technical skills and improvements due to the learning environment (including equipment) were the most commonly cited training strengths, each named in eight interviews.

Despite some improvement, the private sector still faces challenges in finding skilled workers. Though as discussed above, most private sector respondents indicated that training quality has improved, private sector respondents scored the quality of TVET training overall and average of 3.25 out of 5 (from 24 responses). Of 18 private sector respondents, only 3 said it was very easy to find workers with the skills they needed, with others citing a range of challenges where TVET quality needs improvement. Private sector respondents noted that though TVET quality has increased, additional training is still required to bring TVET students to the level of skill and professionalism needed in the workplace. Soft skills are a major weakness, according to 13 of 18 private sector respondents. One respondent noted, *“Recent graduates, they are good at working on the modern equipment. But their soft skills – managing heavy workload, communication, are not that good, like teamworking, their productivity is not so good”* (private sector representative). Technical skills also have significant room for improvement; 10 of 18 private sector respondents raised that insufficient practical training remains a challenge to TVET quality and makes it difficult for employers to find what they need through TVET.

The extent to which a change in the private sector's perceptions of TVET quality also affected behavior is difficult to determine. Private sector respondents believe that collaboration has increased (see Section 5.1.4.4) in various ways. However, ability to offer employment is dependent on other factors, including the economic situation. Three respondents indicated that TVET graduates, despite the need for more improvement, are preferable to university or secondary school graduates because of their exposure to practical training: *“And I would say TVET graduates, adaptation skill is better than the university graduates because they do plenty of practical training. During 3 months it is clear who is more adaptable for work place because of difference of training and working conditions.”*

5.1.4.6 TVET Relevance - Key Findings

Table 18: TVET Relevance - Key Findings

Outcome	Evaluation Question	Key Findings
Outcome 2. Increased Relevance of the TVET System	15. What were the effects of the Agency for Technical and Vocational Education and Training (ATVET) committee on engagement of the private sector in TVET? What happened after the ATVET was dissolved, and what impact did that have on private sector engagement?	The creation of the NCVET and ATVET brought private sector representatives into a high-level decision-making body for TVET and generated a lot of interest and energy for TVET development early in the Compact. However, after the political transition in 2012, the ATVET was reduced to a department in another ministry and was no longer able to support the NCVET as effectively as it had previously. Private sector engagement since has been more active at the local level, with limited activity at the national level.
Outcome 2. Increased Relevance of the TVET System	16. Are the Labor Market Information System (LMIS) and Career Guidance System (CGS) websites still functioning? Why/why not?	The LMIS and CGS stopped operating shortly after the Compact, due to the political transition that reorganized ownership of the systems and undermined their operations.
Outcome 2. Increased Relevance of the TVET System	17. To what extent has the LMIS and CGS website content been updated since the Compact ended?	Though the LMIS and CGS websites were closed, other donors recognized the need for career guidance support and have worked to develop a new online system.
Outcome 2. Increase Relevance of the TVET System	18. To what extent has the private sector been able to effectively engage with and influence the TVET sector as a result of the project?	Most respondents agree that private sector engagement has increased over time since the VEP, with TVET schools and private sector partners increasing the depth and breadth of their partnership into various types of interaction at the local level. However, many respondents also report that collaboration was almost nonexistent before the MCA project, so despite the increases since the start of the Compact, its current level is still far below where it needs to be. Policies put in place to support more partnership have not come to fruition, deterring partnership with larger private sector entities.
Outcome 2. Increased Relevance of the TVET System	19. To what extent have the CBT curriculums been updated since the end of the project? Why/why not?	Schools are actively seeking private sector input into curriculum updates. The primary reasons for updating CBTs include updating to reflect input from employers and new technology needs. Private sector partners are observing increases in skills, but not attributing those increases to changes in the curriculum.
Outcome 2. Increased Relevance of the TVET System	20. What are the key factors enabling and/or restricting private sector engagement in TVET?	A shift in understanding of the importance of partnership—for both TVET schools and potential business partners—has been the primary enabler for increased partnerships. Major challenges include a limited ability to contribute from smaller, local companies and a lack of engagement by larger businesses.
Other Outcome: Engagement in PPPs	21. To what extent have TVET schools been engaged in PPPs since the end of the Compact? Why/why not?	Instances of direct funding from private sector partners to schools, or joint projects, are extremely limited. Schools believe they are effectively engaging in PPPs due to the assortment of other types of interaction that

		are not funding-related. Though these other types of engagement are active locally, they do not move the sector toward MCC's vision of TVET schools reaching a broader funding base. The sector faces major barriers to private sector investment in schools due to unclear policies around TVET financing.
Outcome 2. Increased Relevance of the TVET System	22. To what extent do private sector actors feel that TVET education teaches the skills they need as employers? To what extent has this changed since the Compact was implemented?	Employers believe TVET quality has improved as well as TVET's ability to match the skills needed by employers, particularly on the technical side. A greater focus on practical training that accompanies CBT is a contributor to this. Poor soft skills, on the other hand, continues to be a major gap in TVET training and a challenge for potential employers.

5.1.5 Effects on TVET Enrollment and Graduation

Background

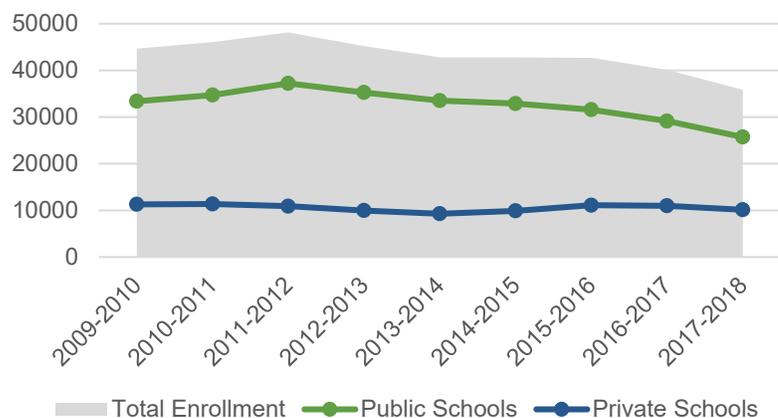
Improved quality and relevance of TVET training was intended to influence longer-term outcomes including enrollment, employment, and income. Each of these longer-term outcomes will be discussed in turn. The economic logic for the VEP assumed that the improved quality and relevance of TVET training would lead to an increase in TVET enrollment and, by extension, of TVET graduates. Both the number of enrollees as well as the number of graduates will be discussed in turn.

Current Status: Enrollment

Interviewees were split on whether enrollments have been increasing or decreasing over the last 10 years. Of 24 who provided input on how enrollment has changed, 13 believed enrollments were increasing while 10 believed they were stagnant or even decreasing. Another nine believed that enrollments had been unstable over the last 10 years, with some years seeing an increase and other years decreases.

Based on school-level and national-level data, enrollments appear to be decreasing in general, though there are some differences between private and public schools. As seen in Figure 16, total enrollment has dropped from a high of 48,134 in 2011-2012 to the current low of 35,831 in 2017-2018. However, most of this decline comes through the public schools. Enrollment in private TVET schools has stayed fairly constant at approximately 10,000 over the period (MLSP, 2018).

Figure 16: Enrollment in TVET Schools, National Data



Gender differences among enrollees are also observed. While the number of both male and female enrollees has declined over the period, the number of male enrollees has declined less than the number of female enrollees, as seen in Figure 17.

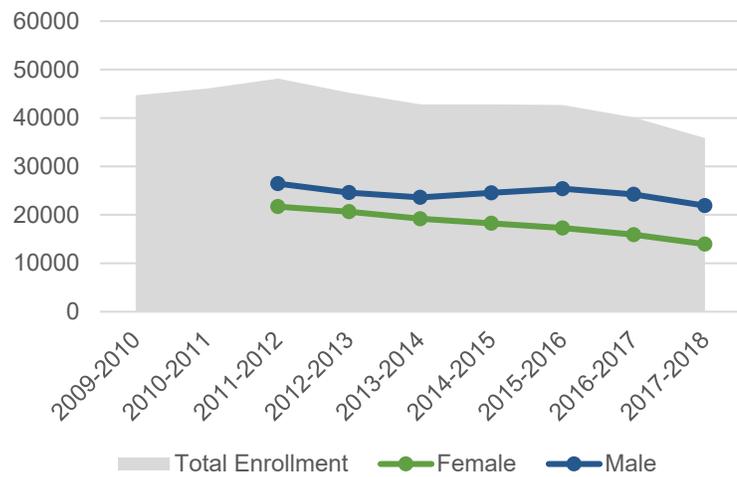
Factors Influencing Enrollment

The enrollment data show a clear change between the early Compact period up to 2012 and declining afterwards. Though it is not possible for this evaluation to determine the precise extent to which different factors have affected enrollments, the combined impacts of changes to the TVET sector following the 2012 change in administration, as well as the end of the mining boom (and the associated economic growth across the economy) in 2013, are likely factors. In addition, 33 interviews highlighted several other factors affecting student enrollment, including government stipends for enrollees (18 interviews), the perception of TVET (11 interviews), the birth rate in the country (6 interviews), and the quality of the school and the training provided (5 interviews). Each is described in more detail below.

At various times over the past 10 years, the GoM has offered TVET enrollees under age 24 a monthly stipend to incentivize youth to enroll in vocational training over academic secondary school. The amounts and years in which the stipend has been available have been inconsistent, often changing as the political administrations change. To save money, a new administration might get rid of the stipends but then, after political pressure, the stipends get reinstated, often with an increase in value. During the time of the Compact, TVET stipends were reported to be 40,000 tugriks/month (~US\$15/month). While no stipends were being offered in late 2018 at the time of the ET’s visit, it was reported that the government was promising to reinstate the stipends in 2019 at the rate of 100,000 tugriks/month (~US\$38/month).

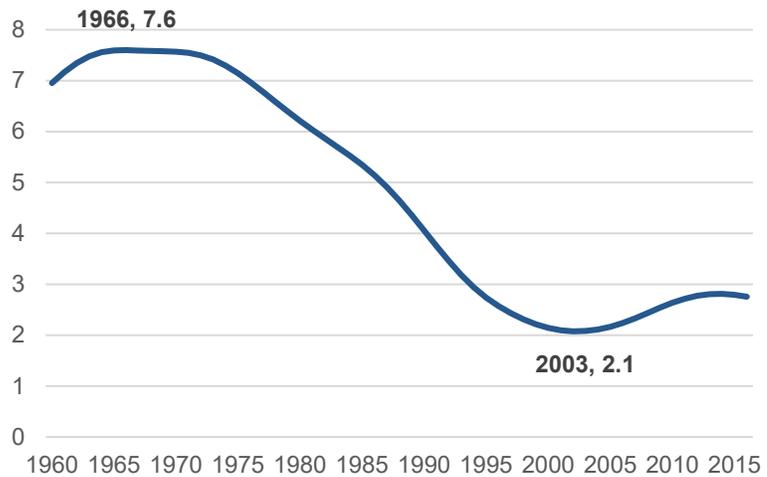
As noted in the sector overview, the TVET sector in Mongolia has long suffered from a poor reputation of being a school of last resort for students who are otherwise unsuccessful academically. This historically poor reputation continues to influence TVET enrollment, according to interviewees.

Figure 17: TVET Enrollment by Gender



The third factor of low birth rates was not noted as often as the first few factors but is substantiated by World Bank data. Respondents noted that in the early 2000's, the years in which the current grade 9 graduates (who would normally be entering the TVET schools) were born was a particularly difficult time in Mongolia, and people weren't having as many babies. Thus, today, there are fewer young adults at that age to enroll in TVET schools. As a result, respondents indicated that there was some competition between the TVET schools and the academic secondary schools for the youth to enroll, given that schools are funded based on the number of enrollees. World Bank data supports this lower fertility rate, showing (as seen in Figure 18) that from the mid-1970's to the early 2000's, the fertility rate declined substantially. It has since risen slightly to just under three children per woman from approximately two children per woman in 2002.

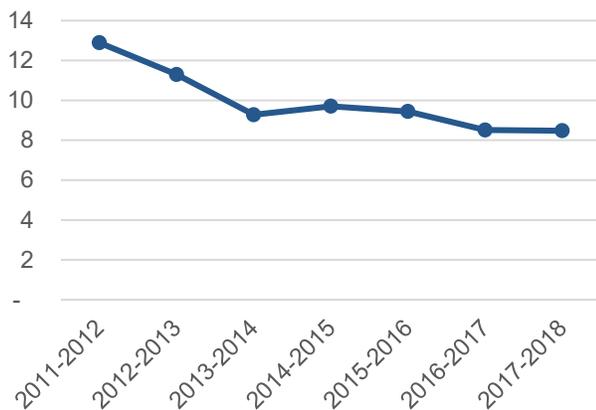
Figure 18: Fertility Rate Over Time (children per woman)



Though this factor is unlikely to explain the entire decrease in TVET enrollments, the potential pool of enrollees has indeed declined over the past 40 years.

Finally, the quality of education provided by TVET institutions is also considered a factor in TVET enrollments. It is likely, however, that this factor is tempered by the previously mentioned negative perception in the country of TVET education. Thus, despite the improvements seen in TVET quality, persistent negative perceptions of TVET likely mediate some of the improvements in enrollment.

Figure 19: TVET Student to Staff Ratio

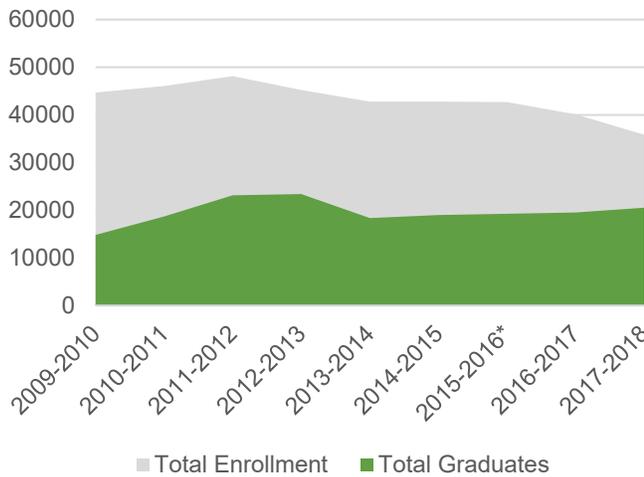


Despite the decrease in the number of TVET enrollees, the number of TVET schools in Mongolia has risen. According to the MLSP, the number of TVET institutions has risen from 71 to 83. Additionally, the number of staff across TVET schools has also risen from 3,735 in 2011-2012 to 4,227 in 2017-2018. Thus, the number of TVET students per staff member has dropped substantially over this period, as seen in Figure 19. Given that some stakeholders had already flagged an issue with having too many TVET schools for the number of students, the fact that the number of schools has continued to increase while enrollments have decreased has only exacerbated this issue.

Current Status: Number of Graduates

Though the total number of students enrolled in TVET schools has been on the decline, the number of actual TVET graduates appears to have increased from 14,836 graduates in 2009–2010 to 20,544 graduates in 2017–2018; an increase of 38 percent, as seen in Figure 20.

Figure 20: Total TVET Graduates versus Enrollment



*Used trendline because no national-level data was available.

Thus, there is a disparity between the trend in total enrollments and the number of TVET graduates. This finding was unexpected and thus little data is available on why this might be the case. However, several potential explanations exist. In part, there is a delayed effect between enrollment and graduation. Most TVET programs are either one year or two-and-a-half-year programs. Thus, following a peak in enrollment, a peak in graduates would be expected one to two-and-a-half years later. There is also the possibility that the stipends offered to young TVET students have resulted in perverse incentives for students to enroll during times when the stipends are offered but then quit (without having graduated) when the stipends

stop. Thus, during periods when the stipends are not available, enrollment drops while those who do enroll may be more dedicated students.

5.1.5.1 TVET Enrollment - Key Findings

Table 19: TVET Enrollment - Key Findings

Outcome	Evaluation Question	Key Findings
Other Outcome: TVET Enrollment	23. To what extent, if at all, has enrollment in TVET schools increased?	<p>Enrollments in TVET schools have been on the decline. However, the total number of graduates from TVET schools remained above pre-Compact levels. Significant influencing factors include the provision (or halting) of TVET student subsidies and the general negative perception of the TVET sector as a poor alternative to university education.</p> <p>Despite the decline in enrollment, the number of TVET graduates has continued to increase over time.</p>

5.1.6 Effects on Employment

5.1.6.1 Background

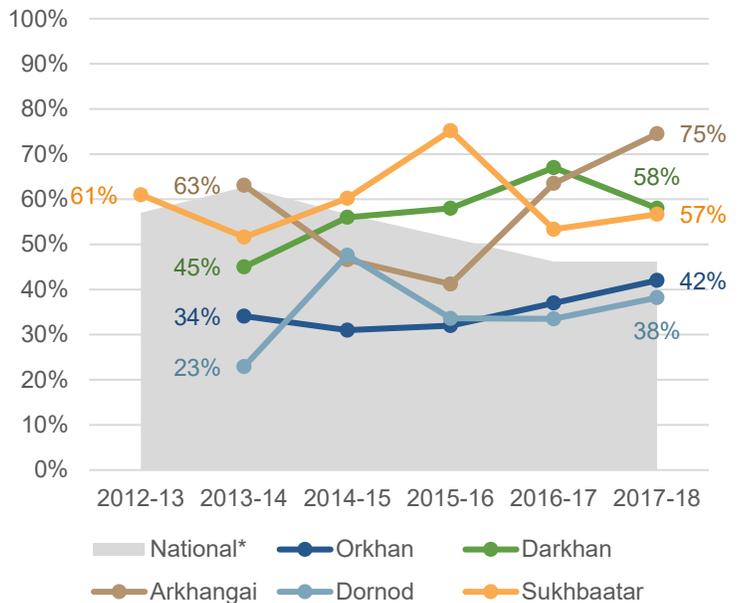
The quality and relevance improvements anticipated in the program logic were anticipated to have a direct effect on the employment rate. In the program logic, this was stated as an outcome at the national level. However, before reaching this longer-term outcome, the logic posits that the employment rate of TVET graduates would increase. Findings at each level are discussed in turn.

5.1.6.2 Current Status - Employment of Graduates

According to 25 interviewees, the employability of graduates is on the rise, with only 9 interviews noting it has remained the same or declined. And according to data provided by schools the ET visited, their employment rates have been steadily increasing, with only a small decrease at one of the schools (Figure 21).¹¹

This finding among the visited schools is contrary to the national-level data, however, which shows an overall decrease in the employment rate of TVET graduates since 2011 (see Figure 21). At the national level, the employment rate appears to have peaked alongside the mining boom up until 2013, after which it has experienced a general decline (no data were available for the 2015–2016 school year).

Figure 21: Employment Rates at Visited TVET Schools



*Annual national-level data not available. Used trendline for 2015-2016 and 2017-2018 rather than actual data.

Unfortunately, only limited information is known about the specifics of how schools collect and track employment data for their graduates (data which are then aggregated at the national level). The employment statistics are said to capture any type of hired employment- whether in the graduate’s sector of study or not. But, it does not capture those who are self-employed or who start their own businesses, which is particularly common for agriculture-related graduates as well as those in some service industries like hair styling. In addition, the statistics do not take into account those students that choose to continue their education rather than find a job immediately upon graduation. It’s possible that the discrepancy in findings between the national-level data and the interviews is attributable to how the data are collected/tracked. However, it is not possible to say for sure.

5.1.6.3 Factors Affecting Employment

Several key factors are reportedly affecting the employment rate of TVET graduates, including graduate skills, the general economic situation in the country or region, the quality of the school itself, whether students decide to continue their education, availability of practical training, family influence, the age of graduates, and the existence of school partnerships with employers.

Skills of Graduates. Though a frequent response across all respondent categories, the skills of graduates was noted particularly frequently by private sector representatives as influencing whether a graduate would be employed. As one private sector representative noted, “*The one advantage is that we can hire skilled graduates [from the TVET school]. So instead of hiring a completely unskilled person, it’s better to hire the graduates of the school because it saves time for us. It requires less time to train them.*”

¹¹ Detailed employment data were available from only five of the eight visited schools.

The availability of practical training is also linked to employers seeking skilled graduates who don't require as much training. Schools that offer internships are also offering their students the opportunity to prove their skills in front of a potential employer, and many students and graduates noted that they are or will be hired on by their internship host. In this way, the factor related to school partnerships with employers is similarly related. The more partnerships with employers a school has built, the more internships they can offer and the more opportunities for employment that they can expose their students to.

Economic Situation. The second most frequently noted factor is that of the general economic situation. Macroeconomic factors such as the mining boom can have a direct impact on the likelihood that businesses will be recruiting and hiring anyone, let alone TVET graduates. In addition to the general macroeconomic climate, respondents pointed to the significant economic divide between the capital, Ulaanbaatar, and the more rural provinces. Jobs are generally more plentiful in Ulaanbaatar, where there are many different companies across many different sectors. But in the provinces, there are far fewer companies and therefore far fewer employment opportunities. As one electricity student noted, there are only two major electricity employers in her region. Thus, if one isn't able to find a job with one of them, they are out of luck. Additionally, respondents noted that the economic situation can influence different sectors in different ways. Thus, while one sector may be strong and may be actively hiring new graduates, another sector may be in the doldrums, with employers struggling even to retain their existing workforce.

Continuing Education. At the end of their secondary TVET education, graduates have the opportunity to continue their studies by attending a college or university. From year to year, the number of graduates deciding to go on to higher education fluctuates, with respondents noting anecdotally that between 10 and 30 percent of graduates choose to do so. Respondents pointed out that the employment statistics they report to the MLSP do not take this number into account, as the figures compare the raw number of graduates with the number of graduates who find employment.

Individual Factors. Individual factors such as family influence as well as age are also reported to influence graduate employment. Given that most TVET students are between the ages of 14 and 17, when they graduate, many are not yet of a legal age to become formally employed. Several respondents noted this as a challenge to graduates finding employment. And, even for those that are of legal age, some respondents noted that 18-year-olds are not yet mature enough to take on the complicated and demanding jobs that businesses often require. Family influence also impacts employability as it is not uncommon for a family member to help a younger member find a job where they are already employed. Those without such connections can have a harder time finding a job.

Gender. Employability can also vary by gender. Gender differences in employment were raised in 28 of the total 110 interviews. Though some respondents (in 7 of 28 interviews) indicated that they didn't believe there were any differences between the employability of male versus female students, others provided a more nuanced response. In these cases, respondents weren't noting that the direct employment rates of males and females were different. Rather, there were more likely to be differences across trades and in which trades or in what types of positions male and female students were likely to be employed. In trades deemed to be more "difficult" or "physical" such as welding, electricity, plumbing, and mechanical repair, most students are male (noted in 14 of 28 interviews). Thus, to start off with, there aren't many females competing for these jobs. On the other hand, in fields such as hairdressing, sewing, and administrative fields, female students predominate.

In the “physical” fields, respondents often noted that employers prefer male graduates to female graduates (noted in 7 of 28 interviews). As one instructor noted, “*Employers are willing to hire male students. In the electric class, we have four to five female students. But the employers only want the males.*” Respondents noted that employers can be concerned about both females’ ability to perform physically demanding jobs and the likelihood that a future employee will want to take maternity leave or leave to take care of their family (noted in 6 of 28 interviews). For them, a male employee is a more sure bet. Because of these biases, female graduates of the “physical” trades are more likely to be employed in more administrative roles such as customer service or back office support rather than as technicians, even when they are employed by a firm in the field in which they were trained.

Career Guidance Services

To help link graduates to future employment as well as to encourage students to enter trades that are most in demand, the VEP attempted to improve career guidance services in the country. To this end, all respondents (11 of 11 that discussed this topic) indicated that career guidance services to students have increased over the last 10 years. Before the VEP, many schools didn’t have a guidance counselor on staff, and guidance services were limited to non-existent.

Today, guidance services exist in all the schools visited by the ET. But they do not appear to be used frequently, with only 7 of 26 interviews on this topic indicating frequent use and the other 7 indicating the respondents were not aware of any guidance services at their school. Fifty-seven interviews discussed career guidance services. Of these, respondents named the following most frequently provided services: secondary school outreach (17 interviews), individual-level counseling (13 interviews), class-level counseling (13 interviews), job search information (11 interviews), and managing private sector partnerships (11 interviews). When asked about what other resources they utilize to help them find a job, teachers and the local labor office were the most common responses (18 and 15 interviews, respectively).

Most of these services are self-explanatory. However, the secondary school outreach is notable in that these services, which are provided by TVET school staff, are not actually directed at the TVET students at their school. Rather, these activities are undertaken with students who are about to graduate and who are in the process of deciding whether to continue on to an academic high school or attend a TVET school. The guidance counselors share information about the trades available at their school and the job prospects in different trades. They try to match potential enrollees with trades based on their strengths, weaknesses, and career aspirations.

Most students and graduates (in 15 out of 19 interviews) report finding the guidance services useful. However, many did not have a strong point of reference to which to compare what career guidance services *should* look like. Thus, when they were asked what additional services they would like to see or how the services could be improved, many students and graduates had a difficult time providing concrete recommendations or suggestions.

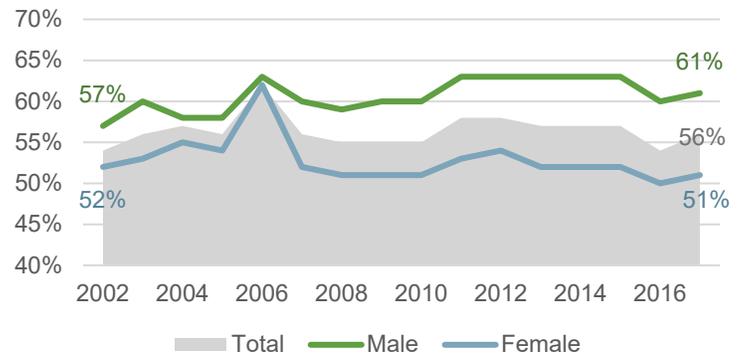
Since the end of the VEP, other donors, in particular GIZ, have also invested in career guidance improvements. Without an impact evaluation it is not possible to determine how much of the current status is due to MCC’s investments versus those of other donors. However, anecdotally, some respondents who were involved in implementation of the VEP noted that the career guidance aspects of the VEP were somewhat neglected in light of bigger components like the CBTs and the equipment and

infrastructure investments. Thus, the VEP’s activities to improve career guidance were more limited. GIZ, on the other hand, focused squarely on improving career guidance services after the VEP ended. It is likely that whereas the VEP may have started the conversation and laid some of the groundwork, other donor efforts have led to more significant changes in the current status of career guidance in Mongolia.

5.1.6.4 Current Status: National Employment Rate

The Compact program logic described that the original intent of the VEP was to "increase employment and income among unemployed and underemployed Mongolians." This section seeks to briefly address any trends in this national-level employment and any verifiable impact from the VEP. As seen in Figure 22, the national employment rate is roughly the same post-Compact as it was pre-Compact, changing only slightly from 55 percent in 2008 to 56 percent in 2017

Figure 22: National Employment Rate (World Bank, 2018a)



(World Bank, 2018a). The employment rate peaked in 2012 alongside the economic boom in Mongolia and has decreased slightly over time since then. The year-to-year trend is similar between males and females, though females are less likely to be employed in all years.

No substantial bump in employment rate potentially due to the VEP is detectable at the national level. However, this is not unexpected. National-level statistics such as this are highly dependent on macro-level factors such as the overall economy (as noted above). Thus, this finding is not surprising.

5.1.6.5 Effects on Employment - Key Findings

Table 20: Effects on Employment - Key Findings

Outcome	Evaluation Question	Key Findings
Objective 1. Increased Employment	24. To what extent, if at all, has the employment rate of TVET graduates changed since the program began?	Conflicting data exist on employment. While interviews generally report increased employment rates for graduates, the national-level statistics on employment rates for TVET graduates (see Figure 21) don't support this and show a notable decrease in the employment rate. Unclear data combined with the many external factors influencing employment rates means it is not possible based on current data to determine the extent to which the VEP may have contributed to changes in employment for graduates.
Objective 1. Increased Employment	25. What have been the biggest drivers of the change (if any) in the employability of students and graduates?	Employment has varied over time, affected by the factors described below. Each factor could affect employability positively or negatively, depending on the circumstances.

		<p>Key factors:</p> <ul style="list-style-type: none"> • Skills of graduates (54 interviews); top response by the private sector • General economic situation • Quality of the school • The number of students continuing to higher education • Practical training • Family influence • Age of graduates • School partnerships • Gender differences
Objective 1. Increased Employment	26. To what extent, if at all, have students used guidance counselors and/or the online guidance system to make career decisions? How useful have these resources been for their ability to obtain employment? Why/why not?	Guidance services exist, to a limited extent, in TVET schools compared with before the Compact when guidance services were limited to non-existent. However, other donors have dedicated more efforts and resources to this than the VEP. Given the limited nature of the services provided, the usefulness was also limited. More students found employment through other teachers, internships, or through family connections.
Objective 1. Increased Employment	27. To what extent, if at all, has the employment rate in Mongolia changed?	No change observed in the national employment rate between 2008 and 2018, but this is unsurprising given the myriad factors affecting national-level statistics.

5.1.7 Effects on Incomes

In addition to increasing employment, improvements in quality and relevance of TVET were intended to increase incomes of the unemployed and underemployed at the national level, according to MCC’s program logic (MCC, 2013). However, as a first step toward improving incomes at the national level, the incomes of TVET graduates would increase. Each is discussed in turn.

5.1.7.1 Current Status: Incomes of Graduates

Across all respondent groups, most respondents report that graduate incomes are increasing (29 interviews reporting an increase versus 4 reporting it has stayed the same or decreased, of 33 discussing changes in income). Unfortunately, unlike the enrollment, graduation, and employment data, there are no ministry statistics on the incomes earned by graduates with which the ET could compare. However, at least for its sample (which is notably smaller than the universe of students benefiting from the VEP overall), IPA found that students selected into trades with improved equipment did not have significantly higher incomes than those that were not (Linden & Malamud, 2017).

5.1.7.2 Factors Affecting Incomes

Several factors are likely influencing graduate incomes and can shed light on these varied findings, as discussed in 39 interviews. The most frequently mentioned factors include: the skills of graduates (noted in 24 of 39 interviews), the overall economic situation (noted in 24 interviews), the selection of specific trades (noted in 16 interviews), and wage policies (noted in 7 interviews).

Graduate Skills and Individual Factors. The first factor, graduate skills, is largely self-explanatory. Respondents noted that graduates with higher skill levels were likely to make more money than their peers. In a similar fashion, respondents noted that graduate incomes varied by the specific sector in which they were enrolled. Graduates going into trades relevant for mining, for example, were likely to be able to make more money than those studying hairdressing.

Economic Situation. Outside of these individual-level factors, the most widely cited contextual factor influencing graduate incomes is the overall economic situation. As seen with employment, there is a relationship between the graduate employment rate and the broader economic boom that occurred in Mongolia into 2013. Though ministry data aren't available to compare directly, it stands to reason that when graduates are more likely to find employment, they are more likely to also have higher incomes. This link with the broader economic situation applies also to the local economic situation. In some regions of Mongolia, there are more economic opportunities than others. In Ulaanbaatar, for instance, the opportunities and incomes are generally much higher than they are in the countryside. The other economic facet affecting incomes is that of inflation. Several respondents noted that, yes, incomes are increasing, but so is inflation. Thus, while nominal incomes may be increasing, the value of that income isn't necessarily increasing as well.

Wage Policies. Though less commonly cited, several interviewees also noted that, in addition to inflation, changes in wage policies have also affected graduate incomes. Among the main policy changes noted was that the minimum wage had increased several times since the VEP began in 2008. As many graduates enter the labor market earning minimum wage, the wage for new graduates has increased. However, this factor combines with inflationary pressures to affect what that increase in nominal wage means in terms of purchasing power.

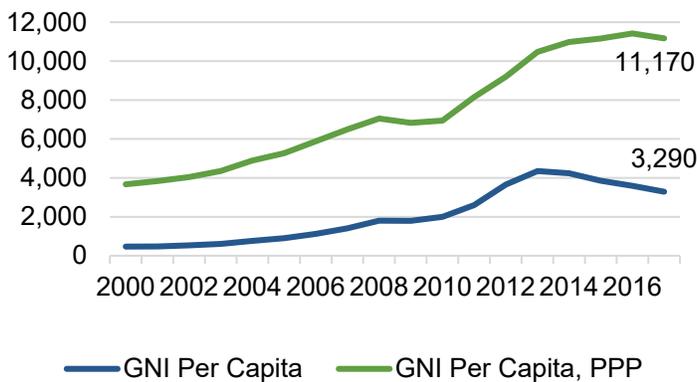
Given the primarily qualitative nature of this evaluation design, it is not possible to parse out the extent to which the noted increase in incomes for graduates is due to the improved quality and relevance of the education students are receiving vs how much is due to larger economic factors or changes in the minimum wage. Thus, on this particular EQ, the findings are inconclusive.

Trade Selection/Gender. As with employment, differences by gender also exist. The difference is not necessarily that female graduates are paid less for doing the same job as their male counterparts. Rather, the impact, at least according to respondents, has more to do with the types of jobs female graduates are hired for and corresponding differences in what people are paid for those jobs. Female graduates are more likely to be steered into clerical or back office jobs rather than the more physically demanding technical jobs. But the latter jobs typically earn more money. Thus, because of the types of jobs they are likely to be hired for, female graduates are more likely to earn less money than male graduates.

5.1.7.3 Current Status: Incomes at the National Level

Incomes of Mongolians, as measured by gross national income (GNI), have risen between 2008 and 2017 (US\$1800/year to US\$3290/year). However, the 2017 per capita GNI is down from a high of US\$4350/year in 2013 (World Bank, 2018a).

Figure 23. GNI Per Capita



Though per capita GNI incomes have decreased since 2013, based on purchasing power parity, incomes have continued to rise, with just a small decrease from 2016 to 2017. These findings are depicted in Figure 23.

Incomes in Mongolia appear to have increased since prior to implementation of the VEP and the broader Compact. However, as with national-level employment rates, there is no noticeable effect potentially attributable to the VEP or the Compact. Rather, the figures appear to more highly related to the overall

economic situation in the country. GNI per capita increased substantially during the economic boom up until 2013, after which it has declined.

MCC’s program logic specifically anticipated income gains for the unemployed and underemployed. However, the ET was unable to assess income changes for this specific group as no public data for this group exist. However, it is likely that the results would be similar to those for overall incomes in that it would be very difficult to detect a change potentially attributable to the VEP or the Compact.

5.1.7.4 Effects on Income - Key Findings

Table 21: Effects on Income - Key Findings

Outcome	Evaluation Question	Key Findings
Objective 2. Increased Income	28. To what extent have the incomes of TVET graduates increased since the project was implemented?	The extent to which the VEP contributed to changes in graduate incomes is unclear. Although interviewees report that graduate incomes are increasing, numerous intervening variables make income growth difficult to confirm.
Objective 2. Increased Income	29. What have been the biggest drivers of the change (if any) in the incomes earned by TVET students and graduates?	Incomes have overall gone up, affected by a variety of factors- each of which could either push incomes up or down, depending on the circumstances. Key factors: <ul style="list-style-type: none"> • Skills of graduates • Overall economic situation • Trades selected • Wage policies • Gender differences
Objective 2. Increased Income	30. To what extent have the incomes of the unemployed and underemployed changed since the project began?	GNI per capita has been declining since 2013, though it is still higher than pre-Compact. GNI adjusted for purchasing power parity, however, has increased. Incomes specific to the formerly unemployed and underemployed, however, cannot be measured using available national statistics.

5.1.8 Conclusion and Recommendations

The VEP was an ambitious project – both in the scope and number of activities, as well as in the intended outcomes. The VEP aimed to transform Mongolia’s TVET sector from an underperforming, centralized, misaligned, and undesirable alternative to academic education into a sought-after provider of high-quality technical and vocational education. As described in the Compact, the VEP’s goal was to increase employment and income among underemployed and unemployed Mongolians. To achieve these goals, the project aimed to improve the quality and relevancy of the TVET system..

The VEP was not 100 percent successful in this ambitious undertaking. The project’s effect on employment and income for TVET graduates is unclear, and TVET enrollment did not reach MCC’s expectations for an increased number of students. One influencing factor was a series of political transitions, beginning with the election of 2012, that undercut work done by the VEP to build capacity among TVET stakeholders and to build momentum toward change. Other challenges in implementation, in global economic factors, and in the sheer complexity of the project also affected results or made it difficult to trace the impact of the VEP. Several components failed entirely, either during or shortly after the end of the Compact, such as the NLRC and the LMIS and CGS websites. Others were only partially successful in achieving their intended goals, such as the move toward private sector collaboration (and increased private sector investment), implementation of PPPs, and empowerment of the Regional Methodological Centers (RMCs) and Centers of Excellence (CoEs) to take a strong leadership role.

Nonetheless, despite the challenges, the VEP’s collective activities made a strong push toward its key long-term outcomes of improved TVET quality and relevance. The VEP also provided a new base for TVET development. It supported policy reforms that started the TVET sector on a path to accessing a greater resource pool and becoming a major contributor to Mongolia’s skilled labor market. It introduced new concepts and created a common language for a modern TVET system based on private sector engagement and CBT. And it helped put in place the building blocks that other donors have since used to continue advancing and improving the sector. All these areas continue to experience challenges, and some have fallen far short of MCC’s envisioned result. However, nationwide, the VEP served as a turning point for the overall sector, which continues to move toward a more modern, skilled workforce. This sequence of at least partial gains toward most of the VEP’s intended short-, medium-, and long-term outcomes can be seen below in Figure 24: Program Logic and Results Achieved.

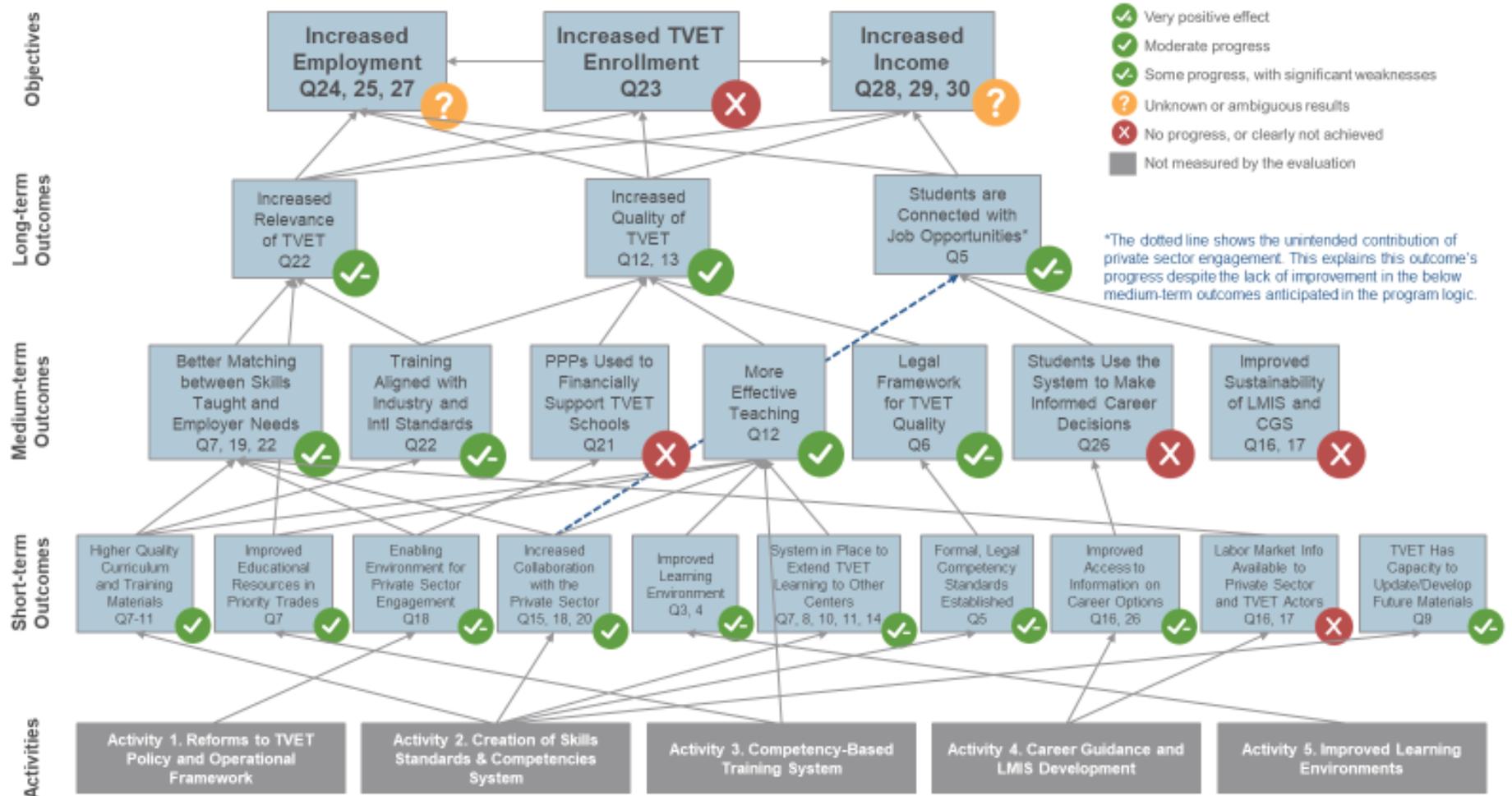
Based on the findings of this evaluation, several key recommendations arise for the design of future TVET programming:

1. **Develop a clear understanding of the core problems in the sector and focus project interventions on resolving the key issues.** It may not be possible to resolve all potential problems in a sector. But, focusing on the biggest challenges and constraints can help keep the project focused on what matters most for resolving the central problem and prevent scope creep that can dilute impacts on the core issues. Lack of success in several areas indicates a lack of clear focus and that by trying to do too much, the VEP was not able to fully complete some major goals, such as securing the sustainability of the NLRC.
2. **Establish a clear and detailed program logic linking all project components to the longer-term intended outcomes.** This can ensure that all components are appropriately linked and

that all stakeholders share the same intentions regarding the goals of each component. A clear program logic will also prevent activities emerging that do not contribute directly to the overall objective.

3. **Ensure adequate maintenance—not just of facilities but of equipment as well.** Many of the schools that received equipment through the VEP were not able to adequately maintain and/or replace the equipment they received. Planning for how they will be maintained or replaced and using what funding will help ensure that the benefits continue in the longer-term.
4. **Ensure adequate time during the Compact period not just for design and approval of policy changes, but for implementation as well.** The NVQF in particular suffered a loss of momentum when the GoM administration changed and the Compact ended. It took several years and additional investment by other donors to restart the process.
5. **Plan for the potential effects of significant political and/or economic changes.** It's impossible to foresee every eventuality, but project design can help mitigate the impact of political or economic shifts. For instance, policy reforms can be written so as to better ensure continuity across political transitions. And contingency planning can help ensure that there are options available in case of large changes in the political or economic context.
6. **Retain clear and detailed documentation of projects and activities.** The period of time from when a country is approved by MCC's Board of Directors to the time final data is collected several years post-Compact can be 10 years or more, during which staff from all participants—MCC, the MCA, and the partner country government—can change multiple times. In the case of the VEP, much documentation and detail regarding project implementation was lost across these transitions. The lack of documentation posed a challenge to understanding the project and measuring its impacts. Fortunately in this case, the VEP was a major milestone in the TVET sector of Mongolia, and it involved, to one extent or another, a large percentage of the TVET staff and schools across the country. Thus, the ET was able to reestablish many of the details of the project through interviews with stakeholders. Had the VEP not been so large and wide-reaching, however, this may not have been possible, and the ET would have been much more limited in its ability to draw meaningful conclusions about the project's myriad components.

Figure 24: Program Logic and Results Achieved



5.2 Interpretation of the ERR

As a primarily qualitative evaluation, it is not possible for the ET to conduct its own cost-benefit analysis and recalculate the ERR for the VEP. However, the ET can qualitatively comment on the assumptions in MCC’s CBA model, as currently published on its website.¹² This model includes five key assumptions:

1. The number of schools benefitting from the VEP
2. The time required to fully implement the new CBT training curriculums
3. The increase in the total number of TVET graduates
4. The gain in wages for TVET graduates
5. The increase in probability that graduates will be employed after graduation

Of these five assumptions, assumptions four and five are documented directly in the ITT monitoring data. Assumption three regarding the number of graduates is included through a similar (though not precisely the same) indicator of “Graduates from MCC-supported educational facilities.” The first two assumptions are not documented in the ITT. For the latter three, a review of the ITT target values indicates that the ITT targets were not aligned with the CBA assumptions, though each uses different sources of data.

Table 22: Key Assumptions in the CBA Model and ITT

ERR Assumption	From the ERR		From the M&E Plan/ITT			
	Source	Target	Indicator	Source	Target	Actual (End of Compact)
Schools MCC is assisting directly	From Proposal ¹³	8	N/A	N/A	N/A	N/A
Years to implement all new curriculum (length of time between the launch of a new curriculum and its full dissemination)	Unspecified	3	N/A	N/A	N/A	N/A
Increase in vocational education graduates due to the project between 2007 and 2012	Unspecified	6% (<i>increasing to 3,488 in assisted schools in 2012</i>)	Graduates from MCC-supported facilities	TVET Administrative Survey 2013, Wave 3	15,800	11,967
Gain in wages for vocational education graduates due to the project	Projected based on a Salary Survey	9.3% (<i>raising wages to \$1,752 in 2012</i>)	Annual salary for TVET graduates	TVET Graduate Follow-up Survey 2012 Wave 2	\$1,336	\$887.82
Increase in probability of employment for graduates of affected institutions due to the project	Projected based on a Salary Survey	5% (<i>raising employment to 76% starting in 2012</i>)	Rate of employment	TVET Graduate Follow-up Survey 2012 Wave 2	75%	57%

For the first assumption on the number of schools benefitting from the VEP, MCC’s CBA model assumes that benefits would accrue to graduates of eight schools selected for participation in the VEP, out of a total of 34 vocational schools in country. However, according to MLSP records, in the 2011-2012 school

¹² In interviews, the ET learned that a “closeout ERR” is in the process of being finalized. This model is said to be substantially different from the one used to justify the VEP investments at the beginning of the Compact. As that ERR has not been finalized, the ET provides comment on the most recently published ERR.

¹³ It is not clear from the ERR spreadsheet which document or proposal this references.

year, there were 71 TVET schools around the country (earlier data are not currently available), suggesting that the 34-school estimate was not comprehensive. Of those schools, project records indicate that the majority of TVET schools benefited in some way from the VEP, with varying levels of interaction and support. Table 23 provides an overview of the number of schools benefiting from each of the major project components (some schools benefited from multiple components).

Table 23: Schools Benefiting from the VEP

Activity	Estimated Number of Schools Benefiting
TVET Law and National-level Strengthening (Activity 1)	All TVET schools
New RMCs	6 schools immediately benefit; all schools predicted to benefit from their services (to the extent they are being provided to other schools)
Centers of Excellence	3 schools
NLRC	1 school
Competency-Based Curriculums	6 pilot schools; later expanded (to varying degrees of success) to all schools
Equipment and Facility Upgrades	28 schools
Grants	21 schools
Books from Books for Asia	31 schools
Received Learning Materials	22 schools
Training (ranging from individual to more intensive/repeated efforts)	68 schools

In addition to the project documents noted above, IPA’s evaluation included 50 TVET schools believed to have benefited from the VEP activities, which was also the basis for the calculation of several of the ITT indicators. Evaluation interviews also suggest that the VEP’s effects were felt sector-wide, and not just in a few schools. Though it is clear that more than eight schools substantively benefited from the VEP activities, calculating the precise benefits for graduates from each school, given the myriad combinations of activities, would be challenging at best.

For the second assumption, MCC’s CBA model assumed that it would take three years for the CBT curriculums to be adopted in the affected schools. However, this evaluation finds that, though CBTs are largely in place, the extent to which they are adequately being implemented remains a challenge. Thus, the assumption of full adoption within three years of Compact completion was likely optimistic.

The third assumption anticipated a six percent annual rise in the number of TVET graduates over the course of the Compact, with the expectation that the growth rate would return to 1% annually after the end of the VEP. Based on MLSP data, though overall enrollments have not increased, the number of graduates has risen from 14,836 in 2009–2010 to 20,544 in 2017–2018. This is a larger increase than anticipated in the original CBA.

The fourth assumption anticipated that graduates would experience a 9.3 percent increase in their wages. Unfortunately, given the large number of economic and policy factors affecting respondent reports of income changes, this evaluation is unable to determine with certainty the extent to which graduate incomes have or have not increased as a result of the VEP.

The fifth assumption anticipated an increase of 5 percent in the likelihood that graduates would find employment. Unfortunately, available data show that this increase has not occurred. The most recently

available national data show that the employment rate of TVET graduates has fallen from 55.6 percent in 2010–2011 to 46.2 percent in 2016–2017. This is substantially lower than 71 percent employment rate anticipated in the CBA. Again, given the large number of economic factors affecting employment within Mongolia and the largely qualitative nature of the data, the evaluation cannot isolate any impact of the VEP on employment rates of graduates.

Across the five main assumptions, the evaluation finds varying results. In the case of the number of graduates, the evaluation finds that the project outperformed expectations, which would increase the calculated ERR. Increasing the number of schools considered “affected by the project” would similarly increase the ERR. However, the longer than expected time to fully adopt CBTs would reduce the calculated ERR. And the inconclusive results on employment and income have an unclear impact on the ERR. Given the varied directions of these impacts, it’s not possible, without quantitative data representing the impact of the project, to know how the final ERR compares to MCC’s prior estimates.

5.3 Policy Implications

Not all of the VEP investments were successful in the long term. But the VEP appears to have succeeded in steering the Mongolian TVET sector toward a more modern, relevant, and high-quality system. In addition, it helped lay the groundwork for additional TVET investments by other donors.

The findings from this evaluation on what worked well and what some of the major challenges were provide useful insights for potential future TVET investments around the world as well as for future TVET investments in Mongolia. Many lessons could be drawn from the specific details regarding each of the VEP sub-activities, but the key, overarching lessons are documented in the recommendations listed in Section 5.1.8. These recommendations call for a stronger focus of a project through a more thorough documentation of the central problem and the program logic, for adequate time to not only design and approve policy changes but for their implementation as well, better planning for potential significant changes to the political and/or economic context, and better documentation of project details and implementation.

6 NEXT STEPS | FUTURE ANALYSIS

6.1 Dissemination Procedures

Upon final clearance by MCC, this final report will be shared publicly on MCC’s Evaluation Catalogue. In addition, dissemination presentations will be offered at MCC’s offices in Washington, DC, and for local stakeholders in Ulaanbaatar, Mongolia. The Executive Summary will be translated into Mongolian to disseminate key findings within Mongolia.

6.2 Additional Analysis and Deliverables Expected

This report represents the final analyses for this evaluation. No additional reports are anticipated.

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8 ANNEXES

Annex 1. Expanded Program Logic and Results

This annex includes the more detailed program logic for the MCC Mongolia Vocational Education Project (VEP). This logic was developed as part of the evaluation design for the VEP.

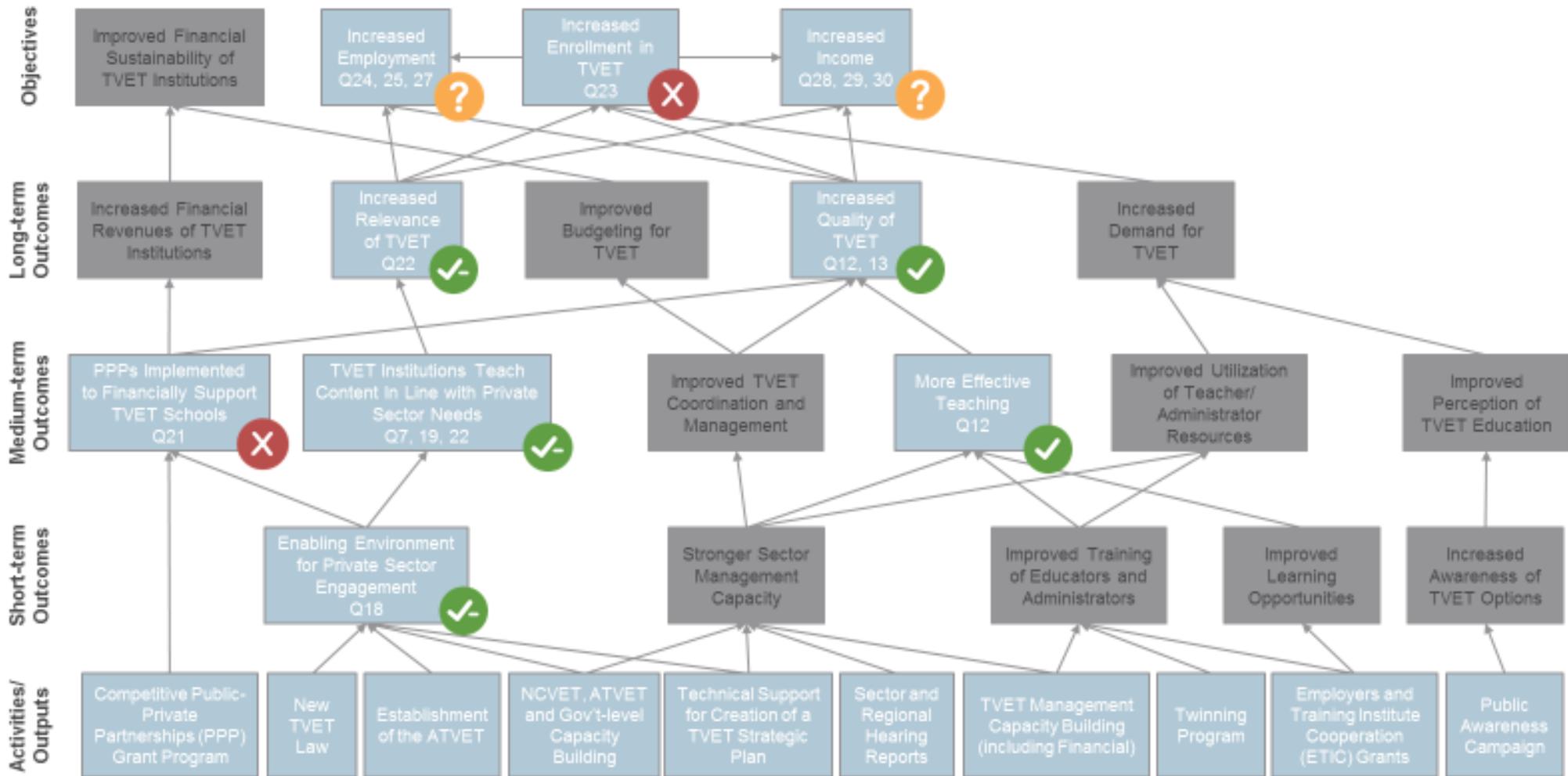
In completing the Evaluability Assessment, the evaluation team (ET) noted that the program logic in program documents (including the Compact, Investment Memo, Due Diligence Book, and M&E plans) included only a high-level version of the program logic. The ET also observed that no document contained a complete list of activities, and that different activities were referenced through different documents.

To effectively evaluate the program, the evaluation team first developed a **list of activities**, drawing from all available program documents, for MCC review. The list of activities then led to the development of a full list of EQs that were the basis for this evaluation.

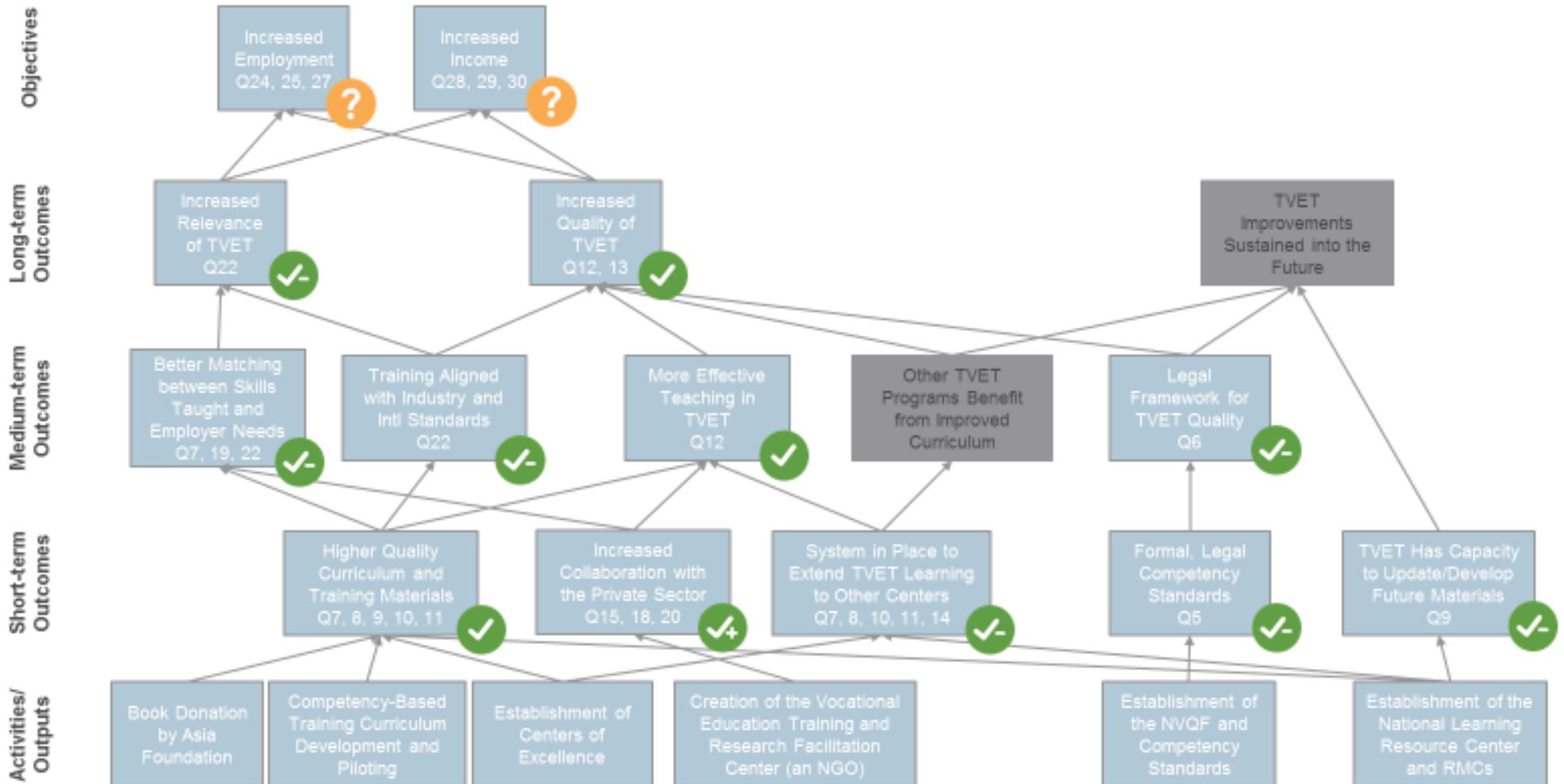
The below program logic shows the connections between activities and the different levels of results. Icons are used to demonstrate the evaluation team’s assessment of progress towards each outcome, according to the below legend:

-  Very positive effect
-  Moderate progress
-  Some progress, with significant weaknesses
-  Unknown or ambiguous results
-  No progress, or clearly not achieved
-  Not measured by the evaluation

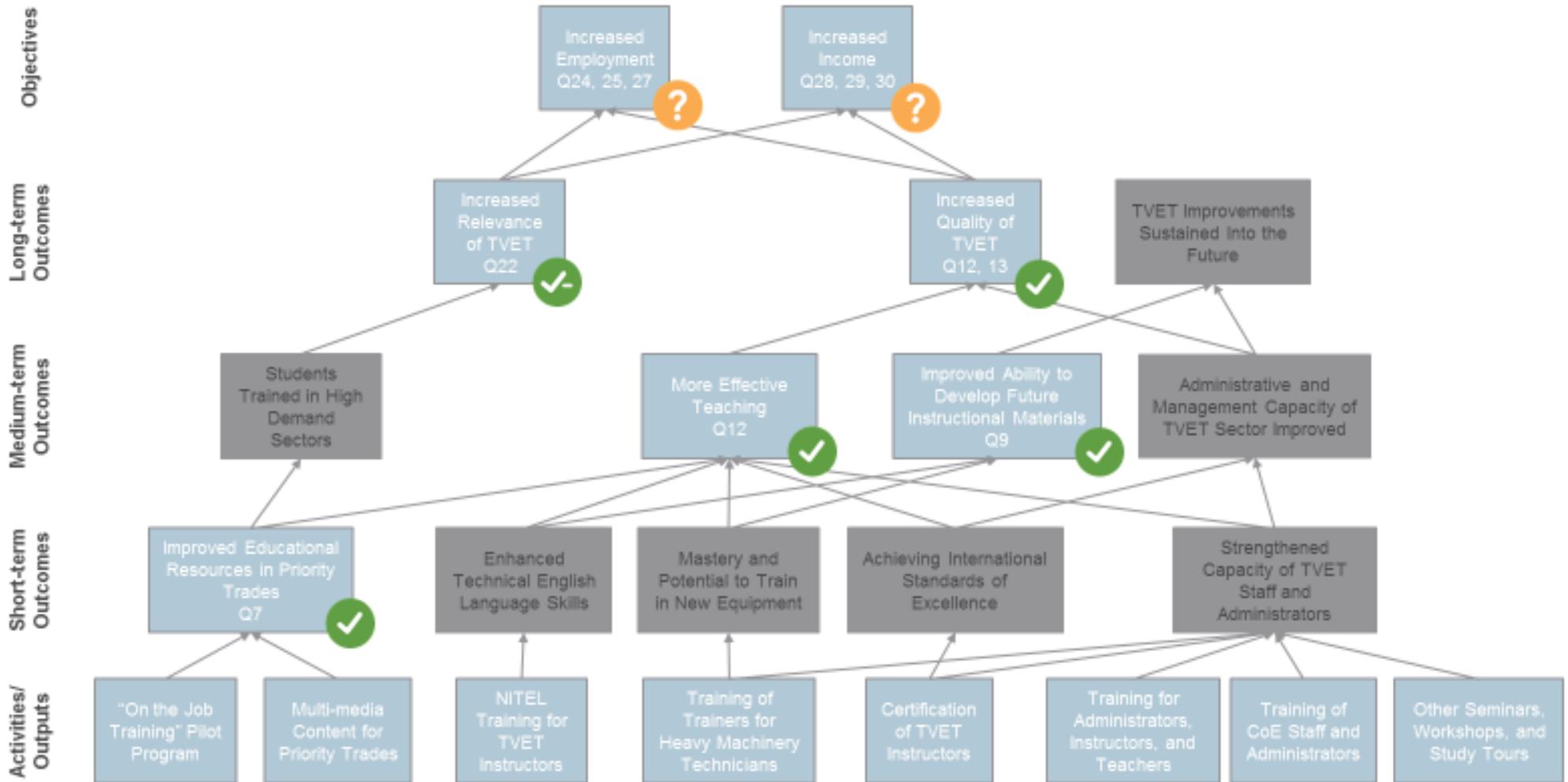
Activity 1. Reforms to TVET Policy and Operational Framework Activity



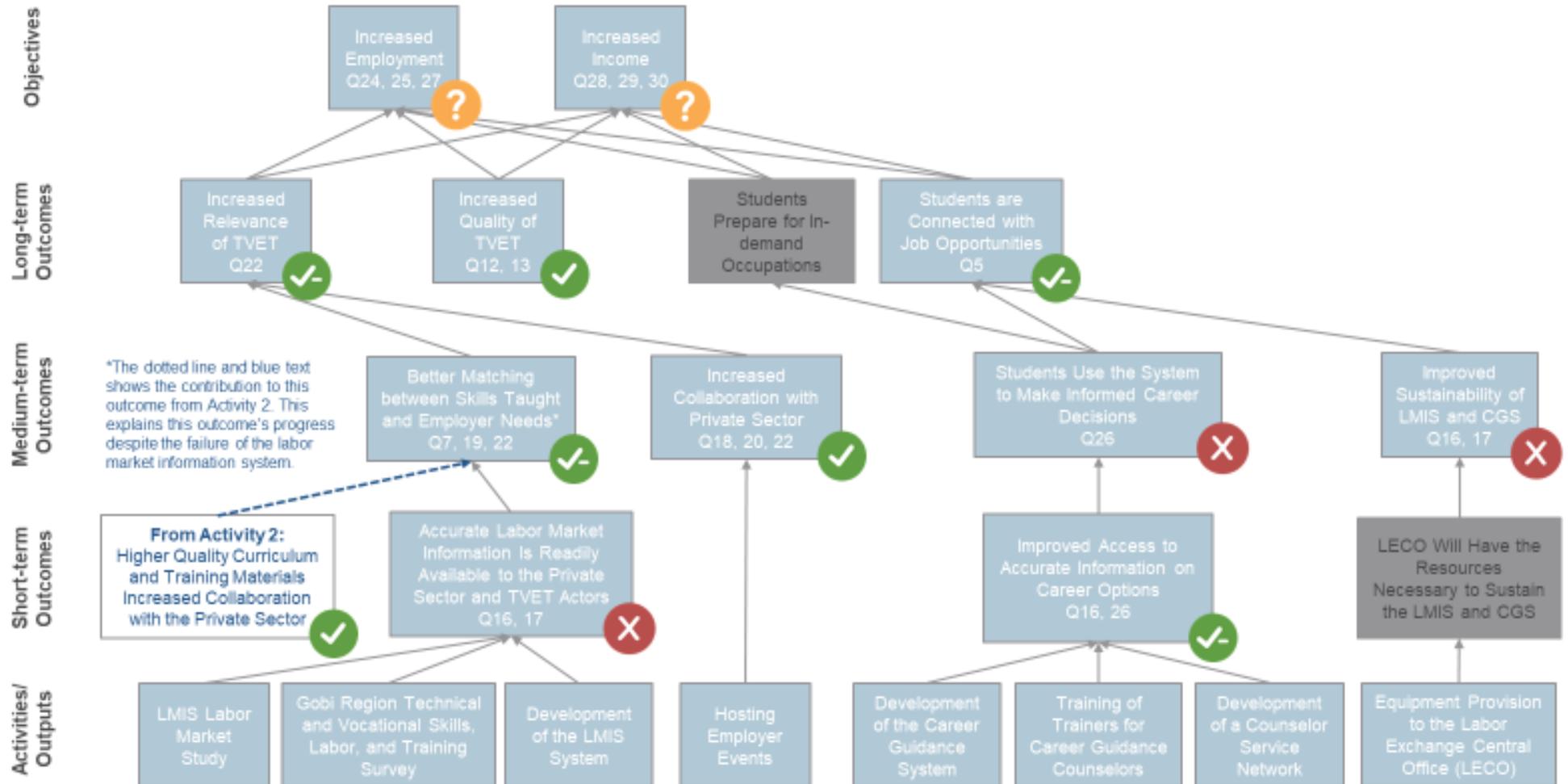
Activity 2. Creation of Skills Standards and Competencies System Activity



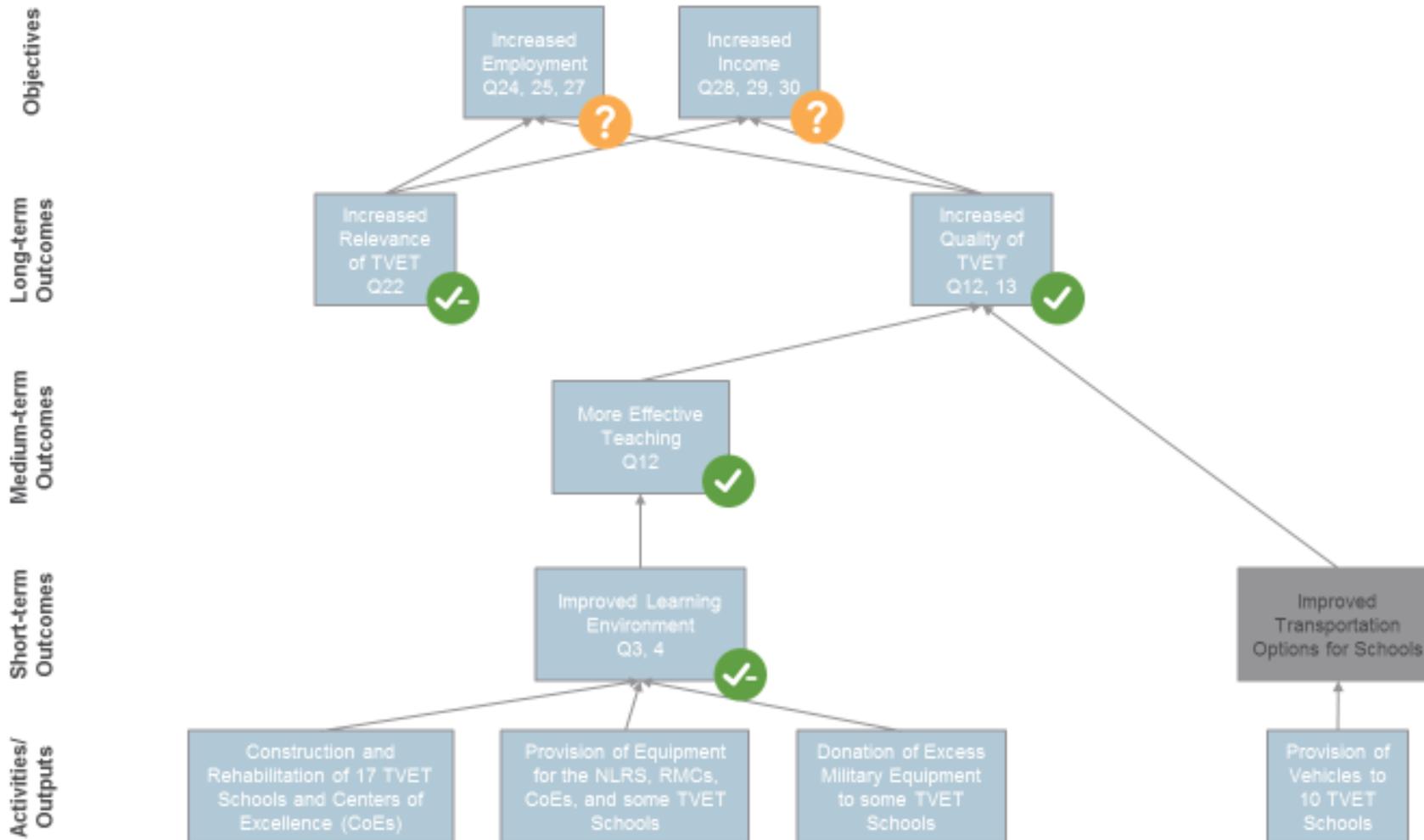
Activity 3. Competency-Based Training System Activity



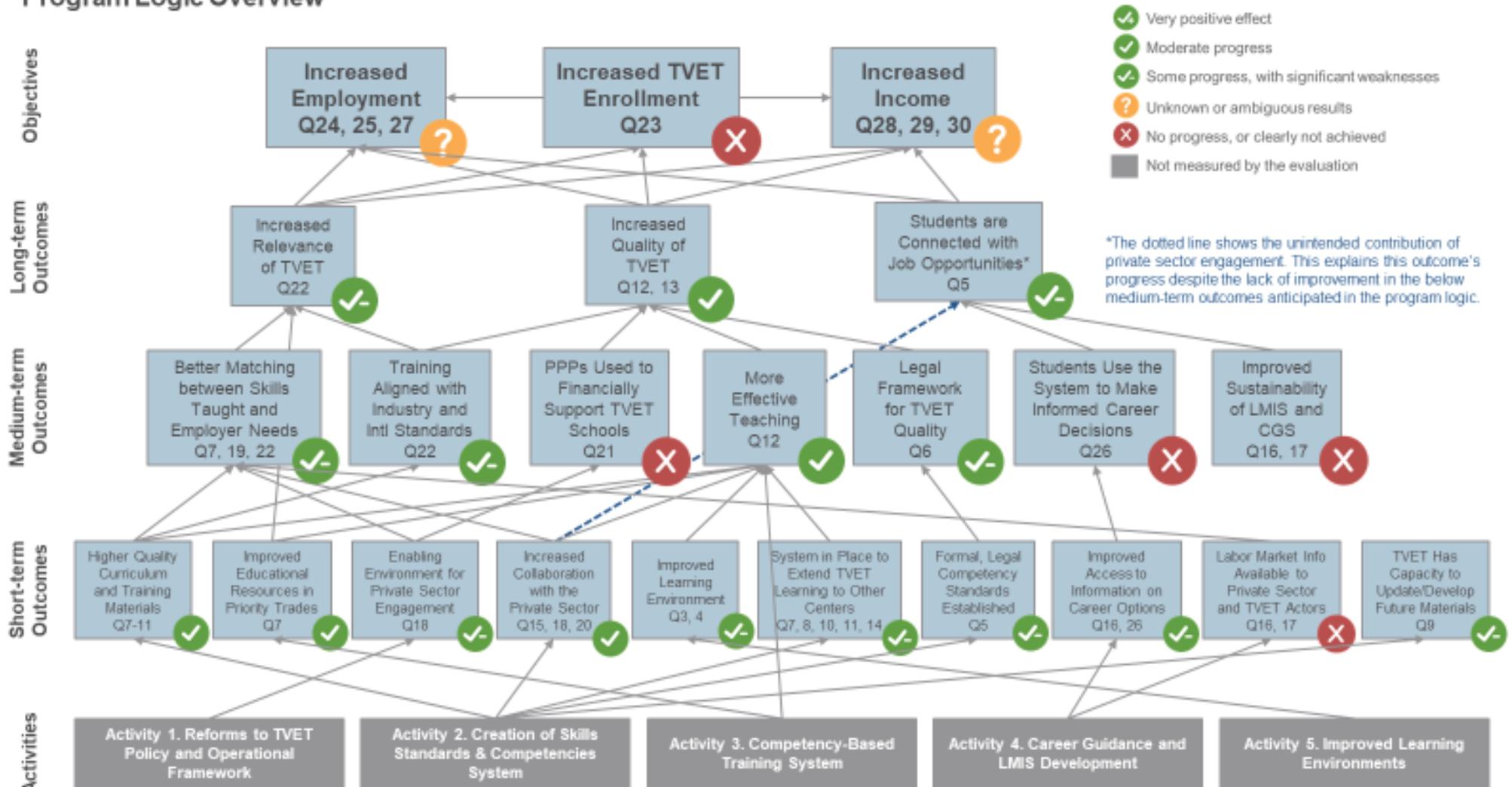
Activity 4. Career Guidance and Labor Market Information Systems (“LMIS”) Development Activity



Activity 5. Improved Learning Environments Activity



Program Logic Overview



Annex 2. Stakeholder Feedback

Feedback from Local Stakeholders

Feedback	Evaluator Responses
<p>In general the report is good, has a substance and it confirms the general consensus over perceived benefits and the short-comings of the MCA project.</p> <p>Along with well explained and captured benefits few critical points on systems which could come more prominent:</p> <ul style="list-style-type: none"> • Despite the creation of favourable legal framework of TVET, the Law and policies were and are still not implemented by GoM fully. That was evident in several pillars of TVET, like malfunctioning NCVET, under-utilised RMCs, weak policy formulation and implementation capacities of ML/MLSP/GOLSW; missing flexibility, autonomy of schools to decide over their income (which in turn demotivates the schools and employers, despite all the good will of employers to pay for training/re-training of the workers). • TVET teacher pre-service training system is not spelled out more prominently, the failure of which led to missing capacities of local TVET experts in curricula development, didactics etc 	<p>We have added some additional text to draw out these challenges, especially regarding the implications of the TVET law and how it relates to difficulties in other areas of the TVET sector (private sector engagement, NCVET, and RMCs).</p>
<p>I generally agree with what's written in the draft report. Although the report concludes that the VEP was well implemented, the report also states that the effects of three main outcomes are unclear or immeasurable. I'm assuming it indicates that the implementers focused more on not-so-important sub-activities rather than main long-term outcomes.</p>	<p>The unclear results regarding incomes and employment do not necessarily imply that implementers focused more on less important sub-activities. Rather, the difficulty in determining the VEP's contributions to these long-term outcomes relates to:</p> <ol style="list-style-type: none"> 1. Sometimes conflicting data (or a lack of confirmatory evidence) 2. Myriad external factors, such as macroeconomic shifts, that also affected these outcomes during the time period in question 3. Not having a measurable counterfactual against which changes could be compared so as to more accurately measure just the effect of the program. <p>Thus, it is not possible to say if incomes or employment were or were not improved. We have tried to make this more clear in the text.</p>
<p>I'd like to recommend that the challenges related to the RMCs be more detailed in the report. RMCs are not able to fulfill their intended roles as their funding and organizational structure is unclear.</p>	<p>We have added additional details and an example to the text.</p>

Feedback from MCC

Page Number	Comment	Evaluator Responses
Overall	Firstly, I'm like to note that the overall quality of the report is strong. I also, understand that data collection is complete and so I understand that some of the responses to my questions/requests may be that it's not possible.	We appreciate the note. We have done our best to address those comments that can be answered with existing data and to note those areas where additional data collection would be necessary.
Literature Review	Could you please provide us with copies of the papers cited?	We will share these papers separately w/ MCC.
52	Citation at the end of the page references a section above but says its below.	Corrected.
55	Centers of Excellence. Part of the idea of a center of excellence is not just that they share knowledge - but that they are better (excellent) as well. Did your findings show at all whether the Centers of Excellence have better outcomes than other centers?	We've added additional detail regarding perceptions of the overall quality of the institutions. However, to assess differences in outcomes between the CoEs and non-CoE's, we would require a representative sample of non-CoE schools, which was not a part of the evaluation design.
57	Overall comment on TVET quality. The findings presented focus on interview results. Did your observations lead you to any conclusions about TVET quality?	Based on discussions with the EMC regarding the tradeoffs between conducting independent observations of teaching quality and the limited resources available for this evaluation, the decision was made to focus on perceptions of teaching quality (this decision was documented in the Evaluation Design Report). Thus, no independent observations of teaching quality were conducted.
63	The term "social partnerships" is used several times. Please define what this means in the Mongolian context - or use a more common term.	Footnote added in the text providing an explanation of social partnership.
66	TVET centers received a large amount of donated equipment during the compact through what I remember being described as PPPs. From CAT and Wagner for example. Was there any sense of what happened to these contributions? Could you be more clear about whether or not this type of equipment donation is still happening at any kind of scale? In general, I disagree that a PPP needs to be just cash. Equipment donations are a very viable source of keeping TVET equipment up to date and would otherwise require large cash layout.	We agree that providing large equipment can be a form of PPP. Text has been adjusted to reflect that component and to provide more details on the status of equipment donations.
???	Twinning. Was this not looked at at all?	The Twinning Program, along with the short-term outcome "Improved Training of Educators and Administrators" was agreed during the scoping/evaluation design process to not be a top priority for MCC, and was accordingly not assessed in the VEP Evaluation.

67	I found the description about whether or not the private sector has found what they need a bit lacking. Respondents say TVET is better. But is it good enough? Are they hiring graduates more than they were before? If so, why? Because they have everything - or they have more than others but still need training?	Additional paragraph added highlighting more information on how private sector views TVET graduates and how that has affected the partnerships.
73	Did you find out how TVET centers are collecting data on placement/employment rates? Is it any employment or in relevant sector/job? Are they higher level/better jobs than before? Some more understanding of where these numbers come from / how reliable they are would be important context for understanding any change in employment.	We've added as much information as we have to the text to contextualize these findings.
76	I don't find an analysis of the national employment rate useful. (TVET is a small share of overall employment.) Are there national data/statistics on job placement/employment for TVET grads?	National TVET statistics are included on pg. 73 (Figure 21). National employment rate data is included - though lightly treated - because the overall Compact Goal for the VEP was to "increase employment and income among unemployed and underemployed Mongolians" (without restricting to TVET graduates). Text has been added to this section to give some additional clarity about why it is included.
76	First line in Table 20. Key finding. I don't see the links to get to the conclusion (national data doesn't support the anecdotal responses.) I believe the finding. I just can't see what "national data" you're using relevant to TVET grads.	The national-level data on graduation rates for TVET grads is shown in Figure 21. We've added a line referencing that previous figure (on pg. 73). That figure shows a decrease in national average of TVET graduation rates over the last decade.
4 and 5	Lack of coordination between donors' is listed as a challenge. In my view of the project this was certainly not the case. The formation of the 'Collective Impact NGO' in collaboration with key donors and Oyu Tolgai was a major initiative and a clear example of very close cooperation with other development partners.	Coordination between donors was noted in only a few interviews. The text focuses on the top 5 challenges, which does not include donor coordination. Thus, we've removed the reference to it in the key findings. It's possible that opinions on this topic varied- both by individual respondent as well as over time, and thus could vary from the reviewer's personal experience.
	A short summary of the Collective Impact story is attached. This summary was developed for publication by MCC to talk about an innovative model to solve some common problems.	Thank you for sharing. This did not come up during any of our interviews, interestingly.
Cover	Clearer recognition of MCC (branding issue to be addressed in final version?)	MCC does not require independent evaluations to follow particular branding guidelines. Branding is consistent with other deliverables under this contract.
9	2nd paragraph, last sentence, ("A series of political transitions...") should be moved to start of sentence since, according to text elsewhere (best explained on p. 60) underscores the detrimental impact of the 2012 change in government resulting in the dissolution of the ATVET and demotion of NCVET's status.	Sentence has been shifted earlier, and an additional sentence added to reflect that these political transitions were not the only cause for the lack of success.

16	Table 10. If possible, break down contractor list by VEP Activity, as in other Tables (e.g., 8, 9, 11). Also, standardize use of "Activity" vs "VEP Activity" as headings meaning the same thing (e.g., see tables 8 and 9)	Table reorganized to follow the same activity structure as shown in other tables. Headings throughout the report now reflect VEP Activity to avoid confusion between the five activity areas of the VEP and the many, many subactivities.
18	Table 12. Clarify (perhaps in footnote) method of calculating values for "% Completed", as they are not intuitive at first glance. Also, figures in yellow are nearly illegible to reader.	The calculation method is now added at the bottom of the table, and the yellow text has been changed to a dark orange.
36	Section 4.5.2 cites CBY benefits should be fully accruing by 2018. Cite standard or rationale for 5 year horizon, if one is available.	Section 4.5.1 discusses the context for the 2018 timing of data collection. The only timeframe for the realization of benefits estimated by MCC was in regards to CBT adoption 3 years after Compact end. Given this estimate, by 2018, all graduates would have studied under the CBT curriculums.
39	Section 5.1.2.1 (mid paragraph) cites that "Other changes noted were smaller changes..." but examples of these smaller changes are not explained until near the bottom of the next page p. 40. Citing examples of "small changes" (e.g., twinning, English language training, grants) would be helpful to ground the reader without detracting from info in later sections.	Noted. A sentence has been added to the opening section giving more examples of these small changes and better ground the reader.
44	Near the bottom of the page, the report says that "...schools haven't had the money to restart" software licenses. I suggest using the term renew (not restart).	Agreed. This word has been changed.
46	1st paragraph (next to photo) discusses lower quality of items of "chinese manufacture and from Chinese vendors. Clarify if the meaning is of Chinese origin, from Chinese vendors, or both. Also, it is not clear if "non-Chinese" would mean local origin/local vendors or other country vendors/origin.	We've clarified the text as referring to Chinese manufacturers and added a note that higher satisfaction was reported with equipment from South Korea and Western nations.
49	4th paragraph references "NVQF certificates and other certification systems". Consider including a footnote providing examples of other certification systems used.	Additional information provided on other certification systems in the text of the paragraph.
59	This page toggles between references to NCVET and ATVET, most of which are clear except for the reference to "The agency" at the start of the last paragraph. While ATVET is an agency, it may be clearer to the reader to just cite ATVET here.	Thank you; we've made this change for clarity.
4	Typo: , "training	Corrected.
5	"did not have their intended effect": suggest specifying that result here	More details added on the intended results of the NLRC and the CoEs according to the logical framework.

9, Conclusion	"Success" of the VEP should be framed around achievement of its objectives, as written in the compact. Can you highlight this in the conclusion?	The conclusion has been revised to focus more on the overall objectives of the VEP and the extent to which the VEP made progress towards achieving them.
	The conclusion now states the objectives, but it doesn't "conclude" anything about the program's success against them. Please add that. Additionally, where are the outcomes in this sentence from? I didn't see those in the Compact or M&E Plan. "Objectives in support of this goal included increasing the financial sustainability and enrollment among TVET institutions, along with increasing the employment rates and incomes of their graduates."	The conclusion has been revised to more clearly outline progress towards the project objectives and outcomes. The first paragraph summarizes the expected outcomes. The second focuses on employment, income. The third focuses on quality and relevance. For clarity, we have removed the reference to financial sustainability and enrollment rates in the objectives. Though these outcomes were written in project documents, they were not formalized in the official program logic.
11	"However, at the time, MCC...": This isn't accurate, to my knowledge. We've always had to evaluate all projects. IPA was only willing to do an IE, so we needed a new evaluator for the rest.	This section has been revised slightly to clarify prior findings from the Evaluability Assessment. The text is consistent with the IM and Compact, which stated, "The MCC approach to development assistance features a strong commitment to conducting evaluations of MCC Programs in order to establish clear attribution of the effects of the program compared to a counterfactual. MCC will be responsible for procuring a firm to execute an impact evaluation of the Compact. The evaluation sponsored directly by MCC will focus on the Projects most suitable to rigorous evaluation."
18, Table 12	It's hard to interpret the last column without targets and actuals. Can you add those to the table?	The table has been updated to include the missing values in the existing Compact Target and Actual columns.
18, Table 12	TVET quality assessment: suggest discussing this in the text of the report, given the result is so low, but the report generally shows positive findings on quality	We've added a bit of clarity to the text regarding differences between the ITT data and the evaluation findings (just below Table 12). However, the same issues that could be intervening in the other indicators equally apply to the public perception data (period of exposure, data source, and data quality). Given the concerns about the quality of the ITT data, they are not discussed in the main text of the report.
25	Ofer and Pop-Eleches: I think Ofer is his first name, should be last name	Corrected.
35	The ET does not anticipate there being very many counselors per school: change to past tense/delete	Corrected.
42	Quality section: Can you add a description of how you define quality? It should be not just any quality increase but quality in order to increase incomes and employment – the evaluation against this result should be made with this in mind	We've clarified the text.

43	"The original Compact between MCC and the GoM had not included substantial investments in infrastructure or equipment out of concerns about long-term maintenance of those investments (MCC, 2007a)." How did this end up? Suggest tying back to this at the end of the section	A footnote has been added to clarify to the extent possible and to include the impressions of some respondents. However, unfortunately, no documentation/formal explanation for the shift is available.
44	Current Status and Challenges: This section focuses on the quality of the equipment, but the result is the quality of the TVET system, which I think are different things. Is it possible to change this to a measurement of the quality of the TVET system (as resulted from the equipment)? But, looking at the evaluation questions, maybe it is too late to answer this. It just seems a little disconnected from the results we should be measuring.	We've added a description more clearly linking the facilities and equipment to TVET quality. We've also described the various aspects around the facilities and equipment that are necessary for them to lead to improvements in quality (such as regular use, relevance to employers, and maintenance).
45	"as does the technological evolution that renders older equipment obsolete." Does this have an impact on TVET quality?	Added additional context connecting this issue more directly to TVET quality.
46	"Generally speaking, at least the equipment that is still operational is well used (with an average score of 1.6). And the equipment and facilities are generally well maintained (with an average score of 1.5 for both facilities and equipment)." Are those both really "well"? 1.6/3 seems lower than that.	We've clarified the text. On a scale of 1 to 3, 1 is the best possible score, and 3 is the worst. Thus, averages between 1-2 would be considered good.
50	Can you comment on the impact the un-approved NVQF has on the CBT?	We've clarified the text. The NVQF was adopted, but not yet implemented at the end of the Compact. Since then, other donors have pushed this forward and it is being implemented (even if it has not yet received full traction, and awareness of its details are still varied).
General	Please add the denominator number of interviews whenever you state a number of interviews that reported this or that	We have gone through the text and added appropriate denominators, referencing the total # of interviews that discussed each topic.
	It looks like it is still missing in some places - should we assume that the total number of interviews that occurred is the full denominator? If so, that is fine with me/makes sense.	Yes, that is correct. We also went through again and added this detail in a couple of places where it is helpful to have the sub-group of respondents as a reference.
Table 17, EQ 5	Suggest answering this question in the results column. The opinion of the private sector seems like useful learning for MCC.	This key findings paragraph has been rewritten to more fully answer all questions.
Table 17, EQ 6	Key Findings: But it isn't formally in place yet. This description doesn't seem to match the analysis in the report.	We've clarified the text. The NVQF was adopted, but not yet implemented at the end of the Compact. Since then, other donors have pushed this forward and it is being implemented (even if it has not yet received full traction, and awareness of its details are still varied).
Table 17, EQ 7	Key Findings, "Though more work is needed...": What, specifically, is needed?	More explanation added clarifying the work needed.

Table 17, EQ 8	Key Findings, "Seeing the benefits being realized...": What is the benefit, specifically?	Reworded to clarify
Table 19	Suggest specifying what the perception is	Added language explaining that TVET is perceived as a lesser option for parents.
Figure 20	No graduate data is available for 2015-2017?	Added a note more clearly explaining the years where there was missing data.
	OK, something is off with the graphic in the text, though.	Revisited the graphic and corrected the spacing with the text.
73, 5.1.6.2	Since the data show different things, can you include a discussion on how the data were reported/aggregated? I assume the TVET data is self-reported by the schools. Do you know how they track it? Do the national level statistics aggregate those, or use another mechanism?	We've added what information we have on how the national statistics are collected.
74,	"Respondents pointed out that the employment statistics they report to the MLSP do not take this number into account": Is it the case that their self-reported number so, though? Maybe that helps explains the differences seen above?	Agreed. We've added a discussion of how the national statistics are collected/what they represent.
75	"grade": delete?	Corrected.
Table 20, EQ 25	Since there isn't a clear change identified in the previous question, this answer is confusing. Are the drivers of a possible increase and a possible decrease separable?	We've clarified in the text that each factor could either have a positive or negative effect on employability. Most had examples of effects in both directions, so separating them is not that helpful.
Table 20, EQ 26	This doesn't seem to answer the second two questions. Can you include an answer to those?	We've added these details.
Table 20, EQ 29	Again, I find this a little confusing to digest, when we don't know the direction of the trend.	We've clarified in the text that each factor could either have a positive or negative effect on income. The general economy, for instance. During the mining boom, the economy helped lift incomes. After it crashed, incomes have gone down.
5.1.8 Conclusion	Would it be possible to add a paragraph boiling the evaluation results down to recommendations for future project design? I think that would help the sector to make sense of the report.	We've added recommendations for future programming in the conclusions section.
	I don't understand the "objectives in support of this goal..." sentence. Where are those objectives documented? (Same comment as above)	The conclusion has been revised to more clearly outline progress towards the project objectives and outcomes. The first paragraph summarizes the expected outcomes. The second focuses on employment, income. The third focuses on quality and relevance. For clarity, we have removed the reference to financial sustainability and enrollment rates in the objectives. Though these outcomes were written in project documents, they were not formalized in the official program logic.

Figure 24	It doesn't make sense that "Students are connected with job opportunities" would be marked as "progress" when the pathway below showed no progress. The changes must be the result of something outside the project (and therefore shouldn't be green here), or of a different path way (which should be laid out on this chart).	We've added a dotted line and a textbox in the graphic explaining why this result is depicted as shown.
5.2	Please include a paragraph explaining whether, after consideration of this data, it appears the ex-ante ERR was likely and over- or under- estimate, and what problematic assumptions drove that. Also need to cite the ex-ante ERR number somewhere. Should also take into account costs, not just benefits. I think the current public model doesn't include the re-scoped costs.	We've added a paragraph on directional impacts for each assumption. However, since some findings would push the ERR up and some would push it down, without quantitative data, it's not possible to determine the aggregate direction of the change.
5.2	"For the latter three, a review of the ITT target values indicates that the ITT targets were not aligned with the CBA assumptions, though each uses different sources of data." Would it be possible to include a table with the indicator, definition (both if different), sources, respective targets, and any measured values at closeout and/or beyond?	Table 22 is now included with this information.
5.3	This section should describe the policy implications of this evaluation. Based on this learning, what should policy makers do differently? What should they take into account?	We've expanded the text and added a summary of the recommendations from the conclusion section.
82	"Provide useful insights": Such as...??[in summary]	We've added some additional, high level details without delving into the specifics of the many sub-activities (for the sake of space and avoiding repetition).
Annex I	Can you clarify what the shaded boxes mean?	We've added the gray boxes to the legend indicating that those results were not included in the evaluation.
90	Again, we shouldn't have a green box if the preceding are all red	Corrected - see comment above.
	Still a problem in the diagram for Activity 4	Activity 4 graphic reworked to include a similar statement.
Table 10	There's a formatting issue.	Formatting adjusted for this table.
Overall	I don't see an independence statement in there. Can you add?	Independence statement added in the Executive Summary and in the body of the report.
Executive Summary	The Executive Summary is missing some updates to the EQ answers in the text (for example, EQ 5, 19, 23)	All tables updated with the current text from the report. (These changes were not tracked.)

Feedback from Other Stakeholders

Feedback	Evaluator Responses
<p>Thank you for giving us the opportunity to provide feedback. Your conclusions on the VET project's impact on income and employment are in line with our findings (see Appendix E in our follow up report). While we do see some evidence of higher incomes and employment as a result of being accepted to vocational school through an admissions lottery, we can't causally attribute those effects to the reforms themselves. The sharp fall in Mongolian growth rates from 2013 or so onward depressed income and employment growth across the board, which made a challenging employment landscape even harder to navigate for young TVET graduates and added to the many confounding factors that prevent causal attribution with a reasonable degree of confidence.</p>	<p>Thank you for the corroboration and context.</p>
<p>The references to the TVET follow up report (pp 51 & 79) should read "Linden & Malamud, 2017", rather than just Linden.</p>	<p>Corrected.</p>



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