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EVALUATION DESIGN REPORT

Evaluation of the Mongolia Vocational Education Project

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Social Impact

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ACRONYMS

ATVET	National Agency for Technical and Vocational Education and Training
CBA	Cost-Benefit Analysis
CBT	Competency-Based Training
CoE	Center of Excellence
DDB	Due Diligence Book
DO	Direct Observation
EDR	Evaluation Design Report
EMC	Evaluation Management Committee
ERR	Economic Rate of Return
ET	Evaluation Team
EQ	Evaluation Question
GoM	Government of Mongolia
HQ	Headquarters
IE	Impact Evaluation
IPA	Innovations for Poverty Action
IRB	Institutional Review Board
ITT	Indicator Tracking Table
LECO	Labor Exchange Central Office
LMI	Labor Market Information
LMIS	Labor Market Information System
MCA-M	Millennium Challenge Account - Mongolia
MCC	Millennium Challenge Corporation
M&E	Monitoring and Evaluation
NCS	National Competency Standard
NCVET	National Council for Vocational Education and Training
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
PI	Principal Investigator
PIU	Project Implementation Unit
PE	Performance Evaluation
PM	Program Manager
RMC	Regional Methodological Center
PPP	Public-Private Partnership
SI	Social Impact
TVET	Technical Vocational Education and Training
VEP	Vocational Education Project
VTPC	Vocational Training and Production Center

1 INTRODUCTION

1.1 Country Context

Mongolia is a landlocked country between Russia and China, with a population of approximately 2.6 million in 2007, the year before the start of the joint Compact between the Millennium Challenge Corporation (MCC) and the Government of Mongolia (GoM). Mongolia is one of the most sparsely populated countries in the world, with about half its population residing in capital Ulaanbaatar. Mongolia's abrupt transition away from a centrally managed state in the early 1990s to a market economy led to a transformational recession, where many systems—including vocational education—were disrupted.

Within a few years, economic growth returned, along with increased rapid urbanization. Mongolia experienced increasing annual GDP growth rates intermittently in the 1990s and more consistently starting in 2000, reaching over 10% in 2007 (World Bank, 2018a). Mongolia's post-transition economy relied on its rich resources, with large growth in the mining, automotive, tourism, and construction sectors (MCC, 2014). However, weak institutions and aging infrastructure remained barriers to economic growth (MCC, 2007a). The economy also suffered from a mismatch between the structure and skills available in the labor market and industry needs. Increased industrialization and private sector investment paralleled a demand for greater "analytical skills, behavioral skills, practical knowledge [English and IT] and technical skills" that were not available in the Mongolian market (World Bank, 2007).

These challenges particularly affected youth. In 2007, youth unemployment reached its highest point in a decade at 14.96%, compared to 5.3% overall, with a labor force participation rate at approximately 33.61% for youth ages 15-24 (International Labor Organization, 2017). The private sector compensated in part for the lack of skilled Mongolian labor by hiring foreign workers; according to a 2007 World Bank report on the Mongolian labor force, 2005 estimates showed over 14,000 foreign working permits that year, with technicians as the largest group, but Mongolian authorities acknowledge that actual values are much higher due to illegal immigration (World Bank, 2007).

Despite the high youth unemployment rate and low labor force participation rate due to discouragement, in the mid- to late-2000's Mongolia was importing significant amounts of skilled and semi-skilled labor because local workers did not possess the skills needed by employers. The Technical Vocational Education and Training (TVET) system in Mongolia was still highly centralized, with limited involvement of the private sector in planning or anticipating high demand fields of study. This often contributed to a mismatch between the skills being taught at TVET schools and the skills needed by employers for increasingly technology-intensive growth sectors. Additionally, the general population often looked down on TVET schools, perceiving them as a second-choice option for students with limited other academic possibilities, which suppressed demand for a technical education in the skilled trades (MCC, 2007a).

1.2 Project Background

It was in this context that the MCC and the GoM implemented a five-year Compact from 2008-2013 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 the 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).

This report, and the subsequent evaluation, focuses on the VEP. The VEP consisted of five key activities:

1. Reforms to 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)

1.3   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, including administering surveys of school administrations and TVET graduates. However, at the time, MCC focused only on IEs, and only the equipment upgrades components of the Sub-Activity 5 (Improvement of Learning Environments) was determined to be suitable for a rigorous IE. However, MCC's approach to evaluation has evolved over time; evaluation efforts are now expected to include all project components, not just those that can be measured via IE.

To adequately capture the results of the remaining VEP sub-activities, MCC awarded Social Impact, Inc. (SI) with a contract to conduct a performance evaluation (PE) of the VEP. This Evaluation Design Report (EDR) establishes the methodology that SI will use to evaluate the VEP. In the remaining sections, the Evaluation Team (ET) will describe the components and objectives of the VEP sub-activity, discuss the relevant TVET literature as it relates to the VEP activity components, define the evaluation objectives and questions, and describe the methodological approach to the evaluation.

2   OVERVIEW OF COMPACT & INTERVENTIONS

In this section, the ET provides an overview of the Mongolia VEP interventions, and beneficiaries, and of the theory of change underlying the project.

2.1   Vocational Education Project Overview

According to the Compact Amendment, the VEP was designed to "increase the wages of poor Mongolians by improving their technical skills and productivity to meet labor market demand in key industries (including, among others, construction trades, road construction, mining and mining operations, electronic trades, mechanical trades, transport and nursing and allied health)" (MCC, 2010).

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

Table 1: Summary of VEP Activities

VEP Activity	Purpose (as described in Compact Amendment)	Key Sub-Activities	Budget
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.	• 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	$1,000,000
2. **Creation of Skills Standards and Competencies System Activity**	Identify, install, and operationalize occupational and skills standard and a competency-based training system, including standardization of competencies.	• 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)	$9,680,000
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.	• 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	$14,300,000
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.	• Conduct LMIS Labor Market study • Develop the LMIS system • Develop career guidance system and conduct training of trainers for career guidance counselors	$1,850,000
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.	• Construct or rehabilitate 17 TVET schools, including three Centers of Excellence (CoEs) • Provide improved equipment for TVET programs	$18,200,000
Administrative Costs			$2,562,856
TOTAL			$47,592,856

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[1] The sub-activities listed in Table 1 are demonstrative examples taken from the full list of activities that was compiled by SI and approved by MCC. Annex 2 provides the full list of identified sub-activities.

2.1.1 Program Participants

For the VEP, TVET graduates were the intended beneficiaries of the program. 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 benefits—including wages and employment rates—improve by 5-10%. This would be accomplished through the improved curriculum, teaching, and access to resources such as the LMIS. Additional descriptions of targeted beneficiaries included "youth" (MCC, 2007a) or "the unemployed and underemployed" (MCC, 2007b), though these details were not included in any beneficiary descriptions.

TVET graduates, as beneficiaries, constitute a sub-group of the broader participant pool. Program participants include all those individuals and entities who were involved in implementing the program and its sub-activities. Participants included the GoM and relevant ministries, national-level organizations involved in TVET, private sector firms and associations, TVET schools and administrators/staff, grant recipients, Centers of Excellence (CoEs), and Regional Methodological Centers (RMCs). These participants did not necessarily expect to see income or livelihood benefits from the project.

2.1.2 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 with 22 TVET schools. Other activities included training and capacity building of TVET instructors and school administrators, which also supported specific schools. TVET providers in Mongolia included state-owned Vocational Training and Production Centers (VTPCs), National and Regional Methodological Centers (RMCs), secondary vocational schools, privately owned TVET schools, colleges, and university sub-branches (MCC, 2014). These countrywide facilities have a presence in every region.

The primary difference between the colleges and university sub-branches and the other TVET facilities is that the college- and university-based programs only enroll students that have graduated from the 12th grade, whereas the other facilities enroll students that have graduated from the 9th grade (World Bank, 2015). The MCC Compact activities focused on the VTPCs (both public and private) and RMCs, however, some schools of all categories also participated.

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 country wide.

2.2 Program Logic and Assumptions

The official VEP Program Logic, as published by MCC in the Compact documents (both original and amended) and in the monitoring & evaluation (M&E) plans, remained unchanged throughout the course of Compact implementation. The official VEP Program Logic (Figure 1) is simple and concise, including 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

Figure 1: Program Logic, Closeout M&E Plan (MCC, 2013)

COMPACT LOGIC

Compact Goal

Reduce poverty through economic growth

Poverty Reduction through Economic Growth

Property Rights Project: Increase the security and capitalization of land assets held by lower-income Mongolians, and increase peri-urban herder productivity and incomes
Outcomes: (1) Increased land right formalization and (2) Optimized peri-urban rangeland carrying capacity and range management

Vocational Education Project: Increase employment and income among unemployed and underemployed Mongolians
Outcome: Improved quality and relevance of TVET System

Health Project: Reduce the risk of premature death and disability from NCDIs (Non-Communicable Diseases and Injuries) and traffic injuries
Outcomes: (1) Improved National and local response to NCDI (2) Increased understanding of NCDI prevention, and (3) Increased availability of sound NCDI services

NS Road Project: More efficient transport for trade and access to services
Outcomes: (1) Increased Traffic, (2) Decreased travel times, (3) Decreased vehicle operating costs, and (4) Decreased road roughness

Energy and Environment Project: Increased wealth and productivity through greater fuel use efficiency and decreasing health costs from air pollution in Ulaanbaatar.
Outcomes: (1) Reduced incidence of respiratory-related morbidity, (2) Reduced fuel consumption, (3) Increased energy efficiency, (4) Substitution of wind power for additional coal-fired power generation capacity, (5) Improved power quality.

The simplicity of the official VEP Program Logic, however, belies what became a large and complex project consisting of five activities, each with many sub-activities. Though the simplified Program Logic is clear and concise, the mechanisms by which the stated changes were expected to occur remain a black box. The linkages between the problems identified in the TVET sector and the proposed activities was never clearly explained, leaving only high-level, long-term outcomes to be included in the Program Logic. The roles of specific VEP components such as aligning training to employer needs, the competency-based training (CBT) curricula, the LMIS, and facility and equipment upgrades, are not made explicitly clear. The Program Logic also does not capture the VEP's efforts to increase non-public funding of TVET schools, including public-private partnerships (PPPs).

For this reason, the ET first developed a more complete list of project activities drawn from project documents (see Annex 2), followed by an assessment of how these activities fit within the overall Program Logic and the activities defined in the Compact. This detailed Program Logic, created for this evaluation, was approved by the Evaluation Management Committee (EMC) and can be reviewed in Annex 1.

2.2.1 Monitoring Critical Assumptions

Given the high-level nature of the official Program Logic, many assumptions and risks were undocumented. As part of the Evaluability Assessment, the ET reviewed and critiqued the assumptions and risks in the published documents and offered suggestions for additional assumptions to examine in the evaluation.

The VEP evaluation is being conducted ex-post, after the project has been fully implemented. Thus, unlike evaluations that begin before or during a project's implementation, the VEP evaluation will not be monitoring assumptions over time. Rather, the key assumptions have been noted in the Evaluability Assessment and this EDR, using as up-to-date data as is currently available. The assessment of these key assumptions contributed to the selection of evaluation questions (EQs), discussed in Section 4.

2.3   Link to the Economic Rate of Return (ERR) and Beneficiary Analysis

MCC's cost-benefit analysis (CBA) and ERR calculations rely on several assumptions regarding 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

Items 3 and 4 are covered in the official Program Logic directly as intended outcomes. However, the CBA assumptions regarding the time required to implement the new curricula and the increase in number of TVET students are not included in the Program Logic. These additional outcomes are captured in the expanded Program Logic elaborated by the ET (see Annex 1).

Multiple Compact documents, including the original Compact (2007), the Initial Monitoring and Evaluation (M&E) Plan (2008), the Amended Compact (2010), and the Closeout M&E Plan (2013), state that VEP benefits related to wages and employment are expected to accrue "over the next 20 years" for approximately 170,000 beneficiaries. A change of between 5 and 10 percent was projected in later Compact documents regarding these two high-level objectives of VEP.

The estimate of the number of beneficiaries for the VEP was consistent over the course of the Compact, as outlined in SI's Evaluability Assessment. When the Compact was amended to add the Improvement of Learning Environments Activity, the expected number of beneficiaries was not expected to change. However, each beneficiary was expected to see an additional increase in income as a result of the additional investments, which resulted in the expected ERR shifting from 5% under the original Compact to 5-10% under the amended Compact.

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 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) career guidance system 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.[2] 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 regarding improved learning environments. Section 3.2 summarizes gaps in the evidence.

3.1.1 Reforms to TVET Policies and Operational Framework Activity

Despite the fact that 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 the participation of stakeholders at the local level, 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

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[2] 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.

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 and curriculum design, and also moving from a system exclusively financed by the government to a system increasingly financed by both the private sector and students paying user fees. Mongolia's TVET system has also faced low involvement of the private sector in providing training and education to prepare students with relevant skillsets. However, this failure is the result of the lack of a proper quality assurance system within the nation's broader education policies, resulting in a number of 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 supply of labor and demand for a higher-skilled workforce in the region. 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 against 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 Xinjiang's 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 through enhanced 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 via 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 the issue of TVET planning and operational framework activity. The reviewed studies stress the importance of having the government work closely with the private sector to assure 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 also attempting to improve the relevance and quality of their TVET

systems through the use of skills standards or competencies to assure 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 a 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 educational system (Macdonald & Dunbar, 2015). The Asian Development Bank (2011) noted that the development of the NQF in Sri Lanka required eight years — two to develop the standards and six to complete development of the system. 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 (Asian Development Bank, 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 terms of 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 mainly developed by industry experts; and are expected to lead to a genuine industry-led NTQ (Cho, 2016).

While 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 assuring 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 ILO, note that the integration of "core skills" into TVET systems is an important contributor to the employability of graduates. Core skills in this context are defined as skills including abilities to learn and adapt to change; to read, write, and compute competently; to communicate effectively, etc. 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, 2010), noting that NQFs are not "magic bullets as instruments of reform." The countries that are successful in implementing qualifications standards are those that are developed 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 assure 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; Asian Development Bank, 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, for labor markets to operate efficiently both employers and job seekers require information on labor supply and demand. 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 help 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, the use of LMI – including regular surveys of employer needs – could help sustain the progress of the nation's TVET system. Although many of the 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 the needs of the labor market 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's 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 incompletion rates. The report asserts 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 characteristics of the program 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 multiple 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.

Ofer 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 make use of 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.[3]

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

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[3] 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.

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 through aiding with identifying technological and equipment needs, and assisting with budgeting for capital improvements.

In Xinjiang, China, TVET policy reforms also emphasized the importance 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 qualitative 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 Asian Development Bank-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, none of the topics were covered as much as would be desired. For example, studies of TVET operational policies and operational framework activity is 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 LMI. 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. 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 the 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 is essential in interpreting impact studies.

4 EVALUATION DESIGN

4.1 Evaluation Overview

The ET will conduct a mixed methods PE of the VEP. This PE will be conducted ex-post, approximately five years after Compact close and the completion of the VEP. While 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.

As highlighted in Section 2.2, the official Program Logic was high-level, focusing on 2 key objectives and 2 related outcomes supporting those objectives (for simplicity, we subsequently refer to all 4 as "outcomes"). In support of MCC's accountability goals, this PE focuses primarily on these four, official outcomes. However, as described in Annex 1, to better assess how the project components may (or may not) have influenced these key outcomes, the ET, with concurrence from the EMC, elaborated a more detailed Program Logic that documented the various linkages and intermediate steps between the project's sub-activities and the achievement of the project's outcomes. Based on this detailed Program Logic, the ET identified (and later received EMC concurrence on) a set of 30 EQs that would help explore project effects on these four outcomes. Table 2 presents a summary of how each of the intended outcomes will be assessed.

Table 2: Summary of Proposed Evaluation Questions and Methods

VEP Outcome	Evaluation Questions	# of Evaluation Questions	Qualitative Data Collection Method	Quantitative Data Collection Method
VEP Implementation	1, 2	2	- Interviews - Document Review	
Objective 1: Increased Employment	3 - 6	4	- Interviews	- Secondary data
Objective 2: Increased Income	7 - 9	3	- Interviews	- Secondary data
Outcome 1: Improved TVET System Quality	10 - 21	12	- Interviews - Observation	- Secondary data
Outcome 2: Increased Relevance of the TVET System	22 - 28	7	- Interviews - Observation	
Other Outcomes (TVET enrollment and PPPs)	29, 30	2	- Interviews	- Secondary data

In the sections below, the ET presents each of the 30 prioritized EQs (4.2), and then details both the qualitative and quantitative methods (4.3) to be used in this PE. Section 4.3 provides information on the approach, exposure timeframe, study sample, and data collection and analysis plans for both qualitative and quantitative methods. Section 4.4 includes a discussion of the risks, limitations, and challenges of the proposed evaluation design, and Section 4.5 includes a discussion of the VEP economic analysis.

4.2   Evaluation Questions

SI and the EMC conducted thorough discussions of the costs and benefits of focusing on particular questions and/or project components. 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.

30 EQs were eventually selected and are presented in Table 3, organized by the outcome they address. Additional information presented in the table includes data collection methods (both qualitative and quantitative) and data sources, each of which are described in detail in Section 4.3. All selected EQs were ranked by the EMC and the ET as either 'high' or 'medium' priority for this PE. Annex 3 documents all questions that were considered for inclusion as well as their rankings during the decision process.

In addition to EQs related to the four key outcomes, with the agreement of the EMC, this PE will also touch on additional outcomes of increased enrolment in TVET schools and participation in PPPs. These outcomes were identified in the project's CBA and in project documents but were not included in the official Program Logic. They were, however, documented by the ET in the expanded Program Logic (see Annex 1). Enrollment in TVET schools is included in the PE due to its relevance to the ERR. The PPP outcome is included due to the focus of VEP activities on increasing the use of PPPs.

The 30 EQs will assist the ET in comprehensively assessing each of the key outcomes. In addition to assessing the outcomes directly (such as using secondary data to assess increased income), additional questions are included under each outcome to more fully explore the effects of specific project components and Program Logic assumptions.

For each EQ, the ET has identified the best methods for answering each that balances the need for rigorous and informative results with resource constraints. As large-scale data collection (such as was conducted by IPA) is not feasible under the current contract, the ET has selected a mixed-methods design, relying primarily on qualitative data but triangulated with quantitative data where possible.

Table 3: Evaluation Questions and related Outcomes, Data Collection Methods, and Data Sources

Evaluation Question	Aspect Covered	Data Collection Method(s)	Data Source(s)
1. To what extent was the project implemented as originally designed?	Implementation: – Implementation Fidelity	- Desk Review - Interviews	- MCC, Mongolia Compact, VEP, and Evaluation Documents; relevant industry reports - VEP Contractors; former MCA-M; PIU; and MCC staff
2. What worked well in project implementation? What were the key challenges?	Implementation: – Implementation Strengths and Weaknesses	- Desk Review - Interviews	- MCC, Mongolia Compact, VEP, and Evaluation Documents; relevant industry reports - VEP Contractors; former MCA-M; Project

Evaluation Question	Aspect Covered	Data Collection Method(s)	Data Source(s)
			Implementation Unit (PIU); and MCC staff
3. To what extent, if at all, has the employment rate of TVET graduates changed since the program began?	Objective 1: Increased Employment: − Employment Rate − Perceptions of Changes in Employment	- Secondary data - Interviews	- IPA survey data; TVET administrative data - TVET administrators; students/graduates
4. What have been the biggest drivers of the change (if any) in the employability of students and graduates?	Objective 1: Increased Employment: − Perceptions of Employability Drivers	- Interviews	- TVET administrators; TVET instructors; Private Sector Representatives; VEP grantees; students/graduates
5. 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?	Objective 1: Increased Employment: − Use of Guidance Systems to Influence Employability	- Secondary data - Interviews	- IPA survey data; website/portal usage statistics - Students/graduates; TVET administrators; TVET guidance counselors
6. To what extent, if at all, has the employment rate in Mongolia changed?	Objective 1: Increased Employment: − Employment Rate (National)	- Secondary data	- National employment statistics (from the National Statistics Office (NSO))
7. To what extent have the incomes of TVET graduates increased since the project was implemented?	Objective 2: Increased Income: − Graduate Income − Perceptions of Income Changes	- Secondary data - Interviews	- IPA survey data; TVET administrative data - TVET administrators; graduates
8. What have been the biggest drivers of the change (if any) in the incomes earned by TVET students and graduates?	Objective 2: Increased Income: − Perceived Drivers of Income Changes	- Interviews	- TVET administrators; TVET instructors; students/graduates
9. To what extent have the incomes of the unemployed and underemployed changed since the project began?	Objective 2: Increased Income: − Employment and Income Rates (National)	- Secondary data	- National level data
10. 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?	Outcome 1: Improved TVET System Quality: − Adoption of CBT Curriculums	- Secondary data - Interviews	- IPA survey data; Ministry data - Ministry officials; TVET administrators; TVET instructors
11. 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?	Outcome 1: Improved TVET System Quality: − NVQF Status and Perceptions	- Interviews	- Ministry officials; TVET administrators; TVET instructors; Private sector representatives; students/graduates

Evaluation Question	Aspect Covered	Data Collection Method(s)	Data Source(s)
12. To what extent do students/graduates and teachers perceive the curriculum and training materials are of high quality?	Outcome 1: Improved TVET System Quality − Perceptions of Training Quality	- Interviews	- TVET administrators; TVET instructors; students/graduates
13. What factors have enabled and/or constrained the effective adoption and implementation of the CBT curriculums?	Outcome 1: Improved TVET System Quality − Perceptions of CBT Adoption Factors	- Interviews	- Ministry officials; TVET administrators; TVET instructors; other donors
14. To what extent are the NLRC and RMCs utilized by TVET centers and instructors/staff?	Outcome 1: Improved TVET System Quality − Perceptions of NLRC and RMC Use	- Interviews	- TVET instructors; TVET administrators
15. To what extent are the CoEs taking on the role and function of a center of excellence? Why/why not?	Outcome 1: Improved TVET System Quality − Perceptions of CoE Roles/Functions	- Interviews	- Ministry officials; TVET administrators; TVET instructors
16. To what extent has the quality of teaching improved since the start of the project?	Outcome 1: Improved TVET System Quality − Perceived Changes in Training Quality	- Secondary data - Interviews	- IPA survey data - TVET administrators; TVET instructors; students/graduates
17. To what extent have other TVET centers used materials or trainings developed through the VEP to improve teaching quality?	Outcome 1: Improved TVET System Quality − Adoption of VEP Trainings and Materials	- Interviews	- TVET instructors from non-VEP schools; TVET administrators from non-VEP schools
18. To what extent has the TVET sector updated materials or developed new CBT materials post-Compact?	Outcome 1: Improved TVET System Quality − Reported Updating of CBT materials	- Interviews	- TVET administrators; TVET instructors; Ministry officials
19. How do the changes in the national qualification framework affect the overall functioning and operations of the TVET system?	Outcome 1: Improved TVET System Quality − Perceptions of the Impact of the NVQF	- Interviews	- Ministry officials; TVET administrators
20. To what extent have the TVET school and CoE facilities been maintained since the end of the Compact? Why/why not?	Outcome 1: Improved TVET System Quality − Observed and Reported Maintenance of Facilities	- Observation - Interviews	- TVET schools; CoE facilities - Ministry officials; TVET administrators; TVET instructors; students/graduates
21. To what extent has the training equipment provided by the Compact been used and maintained since the end of the Compact? Why/why not?	Outcome 1: Improved TVET System Quality − Observed and Reported Use and Maintenance of Equipment	- Observation - Interviews	- Training equipment - TVET administrators; TVET instructors; students/graduates
22. To what extent has the private sector been able to effectively engage with and influence the TVET sector as a result of the project?	Outcome 2: Increased Relevance of the TVET System − Perceptions of Private Sector Engagement	- Interviews	- Ministry officials; Private sector representatives; other donors

Evaluation Question	Aspect Covered	Data Collection Method(s)	Data Source(s)
23. What are the key factors enabling and/or restricting private sector engagement in TVET?	Outcome 2: Increased Relevance of the TVET System: − Perceptions of Factors Affecting Private Sector Engagement	- Interviews	- Ministry officials; Private sector representatives; other donors
24. 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?	Outcome 2: Increased Relevance of the TVET System − Perceived Matching of Skills and Needs	- Interviews	- Private sector representatives
25. Are the Labor Market Information System (LMIS) and Career Guidance System (CGS) websites still functioning? Why/why not?	Outcome 2: Increased Relevance of the TVET System − Observed Functionality of LMIS and CGS Websites	- Observation - Interviews	- LMIS website; CGS website - Ministry officials (Labor Exchange Central Office (LECO), in particular)
26. To what extent has the LMIS and CGS website content been updated since the Compact ended?	Outcome 2: Increased Relevance of the TVET System − Reported Updating of the LMIS and CGS	- Observation - Interviews	- LMIS website; CGS website - Ministry officials (LECO, in particular)
27. What were the effects of the National 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?	Outcome 2: Increased Relevance of the TVET System − Perceived Effect of ATVET	- Interviews	- Ministry officials; Private sector representatives; other donors
28. To what extent have the CBT curriculums been updated since the end of the project? Why/why not?	Outcome 2: Increased Relevance of the TVET System − Perceived Relevance of CBT Over Time	- Interviews	- Ministry officials; TVET administrators
29. To what extent, if at all, has enrollment in TVET schools increased?	Other Outcome: TVET Enrollment − TVET Enrolment	- Secondary data	- IPA survey data; TVET administrative data
30. To what extent have TVET schools been engaged in PPPs since the end of the Compact? Why/why not?	Other Outcome: Engagement in PPPs − Reported Engagement in PPPs	- Secondary data - Interviews	- IPA survey data; TVET administrative data - Ministry officials; TVET administrators

4.3   Methodology and Sampling

4.3.1   Qualitative

4.3.1.1   Methodology

As introduced in Section 4.2 above, this evaluation will utilize several qualitative methods, namely interviews, direct observation (DO), and desk/document review to answer EQs related to priority VEP outcomes. One or more of these methods will be used to address all but the following EQs: 6, 9, and 29 (which will be addressed solely by quantitative data, described in Section 4.3.2).

The collection of ex-post qualitative data will provide an opportunity to explore whether VEP activities (and related outputs) ultimately impacted priority outcomes, how they did so, and whether the gains (if any) are sustainable. To assess VEP outcomes related to wages and employment, the ET will rely on interviews with TVET students and graduates (VEP beneficiaries) and secondary quantitative data, while the assessment of TVET system quality and relevance will be investigated largely through discussions with a broader range of respondents including Ministry officials, TVET administrators and instructors, and private sector representatives.

4.3.1.2   Timeframe of Exposure

The official Program Logic does 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 will 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.

Based on the wide range of likely horizons across project components and given that the CBT benefits should be fully accruing by 2018, the ET believes that data collection in fall 2018 is appropriate for measuring the expected results and sustainability.

4.3.1.3   Study Sample

SI's qualitative approach will include varied sample units for interviews and DOs, including visiting each respondent type and school identified in Table 3 above. Data will be collected in Ulaanbaatar and during visits to schools. The ET will conduct between 70-100 semi-structured interviews. Additionally, the ET will conduct DOs of equipment and facilities at up to seven schools and review any additional VEP documentation provided by evaluation respondents in addition to the documentation provided by MCC.

The seven TVET schools will be 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, will include some that received equipment and facility upgrades and some that piloted the CBT curricula.

4.3.1.4 Interviews

Key informants are presented by category in Table 4 below, including a description of informants (column 2), the sampling strategy to be used (column 3), and target sample size (column 4). PE informants include both VEP beneficiaries (a distinct group of those experiencing income or livelihood benefits from VEP) and stakeholders (those who had an active role in project implementation). This informant list is based on ET review of available documents and may be expanded during fieldwork as more details about VEP implementation become available. In general, the selection of informants will be primarily purposive, with elements of random, snowball, and convenience sampling based on the established sampling frame.

Table 4: Key Informant Interview Sampling Frame

Informant Category	Informant Details	Sampling Strategy	# of Interviews
MCC	MCC staff who managed, supervised, and/or advised VEP	All available staff/former staff will be interviewed	2-3
MCA-M	Former MCA-M staff	All available former staff will be interviewed	2-3
Project Implementation Unit	Former PIU members	All available former staff will be interviewed	2-3
VEP Contractors	Former VEP contractors	Will focus on those responsible for implementing major components (CBT, policy reform); all available with contact information will be interviewed	3-4
Ministry Officials	Officials from the Ministry of Education, Culture and Science, the Ministry of Social Welfare and Labor, LECO, NCVET, and ATVET	Purposive sampling will target: • All pertinent ministries • Staff at different levels • Both male and female staff	5-6
TVET Administrators	TVET school principals, staff, and others at the school level	Purposive sampling will target: • Principals/Deputies • Enrollment/ Registrar Officials • Those responsible for private sector engagement	1-2/school
TVET Instructors	TVET instructors at VEP schools	Purposive sampling will target: • Both male and female instructors • Different fields of study • Both newer teachers and those who were present during the Compact *If access is provided to IPA's non-anonymized data, the IPA data will provide a more robust sampling frame from which to select instructors who were present at the time of the Compact	2-3/school
TVET Guidance Counselors	TVET guidance counselors at VEP schools	Convenience sampling based on who is available to speak with the ET (the ET does not anticipate there being very many counselors per school)	1/school
TVET students	TVET students at VEP schools	See notes below	2-3/school

TVET graduates	TVET graduates from VEP schools	See notes below	2-3/school
Private Sector Representatives	Employers, PPP participants, and industry leaders in relevant sectors (construction, mining, health, etc)	Purposive sampling will target: • PPP Participants • Industry Organizations (such as the Chamber of Commerce) • A variety of industries	3-4 in Ulaanbaatar; 1-2 in communities near the schools visited
Other Donors	Other donors with programming in the TVET sector including (but not limited to) ADB and WB	Purposive sampling will target those donors who are most active in the TVET sector and/or who are doing similar work to that which was done by the VEP	2-3
		TOTAL	70-100

While the ET currently has access to several lists with names/locations/contact information for many stakeholders involved in implementing the project, the ET does not have complete information on all stakeholders and does not currently have access to lists of VEP beneficiaries including TVET students and graduates. The ET will develop a list of project stakeholders for all categories noted above through document review and further discussion with MCC and local stakeholders. Gaps in this list will be filled during data collection through snowball sampling, when possible.

For TVET students and graduates, the ET is still assessing potential sampling strategies. Ideally, student and graduate rosters will be made available to the ET by the schools visited. This would allow for random sampling of students and graduates. However, given the sensitivity of this information, it may not be possible to obtain. If this is the case, two potential options will be assessed:

1. The IPA survey datasets include the names and contact information for TVET graduates who were included in the IE. These datasets do not account for all beneficiaries from the project but do provide information on a sub-set of beneficiaries who could provide information related to project outcomes, strengths, and ongoing challenges. Graduates from this dataset could be randomly sampled.
2. Convenience sampling, supplemented by a snowball approach, could also be used. This option is the most prone to potential bias. However, this approach would ensure that beneficiaries would be represented regardless of participation in the IE.

The above sample sizes are based on the assumption that interviews will take 60-90 minutes and that 4-6 interviews will be conducted per day.

4.3.1.5 Observations

DOs are presented by category in Table 5. The ET plans to conduct observations at up to 7 TVET schools as well as observations of the LMIS, CGS, and NLRC online portals to help provide insight into outcome 1 and outcome 2. Specific EQs that will be addressed (in part) through observation findings are noted in the table below. For TVET training location observations, the ET will conduct "light" DOs. While the observations will be guided by a simple, one-page observation protocol, the goal of the observations is to conduct rapid, general checks of the state of affairs at TVET locations. Additional details regarding each category of observation are included in the table.

Table 5: Proposed Direct Observation Plan

Observation Category	Observation Details	Sampling Strategy	Target
TVET training locations' resources	The ET will conduct 'light' direct observations at TVET schools, RMCs, and COEs. The goal of these observations is to focus on resources provided by VEP. The ET will conduct a rapid appraisal of VEP-provided resources (training equipment, audio-visual equipment, etc) and note the general state of infrastructure in VEP-improved classrooms, workshops, and labs. The ET will assess the extent to which the resources have been maintained and used as intended. These observations will inform the answer to EQs 20 and 21.	While visiting TVET schools and conducting interviews, the ET will also seek to observe any facilities or equipment that was provided by the Compact. Not all visited schools may have obtained such equipment or upgrades.	Up to 7
Websites/portals	The ET will observe the LMIS, CGS, and the NLRC websites/portals to confirm website/portal functioning, review current content, assess quality of content, and review usage statistics (if available). These observations will inform EQs 5, 25, and 26.	The ET will collect most recent, up-to-date links to the three websites/portals supported by VEP and observe each one.	3
		TOTAL	Up to 10

4.3.1.6   Document/Desk Review

Although desk review is only formally noted in Table 4 above to address EQs 1 and 2 regarding VEP implementation, the ET will also utilize VEP and other desk review documents to inform answers to each EQ included in this PE. Document/desk review has also provided critical context upon which the Evaluability Assessment and this evaluation design are based. Further information regarding VEP M&E data is included in Section 4.3.2.

The ET will conduct a document review of different types of documents, presented in Table 6 below by category. Additionally, Section 6 provides a list of references the ET reviewed prior to writing this EDR.

Table 6: Proposed Document/Desk Review Plan

Document Category	Document Details
MCC Documents	MCC documents include, but are not limited to, the Policy for Monitoring and Evaluation, Beneficiary Analysis, Update on Sustainability Measures, etc.
Mongolia Compact Documents	Compact documents include, but are not limited to, the Compact and amendments, Investment Memo, Due Diligence Book (DDB) and Supplemental DDB, M&E Plan, Indicator Tracking Tables (ITTs), Program Logic, Completion Report, and Final Results Statement.
VEP Documents	VEP documents include, but are not limited to, VEP implementer/contractor reports, VEP grantee reports, information disseminated through the public outreach activity, and other VEP-generated documents.
Evaluations	Relevant evaluations include, but are not limited to, the IPA IE Study, the Project Evaluability Assessment (PEA), the TOR for Performance Evaluation TVET, and the VEP Evaluability Assessment.
Relevant Industry Reports	Industry reports include studies/reports published by other donors or industry experts including the International Trade Administration, ADB, and the WB.

At the time of EDR writing, the ET has access to all documents noted in the table above with the exception of those in the "VEP Documents" category. During data collection, the ET intends to request additional documentation related to the implementation of VEP from, in particular, project implementers/contractor reports. The final report will include a complete list of all reviewed documents.

4.3.1.7 Data Collection

Data Collection Tools: All interviews and DO will be conducted according to pre-developed and tested protocols. The ET will develop semi-structured protocols that will be submitted for MCC and local stakeholder review according to the schedule in Section 5.5. It is expected that unique protocols will be developed for each informant category noted in Table 4, and for each type of observation noted in Table 5. Data collection tools across respondent categories will include parallel questions related to relevant EQs to enable greater data triangulation. All data collection tools will be piloted prior to use and will be translated to Mongolian and back-translated. A local evaluator in the ET will be tasked to review translations to ensure accuracy of wording and phraseology used.

Staff and Fieldwork: To implement data collection, SI proposes the staffing structure outlined in Section 5.4 of this report. While SI expects that some interviews may take place in English, the use of translators will allow interviews to be conducted in the national language when necessary.

Data Processing and Quality: Interview and observation notes from qualitative data collection activities will be created during field work with daily review by the ET to ensure clarity. The Principal Investigator (PI) will have the ultimate responsibility to check interview notes for completeness and accuracy during team de-briefs and review sessions. Additionally, if the team splits and the PI is not present during multiple interviews and observations, the PI will randomly spot check interview notes to ensure the interviewer followed protocols and adhered to best practice for conducting qualitative data collection.

Finalized interview and observation notes will be: a) anonymized for the protection of respondents, and b) uploaded into qualitative data analysis software for coding, analysis, and report writing. Qualitative data will be handled solely by the ET and SI Headquarters (HQ) management team members that provide support during the PE.

The table below summarizes information presented in this section related to qualitative data collection.

Table 7: Summary of Proposed Qualitative Data Collection Plan

Data Collection	Timing	Sample Unit	Sample Size	Data Collection Tools	Exposure Period
Interviews	Sept/Oct 2018	Individuals organized into 14 informant categories	70-100	14 data collection tools, one per informant category	5 years post-Compact
Observations	Sept/Oct 2018	VEP-supported TVET schools/facilities; VEP-supported websites/portals	Up to 10	2 observation tools	5 years post-Compact
Document/Desk Review	Ongoing	Documents/reports	NA	NA	NA

4.3.1.8 Analysis Plan

Finalized interview notes will be coded using electronic software (Dedoose or similar software) to construct response categories and identify patterns in data. Coding qualitative data through use of electronic software will allow SI to analyze notes with speed and efficiency, easily cataloging and documenting emergent themes from among respondents. Prior to fieldwork, the ET will develop a preliminary coding scheme based on finalized data collection tools. During fieldwork, the PI will adjust the coding scheme as new themes or areas of interest arise as relate to each EQ. The coding scheme will be finalized post-fieldwork and will include codes across prioritized outcomes and EQs. All notes will be coded based on the codebook, using double coding to ensure intercoder reliability. All coding will be overseen by the PI to ensure proper application and consistency. Analysis of coded data will include, at a minimum, review of code frequencies, cross-tabulations, and co-occurrences. This analysis will reveal key trends and highlight the most important themes for each of the EQs.

Triangulation of data from multiple sources will enable the ET to cross-verify and cross-validate the findings that emerge to identify correlations between findings. It will also enable the ET to strengthen the potential linkages and accuracy of its data if the results obtained through one method are less conclusive than another method. All data will be disaggregated by gender and TVET location.

Consistent with MCC's evaluation guidelines and recognizing that effects of integration and the success of VEP might vary across gender (and other identified minority or vulnerable groups), the ET will apply a gender-responsive lens during all evaluation activities described in this EDR. As noted above, all data and findings will be disaggregated by gender.

4.3.2 Quantitative

4.3.2.1 Methodology

At the time of writing, the use of secondary data is the only quantitative method confirmed for this evaluation. The ET hopes to also conduct a short online survey of graduates and instructors. However, this survey requires access to the non-anonymized version of IPA's survey data. Whether access will be possible is currently under IRB review.

This evaluation will use secondary quantitative data in support of two items: a) analysis of trends in VEP outcomes and, potentially, b) the sampling strategy. The ET plans to utilize four unique sets of quantitative data for these purposes, namely IPA survey data, national-level data, TVET school administrative data, and VEP M&E data. Table 8 in Section 4.3.2.3 below explains in more detail the type of secondary data that will contribute to these EQs.

In addition to using secondary data, the ET will attempt to conduct a short, online survey as a follow up to the IPA survey. This would not be a brand-new survey, but rather would rely heavily on the questions used in IPA's survey, which will offer an updated data point for 2018 to which the ET can compare with the data IPA collected.

4.3.2.2 Time Frame

As noted in Section 4.3.1.2., based on all available information, conducting data collection for new primary data in the Fall of 2018 should be sufficient to capture the expected benefits.

For secondary data, IPA's final follow-up data were obtained in 2015, two years after the end of the Compact. For student/graduate outcomes in IPA's sample, this timeframe was likely sufficient, given that the schools from which these students/graduates emerged had participated directly in the Compact activities. However, obtaining updated information through the online survey will help to confirm whether this was truly the case.

In addition to student/graduate data, IPA also included administrative data for all TVET schools. For schools that did not participate directly in Compact activities and for whom it may have taken additional time for aspects such as the CBT curriculums to be fully adopted, 2015 may have been too early. Some results may have taken longer to materialize. It is for this reason that, where possible, updated data will be sought.

4.3.2.3 Study Sample

Secondary, administrative data will be sought for all TVET schools. However, it is unclear how much of this information may be centrally available within the ministry. Whatever is available will be collected. However, this will be supplemented by requests for data at all the visited schools. Additionally, the ET will request relevant data when speaking with other donors in the sector.

IPA's administrative data is available as of 2015 for 50+ TVET schools. This will provide a rich source of information, even if additional data cannot be obtained from the ministry or other donors.

For IPA's graduate data and for the online survey that will be based on the same sample, the data will include those who graduated before 2015 from the 10 schools that were included in IPA's evaluation. Conducting a follow up 3 years later will provide additional information on the trajectory of benefits over time for these graduates. However, it is important to note that the qualitative component of this evaluation will be based on separate sample of schools.

4.3.2.4 Secondary Data

Table 8 provides details on each type of secondary data that the ET plans to access, review, and analyze for use either in developing a sampling frame or in identifying trends in key VEP outcomes of interest.

Table 8: Summary of Quantitative Secondary Data Sources

Quantitative Secondary Data Category	Details
VEP Data	VEP M&E data were collected by MCC, MCA-M, and/or VEP contractors/implementers and grantees during VEP implementation (2008 – 2013). M&E indicator data for a total of 32 indicators has been reported at varying frequencies throughout the Compact, depending on the indicator and its origin. The ET will review all available indicator data across these years and note trends related to key outcomes of interest. VEP M&E data will provide data for EQs 1 and 2 about VEP implementation. Furthermore, the ET will note trends in VEP M&E data regarding TVET graduate wages and employment for EQs 3, 6, 7, and 9.
IPA Survey Data	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. IPA also surveyed TVET administrators and instructors and collected administrative data from 50+ TVET schools (not just those involved in the

	randomization of trades). The IPA evaluation data provides significant information relevant to the EQs of this PE and includes names and contact information for the respondents. The survey data will be used to help directly answer several to the EQs, including EQs 3, 5, 7, 10, 16, 29, and 30. In addition, as described in Section 4.3.1.4, IPA's data may be used to support sample selection for qualitative interviews with students and graduates.
TVET Administrative Data	TVET administrative data are critical to the development of our sampling frame for current TVET students in VEP-supported TVET schools. The ET expects TVET administrative data to include information on TVET graduate employment rates and TVET graduate income/wages (EQs 3 and 7), enrollment statistics (EQ 29), and financing (specifically related to PPPs, EQ 30). The ET will request data across multiple years (from 2009 to present), if possible, to identify and assess trends in these key outcomes.
National Data	National data include data from relevant ministries, NSO, World Bank data repositories, etc. The ET will seek access to this data from multiple years (2009 – present) prior to fieldwork and utilize information across years to identify trends. This data will provide evidence for EQs 6, 9, and 10 regarding TVET graduate employment rates, TVET graduate income, and the adoption of CBT curriculums.

There is no need to independently verify the quality of data from the NSO, other national agencies/ministries, or IPA since these were generated by qualified actors. The ET will as necessary, however, review received datasets and conduct additional cleaning prior to analysis. For TVET administrative data, the ET together with MCC will review and determine quality before use in both the sampling frame for this PE and analysis of key outcomes.

4.3.2.5 Online Survey

Should email addresses of respondents be available, SI will conduct an online survey of the graduates and instructors included in IPA's sample. The online survey will be sent to all potential respondents. This sample covers 7 schools that participated in the MCC/MCA-M interventions and received equipment and/or facility upgrades and 3 comparison schools. Given the differing purpose of IPA's sample selection, this sample is not a perfect fit for answering all of this PE's questions. However, the results will provide additional perspective from a wider array of potential respondents than would otherwise be available via interviews and site visits. As such, any updated survey data would be combined and triangulated with other data sources to inform the overall results.

The online survey would not duplicate every question from IPA's original survey. However, where the questions remain relevant for answering the EQs of this evaluation, they will be repeated in the online survey. The ET may also include a limited number of additional questions specific to this evaluation.

Data Collection

Data Collection Tools: The online survey instrument will be thoroughly reviewed both by the ET (including the local, TVET Specialists), as well as by MCC and local stakeholders. No other data collection instruments are required.

Secondary Data Collection: Survey data from IPA will be obtained. Some sectoral secondary data is currently available publicly and/or through MCC's past monitoring data and ITTs. However, while in the field, the ET will seek updated sectoral data from ministry officials and TVET administrators. The online follow up to IPA's survey will be conducted at approximately the same time as the evaluation fieldwork.

Data Processing and Quality: As secondary data are obtained, they will be entered into STATA or Excel (as relevant) and will be cleaned and formatted for appropriate analyses.

4.3.2.6 Analysis Plan

The ET will use the quantitative data to generate descriptive statistics of outcome variables by gender, TVET school, and type of program using Stata statistical software. The ET plans to present trends over time in these outcomes (where relevant) and will use correlation and/or regression analyses in a limited manner. Correlations and/or regressions would be used to further explore potential explanatory factors and/or differences among sub-groups that might enhance learning. However, these correlations and/or regressions would be secondary to the assessment of trends over time. As an example, the ET will examine the adoption of CBT curriculums by TVET schools over time (EQ10). Summary statistics and trend analysis will show how the percentage of schools adopting the CBT curriculum changed over time. Regressions may (as an example) be used to examine differences between the schools that adopted the curriculum and those that did not. But, the core answer to the research question of the extent to which TVET schools have fully adopted the CBT curriculums would come from the trend analysis.

In addition, qualitative data will be triangulated with the quantitative data. Triangulation of data will involve comparing and contrasting findings across the different data sources, potentially providing confirmation, refutation, or nuance to the quantitative findings. For instance, qualitative interview data regarding the adoption of CBT curriculum could either confirm or refute the quantitative findings, and can provide nuance regarding the reasons why the curriculums have or have not been fully adopted.

4.4   Risks, Limitations, and Challenges

4.4.1 Contribution vs 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 components of the VEP and how it was implemented, a valid counterfactual could only be found for the equipment improvement components of the project (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. As such, 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 can be found 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 TVET advisory council 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.

4.4.2 Accessing Contact Information

This PE relies on the availability of contact information for beneficiaries and VEP participants and a variety of secondary data. First, regarding beneficiary and stakeholder contact information – Uncertainty surrounding the ET's ability to access key individuals due to the five-year gap between Compact close and this PE poses a challenge to the proposed evaluation design. The ET will mitigate this risk by first working closely with MCC to collect and/or identify contact information. The ET will also use local ET members to establish strong support in-country to mediate these discussions with local respondents and support fieldwork scheduling. As noted above, the ET also plans to utilize snowball sampling during fieldwork to help fill in any gaps left in the sampling frame after coordination with the EMC. Second, regarding secondary data, the ET will request secondary datasets through MCC. Any direct communication with the GoM will be coordinated through appropriate MCC channels, if available. For this task, strong support in-country from a local ET member will also be critical.

4.4.3 Recall and Response Biases

The ET acknowledges two inherent biases associated with the proposed qualitative data collection. One limitation is the possibility of recall bias among key informants. The ET will take steps to reduce recall bias in the data collection tool design phase, including framing questions to aid accurate recall. Where possible, the ET will corroborate interview findings with additional data sources, such as GoM records. Potentially relevant records include enrollment and graduation statistics for the country as a whole plus records on PPPs and other types of private sector engagement. 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 will purposively recruit a diverse sample of informants and triangulate responses with other data sources, all while developing data collection tools based on best practices that minimize response bias. Since the ET will not be able to avoid all bias in the data, persistent biases will be noted, where applicable, in the discussion of results of the final report.

4.5 Economic Analysis

This PE is primarily qualitative in nature. As such, it will not be possible to directly update the key assumptions of MCC's CBA analysis to provide an updated estimation of the ERR. However, based upon the data collected and analysed, the final report will qualitatively comment on the CBA assumptions and the likelihood that the assumptions have held in reality. For instance, based on the findings to question 29 regarding the change in the number of TVET students over time (a key assumption in the CBA), the final report will comment on the extent to which this assumption has held and the effect any deviation might have on the expected 20-year ERR.

5 ADMINISTRATIVE

5.1 IRB Clearance

All data collection protocols and informed consent statements will be submitted for review by SI's internal Institutional Review Board (IRB). Documentation of IRB approval will be provided to MCC prior to the commencement of data collection activities.

5.2 Data Protection, Anonymization, Public Release

SI's process for respecting privacy of respondents during data collection, transfer, storage, analysis, disposal and dissemination is governed by SI's Data De-Identification Policy and Guidelines, which are aligned with MCC's microdata guidelines. SI will adhere to MCC's open data policy in preparing data for publication. At of present, guidance by MCC indicates that qualitative data should have direct identifiers (such as name or contact information) removed for submission to MCC. However, current practice does not envision the preparation of qualitative data for public dissemination. Should this practice change in the future, SI will work with MCC to abide by the most updated guidance and practices.

5.3 Dissemination Plan

SI recognizes that different audiences have different information needs. While some expert evaluators will seek out a full-length report in which they can dig into the details of the evaluation design and analysis, others require a high-level overview that quickly conveys the key themes and policy implications. Thus, evaluation results will be shared with MCC and relevant stakeholders through a variety of means, including: a Final Evaluation Report, an Evaluation Summary Brief (similar to what was done under this contract for the Ghana evaluation), posting of results on MCC's Evaluation Catalogue, and a Presentation of Findings.

5.4 Evaluation Team

Table 9: Evaluation Team Positions and Responsibilities

Name	Position	Responsibility
Kari Nelson	Principal Investigator	Lead engagements with MCC, MCA and partners. Lead the design and implementation of the evaluation. Supervise completion of all deliverables.
Burt Barnow	TVET Specialist (Senior Technical Advisor)	Advise on evaluation context, design, and analysis.
Sierra Frischknecht	Program Manager	Manage administrative aspects of the evaluation. Support the Principal Investigator in evaluation design and implementation.
Dominick Margiotta	Research Assistant	Provide support to the Principal Investigator and Program Manager
TBD	Local TVET Evaluation Specialists (Qualitative Researchers) (x2)	Support the PI and Program Manager (PM) in preparing data collection tools, collecting data in the field, and with data analysis and report.

5.5   Evaluation Timeline and Reporting Schedule

The work plan for the evaluation is outlined in Table 10 below. The plan accounts for each major deliverable along the expected timeline of the evaluation.

Table 10: Evaluation Timeline

Deliverable	Due Date	Comments
Evaluability Assessment	March 2, 2018	
Draft Evaluation Design Report	July 6, 2018	.
Final Evaluation Design Report	August 21, 2018	
Anticipated Fieldwork Dates	October 2018	Fieldwork is planned for the first three weeks in October, contingent upon formal modification of the contract to increase the scope and budget necessary to implement the evaluation design proposed in this report.
Draft Final Evaluation Report	December 5, 2018	
Final Evaluation Report (approved by EMC)	May 5, 2019	
Publication of the Final Evaluation Report on the Evaluation Catalogue	Within one month of approval	Publication of the final report is contingent upon approval by MCC senior management

6 REFERENCES

Alagaraja, M., & Arthur-Mensah, N. (2013). Exploring technical vocational education and training systems in emerging markets. *European Journal of Training and Development, 37*(9), 835-850. doi:10.1108/ejtd-04-2013-0037.

Allais, S. M. (2011). The impact and implementation of national qualifications frameworks: A comparison of 16 countries. *Journal of Education and Work, 24*(3-4), 233-258. doi:10.1080/13639080.2011.584685.

Almeida, R., Anazawa, L., Filho, N. M., & Vasconcellos, L. (2015). Investing in Technical & Vocational Education and Training: Does it Yield Large Economic Returns in Brazil? *World Bank Group, Policy Research Working Papers* (No. WPS 7246). doi:10.1596/1813-9450-7246.

Asian Development Bank. (2011). *The national qualifications framework for skills training reform in Sri Lanka*. (2011). Mandaluyong City, Metro Manila, Philippines: Asian Development Bank.

Brewer, L., & Comyn, P. (2015). Integrating core work skills into TVET systems: Six country case studies. *International Labour Organization, International Labour Office* (Skills and Employability Branch,), Employment Policy Department, 1-91.

Butler, E., Lamaute, D., Murray, C., & Sallinger, L. (2009). *A Modern Workforce Development System is Key to Kosovo's Growth*. Pristina, Kosovo: United States Agency for International Development.

Cho, J. (2016). Quality Assurance of Qualifications in TVET: Korea Case Study. *TVET @ Asia,* (7), 1-14.

Dar, A. (2008). Skill development in India: The vocational education and training system (English). *World Bank, 1*(South Asia Human Development Sector), no. 22.

Hart, J., & Rogojinaru, A. (2007). The Development of National Qualifications and Quality Assurance Frameworks in the Context of the TVET Reform in Romania. *European Journal of Education, 42*(4), 549-571. doi:10.1111/j.1465-3435.2007.00321.

Innovations for Poverty Action. (2014). *Mongolia Technical, Vocational, and Education Project Impact Evaluation Strategy.* Washington, DC: Millennium Challenge Corporation.

International Labor Organization, ILOSTAT database. (2017). Mongolia Unemployment, youth total (% of total labor force ages 15-24) (national estimate) [Chart]. In *World Bank Open Data*. World Bank Group. Retrieved from https://data.worldbank.org/indicator/SL.UEM.1524.NE.ZS?locations=MN&view=chart.

Macdonald, M., & Dunbar, M. (2015). Secondary Vocational Education International Experience: Final Report April 2015 (English). *World Bank, 1*(Working Paper), South Asia.

Malamud, O., & Pop-Eleches, C. (2010). General Education vs. Vocational Training: Evidence from an Economy in Transition. *Review of Economics and Statistics, 92*, 1st ser., 43-60. doi:10.3386/w14155.

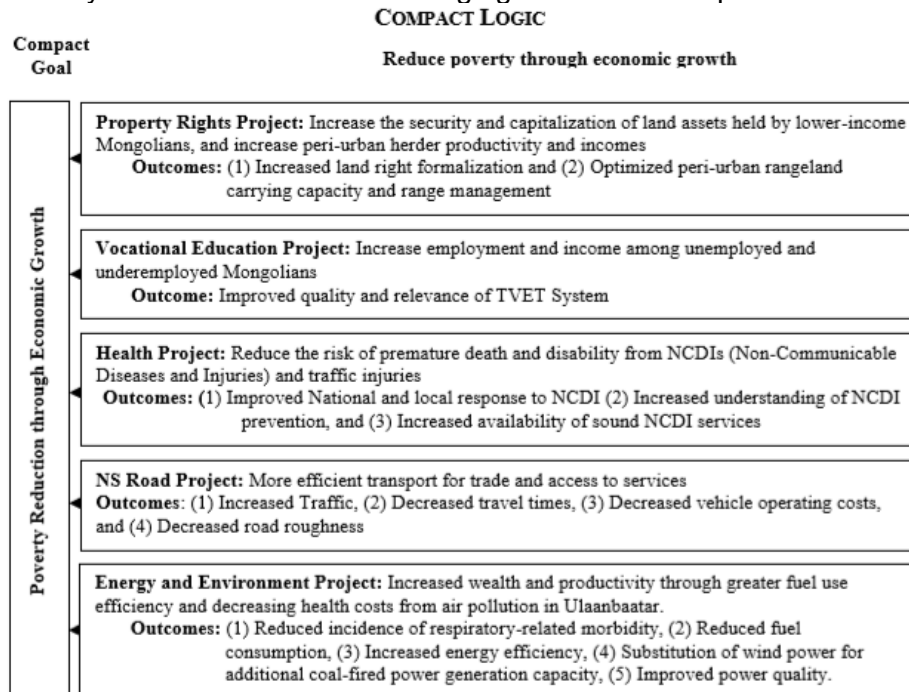Millennium Challenge Corporation. (2007a). *Due Diligence Book on Mongolia's Proposed Compact*. Washington, DC: MCC.

Millennium Challenge Corporation. (2007b). *Millennium Challenge Compact between the United States of America acting through the Millennium Challenge Corporation and the Government of Mongolia* (Mongolia Compact). Washington, DC: MCC.

Millennium Challenge Corporation. (2013). *Monitoring & Evaluation Plan: Mongolia*: *May 2013*. Ulaanbaatar, Mongolia: Millennium Challenge Account - Mongolia.

Millennium Challenge Corporation. (2014). *Final Mongolia Result Statements: Updated as of December 2014* (Mongolia Compact I). Washington, DC: MCC.

Millennium Challenge Corporation. (2017). Policy for Monitoring and Evaluation. Retrieved from mcc.gov: https://www.mcc.gov/resources/doc/policy-for-monitoring-and-evaluation.

Munbodh, S., Verma, M. C., Atchoarena, D., & Lannert, J. (1999). *Getting the stakeholders involved: Partnership at work in three countries from Africa Asia and Eastern Europe*. Paris: UNESCO, International Institute for Educational Planning, 1-141.

Newhouse, D., & Suryadarma, D. (2011). The Value Of Vocational Education: High School Type And Labor Market Outcomes In Indonesia. *World Bank Economic Review, 25*(2). doi:10.1596/1813-9450-5035.

Shatz, H. J., Constant, L., Arce, F. P., Robinson, E., Beckman, R. L., Huang, H., . . . Ghosh-Dastidar, B. (2015). *Improving the Mongolian labor market and enhancing opportunities for youth*. Santa Monica, CA: RAND Corporation.

Subrahmanyam, G., & Ananiadou, K. (2013). *Tackling Youth Unemployment Through TVET: Report of the UNESCO-UNEVOC Online Conference*. Bonn, Germany: UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training, UN Campus.

World Bank. (2007). Mongolia - Building the skills for the new economy. *Human Development Sector Reports. No. 40118., 1*(Institutional and Governance Review (IGR)), East Asia and the Pacific Region.

World Bank. (2015). *Mongolia: Education System Overview*. Available online: http://documents.worldbank.org/curated/en/597291508755011466/pdf/120591-WP-P150980-PUBLIC-Mongolia-NQF-summary.pdf.

World Bank. (2018a). *Mongolia | Data*. Retrieved from The World Bank in Mongolia: https://data.worldbank.org/country/mongolia.

World Bank. (2018b). *World Development Report 2018: Learning to Realize Education's Promise*. Washington, DC: World Bank Group. doi:10.1596/978-1-4648-1096-1.

Xiao, L., & Song, J. (2013). Technical Vocational Education and Training in Xinjiang. Systems Approach for Better Education Results (SABER) country report. *World Bank, 1*(Human Development Unit Sector), East Asia and Pacific Region.

7 ANNEXES

1. **Mongolia VEP Program Logic**
2. **List of Activities**
3. **Design Options and Design Matrix**

ANNEX 1: MONGOLIA VEP PROGRAM LOGIC

As outlined in the EDR, the official Mongolia Compact Program Logic did not provide substantial detail regarding the expected outputs or short- and medium-term outcomes (the official Program Logic is here). Additionally, different project documents listed different sub-activities. Thus, as the basis for a solid design, a more detailed Program Logic was created based on all available project documentation as well as discussions with key stakeholders. The following figures are the output of these discussions.

COMPACT LOGIC

Compact Goal

Reduce poverty through economic growth

Poverty Reduction through Economic Growth

Property Rights Project: Increase the security and capitalization of land assets held by lower-income Mongolians, and increase peri-urban herder productivity and incomes
Outcomes: (1) Increased land right formalization and (2) Optimized peri-urban rangeland carrying capacity and range management

Vocational Education Project: Increase employment and income among unemployed and underemployed Mongolians
Outcome: Improved quality and relevance of TVET System

Health Project: Reduce the risk of premature death and disability from NCDIs (Non-Communicable Diseases and Injuries) and traffic injuries
Outcomes: (1) Improved National and local response to NCDI (2) Increased understanding of NCDI prevention, and (3) Increased availability of sound NCDI services

NS Road Project: More efficient transport for trade and access to services
Outcomes: (1) Increased Traffic, (2) Decreased travel times, (3) Decreased vehicle operating costs, and (4) Decreased road roughness

Energy and Environment Project: Increased wealth and productivity through greater fuel use efficiency and decreasing health costs from air pollution in Ulaanbaatar.
Outcomes: (1) Reduced incidence of respiratory-related morbidity, (2) Reduced fuel consumption, (3) Increased energy efficiency, (4) Substitution of wind power for additional coal-fired power generation capacity, (5) Improved power quality.
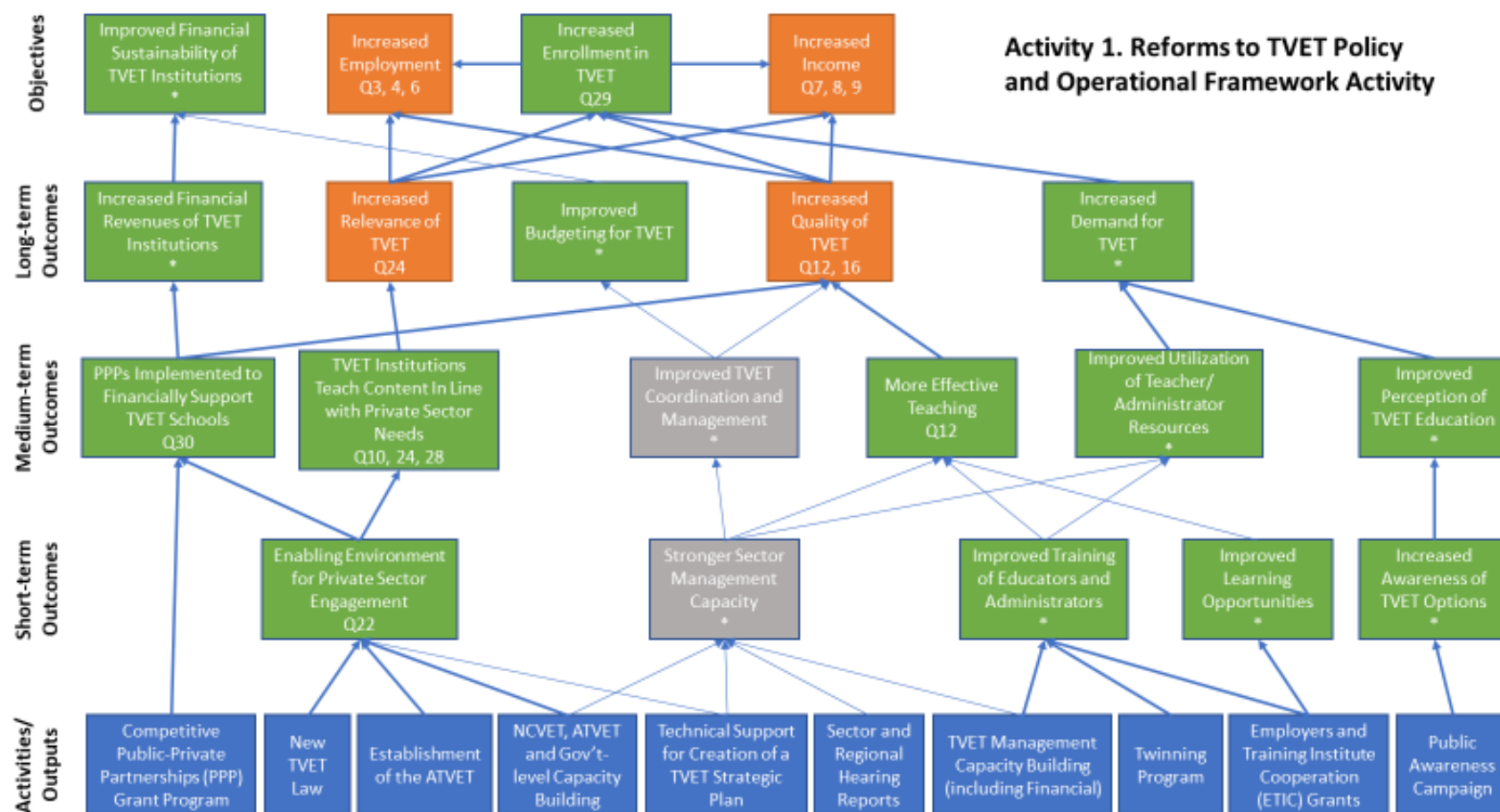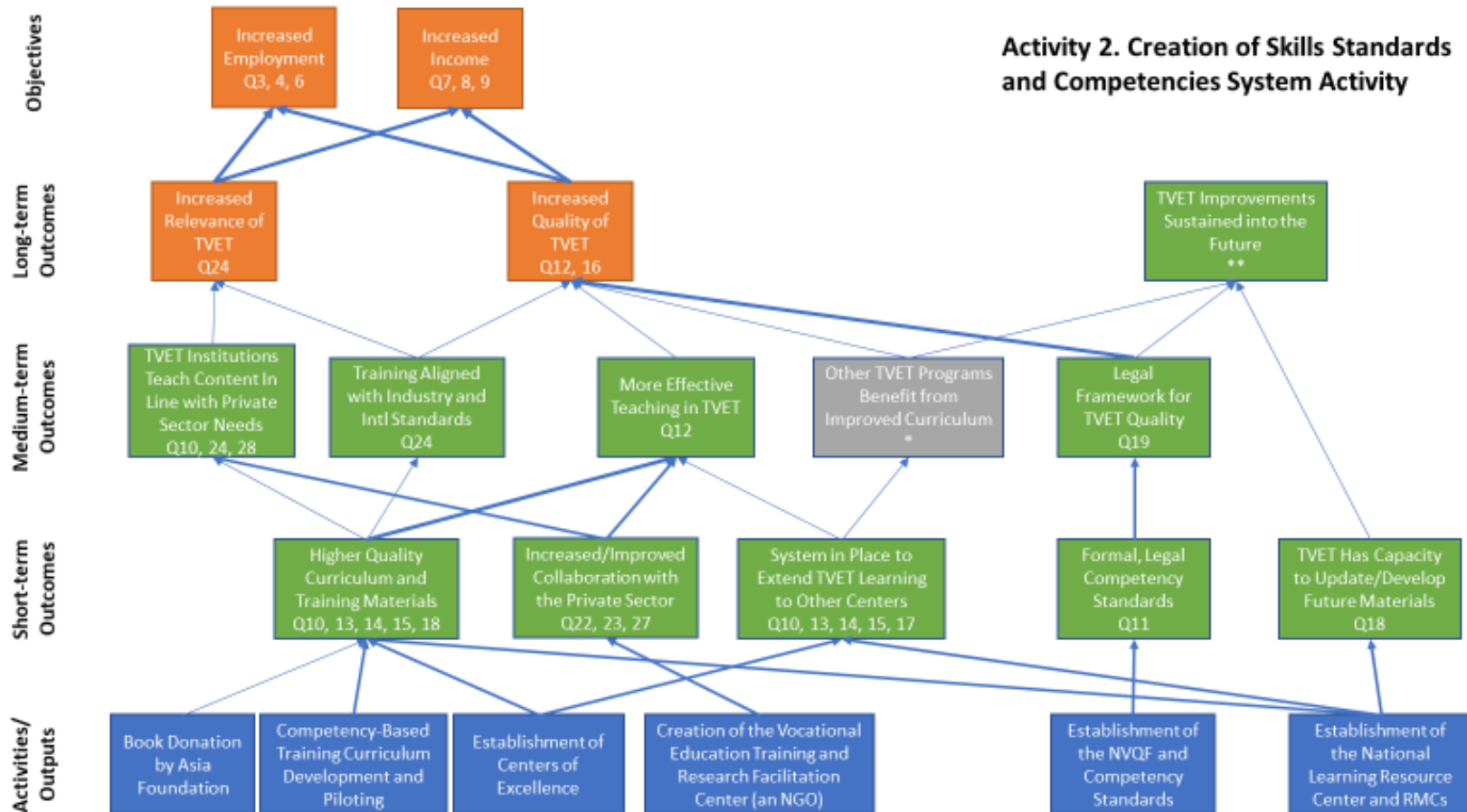
The first step in this process was to establish a complete list of all sub-activities, organized by activity. While some documents placed some sub-activities under multiple different activities, the below figures provide the best-known information, which was reviewed and agreed upon with the EMC. These sub-activities are in blue. The original four long-term outcomes from MCC's Program Logic are in orange.
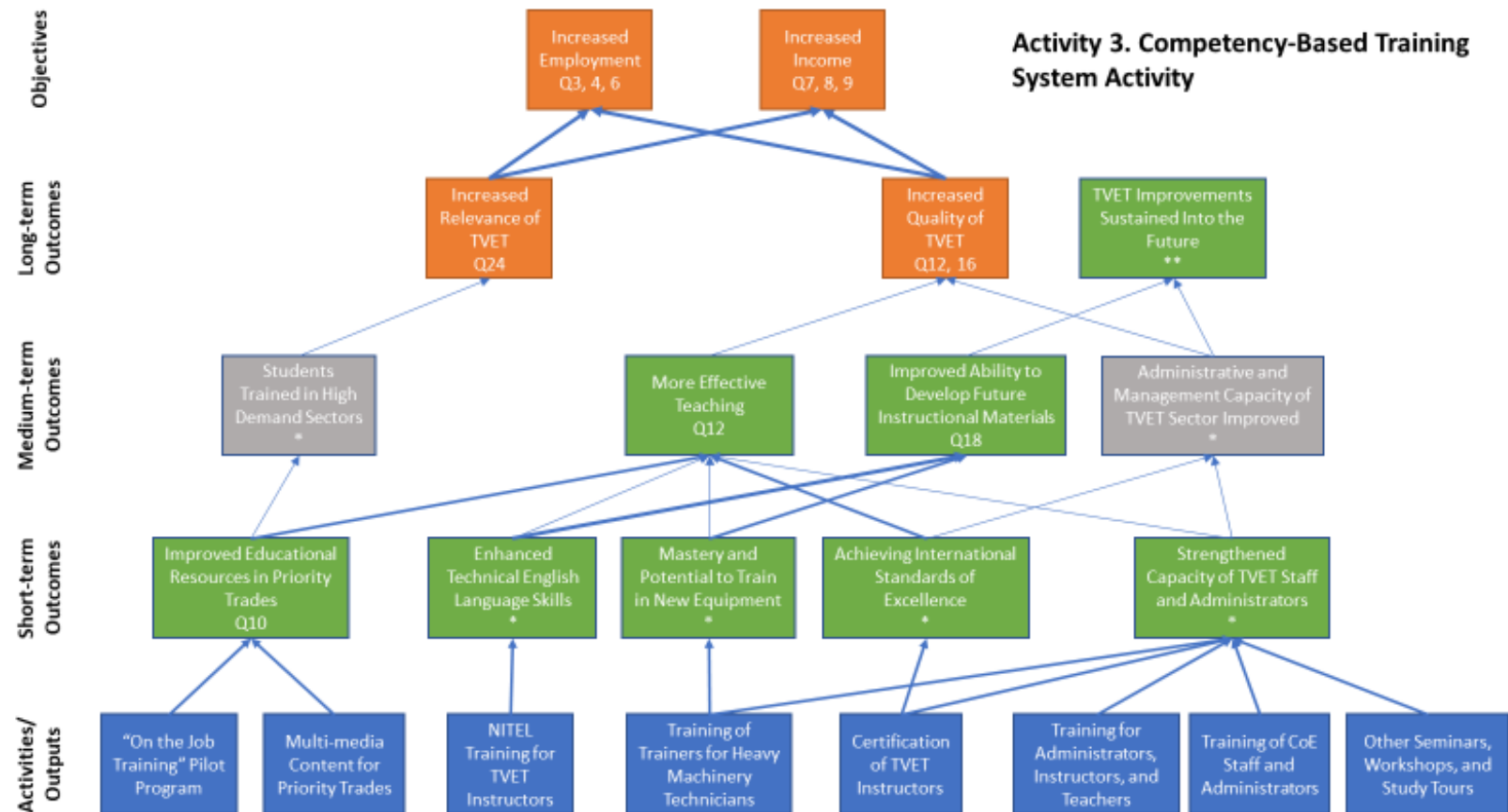
Intermediate steps between the sub-activities and the Program Logic's longer-term outcomes and objectives are represented in green and grey. The green outcomes represent expected outcomes that were documented in project documents, but not in the formal Program Logic. The grey outcomes represent inferences by the ET where no other information was available regarding the expected linkages between sub-activities and outcomes. The below Program Logics were vetted and agreed upon by the EMC prior to the writing of this EDR. Similarly, linkages between outcomes are represented in either thin or thick lines. Thick lines were used where the intended linkages were documented officially. Thin lines indicate where the ET had to make inferences about the likely theory of change.

To facilitate linking between the evaluation questions and the program logic, the relevant EQ numbers are included in each outcome box. Where outcomes are not covered in the evaluation design (as a result of the scoping process), an asterisk (*) replaces the EQ numbers. Double asterisks (**) denote sustainability outcomes assessed through the ex-post timing of the evaluation.

Activity 1. Reforms to TVET Policy and Operational Framework Activity

SOCIAL IMPACT

Objectives

Long-term
Outcomes

Medium-term
Outcomes

Short-term
Outcomes

Activities/
Outputs

Increased
Employment
Q3, 4, 6

Increased
Income
Q7, 8, 9

Activity 2. Creation of Skills Standards
and Competencies System Activity

Increased
Relevance of
TVET
Q24

Increased
Quality of
TVET
Q12, 16

TVET Improvements
Sustained into the
Future
**

TVET Institutions
Teach Content In
Line with Private
Sector Needs
Q10, 24, 28

Training Aligned
with Industry and
Intl Standards
Q24

More Effective
Teaching in TVET
Q12

Other TVET Programs
Benefit from
Improved Curriculum
*

Legal
Framework for
TVET Quality
Q19

Higher Quality
Curriculum and
Training Materials
Q10, 13, 14, 15, 18

Increased/Improved
Collaboration with
the Private Sector
Q22, 23, 27

System in Place to
Extend TVET Learning
to Other Centers
Q10, 13, 14, 15, 17

Formal, Legal
Competency
Standards
Q11

TVET Has Capacity
to Update/Develop
Future Materials
Q18

Book Donation
by Asia
Foundation

Competency-Based
Training Curriculum
Development and
Piloting

Establishment of
Centers of
Excellence

Creation of the Vocational
Education Training and
Research Facilitation
Center (an NGO)

Establishment of
the NVQF and
Competency
Standards

Establishment of
the National
Learning Resource
Center and RMCs

Activity 3. Competency-Based Training System Activity

Activity 4. Career Guidance and Labor Market Information Systems ("LMIS") Development Activity
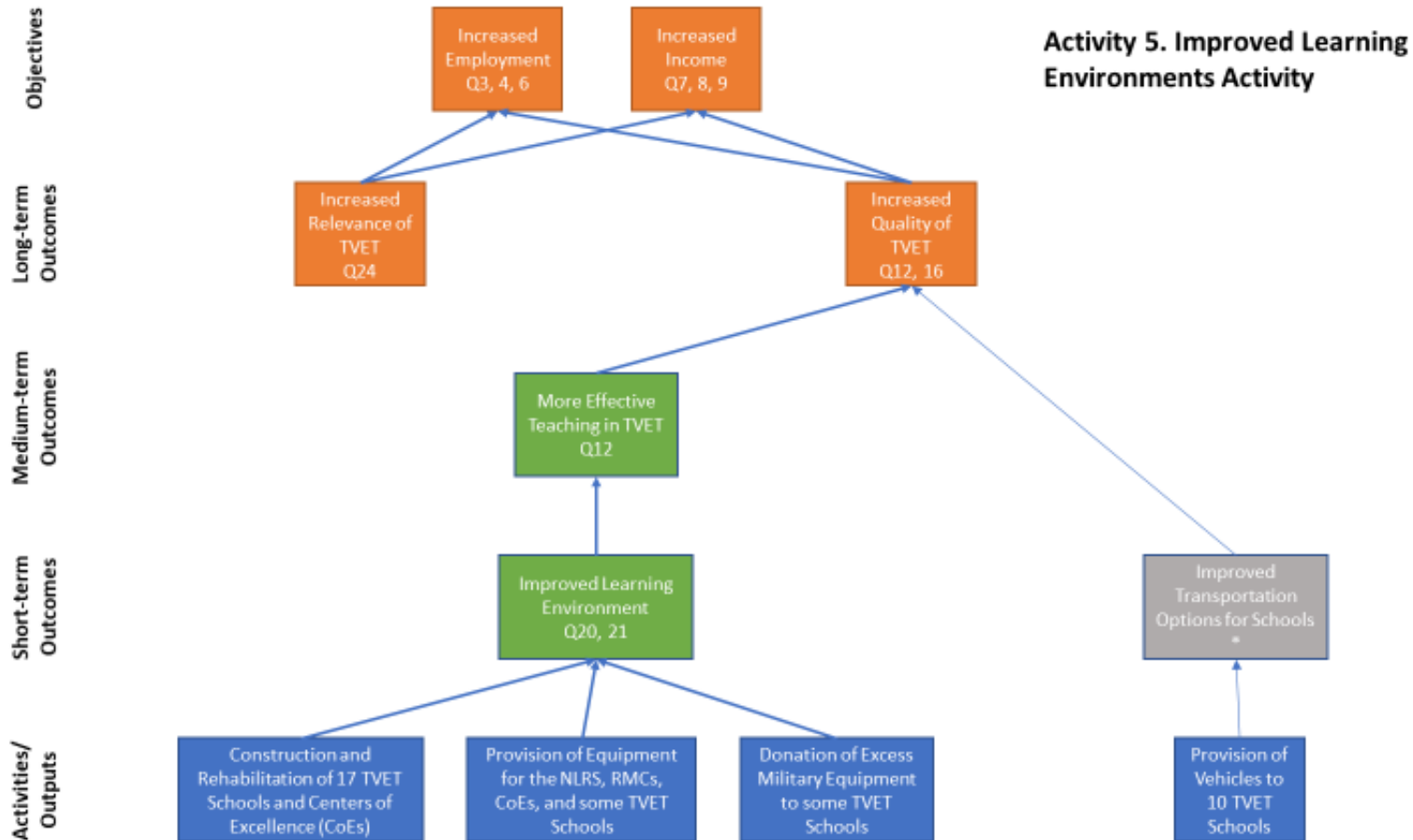
Activity 5. Improved Learning Environments Activity

ANNEX 2: LIST OF ACTIVITIES

This annex outlines the sub-activities under each of the five core activities of the amended Vocational Education Program. These details were drawn from a series of background documents, including: MCA TVET Project Pamphlet, MCA Compact Completion Report, Compact Results Statement, ITT, the TVET Administrative Database, and the Costs - Supporting Documentation spreadsheet.

There were some inconsistencies in the documents, with some activities being listed in some documents, but not in others. There were also inconsistencies regarding which sub-activities belonged under which activity, with different documents placing the same sub-activity under different activities.

Activity	Sub-Activities

Reforms to TVET Policy and Operational Framework Activity	• New TVET law adoption and implementation/dissemination which:
	  o Drafted amendments for proposal to the State Great Hural
	  o Establishes the National Council for Vocational Education and Training (NCVET)
	  o Establishes a TVET 'Promotion Fund' with a levy system based on the Activity-Based Costing (ABC approach) for funding the TVET sector
	• Establishment of the National Agency for Technical and Vocational Education and Training (ATVET)
	• TVET Management Capacity Building (for school leaders)
	• Twinning Program (partnering CoEs with Australian schools):
	  o Developed guidelines
	  o Conducted teacher exchange program for 36 teachers from CoEs subsequently awarded international certificates in Teaching and Assessment
	  o Drafted a MoU for sustaining partnerships
	• NCVET and Government-level Capacity Building
	  o Introduced more than 2,400 stakeholders from government and private sector to new TVET law and policies through workshops, study tours, discussions
	• National Competitive Grants Program for establishing PPPs (28 projects in 26 schools):
	  o 13 grantees established relationships with 46 employers with joint investments in equipment
	  o Others upgraded/established facilities and equipment: 25 classrooms, 25 trade workshops, 2 farming workshops, 21 teacher development and career guidance center upgraded
	  o Created and piloted additional CBT curriculums

	• Public Awareness Campaign and Public Outreach, including: o Baseline and Follow-up Public Perception Surveys o Multimedia campaign including public service announcements, TV talk programs and documentaries, and career guidance lectures o Promotion of gender-sensitive environments • Technical guidance and support for the establishment of a TVET strategic plan, developing a legal and policy framework for a competency-based system: o National Vocational Qualification Framework (NVQF) o TVET Quality Assurance System o Teacher Qualifications Framework o TVET Credit System Policy • Employers and Training Institute Cooperation (ETIC) grants to establish partnerships with employers to fund investments in learning environments • Sector and regional hearing reports
Creation of Skills Standards and Competencies System Activity	• CBT curriculum and assessment development (28 curricula) in 7 priority clusters: construction and construction materials production, mining, industry, agriculture, energy, transportation, and IT • CBT piloting at 9 TVET schools (6 RMCs, 2 CoEs, 1 Food Tech College) • Establishment of a National Vocational Qualification Framework (NVQF) • Establishment of the NLRC o Establishment of the NLRC online platform (the Learning Management System) o Equipping of the NLRC and the Regional Methodology Centers (RMCs) with ICT equipment o Develop MLRC strategic plan, commercialization plan, and copyright documents o Developed NLRC MoU for RMCs • Establishing 3 CoEs, including accreditation by the Asia Pacific Accreditation and Certification Commission (APACC) and equipping them with state-of-art equipment and multi-media labs • Donation of 5000 books to TVET schools through The Asia Foundation's Books for Asia program
Competency-Based Training System Activity	• "On the Job Training" pilot program • National Intensive Technical English Language Training (NITEL) for 200 TVET instructors • Training six heavy machinery service technician trainers, involving training with Wagner Asia & Caterpillar • Professional development training for administrators, instructors, and teachers o 150 teacher trainers prepared o 450 TVET instructors trained based on new equipment o 30 people from NLRC, RMC, CoEs trained in training multimedia learning materials

	• Development of multimedia content for training curriculums for five priority trades: welding, plumbing, electrician, automotive service technician, and heavy equipment technician trades • Training and capacity building of CoE staff and administrators: 44 staff received management training by Australian counterparts • Management capacity building/training for TVET school administrators and managers: 416 senior staff from 34 schools trained • Certification of TVET instructors • Various seminars, workshops, international study tours, and other "non-training" events • Professional development training in a range of fields for 1800 trainees (including 1410 instructors)
Career Guidance and Labor Market Information Systems ("LMIS") Development Activity	• LMIS labor market study (2010) • Gobi region Technical and Vocational Skills, Labor & Training Survey (+17,000 respondents) • Development of the LMIS system • Development of the CGS system • Employer events • Training of trainers of 17 government employees to become national trainers for career guidance counselors. Trainers also provided career guidance training for TVET social workers and welfare officers • Develop counselor services network • Provision of equipment to the Labor Exchange Central Office (LECO)

Improvement of Learning Environments Activity	• Construction and rehabilitation of 17 TVET schools (training workshops) and CoEs
	• Provision of training and ICT equipment for the NLRS, the RMCs, the CoEs, and some TVET schools. Equipment included heavy machinery operator, lathe-milling, electricity and electronics, plumbing, welding, heating/cooling/refrigerating, as well as core technology lab and multi-media training equipment.
	   o 5 vocational training and production centers (VTPCs) received technology labs
	   o 10 VTPCs received multimedia and other ICT resources as well as recording studios
	   o Distance learning programs being designed
	• Donation of excess US military equipment to several TVET schools
	• Provision of vehicles for TVET schools (10 buses)

ANNEX 3: DESIGN OPTIONS AND DEISGN MATRIX

Evaluation Questions	Option B	New Option	Option C
	20 Total	**30 Total**	**44 Total**
Overall	2	2	3
Increased Employment	3	4	4
Increased Income	2	3	3
Improved Quality	6	12	19
Improved Relevance	5	7	10
Other Outcomes	2	2	5

The below Evaluation Design Matrix provides an overview of the evaluation questions that would be covered under a proposed New Option. The table shows prioritization ranking of these questions as well as the intended design methods and respondent groups for each. The questions with an overall ranking of "low" would only be covered in Option C.

EVALUATION QUESTIONS	DATA COLLECTION METHODS	DATA SOURCES	PRIORITIZATION			COMMENTS
			Importance	Ease	Overall	
1. To what extent was the project implemented as originally designed?	Desk Review	Project Documents	High	Medium	High	Would need to define what the "original design" was in order to make a comparison.
	Interviews	Project Contractors; MCA, PIU, and MCC Staff				
2. What worked well in project implementation? What were they key challenges?	Desk Review	Project Documents	High	Medium	High	
	Interviews	Project Contractors; MCA, PIU, and MCC Staff				
3. What changes were made to the design and why? In the end, were the changes beneficial to the achievement of outcomes?	Desk Review	Project Documents	Medium	Low	Low	
	Interviews	Project Contractors; MCA, PIU, and MCC Staff				
Objective 1. Increased Employment						
4. To what extent, if at all, has the employment rate of TVET graduates changed since the program began?	Secondary Data	Innovations for Poverty Action (IPA) Survey Data TVET School Records (if available)	High	Medium	High	
	Interviews	TVET Administrators Students/Graduates				
5. What have been the biggest drivers of the change (if any) in the employability of students and graduates?	Interviews	TVET Administrators TVET Instructors Private Sector Representatives Students/Graduates	Medium	Medium	Medium	This would only be answered qualitatively, not quantitatively.
6. To what extent, if at all, have students used guidance counselors and/or the online guidance system to make	Secondary Data	IPA Survey Data Website Usage Statistics (if available)	Medium	Medium	Medium	

career decisions? How useful have these resources been for their ability to obtain employment? Why/why not?	Interviews	Students/Graduates TVET Guidance Counselors				
7. To what extent, if at all, has the employment rate in Mongolia changed?	Secondary Data	National Employment Statistics	Low	Medium	Medium (New)	Overall rates will be included in final report but would not include significant analysis or attribution to the Compact.
Objective 2. Increased Income						
8. To what extent have the incomes of TVET graduates increased since the project was implemented?	Secondary Data	IPA Survey Data School Administrative Data (if available)	High	Medium	High	
	Interviews	TVET Administrators Graduates				
9. What have been the biggest drivers of the change (if any) in the incomes earned by TVET students and graduates?	Interviews	TVET Administrators TVET Instructors Students/Graduates	Medium	Medium	Medium	This would only be answered qualitatively, not quantitatively.
10. To what extent have the incomes of the unemployed and underemployed changed since the project began?	Secondary Data	National Level Data (if available)	Low	Medium	Medium (New)	Overall rates will be included in final report, but not intended to be included in analysis or attributed to the Compact.
Outcome 1. Improved TVET System Quality						
11. 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?	Secondary Data	IPA Survey Data Ministry Records (if available)	High	Medium	High	
	Interviews	Ministry Officials TVET Administrators TVET Instructors				
12. What is the status of the National Vocational Qualification Framework (NVQF) and associated	Interviews	Ministry Officials TVET Administrators TVET Instructors	High	Medium	High	

Question	Method	Data Source				Notes
competency standards? To what extent are they utilized by TVET programs and students/graduates? Are the certifications valued?		Private Sector Representatives Students/Graduates				
13. To what extent do students/graduates and teachers perceive the curriculum and training materials are of high quality?	Secondary Data Interviews	IPA Survey Data TVET Administrators TVET Instructors Students/Graduates	Medium	Medium	Medium	
14. What factors have enabled and/or constrained the effective adoption and implementation of the CBT curriculums?	Interviews	Ministry Officials TVET Administrators TVET Instructors Other Donors	Medium	Medium	Medium	This would only be answered qualitatively, not quantitatively.
15. To what extent are the NLRC and RMCs utilized by TVET centers and instructors/staff?	Interviews	TVET Instructors TVET Administrators	Medium	Medium	Medium	
16. To what extent are the CoEs taking on the role and function of a center of excellence? Why/why not?	Interviews	Ministry Officials TVET Administrators TVET Instructors	Medium	Medium	Medium	
17. To what extent has the quality of teaching improved since the start of the project?	Secondary Data Interviews	IPA Survey Data TVET Administrators TVET Instructors Students/Graduates	Medium	Low	Medium (New)	Questions will be added to TVET instructors/administrators protocols about perceptions in the change in TVET teaching. Questions for students and graduates will also be added.
18. To what extent have other TVET centers used materials or trainings developed through the VEP to improve teaching quality?	Interviews	TVET instructors TVET Administrators from non-program schools	Medium	Low	Medium (New)	Questions will be added to existing interview protocols
19. To what extent has the TVET sector updated materials or developed new CBT materials post-Compact?	Interviews	TVET Administrators TVET Instructors	Medium	Low	Medium (New)	Questions will be added to existing interview protocols

20. How do the changes in the national qualification framework affect the overall functioning and operations of the TVET system?	Interviews	Ministry Officials TVET Administrators	Low	Low	Medium (New)	Questions will be added to existing interview protocols
21. To what extent have the TVET school and CoE facilities been maintained since the end of the Compact? Why/why not?	Direct Observation Interviews	TVET school and CoE facilities Ministry Officials TVET Administrators TVET Instructors Students/Graduates	Medium	Low	Medium (New)	Light direct observation will be done as part of site visits: basic check on equipment functionality, general state of building, existence of maintenance, etc.
22. To what extent has the training equipment provided by the Compact been used and maintained since the end of the Compact? Why/why not?	Direct Observation Interviews	Training Equipment TVET Administrators TVET Instructors Students/Graduates	Medium	Low	Medium (New)	Light direct observation as part of site visits: basic check on equipment functionality, general state of building, existence of maintenance, etc.
23. To what extent do teachers and administrators believe they have the equipment and resources necessary to teach effectively? Why/why not?	Secondary Data Interviews	IPA Survey Data TVET Instructors TVET Administrators	Low	Medium	Low	Some data may come from IPA report. In general, lower priority, so okay to drop.
24. To what extent do teachers and administrators have capacity to deliver high-quality programming? What contributed to this level of capacity?	Interviews	TVET Instructors TVET Administrators	Medium	Low	Low	Capacity for quality TVET will be covered through other questions.
25. To what extent have international standards certifications for TVET teachers and administrators been useful?	Interviews	TVET Instructors TVET Administrators	Low	Low	Low	It will likely be difficult to identify and contact the individuals who received these certificates and accreditations.
26. To what extent do TVET instructors have adequate English language skills to	Secondary Data Interviews	IPA Survey Data TVET Instructors	Low	Medium	Low	English trainings were a small component of the overall program; IPA data only ask teachers about whether English

disseminate technical information?		TVET Administrators Students/Graduates					language barriers were an issue for them.
27. To what extent do the donated books from the Asia Foundation benefit students?	Interviews	TVET Administrators TVET Instructors Students/Graduates	Low	Low		Low	This was a small component of the activity.
28. To what extent was the excess military equipment useful for TVET instruction and to what extent has it been used and maintained since the end of the Compact? Why/why not?	Direct Observation	Donated Excess Military Equipment	Low	Low		Low	This was a small component of the activity.
	Interviews	TVET Administrators TVET Instructors Students/Graduates					
29. To what extent have the vehicles provided by the Compact been used to benefit students and to what extent have they been maintained? Why/why not?	Direct Observation	Vehicles	Low	Low		Low	This was a small component of the activity.
	Interviews	TVET Administrators/ Staff					
Outcome 2. Increased Relevance of the TVET System							
30. To what extent has the private sector been able to effectively engage with and influence the TVET sector as a result of the project?	Interviews	Ministry Officials Private Sector Representatives and Organizations Other Donors	High	Medium		High	The conversion of the Mongolian TVET system from a centralized system to one that responds to market needs is a key assumption for the project.
31. What are the key factors enabling and/or restricting private sector engagement in TVET?	Interviews	Ministry Officials Private Sector Representatives and Organizations Other Donors	High	Medium		High	The conversion of the Mongolian TVET system from a centralized system to one that responds to market needs is a key assumption for the project.
32. 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?	Interviews	Private Sector Representatives	High	Medium		High	

#	Question	Method	Source				Notes
33.	Are the Labor Market Information System (LMIS) and Career Guidance System (CGS) websites still functioning? Why/why not?	Direct Observation	LMIS and CGS websites	High	Medium	High	
		Interviews	Ministry Officials (LECO officials in particular)				
34.	To what extent has the LMIS and CGS website content been updated since the Compact ended?	Direct Observation	LMIS and CGS websites	Medium	Medium	Medium	
		Interviews	Ministry Officials (LECO officials in particular)				
35.	What were the effects of the 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?	Interviews	Ministry Officials Private Sector Representatives and Organizations Other Donors	N/A	N/A	Medium (New)	This additional question was added by request.
36.	To what extent have the CBT curriculums been updated since the end of the project? Why/why not?	Interviews	Ministry Officials TVET Administrators	Medium	Low	Medium (New)	Will be included in existing interviews.
37.	How effective is the Vocational Education Training and Research Facilitation Center in increasing collaboration with the private sector?	Interviews	TVET Instructors TVET Administrators Private Sector Representatives	Low	Medium	Low	
38.	To what extent do students/graduates feel that they are receiving the skills necessary to get a job?	Secondary Data	IPA Survey Data	Low	Medium	Low	Based on inclusion of the questions from the private sector perspective, this question is less important.
		Interviews	Students/Graduates				
39.	To what extent is LECO still using and maintaining the equipment they were provided?	Direct Observation	LECO equipment	Low	Low	Low	This was a small component of the activity.
		Interviews	Ministry Officials (LECO officials in particular)				

Other Outcomes						
40. To what extent, if at all, has enrollment in TVET schools increased?	Secondary data	IPA Survey Data TVET School Records	High	Medium	High	This outcome is a part of the ERR and expressed in project documents but is not included in the Program Logic. It is rated "high" given its relevance to the ERR.
41. To what extent have TVET schools been engaged in PPPs since the end of the Compact? Why/why not?	Secondary Data	IPA Survey Data TVET Schools Records	Medium	Medium	Medium	This outcome was expressed in project documents, but not in the Program Logic. It is rated "medium" due to the focus of activities on increasing the use of Public-Private Partnerships (PPPs).
	Interviews	Ministry Officials TVET Administrators				
42. To what extent has the perception of TVET education changed? What concerns remain?	Interviews	Students/Graduates Private Sector Representatives	Low	Low	Low	This outcome was expressed in project documents but is not connected to the Program Logic.
43. To what extent have TVET schools increased their funding from non-governmental sources?	Secondary Data	IPA Survey Data TVET School Records	Low	Medium	Low	This outcome was expressed in project documents, but not in the Program Logic.
	Interviews	Ministry Officials TVET Administrators				
44. Which non-governmental sources of funding have been increasing/decreasing? Why/why not?	Secondary Data	IPA Survey Data TVET School Records	Low	Medium	Low	This outcome was expressed in project documents, but not in the Program Logic.
	Interviews	Ministry Officials TVET Administrators				