

Millennium Challenge Account – Georgia

Monitoring and Evaluation Plan

Compact II

November 2018

Version 4

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1. Preamble

This Monitoring and Evaluation (M&E) Plan:

- is part of the action plan set out in the MILLENNIUM CHALLENGE COMPACT (**Compact**) signed on July 26, 2013 between the United States of America, acting through the Millennium Challenge Corporation, a United States Government corporation (**MCC**), and Georgia (**Georgia**), acting through its government;
- is designed to support provisions described in *Annex III. Description of Monitoring and Evaluation Plan* of the Compact;
- is governed and following principles stipulated in the *Policy for Monitoring and Evaluation of Compacts and Threshold Programs* (DCI-2007-55.2 from 05/12/2009) (MCC M&E Policy).

This M&E Plan is considered a binding document, and failure to comply with its stipulations could result in suspension of disbursements. It may be modified or amended as necessary following the MCC M&E Policy (article 5.2), and if it is consistent with the requirements of the Compact and any other relevant supplemental legal documents.

2. List of Acronyms

Compact	– Millennium Challenge Compact signed on July 26, 2013 between the United States of America, acting through the Millennium Challenge Corporation, a United States Government corporation and Georgia, acting through its government
MCC	– Millennium Challenge Corporation
MCA-G	– Millennium Challenge Account - Georgia
GoG	– Government of Georgia
MoES	– Ministry of Education and Science
Geostat	– National Statistics Office of Georgia
ITT	– Indicator Tracking Table
ERR	– Economic Rate of Return
M&E Plan	– Monitoring and Evaluation Plan
TVET	– Technical Vocational Education and Training
STEM	– Science, Technology, Engineering and Math
MIS	– Management Information System
TOR	– Terms of Reference
QDRRP	– Quarterly Disbursement Request and Reporting Package
DQR	– Data Quality Review
IRB	– Institutional Review Board
CCR	– Compact Completion Report
O&M	– Operations and Maintenance

3. Compact and Objective Overview

3.1. Introduction

MCC and the Government of Georgia shall formulate, agree to and the Government shall implement this M&E Plan that specifies: i) how progress toward the Compact Goal, Objectives, and the intermediate results of each Project and Project Activity will be monitored; ii) a methodology, process and timeline for the evaluation of planned, ongoing, or completed Projects and Project Activities to determine their efficiency, effectiveness, impact and sustainability; and iii) other components of the M&E Plan described below.

The M&E Plan serves the following functions:

- Explains in detail how MCC and MCA - Georgia will monitor the various Projects to determine whether they are achieving their intended results and measure their larger impacts over time through evaluations.
- Outlines any M&E requirements that MCA - Georgia must meet in order to receive disbursements.
- Serves as a guide for program implementation and management, so that MCA - Georgia staff, Supervisory Board members, Stakeholder Committee(s), Implementing Entities staff, beneficiaries, and other stakeholders understand the objectives and targets they are responsible for achieving, and are aware of their progress towards those objectives and targets during implementation.
- Establishes a process to alert implementers, stakeholders and MCC to any problems in program implementation and provides the basis for making any needed program adjustments.

3.2. Program Logic

The goal of the Compact II is to reduce poverty through economic growth in Georgia by means of MCC's assistance to strengthen good governance, economic freedom, and investments in Georgia.

The objective of the Program is to support strategic investments to: (a) improve general education quality in Georgia through: infrastructure enhancements to the physical learning environment in schools, training for educators and school managers, and support to classroom, national and international education assessments; (b) strengthen the linkage between market-demanded skills and the supply of Georgians with technical skills relevant to the local economy; and (c) support delivery of high-quality STEM degree programs in Georgia.

The M&E Plan is built on a logic model that illustrates how the Projects and Activities contribute to the Compact Goal and the Project Objectives as described in the following sections.

3.2.1. Improved Learning Environment Infrastructure Activity

3.2.1.1. General Description

The Improved Learning Environment Infrastructure Activity will rehabilitate rural public school facilities to address very poor physical conditions including internal utilities such as heating, electrical, water supply and sanitation systems.

The Improved Learning Environment Infrastructure Activity will involve the full internal and external rehabilitation of selected school facilities, utility upgrades, and provision of laboratories. Such an approach addresses the key elements correlating with improved educational performance, including human comfort, indoor air quality, and adequate lighting.

The selection of schools will be based on a formula that prioritizes schools according to their physical condition (dilapidated physical infrastructure), social vulnerability (higher proportion of Socially Vulnerable students), number of students enrolled and utilization rate. The above criteria have been chosen based on agreement between the Ministry of Education and science, MCC and MCA Georgia.

MCC's independent Evaluator for the Improving General Education Quality Project, Mathematica Policy Research (Mathematica), collaborated with MCC and MCA-Georgia to develop a process for selecting the schools eligible for rehabilitation. This process is expected to ensure that a package of schools is selected that allows MCC and MCA-Georgia to meet key priorities for this project, including cost-effectiveness (i.e. meeting an ERR hurdle rate), targeting of key beneficiaries, and ability to rigorously measure project outcomes and impacts through a rigorous impact evaluation.

The selection process began by selecting a pool of 425 eligible schools. The first step in this process was calculating a ranking score for each of Georgia's schools that serve secondary grades (7 to 12), using the following formula¹:

$$\text{Ranking Score}_i = (-0.5\lambda + 0.1\gamma - 0.3\mu + 1.5\beta - 0.3\sigma)/5$$

λ = School Condition (aggregate which includes roof, windows, exterior walls, etc.)

γ = % Socially vulnerable students, $\left(\frac{\# \text{ Socially vulnerable}}{\text{Total \# of students}}\right)$

μ = M² per student, a measure of underutilization $\left(\frac{\text{Total facility M}^2}{\text{Total \# of students}}\right)$

β = Total # of students

σ = Standard deviation² across each school's λ , γ , μ , β

¹ The weights attached to each variable were chosen to meet specific targets on factors including ERR, social vulnerability, and space utilization. Assigning a positive or negative sign to each item allows a variable to be maximized or minimized, respectively. All variables were calculated as standard normal (z-scores) of the natural log of the original values in the school-level data.

² Minimizing the standard deviation helps avoid the inclusion of schools which rank highly on some variables but do not fulfill other criteria (e.g. a school with a large number of students and low M² but with low % of socially vulnerable and good condition of facilities).

After calculating these ranking scores, Mathematica identified the highest-ranked schools in each region to select which schools would be eligible for the program. That is, within each region schools were ranked from the school with the highest score to the school with the lowest score, and the schools with the highest ranks in each region were selected for the program.

The number of schools allocated to each region (Table 1) was determined by an allocation percentage that was set to match the results of the previous school selection round conducted in 2012-2013.³

Table 1. Region-level allocation of schools

Region	Percentage Allocation	Number Selected for the 425-School List
Adjara (Phase 2)	8%	32
Guria (Phase 2)	4%	16
Imereti (Phase 3)	20%	78
Kakheti (Phase 3)	20%	80
Mtskheta-Mtianeti (Phase I)	2%	10
Kvemo Kartli (Phase 2)	15%	62
Racha-Lechkhumi and Kvemo Svaneti (Phase I)	3%	15
Samegrelo-Zemo Svaneti (Phase 2)	8%	32
Samtskhe-Javakheti (Phase 1)	6%	30
Shida Kartli (Phase 1)	14%	70

In addition, an Operations and Maintenance (“*O&M*”) program in the Georgian school system shall be established to ensure the sustainability of MCC’s investment and more broadly to the viability of Georgian schools. The Government has committed to developing and funding a strategy to address school O&M and a plan for its implementation (collectively, a “*School O&M Plan*”) with MCC support. Key elements of this School O&M Plan include hiring permanent dedicated and technically qualified staff to develop and implement the School O&M Plan. MCC will support this effort via an incentive fund of up to US\$2,500,000 (Two Million, Five Hundred Thousand United States Dollars) to maintain school O&M activities.

3.2.1.2. Description of Outcomes

In the long run the Improved Learning Environment Infrastructure Activity is expected to produce improved student learning outcomes through learning environments that facilitate increased time on task and increased attendance. This in turn shall provide the project beneficiaries with better employment opportunities and higher incomes (outcome indicators, baselines and targets are given in Annexes 1 and 2).

3.2.1.3. Description of Outputs

³ Specifically, the 425-school list allocated 400 schools according to these percentages, and then selected 25 additional schools from the four Phase I regions. The extra allowance of schools in Phase I regions allows for a larger number of school exclusions related to the program’s previous design work in these areas.

In the short term the Improved Learning Environment Infrastructure Activity is expected to:

- Rehabilitate up to 130 schools across the country,
- Procure lab equipment for the rehabilitated schools, and
- Improve school infrastructure maintenance practices.

For more details on output indicators, baselines and targets please refer to Annexes 1 and 2 of this plan.

3.2.2. Training Educators for Excellence Activity

3.2.2.1. General Description

The objectives of the Training Educators for Excellence Activity are to: (1) improve math, science, geography, information and communication technology (“**ICT**”), and English teaching and learning in Grades 7-12; and (2) improve school management and (3) implement school based professional development facilitator’s system. Training will also include a gender module designed to reduce teacher gender bias (identified in the study on gender barriers affecting girls and women who wish to pursue STEM education and/or occupations) in the classroom. This Activity will achieve the first objective by training approximately 23,400 math, science, geography, ICT, and English teachers and improving upon the existing system of continuous professional development. To improve school-based professional development, the Activity will train at least one school-based professional development facilitator per public school, or approximately 2,084 such facilitators. Supporting the school based professional development facilitators program will enable teachers to share knowledge and best practices among each other in order to improve teaching and learning process. To meet the second objective, this Activity will support the development of a continuous professional development framework for school principals and will provide training for up to 2,084 public school principals in Georgia.

The Implementing Entity for the Training Educators for Excellence Activity is the Teacher Professional Development Center (“**TPDC**”), the MoES entity currently responsible for managing teacher professional development. Compact funding will support capacity building for TPDC, the development and provision of training materials and equipment, and the implementation of training courses.

The main sub-activities of the activity shall be as follows:

- Secondary school math, science, geography, and English teachers professional development
- Refinement and support of the Teacher professional development system
- Professional Development of public school principals
- Development and implementation of the school based professional development System
- Professional Development of the school based professional development facilitators
- Capacity building of TPDC staff.

3.2.2.2. Description of Outcomes

In the long run the Training Educators for Excellence Activity is expected to produce improved student learning outcomes through improved classroom teaching and improved management of education system. Training that addresses teacher gender bias is expected to result in larger number of girls pursuing STEM tertiary education. This in turn shall provide the project beneficiaries with better opportunities to seek further education, better employment and higher incomes (outcome indicators, baselines and targets are given in Annexes 1 and 2).

3.2.2.3. Description of Outputs

In the short term the Training Educators for Excellence Activity is expected to provide training for:

- Secondary school math, science, geography, and English teachers
- School-based Professional Development facilitators
- Public School principals
- TPDC staff.

For more details on output indicators, baselines and targets please refer to Annexes 1 and 2 of this plan.

3.2.3. Education Assessment Support Activity

3.2.3.1. General Description

A rigorous testing and assessment system is needed to track student progress as well as to hold teachers, administrators, and national authorities accountable to Georgian stakeholders for achieving outcomes. National testing systems will be supplemented by participating in international benchmarking assessments such as the OECD's "Program for International Student Assessment" and Institute of Education Science's "Trends in International Math and Science Study" and "Teaching and Learning International Survey" not only to verify national results but also to track the country's performance relative to the international community. Furthermore, international assessments can help Georgia monitor system-level achievement trends in a global context over time and to further improve teaching and learning through research and analysis of assessment data.

The National Assessment and Examination Center ("**NAEC**") is the Implementing Entity of this Activity. This investment supports NAEC to carry out (1) national; (2) international; and (3) classroom assessments of student learning, with a focus on using the results for improving the quality of general education. The investment supports the effective implementation of five national assessments, including secondary school mathematics, biology, chemistry, physics and Georgian as a second language. Within the compact term, NAEC will participate in three international assessments aimed at measuring student and teacher performance in secondary school math, science, and ICT. Finally, NAEC will create a classroom assessment system for secondary school math and science teachers that will enable those teachers to assess their students' learning and use the results to improve teaching and learning in their classrooms.

The main sub-activities of the activity shall be as follows:

- Supporting implementation of the national and international assessments

- NAEC staff capacity building.

3.2.3.2. Description of Outcomes

Utilization of classroom assessment tools in the classroom will enable teachers to deliver lessons that are adjusted to the student needs. Conducting national and international assessments will enable policy makers to see trends in student achievement over years nationwide as well as compare results with other countries. Based on the assessment outcomes, Ministry will plan, adjust and implement policy decisions to support improvement of the teaching quality.

In the long run the Education Assessment Support Activity is expected to produce improved student learning outcomes through improved classroom teaching. This in turn shall provide the project beneficiaries with better opportunities to seek further education, better employment and higher incomes (outcome indicators, baselines and targets are given in Annexes 1 and 2).

3.2.3.3. Description of Outputs

In the short term the Education Assessment Support Activity is expected to provide the following outputs:

- Report in 9th grade math national assessment
- Report in 9th grade physics, chemistry and biology national assessment
- Report in 7th grade Georgian as a second language national assessment
- Report of TALIS international assessment
- Report of TIMSS international assessment
- Report of PISA international assessment

For more details on output indicators, baselines and targets please refer to Annexes 1 and 2 of this plan.

3.2.4. Industry-led Skills and Workforce Development Project

3.2.4.1. General Description

The Industry-led Skills and Workforce Development (ISWD) Project is a \$16 million project under the Compact, which aims to improve the linkage between market-demanded skills and the supply of Georgians with technical skills relevant to the local economy. Investments to support TVET shall be made to address industry demand for skilled technicians and to reach potential beneficiaries who may not have the opportunity to obtain further education and training.

The four main activities under this project are designed to:

- run a competitive process to solicit and fund innovative, industry-driven proposals from Georgian TVET providers for establishing new or expanding/improving existing training programs, to meet industry needs (Task 1: Competitive Program Improvement Grants);
- strengthen TVET provider practice by identifying, strengthening, documenting, disseminating, and promoting uptake of best practices across the sector (Task 2: Strengthening TVET Provider

- Practice);
- strengthen national policy with respect to industry engagement in the Georgian TVET sector (Task 3: Strengthening TVET Sector Policy);
- Develop and host an annual TVET conference (Task 4: Annual TVET Conference).

3.2.4.2. Description of Outcomes

In the long run the Industry-led Skills and Workforce Development Project is expected to provide increased industry engagement into the TVET sector to ensure the alignment of the TVET programs with the existing market demand. This in turn shall provide the project beneficiaries with better opportunities to seek further education, better employment and higher incomes (outcome indicators, baselines and targets are given in Annexes 1 and 2).

3.2.4.3. Description of Outputs

In the short term the Industry-led Skills and Workforce Development Project is expected to provide the following outputs:

- Industry oriented TVET policies
- Identification and promotion of the best practices
- Higher quality TVET programs

For more details on output indicators, baselines and targets please refer to Annexes 1 and 2 of this plan.

3.2.5. STEM Higher Education Project

3.2.5.1. General Description

The key objective of the GoG and MCC is the long-term delivery of high-quality STEM Bachelor's degrees in Georgia.

The purpose of the proposed investment is the following:

- Bringing a U.S. university to Georgia to partner with Georgian public universities to offer U.S. Bachelor's degree programs in the STEM academic disciplines.
- Providing capacity enhancement for Georgian Public Universities with the goal of Georgian university programs reaching international standards and acquiring international program accreditation.

MCA-Georgia signed a 15-month “pre-enrollment” agreement under which San Diego State University (SDSU) undertook the necessary actions to enroll students starting July 2014, followed by a 45-month collaborative agreement to complete the remainder of the project activities through July 2019. Per this agreement, SDSU: 1) administer and offer academic programs that are professionally (ABET, ACS) and

regionally (WASC) ⁴accredited and internationally recognized, 2) assist partner universities to achieve internationally-recognized accreditation for target degrees, 3) develop curricula and train Georgian faculty, 4) develop facilities that facilitate the SDSU programs and 5) develop partnerships with industry. SDSU is responsible for design, development, and delivery of the academic programs, as well as, required infrastructure improvements.

SDSU is in the process of implementing US and Georgian bachelor's dual degree programs in six disciplines (chemistry, computer science, computer engineering, electrical engineering, civil engineering, construction engineering). Students who graduate from these university programs will receive two diplomas, from both San Diego State University and from the partner university indicated below:

<i>Partner University</i>	<i>U.S. Degree Programs</i>
Tbilisi State University	Chemistry (Biochemistry focus) Computer Engineering Electrical Engineering Computer Science
Ilia State University	Computer Engineering Electrical Engineering
Georgian Technical University	Chemistry Computer Engineering Electrical Engineering Civil Engineering Construction Engineering

3.2.5.2. Description of Outcomes

In the long run the STEM Higher Education Project is expected to provide firm-level productivity spillovers, reduced imports of education (study abroad) and reduced imports of human capital (foreign labor). Program beneficiaries are expected to have better employment opportunities and higher incomes (outcome indicators, baselines and targets are given in Annexes 1 and 2).

3.2.5.3. Description of Outputs

In the short term the STEM Higher Education Project is expected to provide the following outputs:

- Upgraded infrastructure and equipment

⁴ "ABET" is the Accreditation Board for Engineering and Technology; "ACS" is the American Chemical Society, and "WASC" is the Accrediting Commission for Schools, Western Association of Schools and Colleges (ACS WASC), one of the six regional accrediting agencies in the United States and the one that accredits SDSU.

- Faculty development
- Improved curricula
- Inclusive outreach program
- Import of professors, curricula and frameworks
- Distance learning programs for Georgian students.

For more details on output indicators, baselines and targets please refer to Annexes 1 and 2 of this plan.

3.2.6. Program Logic Visualization

A visual description of the logic underlying the proposed Compact Projects is included in Figure 1 and 2 as follows:

Figure 1. Compact-wide Program Logic (1 of 2)

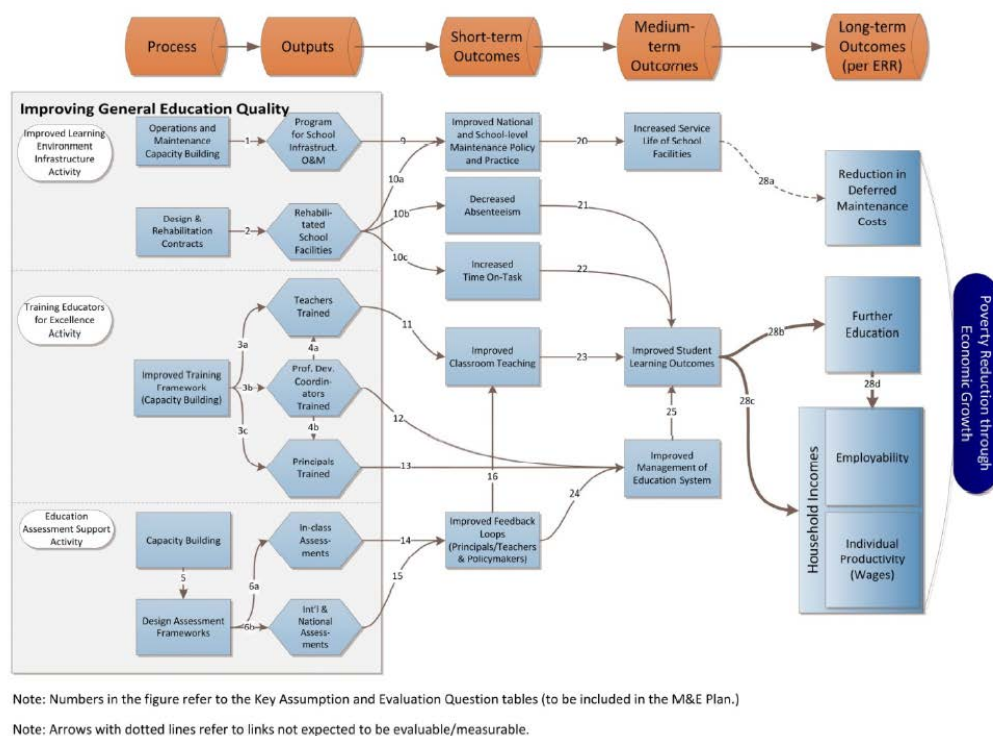


Figure 2. Compact-wide Program Logic (2 of 2)

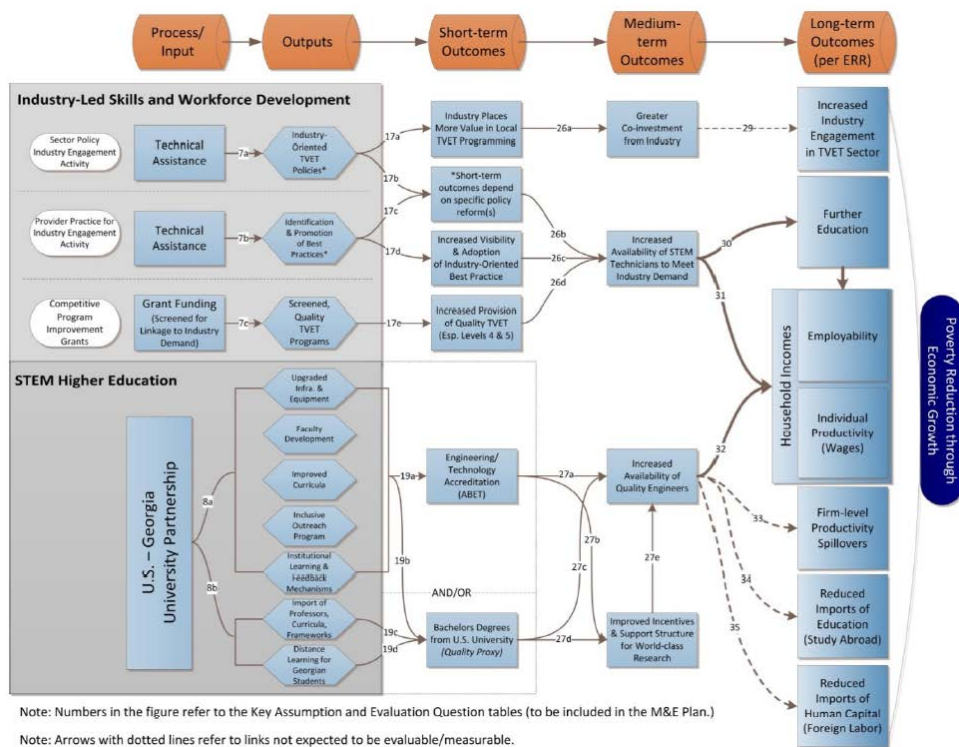
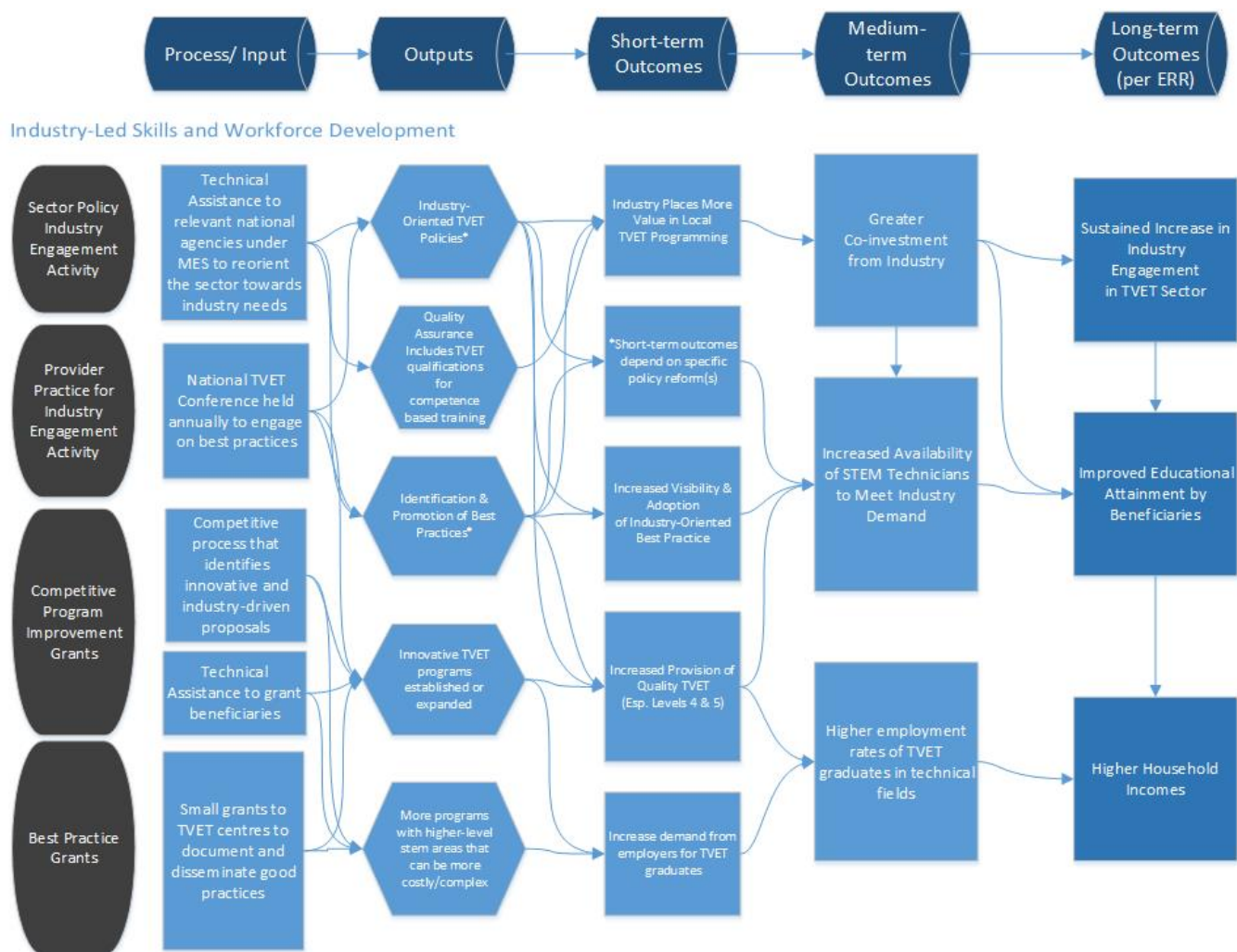


Figure 3: ISWD Project Logic



3.3. Projected Economic Benefits

The estimated economic rate of return (ERR) and number of beneficiaries for each project is summarized in the table below:

Component		Budget (USD million)	Estimated ERR	Estimated Beneficiaries
I. General Education Project		76.5	11%	1.7 million
	School rehabilitation activity (including O&M fund)	56.5	10%	348,296
	Teacher training activity	14	18%	1.7 million
	Assessment activity	6	no estimate*	
II. TVET Project		16		
	Competitive grant activity	12	23%	12,389
	Strengthening sector policy and provide practice	4	no estimate	

III. STEM Higher Education Project	30	10%	47,124
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* The cost of the assessment activity is included in the project level ERR estimate.

3.3.1. Improving General Education Quality Project

The project-level economic rate of return (ERR) for the *Improving General Education Quality Project*, combining all three proposed activities, is estimated at 11%. Estimates for the individual activities are discussed below. The *Education Assessment Support Activity* does not have a separate ERR estimate but the \$6.0 million cost of this activity is included in the 11% project level ERR estimate.

Project/Activity	ERR	Estimated beneficiaries including family members, over 20-year project lifetime
Improved Learning Environment Infrastructure Activity	10%	348,296
Training Educators for Excellence Activity	18%	1.7 million
Improving General Education Quality Project	11%	1.7 million*

*Beneficiaries of the Improved Learning Environment Infrastructure Activity are a subset of the Training Educators for Excellence Activity.

3.3.1.1. Improved Learning Environment Infrastructure Activity

The economic benefit of the Improved Learning Environment Infrastructure activity is based on the number students expected to attend the rehabilitated public schools. At the time of Compact signing in July 2013 it was estimated that up to 130 schools would be rehabilitated with an average enrollment of 350 students per school. Subsequent engineering studies for an initial batch of 12 schools indicated that costs are likely to be substantially higher than previous estimates resulting in fewer schools rehabilitated. The number of schools that can ultimately be rehabilitated within the budget envelope of \$56.5 million for this activity (including \$2.5 million for operations and maintenance support) is currently unknown. However, to reach an estimated rate of return of 10%, initial enrollment in the rehabilitated schools will need to be approximately 37,000 to 38,000 students. This can be achieved, for example, if 107 schools are rehabilitated with an average enrollment of 350 students per school, or a smaller number of schools with higher average enrollment.

Maintenance assumption: The benefits of this activity depend on future maintenance of the rehabilitation work. If adequate maintenance is not carried out, the useful lifetime of the investment is unlikely to exceed ten years, in which case the estimated ERR declines to less than 5%.

Substantial U.S. literature indicates that physical infrastructure has an important impact on learning outcomes in general education. The characteristics that have the greatest impact are classroom temperature, air quality, lighting, science labs/equipment, and acoustics.⁵ By replacing wood stoves in

⁵ (1) Earthman, Glen I. (2002), *School facility conditions and student academic achievement*, Los Angeles CA: UCLA's Institute for Democracy, Education and Access. (2) Earthman, Glen I. (2004), *Prioritization of 31 criteria for school building adequacy*, ACLU Maryland.

classrooms with central heat, and by improving electrical systems, roofs, windows, and classroom facilities, the Improved Learning Environment Infrastructure Activity is expected to have a major impact on temperature, air quality, and lighting leading to an enhanced learning environment that results in i) improved school transition rates, ii) higher employment probabilities, and iii) higher future earnings for students educated in the rehabilitated schools.

Benefit streams and key assumptions

The current economic analysis of the Improved Learning Environment Infrastructure Activity foresees several benefit streams supporting the investment including:

- increased transition from lower to upper secondary school (from 9th to 10th grade) and higher 12th grade graduation rates
- increased post-secondary enrollment (vocational and higher education)
- higher probabilities of employment (including self-employment) as a result of achieving higher levels of education
- higher earnings for students who achieve higher levels of education

Key assumptions underlying the benefit streams are: (i) a minimum of 37,000 students initially enrolled in rehabilitated schools (for example, 107 schools rehabilitated with average enrollment of 350 students per school); (ii) a 10% improvement in school transition rates and post-secondary enrollment rates; and (iii) higher probabilities of employment for students who achieve higher levels of education as a result of improved school facilities. The 10% increase in school transition rates is motivated by a 2004 World Bank study which found that rehabilitation of village schools in Georgia resulted in a 13% increase in secondary school enrollment.⁶

Sensitivity Analysis

The table below illustrates the impact on the estimated rate of return for the Improved Learning Environment Infrastructure Activity of changes in one key variable holding other variables constant. Column 4 shows the critical value of each variable beyond which the ERR falls below the 10% hurdle rate. Column 5 reports the estimated ERR if the variable drops below its base value by 25% and column 6 reports the estimated ERR if the variable exceeds its base value by 25%. Movement in more than one variable would have a compound impact on the ERR. The table is based on the assumption that the number of schools rehabilitated and average enrollment is sufficient to achieve an economic rate of return of 10%, as discussed above.

Improved Learning Infrastructure Activity

Baseline economic rate of return = 10% (assuming 107 schools are rehabilitated and average enrollment per school=350)

⁶ M. Lokshin and R. Yemtsov, “Combining Longitudinal Household and Community Surveys for Evaluation of Social Transfers: infrastructure rehabilitation projects in rural Georgia,” *Journal of Human Development* Vol. 5, No. 2, July 2004.

Critical Variable	Explanation	Base/Target Value	Critical Value of Variable Below Which ERR is <10%	ERR at Variable Base Value Minus 25%	ERR at Variable Base Value Plus 25%
(1)	(3)	(2)	(4)	(5)	(6)
Average School Size (# of Students)	Average Enrollment per School	350	350	8.70%	11.10%
# of Schools	Total Number of Schools Rehabilitated during Compact	107	107	8.70%	11.10%
Probability of Employment or Self-employment	Probability of Employment for High School Graduates*	62%	62%	8.50%	11.30%
Increase in School Transition Rate	Percent Increase in School Transition Rates: G1-G9, G9-G12, G12 - Higher Education, G12 to Vocational Education	10%	10%	9.80%	10.30%

* Calculated from 2012 IHHS as (number of high school graduates employed or self-employed)/(total high school graduates)

3.3.1.2. Training Educators for Excellence Activity

The ERR for the Training Educators for Excellence Activity is estimated to be 18%. The estimate is based on estimates of the impact of teacher professional development on learning outcomes and future incomes drawn based on meta-analysis from the U.S. studies. The full Activity cost, estimated at \$14 million, is included in the ERR estimate.

There are very few rigorous studies examining the impact of in-service teacher professional development on learning outcomes in developing countries. Even in the United States, where this topic has been extensively studied, a recent review of more than 1,300 studies found only nine that met evidence standards.⁷ Of these nine studies, five were randomized control trials and the other four used quasi-experimental design. The average effect size, defined as the standard deviation change in student achievement of the intervention group compared with the control group, was 0.54 across all nine studies, and 0.51 across the five randomized control trials. The impact on math test scores in a randomized control trial was 0.50 and this impact was statistically significant. However, the effect size for secondary school math was lower, ranging from 0.13 (Blank and de las Alas, 2010) to 0.27 (Harris and Sass, 2008). Given the lack of comparable high quality studies in developing countries, the analysis in this section makes use of the U.S. finding that teacher professional development programs can raise student achievement and assumes an increase of 0.18 of a standard deviation, in line with the U.S. findings for secondary school math.

⁷ REL 2007, "Reviewing the evidence on how teacher professional development affects student achievement," Institute of Education Sciences, U.S. Department of Education, October 2007.

Several U.S. studies have traced the impact of improved test scores on student's future earnings by following cohorts after they leave high school and enter the labor force. Hanushek (2010) quotes several studies showing that a one standard deviation increase in mathematics performance at the end of high school translates into 10-15% higher annual earnings" and uses a point estimate of 12% as the most likely increase while noting that the estimates come from early in the worker's career (mid-to-late twenties) "suggesting the impact may actually rise with experience."⁸ The current analysis uses Hanushek's point estimate of 12%.

Benefit Streams and key assumptions

The current economic analysis of the Training Educators for Excellence Activity foresees two benefit streams supporting the investment:

- Increased student achievement resulting from increased teacher knowledge of subject content and pedagogy. Mathematics performance is expected to improve by 0.18 of a standard deviation, as found in U.S. studies. This is a conservative estimate given that the proposed project intends to provide considerably more training hours per teacher than was provided in U.S. in-service professional development programs.
- Increased future earnings resulting from improved learning outcomes. In U.S. studies, a one standard deviation improvement in mathematics performance was found to translate into a 12% increase in earnings. Given an estimated 0.18 standard deviation increase in test scores resulting from the Activity, future earnings are expected to rise by 2% annually.

⁸ Hanushek, Eric (2010) "The Economic Value of Higher Teacher Quality," Urban Institute Working Paper 56, December 2010.

3.3.2. Industry-led Skills and Workforce Development Project

3.3.2.1. Competitive Program Improvement Grants Activity

The estimated ERR for the Competitive Program Improvement Grants Activity is 14.0% with a 95% confidence interval of 6% - 22%. This assumes total costs of \$12 million that covers Activity due diligence funds (assumed to be 20% of proposal costs), technical assistance (assumed to be 15% of proposal costs), and capital-fund costs. Other costs outside of MCC funding include student tuition costs and private co-investment. Private investment (either in cash or in kind) is assumed to average approximately 30% of grant size (with a minimum of 0% and a maximum of 300%), based on experiences in Mongolia. Higher levels of private investment are correlated with better wage and employment outcomes, assuming that heavy industry involvement is a strong signal of demand for that skill. Grants are assumed to range in size from \$300,000 – \$3 million; with smaller grants likely to produce smaller numbers of graduates (the average cohort size is assumed to be 40). Tuition cost to students is assumed to be the equivalent to the voucher the government gives for 4/5 – level TVET (2500 GEL or around \$1500 per year).

Maintenance assumption: This model assumes operations and maintenance costs of 3% of the grant size starting from the second year after a grant is awarded. This assumes that all grant monies are spent the year they are awarded, which may be an ambitious assumption. The assumption of 3% may also be small. Increasing O&M costs to 5% does not change the ERR estimate.

Georgian employers have expressed a need for highly trained technical vocational students that are currently not available. Although Georgian TVET centers are now permitted to offer high level (1 – 2 year certificate) TVET courses, with limited exceptions they have not begun the process of developing such programs. In some cases, engineering and other science and technology employers have taken it upon themselves to begin training programs to produce the skilled workers they require. Providing Georgian students with the opportunity to achieve higher levels of technical training should also allow them to receive higher future earnings.

Benefit streams and key assumptions: The current economic analysis of the Competitive Program Improvement Grants Activity foresees two distinct benefit streams supporting the investment:

- increased earnings by graduates
- higher probabilities of employment

Key assumptions underlying the benefit streams are: (i) a nominal 23.8% increase in income would accrue to graduates of technical vocational programs receiving grants (varying normally between 0 and 300% with a standard deviation of 17%), (ii) a nominal 9% increase in the probability of employment (varying normally between 0 and 14%, with a standard deviation of 6%). Because we are modeling a percentage increase in wages over a baseline wage value, the most critical factor affecting the ERR is the base wage of current graduates, which accounts for around 66% of the variance in the ERR. The current estimate is appropriately conservative for producing level IV and V TVET engineering technicians. Based on a 2010 household survey, we currently assume graduates from TVET programs supported by grants would go from the salary equivalent for “plant and machine operators and assemblers” with elementary vocational school education (319 GEL/month in 2010, 339 GEL/per month equivalent in 2011) to “plant and machine operators and assemblers” with higher education (23.8% wage increment). After speaking with industry

representatives, they suggested this was overly conservative. As an upper end to potential wage increase, then, we would take the example given by BP. Entry-level technicians currently coming to them would receive \$700 per month (plus six months English language training). If those workers were coming out of the certificate program BP is planning to support, their starting salary would be \$1500 per month, since they would not have to go through a lengthy on-the-job training process that entry-level employees currently go through. Thus, the ERR uses a nominal base wage (and minimum) of 319 GEL/month with an upper end of 1,120 GEL/month and a standard deviation of 400 GEL, as the figure of 319 GEL/month is likely very low, since it does not differentiate between the incomes of those individuals working full time and part time.

These same benefits would *not* necessarily be expected if grants supporting level I - III TVET programs or non-STEM fields are funded. Wage differentials and base wages for non-technical fields have not been identified and would likely vary widely depending on the fields proposed. Any grant proposals approved which fall under the levels I-III or non-STEM fields would require strong proof of their relevance and value in the job market. Additionally, it is assumed that only the best proposals would be chosen, however, there may be political pressures that mean the best proposals are not selected. This is a very real risk which could lower the ERR significantly. So long as grant manual documents and other guidance include strong economic criteria, this might be avoided.

As part of a risk identification process, the economists identified the key variables most relevant to achieving the outcomes. The following table presents a sensitivity analysis around those key variables and the critical levels to which they have to change before the investment loses viability, and the implications for design of those changes.

**Technical and Vocational Education and Training
(TVET) Baseline Economic Rate of Return 14%**

Critical Variable	Explanation	Base/Target Value	Critical Value of Variable Below Which ERR is <10%	ERR at Variable Base Value Minus 25%	ERR at Variable Base Value Plus 25%
(1)	(2)	(3)	(4)	(5)	(6)
Average Base Monthly Wage of Existing TVET Graduates	Average Base Value of Monthly Wage for Existing TVET Graduates that are Currently Working as Engineering Technicians	GEL 339	GEL 280	8.00%	18.00%
Income Increase	Average Increase of Salary of Graduates from MCC-funded Programs over Graduates from Existing TVET Programs	23.80%	9.00%	12.00%	14.00%
Average Cohort Size	Average Cohort Size of Programs Funded	40	9	12.00%	14.00%

Critical Variable	Explanation	Base/Target Value	Critical Value of Variable Below Which ERR is <10%	ERR at Variable Base Value Minus 25%	ERR at Variable Base Value Plus 25%
Total Number of Students Enrolled in 5 years	Total Number of Students that are Expected to Start Supported TVET Programs within the Lifetime of the Compact	1500	1000	10.00%	13.00%
Benefit Timing	Compact Year in which Graduates Enter the Workforce	Year 4	Year 7	12.00%	11.00%

3.3.2.2. Strengthening Sector Policy and Provider Practice

The Strengthening Sector Policy and Provider Practice Activity may be necessary in order to support a growing body of good practice in Georgia and to help the TVET system as a whole achieve a higher level of quality and standardization. However, it is not clear what the quantifiable benefits of this Activity would be and thus we cannot develop a realistic estimate of the benefits. Similarly, since it is still not clear in exactly what ways this Activity could help support the other TVET activities, the cost of this Activity is not included in the costs of the Competitive Program Improvement Grants Activity.

Currently benefits from improving provider practice activities are not included in the economic analysis, since we do not have the data with which to estimate potential outcomes. However, these activities are expected to have some potential economic benefits such as lowering unemployment rates, potentially raising incomes, or allowing students who otherwise might not have attended tertiary education to continue their studies and earn higher incomes. Additionally, they should help to bolster the outcomes of the larger grants and spread improvement more thoroughly throughout the entire TVET system. Thus, while there are no explicit benefits being measured from the Strengthening Sector Policy and Provider Practice Activity, those costs (\$2,000,000), the Competitive Program Improvement Grants Activity ERR calculates the ERR both with and without these costs. The ERR without these costs is presented above. The ERR including the costs of the sector strengthening efforts is 13%, with a 95% confidence interval between 6% and 21%.

3.3.3. STEM Higher Education Project

The economic rate of return for the higher education project is estimated from information in the technical proposal and financial proposal received from San Diego State University in February 2014. Based on costs and enrollment projections in this proposal, the estimated economic rate of return for the STEM Higher Education Project is 11%. This return assumes an average operating cost (average annual tuition) of \$7,434 per student in the U.S. degree program and \$1,589 in the ABET-accredited partner programs from Year 7 on. If average annual operating cost/tuition rises above \$8,800 per student, the estimated rate of return would decline below 10%.

The initial estimate assumed a combined annual student intake in the US degree programs of 495 in the first year of the program (compact year 2) rising to 610 by Year 5, with total enrollment across all four

years stabilizing at 2,155 from Year 7 on. Lower enrollment numbers would reduce the estimated rate of return. The actual enrollment for the first year of the program, 2015-16 intake (compact year 2), however, fell short of the estimated 495 students, and with 86 students. 126 students enrolled in 206-17 (Cohort 2), and 201 enrolled in 2017-18 (Cohort 3). The SDSU Strategic Growth Plan (September 201&) estimates a grand total by Year 5 (cumulative) to be 685 students. This accordingly is expected to lower the rate of return on the project.

Benefit Streams and key assumptions

The current economic analysis of the STEM Higher Education Project foresees four distinct benefit streams supporting the investment:

1. higher future earnings for graduates of the new programs relative to the amount that these individuals would have earned if they had attended the best Georgian university;
2. human capital externalities in the form of spillovers from an increase in the supply of well-educated STEM professionals on business productivity and on earnings and wages of other workers;
3. savings to the Georgian economy from reduced imports of highly educated and more expensive expatriate STEM professionals, and
4. savings for those students who, in the absence of the new programs, would have pursued more costly undergraduate STEM degrees at U.S. or European universities.

The calculations underlying each of these four benefit streams are discussed briefly below:

a. Wage differential for graduates of the proposed STEM programs

The quality of the proposed programs is anticipated to be on par with good STEM programs in the U.S. and Europe. Admittance would therefore be highly selective, similar to U.S. admissions requirements, and only the very best Georgian students would be accepted. For these highly qualified individuals, it can be assumed that, in the absence of the project, they would attend the best Georgian university. The earnings differential for these individuals is therefore the amount that they would earn after graduating from the new university relative to what they would earn if they graduated from the best local STEM programs.⁹

To estimate the likely earnings premium, a special survey of Georgian businesses was carried out through local chambers of commerce and managed by the Caucasus Resource Research Center. Respondents were asked to evaluate two hypothetical job candidates whose backgrounds are identical in all respects except that one candidate graduated from the best Georgian engineering program while the other candidate graduated from a good U.S. engineering program. One group of employers was sent a CV describing the candidate with a local education and another group was sent a CV describing the candidate with an international education. After evaluating the CVs, employers were asked to state a salary offer. The median salary offer for the candidate with a U.S. degree was \$1,150 per month, while the median salary offer for the candidate with a Georgian degree was \$800, a difference of 44%. This wage differential, adjusted for anticipated growth of earnings due to accumulated experience and future Georgian economic

⁹ The counterfactual is that these individuals would receive a lower *quality* university education, not that they would not attend university.

growth, was extrapolated over a thirty year period post-graduation to estimate the likely increment in lifetime earnings for future graduates of the new STEM programs.

b. Human capital externalities

In addition to private returns captured by the wage differential, education can have additional social returns. For example, an increase in the supply of educated workers can raise the productivity of businesses, leading to increased labor demand and higher earnings for a broader group of workers.

Education spillovers are commonly discussed in theoretical literature but there are few good empirical estimates of the magnitude of these spillovers. Most of the empirical literature is based on research in the U.S. and other high income economies. No suitable studies were located for Georgia or countries with similar economic conditions. Consequently an analysis of education spillovers based on U.S. data was used for this analysis and adapted to Georgian labor market conditions.

Two recent U.S. studies measure education spillovers by comparing both changes in plant level productivity over time and changes in wages of workers with different levels of education. The studies find that both productivity and wages rise more quickly in cities that experience a large increase in the share of college educated workers in the labor force, relative to cities where the college share rises more slowly. The studies also find that the increases in productivity are offset by increases in labor costs so that changes in wages fully reflect productivity growth. A one percentage point increase in the share of college graduates in the labor force raises high school dropouts' wages by 1.9%, high school graduates' wages by 1.6% and college graduates' wages by 0.4%. We apply these parameters to Georgian labor force data to calculate an average increase in wages for peripheral workers, over and above the higher wage captured by the individual graduate.

c. Replacement of expatriate STEM professionals in Georgia with Georgian professionals

Due to skills shortages in Georgia, some high skill positions are currently occupied by expatriate workers. If the proposed STEM program is successful, the supply of highly skilled Georgian STEM professionals should grow over time, allowing some substitution of local workers for expatriate workers. This would allow a savings to the Georgian economy from reduced payments to foreign workers.¹⁰

d. Savings for students who would have studied abroad

Some Georgians who would otherwise go abroad for undergraduate education might be induced to study at home if the proposed STEM bachelor program is successful. This would allow a savings on room, board and transport, as costs are likely to be lower in Georgia than in the U.S. or Europe.

Key assumptions underlying the benefit streams are: i) a 44% earnings premium for US degree program graduates, ii) an initial incoming class size in the US degree program of 495 rising to 610 by Year 5, and iii) a spillover impact of between 0.4% and 1.9% on productivity and earnings of other workers as a result of an increased supply of STEM graduates.

Sensitivity analysis and resulting ranges of economic return

¹⁰ An estimate of the number of foreign STEM professionals working in Georgia was supplied by the MCA-Georgia.
MCA Georgia Monitoring and Evaluation Plan

The table below illustrates the impact on the estimated rate of return for the STEM Higher Education Project of changes in one key variable holding other variables constant. Column 4 shows the critical value of each variable beyond which the ERR falls below the 10% hurdle rate. Column 5 reports the estimated ERR if the variable drops below its base value by 25% and column 6 reports the estimated ERR if the variable exceeds its base value by 25%. Movement in more than one variable would have a compound impact on the ERR. The two most important variables are operating cost per-student and cohort size.

Higher Education ERR Sensitivity Analysis: baseline ERR = 11%

Critical Variable	Explanation	Base/Target Value	Critical Value of Variable Below Which ERR is <10%	ERR at Variable Base Value Minus 25%	ERR at Variable Base Value Plus 25%
(1)	(2)	(3)	(4)	(5)	(6)
Operating Cost per Student, US Degree Program	Average CY7 Operating Cost per Student in US Degree Programs (Average Operating Cost Over 4 Years, Freshman to Senior Class)	USD 7,434	USD 8,772	12.40%	9.70%
Enrollment Year 7*	Total Enrollment (Freshman to Senior Class) in US Degree Programs, Year 7	2,115	1,918	8.80%	12.70%
Investment Cost	Upfront Investment Cost during the % year Compact Period (USD million)	USD 29	USD 54	11.20%	10.60%
Incremental Earnings, US Degree Program	Anticipated % Increase in Earnings of New Program Graduates due to Improved Quality of Education, US Degree Program	44%	38%	9.40%	12.30%
Base Wage	Estimated Average Annual Earnings of New Graduates Without the Program	USD 9,600	USD 8,352	9.10%	12.50%

* The enrollment sensitivity analysis assumes that enrollment in the ABET accredited partner degree programs changes in proportion to enrollment in the US degree programs.

3.3.4. Program Beneficiaries

3.3.4.1. Improving General Education Quality Project

In general, beneficiaries of the Improving General Education Quality Project would be all Georgian students in grades 1-12, who would benefit from both student assessments and teacher professional development. A smaller subset of students would also benefit from improvements to the physical infrastructure of their schools.

Activity 1: Improved Learning Environment Infrastructure Activity. Assuming that 107 schools are rehabilitated, with an average enrollment of 350 students per school, the initial beneficiaries of this Activity would be 37,450 students. New students entering these schools each year would add to the total number of beneficiaries over a twenty year project lifetime. Most rehabilitated schools would have twelve grades; hence the average intake of new students each year would be approximately 3,121 students. Over a twenty year project lifetime this would add an additional 59,299 students for a total of 96,749 student beneficiaries.¹¹ Including family members, total beneficiaries are estimated at approximately 348,296. These beneficiaries are a subset of Activity 2 beneficiaries.

Activity 2: Training Educators for Excellence Activity. The beneficiaries of this Activity would be students whose teachers take part in professional development. It is envisioned that all secondary school math, science, ICT and English teachers would receive training, benefitting all students in grades 7-12 over the twenty year expected lifetime of the project. In 2012, total enrollment in grades 7-9 was 134,882 and in grades 10-12, 113,602 students. Assuming an implementation success rate of 75%, 101,200 lower-secondary and 85,200 upper-secondary students (a total of 186,400 secondary students) would initially benefit from this program. With an annual intake into grade 7 of approximately 48,000 students and a 75% implementation rate, roughly 36,000 new student beneficiaries would enter secondary school each year. Over a twenty year project lifetime, this would add an additional 684,000 student beneficiaries for a total of 870,400 student beneficiaries.¹² Including family members and adjusting for possible double counting, total beneficiaries are estimated at approximately 1.7 million individuals over twenty years.

3.3.4.2. Industry-led Skills and Workforce Development Project

The number of beneficiaries of the Industry-led Skills and Workforce Development Project is estimated to be 26,000. Beneficiaries will likely be from poorer households, the population that has traditionally taken advantage of technical vocational training. This Project is also expected to strengthen sector policy, to facilitate the creation of new programs, and to promote the uptake of best practice throughout the sector.

3.3.4.3. STEM Higher Education Project

The beneficiaries of the STEM Higher Education Project are students who will graduate from the new degree programs, including both the US degree programs and the programs that are expected to eventually attain ABET or similar accreditation. The number of graduates is estimated from the annual intake numbers for each program as stated in the SDSU financial proposal of February 2014 and expected graduation rates. Over a twenty year period (or 20 cohorts) it is anticipated that 8,493 students will graduate from the US degree programs and 4,596 students will graduate from the ABET or equivalent

¹¹ The initial beneficiaries will be all students in the rehabilitated schools at the time of rehabilitation. Counting this initial cohort as year one, then over the remaining nineteen years of a twenty year project, an additional 59,299 students will enter the schools (19 x 3121).

¹² The initial cohort of student beneficiaries will be approximately 186,400 students, given an assumed implementation success rate of 75%. Counting this as the first year, then over the remaining 19 years an additional 684,000 students will benefit from the Activity for a total of 870,400 student beneficiaries.

accredited programs. Including family members, the total number of beneficiaries over twenty years is estimated at 47,124.

4. Monitoring Component

The Compact will be monitored systematically and progress reported regularly through the indicator tracking table (ITT). There are four levels of indicators that follow from the program logic framework: (i) process, (ii) output, (iii) outcome and (iv) goal. The various indicator levels map to the logical framework and thus allow Project developers and managers to understand to what extent planned activities are achieving their intended objectives. Monitoring data will be analyzed regularly to allow managers of MCA-Georgia and MCC to make programmatic adjustments as necessary with a view towards improving the overall implementation and results of the Program.

4.1. Summary of Monitoring Strategy

4.1.1. Indicator Levels

The M&E plan is framed and constructed using the program logic framework approach that classifies indicators as process, output, outcome, and goal indicators.

Goal indicators monitor progress on Compact goals and help determine if MCA-Georgia and MCC are meeting their founding principle of poverty reduction through economic growth. Outcome indicators measure intermediate or medium-term effects of an intervention and are directly related through the Program Logic to the output indicators. Output indicators measure the direct result of the project activities—most commonly these are goods or services produced by the implementation of an activity. Process indicators record an event or a sign of progress toward the completion of project activities. They are a precursor to the achievement of Project Outputs and a way to ensure the work plan is proceeding on time to sufficiently guarantee that outcomes will be met as projected.¹³

4.1.2. Indicator Classification

According to MCC's Monitoring and Evaluation Policy all indicators must be classified as one of the following types:

- Cumulative – to report a running total, so that each reported actual includes the previously reported actual and adds any progress made since the last reporting period.
- Level – to track trend over time.
- Date – to track calendar dates as targets

4.1.3. Common Indicator

MCC has introduced common indicators for external reporting across all MCC Compacts within certain sectors. Common indicators allow MCC to aggregate and reports about results across MCA countries. MCC sector experts have developed these indicators to document sector level progress relevant to different project activity types. Each MCA must include the common indicators in their M&E Plan when the indicators are relevant to that country's Compact Activities. The common indicators relevant to the MCA Georgia Compact are included in Annexes I and II of this M&E plan.

¹³ The indicator levels are formally defined in MCC's *Policy for Monitoring and Evaluation of Compacts and Threshold Programs*.
MCA Georgia Monitoring and Evaluation Plan

4.1.4. Indicator Documentation Table

The Indicator Documentation Table provides relevant details for each indicator by Project and can be found in Annex I. It provides descriptions for the indicator structure by specifying each indicator's: (i) title; (ii) definition; (iii) unit of measurement; (iv) data source; (v) method of collection; (vi) the frequency of collection; and (vii) party or parties responsible.

4.1.5. Indicator Definitions

This M&E Plan provides a succinct description of each indicator in Annex I. The definition of the Outcome and Objective indicators was developed by the M&E Units of MCC and MCA-Georgia in close coordination and are derived from Compact documents, the economic analysis, participatory exercises with stakeholders' participation, from national strategies and sector papers and statistics published by the National Statistics Office of Georgia (Geostat) or Georgia's Education Management Information System (EMIS). The definitions for Output and Process indicators are derived from Compact documents, Implementing Entities and implementers' work plans, and MCC external reporting requirements.

4.1.6. Data Sources

Data sources have been identified and vetted for all the indicators listed in Annex I. Generally, monitoring data will be obtained from various primary sources, including Implementing Entities, Service Providers, and MCA-funded surveys. In addition, the MCA-Georgia M&E unit will obtain secondary data for the high level indicators from the relevant government agencies including Geostat.

4.1.7. Methods of Data Collection

The data for many objective and outcome indicators will be drawn from surveys conducted by MCA-Georgia in conjunction with Implementing Entities and Service providers while the lower-level indicators will be drawn from the Project implementers' records. Indicators will be reported through a Management Information System (MIS). Data will be reported to MCA-Georgia on a monthly, quarterly, or annual basis, depending on the indicator's requirements. To ensure this, MCA-Georgia will set proper cooperation and collaboration with Implementing Entities and Contractors by putting necessary requirements for Contractors to develop and put in place proper reporting mechanisms, including potentially connection to MCA-Georgia's future MIS.

Where and if necessary, MCA-Georgia will commission surveys to collect special data in coordination with the institutions in charge of each project area. Data collection instruments (including surveys and data collection forms and registries) will be designed in a participatory manner with the Dedicated Teams of the relevant Implementing Entities. In order to provide for the specific needs of evaluations, Impact Evaluators shall be involved in the design of the surveys, including in setting the survey strategy, designing questionnaires and helping developing TORs for survey contractors.

4.1.8. Frequency of Data Collection

During the Compact period, data will be collected on a monthly, quarterly or annual basis, depending on the indicator.

Some of the Contractors and Implementing Entities will be required to report on project milestones and outputs quarterly, others annually. Those arrangements will be recorded in the respective contractor's TORs and Implementing Entity Agreements. Decisions on frequency will be taken for each individual implementation-related contract to reconcile MCA-Georgia's need for fresh data with administrative burden and cost efficiency.

4.1.9. Table of Indicator Baselines and Targets

To ensure that the Program is on track to meet its overall goals and objectives, the monitoring indicators are measured against established baselines and targets, derived from ex-ante economic rate of return analysis, other types of analysis, and project planning documents. The targets reflect the underlying assumptions made in program design about what each activity would likely achieve. Baselines and target levels for each indicator are defined in the Table of Indicator Baselines and Targets (Annex II).

Baseline figures were established using the most current and appropriate data available prior to an Activity's implementation. This can include the MCC/MCA Baseline Survey, government surveys such as those conducted by Geostat and other organizations' records. If baseline figures are revised from those used in the economic analysis, the Activity's targets, should be revised accordingly.

Targets are derived from 1) the initial economic analysis used in justifying Program investments, 2) project documents, 3) discussions with experts and consultants, and 4) implementation work plans.

Any revision of baselines and targets must adhere to MCC's policies regarding baseline and target revisions and will require MCC's formal approval.

4.1.10. Disaggregation of Data

Where applicable, the data will be collected, analyzed, and reported by income level, gender, age groups, regions, etc. in order to portray the benefits accruing to the different constituencies of the population.

The Indicator Documentation Table (Annex 1) identifies which indicators should be disaggregated, to the extent that it is feasible and cost-effective. Select disaggregated figures identified in the Indicator Documentation Table (Annex 1) will be reported to MCC in the quarterly Indicator Tracking Table.

4.1.11. Pending Baselines and Targets

At earlier stages of Compact a certain number of each Project's indicators, baselines and targets could be pending, particularly for lower level output and process indicators. The majority of these baselines and targets will be established once the feasibility and design studies' results are known. Others are pending updated data once implementation contracts are awarded and contractors have presented their work plans.

4.2. Data Quality Reviews (DQRs)

Data Quality Reviews will be conducted in accordance with the requirements of the MCC M&E Policy.

The objectives of DQRs are to assess the extent to which data meets the standards defined in the MCC M&E Policy in the areas of validity, reliability, timeliness, precision and integrity. Data quality reviews will be used to verify the consistency and quality of data over time across implementing agencies and other reporting institutions. DQRs will also serve to identify where the highest levels of data quality is not possible, given the realities of data collection. DQRs will help ensure that.

The particular objectives for the data quality reviews will be identification of the following parameters: (i) what proportion of the data has quality problems (completeness, conformity, consistency, accuracy, duplication, integrity); (ii) which of the records in the dataset are of unacceptably low quality; (iii) what are the most predominant data quality problems within each field.

MCA Georgia will contract an independent data quality reviewer in compliance with MCC Program Procurement Guidelines. The entity responsible for data quality reviews is expected to be hired in Year 4 of the Compact. The M&E Director and other Officers, as appropriate, within MCA Georgia should also regularly check data quality. In doing so, MCA Georgia may hire individual data quality monitors to monitor data collection and quality, as needed. Besides independent DQRs, the MCA-Georgia M&E Unit will also conduct field visits on a regular basis or whenever requested by MCC, to review the quality of the data gathered through this M&E Plan. This exercise will be done in coordination with the respective project stakeholders.

4.3. Standard Reporting Requirements

Performance reports serve as a vehicle by which the MCA Georgia Management informs MCC of implementation progress and on-going field revisions to Project work plans. Currently, MCC requires that MCA-Georgia submit a Quarterly MCA Disbursement Request and Reporting Package (QDRRP) each quarter. The QDRRP must contain a quarterly **Indicator Tracking Table (ITT)** which tracks progress against indicators in the M&E Plan. Guidance on fulfilling these reporting requirements is available on the MCC website at: www.mcc.gov/pages/countrytools/tools/compact-implementation.

5. Evaluation Component

5.1. Summary of Evaluation Strategy

Evaluations assess as systematically and objectively as possible the Program's rationale, relevance, effectiveness, efficiency, merits, sustainability and impact. The evaluations will strive to estimate the impacts on the targeted beneficiaries and wider regional or national economy. The evaluations will provide MCC, MCA-Georgia and other stakeholders with information during the Compact on whether or not the intended outcomes are likely to be achieved and at the Compact's end or after on the impacts that are attributable to the Program.

The evaluation strategy will be based upon scientific models that ensure the advantages of neutrality, accuracy, objectivity and the validity of the information. These models will comprise experimental and quasi-experimental designs as well as statistical modeling. Methodologies will be selected considering the cost-effectiveness of an evaluation’s expected learning.

More than formal documentation of Program results, evaluation will serve as a learning tool during Compact implementation and beyond. MCC will strive to conduct evaluations in a participatory way to ensure their success and relevance while protecting the evaluations’ objectivity. The participatory approach will also include continuous training for Program staff and stakeholders on evaluation methods. Participatory, qualitative evaluation will provide an opportunity to better understand stakeholders’ perceptions of the results, engage a broad cross-section of stakeholders including by gender, and enhance ownership of the outcome of the development process.

While all MCC investments are built with the goal of spurring economic growth and poverty reduction, the proposed investments are directed at learning outcomes of students, meaning that household income gains are unlikely to be measurable during the life of the Compact. Fortunately, literature on the economics of education does give confidence in the positive income impacts of increased investments in education, and such gains will allow for the proxy measurement for the income gains from improvements in educational outcomes. Thus, the evaluation of impacts on beneficiary incomes will be focused on an ex-post recalculation of ERR models, which will allow MCC to combine both real income gains and education gains into a single measurement of the gains toward economic growth. Therefore, beyond proxy-means measurement of income gains, the evaluation strategy of the Compact will be that of measuring the degree to which the project’s intermediate outcomes (such a learning gains) come to fruition, rather than attempting to measure income gains directly.

The Respective Roles of MCA-Contracted Evaluations and MCC Impact Evaluations

Both MCC and MCA Georgia will fund evaluations of the Georgia Compact from their respective budgets. MCA Georgia will fund Ad Hoc Evaluations and Mid-Term/Final Evaluations. MCC will fund Impact or Performance Evaluations of every Project.

The roles of the various evaluations are different and are intended to be complementary. The primary difference is the source of funds and the respective scopes. Methodologies also tend to differ though not necessarily. Common differences for each evaluation are noted in the following sections. The table below highlights some key differences.

Common Differences among Evaluations Types

	Mid-Term and Final Evaluation	MCC Impact Evaluation	MCC Performance Evaluation	Ad Hoc Evaluation
Main Objective	Evaluates Compact progress and results in a comprehensive manner	Measures the changes in income and/or other aspects of well-being that are <i>attributable</i> to a defined (through a modeled counterfactual)	A study that seeks to answer descriptive questions, such as: what were the objectives, how was it implemented and perceived; whether expected	Addresses short-term information gaps

	Mid-Term and Final Evaluation	MCC Impact Evaluation	MCC Performance Evaluation	Ad Hoc Evaluation
			results occurred and are sustainable	
Methodologies	<ul style="list-style-type: none"> Interviews Case studies Statistical analysis of primary data Summaries of secondary data (including Impact Evaluations) 	<ul style="list-style-type: none"> Experimental Quasi-experimental Other advanced statistical analysis 	<ul style="list-style-type: none"> Pre-Post comparison Ex-post ERR Other 	(varies)
Strengths	<ul style="list-style-type: none"> Broad survey of all issues Focus on implementation issues 	<ul style="list-style-type: none"> Attempts to establish attribution Focus on high level results (impacts) Use of highly specialized researchers Quantitative focus 	<ul style="list-style-type: none"> Attempts to answer important questions for learning about worked well and what could have been done better 	<ul style="list-style-type: none"> Executed quickly In depth analysis of a single issue
Funding	MCA Compact	MCC budget	MCC budget	MCA Compact

5.1.1. MCC Impact and Performance Evaluations

Impact and performance evaluations support two objectives derived from MCC's core principles: accountability and learning. Accountability refers to MCC and MCA-Georgia's obligations to report on their activities and attributable outcomes, accept responsibility for them, and disclose these findings in a public and transparent manner. Learning refers to improving the understanding of the causal relationships between interventions and changes in poverty and incomes. MCC advances the objectives of accountability and learning by selecting from a range of independent evaluation approaches. MCC currently distinguishes between two types of evaluations, impact and performance evaluations. At the minimum, each project should have an independent performance evaluation for accountability reasons.

5.1.2. Ad Hoc Evaluations and Special Studies

MCC or MCA-Georgia may request ad hoc evaluations or special studies of Projects, Project Activities or the Program as a whole prior to the expiration of the Compact Term to be conducted by an outside MCA Georgia Monitoring and Evaluation Plan

entity contracted in compliance with MCC Program Procurement Guidelines. Ad Hoc Evaluation and Special Studies are designed to provide Management staff, Supervisory Board members, program implementers, beneficiaries, and other stakeholders with information about Program implementation and results that cannot be uncovered from performance monitoring or independent evaluations alone.

5.2. Specific Evaluation Plans

5.2.1. Improving General Education Project Evaluation

Summary Table: Improving General Education Project Evaluation

Evaluation Name	Summary	Questions	Methodology	Data Sources
Improved Learning Environment Infrastructure Activity	A stratified RCT design will be used to select treatment schools in different regions, from a pool of eligible schools	<ul style="list-style-type: none"> ▪ Did students' attendance increase as a result of rehabilitation? ▪ Did teachers' attendance increase? ▪ Did the facility rehabilitation allow students to spend more time on learning related activities? ▪ Do learning and other behavioral outcomes change as a result of the school rehabilitations? ▪ Do students' test scores change as a result of the school rehabilitations? ▪ Have students in rehabilitated schools had a higher rate of further education (lower dropout, higher rates of graduation, etc.)? Differences due to increased productivity or some other factor (e.g. different choice of vocation)? ▪ Have students in rehabilitated schools who entered the workforce experienced lower rates of unemployment? ▪ Have students in rehabilitated schools who entered the workforce earned higher wages? If so, were wage differences due to increased productivity or some other factor (e.g. different choice of vocation)? 	Stratified RCT	Administrative data on school condition, design plans, students' test scores, and surveys of the sample population.

Evaluation Name	Summary	Questions	Methodology	Data Sources
Training Educators for Excellence Activity/	The primary methodology will be a matched comparison of teachers in Cohort 1 and teachers in Cohort 2. The evaluation will also include qualitative work to examine the efficacy of teacher training in improving classroom time use, pedagogical skills, and students test scores.	<ul style="list-style-type: none"> What was the impact of the “school mentor” on teaching and learning methods and outcomes? Do teacher training programs, focused on science and technology, improve teacher performance? Do teacher training programs improve learning outcomes? Does the change in pedagogy, including the use of formative classroom assessment, have an impact on teacher-student interactions? On learning outcomes? Can teacher training improve outcomes without incentives tied to them? Does the training have an impact on school directors, and their perspectives on classroom pedagogy? 	Performance Evaluation/ RCT	Classroom observation, Assessment Test, Administrative data, interview with teachers, school directors, and SPDFs

Evaluation Name	Evaluation Type	Evaluator	Primary/ Secondary Methodology	Final Report Date
Improved Learning Environment Infrastructure Activity	IE	Mathematica	RCT	12/31/2020
Training Educators for Excellence Activity & Classroom Assessment	IE	Mathematica	Performance/ Matched Comparison	12/31/2020
				12/31/2020

5.2.1.1. Improved Learning Environment Infrastructure Activity Evaluation

Evaluation Questions

- Did students' attendance increase as a result of rehabilitation?
- Did teachers' attendance increase?
- Did the facility rehabilitation allow students to spend more time on learning related activities?
- Do learning and other behavioral outcomes change as a result of the school rehabilitations?
- Do students' test scores change as a result of the school rehabilitations?
- Have students in rehabilitated schools had a higher rate of further education (lower dropout, higher rates of graduation, etc.)? Differences due to increased productivity or some other factor (e.g. different choice of vocation)?
- Have students in rehabilitated schools who entered the workforce experienced lower rates of unemployment?
- Have students in rehabilitated schools who entered the workforce earned higher wages? If so, were wage differences due to increased productivity or some other factor (e.g. different choice of vocation)?

Evaluation Methodology Description

The evaluation of the school rehabilitation activity will use stratified random assignment to treatment (rehabilitation) and control (no rehabilitation) at the school level. The randomization will be stratified by region, as detailed in Section 3.2.1. Schools for both treatment and control groups will be drawn from a pool of school deemed eligible based on cost-effectiveness, condition of the school, and targeting for minority languages.

The unit of analysis for the study will be on the individual student level. The study will follow beneficiaries and non-beneficiaries through secondary school and their entry into the labor market.

To allow for efficient contracting into individual, discrete construction phases ("Phases"), the impact evaluation design has been tailored to allow for each construction Phase to include the schools from a specific Region or group of Regions. The key threat to the evaluation design is that each construction Phase contains a specific group of Regions and that the beneficiary schools in a particular Region not be divided into separate phases. In other words, the schools from a given Region must all be constructed within the same construction season and this may reduce the number of schools overall that the intervention is able to reach. Any construction schedules which do not fall inside this design will require specific authorization from all key members of the MCA-Georgia and MCC core teams, as any deviation from this design has the potential to endanger the ability of the Independent Evaluator to assess the impact of the activity. The Evaluator should attempt to leverage variations in "exposure to treatment" to better evaluate the impacts of the school rehabilitations across regions and over time.

Data Sources

Administrative data on school condition, design plans, students' test scores, and surveys of the sample population.

5.2.1.2. Training Educators for Excellence Activity Evaluation

Evaluation Questions

- Do teacher training programs, focused on science and technology, improve teacher performance?
- Do teacher training programs improve learning outcomes for students?
- Does mentoring and follow-up with teachers have an impact on teacher behavior after they complete the training?
- Does teacher training in formative classroom assessment lead to improve student learning outcomes??
- Does the use of formative classroom assessment improve teacher quality?
- Do school directors have different perspectives on pedagogy?

Evaluation Methodology Description

For the TEE activity, the primary focus for the evaluation will be to compare teachers before and after the activity is implemented. To estimate the impacts of the training, we will utilize a matched comparison design, that compares teachers from Cohort 1, who have completed the training, to teachers from Cohort 2, who have not received the training yet. There will also be a qualitative component, including classroom observation in a subset of the schools.

Data Sources

The primary data source for the evaluation is a survey of teachers and school directors. The first round of the survey was implemented in September 2017, and the follow up is scheduled for September 2018. In addition, the evaluation will use the Stallings Classroom protocol¹⁴, in which trained observers make periodic and unannounced visits to classrooms to collect information on use of time and teaching materials. The Stallings protocol will be used in a small sample of teachers, to triangulate the survey data. Finally, the evaluation will use focus groups and interviews with teachers, school directors, and potentially students, to understand the effects of the activity.

5.2.2. Industry-led Skills and Workforce Development Project Evaluation

Summary Table: Industry-led Skills and Workforce Development Project Evaluation

¹⁴ https://www.eddataglobal.org/embedded/stallings_snapshot.doc
MCA Georgia Monitoring and Evaluation Plan

Evaluation Name	Summary	Questions	Methodology	Data Sources
Sector Policy Industry Engagement Activity	The evaluation will assess private sectoral support for TVET programs and its effect on the targeting of those programs.	<ul style="list-style-type: none"> Will Industry oriented TVET policies lead to more resources being devoted to local TVET programming? Will this sector support lead to greater private sector investment in these sectors? Will better industry standards lead to stronger sector engagement 	Longitudinal study, Qualitative Methods	Administrative data from TVET programs, Surveys and/or interviews with TVET students,
Provider Practice for Industry Engagement	The evaluation will assess the use of best practices, the uptake of those local best practices and their effect on the quality of TVET programs in Georgia.	<ul style="list-style-type: none"> Does the identification and promotion of best practices encourage uptake of these procedures and standards? Does the promotion of best practices increase the quality of the TVET programs in Georgia? 	Performance Evaluation	Surveys of TVET programs and certification standards, administrative data
Competitive Grant Program	The evaluation will assess the efficacy of the competitive grants process in incentivizing higher quality, and better targeted TVET programs that match labor market needs.	<ul style="list-style-type: none"> Do competitive grants incentivize investment in TVET programs that are industry demand driven? Will such a grant program produce innovative TVET programs? Do Competitive grants for TVET programs increase employment in targeted sectors? Do demand driven TVET programs increase earned income for participants of the program as compared to the status quo? Do the sector targeted TVET have different outcomes for men and women? 	Performance Evaluation /Longitudinal study	Information on TVET programs gathered during the bidding process, Administrative data, Surveys of earnings of participants post-graduation

5.2.2.1. Sector Policy Industry Engagement Activity

Evaluation Questions

- Do graduates of the MCC funded TVET programs receive better employment upon graduation?
- What are the differences in curriculum, and teaching modalities between the improved programs and existing?
- Will Industry oriented TVET policies lead to more resources being devoted to local TVET programming?
- Has the Ministry implemented PEM's advice on structuring the TVET Sectoral Councils? If so were the Sectoral Councils able to ensure active participation by industry firms?
- Has the Ministry adopted the Quality Assurance Framework (QAF) for TVET?
- Are TVET providers using the internal and external verifications tools developed by PEM?
- Have TVET providers adopted the Career Education and Guidance guidelines developed by PEM?
- Will industry demand driven programs increase employability and income earning potential for graduates of these programs?

Evaluation Methodology

The evaluation will monitor the progress over time with regards to increasing the number and quality of TVET programs that target skills needed in the labor market. It will also monitor sector support for these programs and the reputation of TVET programs in Georgia among employers.

Data Sources

Administrative data from TVET programs, and Surveys, focus groups, and/or key informant interview with TVET students, private firms, and TVET providers.

5.2.2.2. Provider Practice for Industry Engagement Activity

Evaluation Questions

- Does the identification and promotion of local best practices encourage uptake of these procedures and standards?
- Does the promotion of best practices increase the quality of the TVET programs in Georgia?

Evaluation Methodology

The evaluation will monitor uptake of best practices regarding the structure and management of TVET programs nationally. As a counterfactual will be difficult to establish the evaluation of this activity will be a performance evaluation, noting progress over time.

5.2.2.3. Competitive Grant Program

Evaluation Questions

- Do competitive grants incentivize design in TVET programs that are industry demand driven?
- Do competitive grants incentivize design in TVET programs that attract women into non-traditional sectors?
- Will such a grant program produce innovative TVET programs?
- Do competitive grants for TVET programs increase employment in targeted sectors?
- Do demand driven TVET programs increase earned income for participants of the program as compared to the status quo?
- Do the sector targeted TVET have different outcomes for men and women?
- Do the sector targeted TVET increase hours worked?

Evaluation Methodology

The ISWD evaluation will use two complementary methodologies. First, the evaluation will use a benchmarking approach, in which we will select non-supported courses that the trainees in PICG courses considered or applied to when the applied to the PICG-supported course. The evaluation will compare outcomes of the trainees in both of these categories. In addition, the evaluation will use a pre-post design for the 15 PICG-supported courses that were improved (rather than introduced as new courses), and compare the outcomes of trainees in these course with those of earlier cohorts in the same courses before they were improved.

The evaluation will also include a qualitative study that will draw primarily on interviews and focus groups with key stakeholders, complemented by contextual information from grantee documents, administrative data, and grantee financial records.

Data Sources

Administrative data from TVET programs, surveys of beneficiaries, tracer studies, and information gathered of firms involved after bidding process, and interviews and focus groups with stakeholders. .

5.2.3. STEM Higher Education Project Evaluation

Summary Table: STEM Higher Education Project Evaluation

Evaluation Name	Summary	Questions	Methodology	Data Sources
US-Georgia University Partnership	Longitudinal case study to assess the efficacy of university partnerships in fostering technical standards for Georgia university, and the impact of US degrees for participants in their income post-graduation	<ul style="list-style-type: none"> Do graduates of MCC-supported US Bachelor's program have better employment opportunities than Georgian students graduating from the non-US STEM Bachelor's programs? Do graduates of MCC-supported US Bachelor's program have better levels of income than Georgian students graduating from the non-US STEM Bachelor's programs? Does US-Georgia University Partnership program contribute towards reduction of number of Georgian students seeking education abroad? Does US-Georgia University Partnership program contribute towards reduction of imports of foreign professional workers hired in the STEM areas? Does US-Georgia University Partnership program contribute towards eradication of the mismatch on a Georgian labor marketplace? Does it produce skills which are in high demand of the Georgian economy? 	Performance Evaluation/ Longitudinal Studies	administrative data, results from secondary school exit exams, tracer studies, surveys of beneficiaries and non-beneficiaries after graduation from the university program, qualitative research on stakeholder interaction

5.2.3.1. US-Georgia University Partnership Evaluation

Evaluation Questions

- Do graduates of MCC-supported US Bachelor's programs have better employment opportunities than Georgian students graduating from the non-US STEM Bachelor's programs?
- Do graduates of MCC-supported US Bachelor's programs have higher incomes than Georgian students graduating from the non-US STEM Bachelor's programs?
- Does US-Georgia University Partnership program contribute towards reduction of number of Georgian students seeking education abroad?
- Does US-Georgia University Partnership program contribute towards reduction of imports of foreign professional workers hired in the STEM areas?
- Does US-Georgia University Partnership program contribute towards eradication of the skill mismatch in the Georgian labor market? Does it produce skills which are in high demand of the Georgian economy?

Evaluation Methodology

An interim study using ABET accreditation criteria as a way to assess the SDSU program may be useful in assessing successes and areas for improvement in implementation. In addition, a longitudinal study will be used to evaluate the impact of the project on employment opportunities and levels of income for the US Bachelor's program graduates. While such an impact is expected to take place far beyond the lifespan of the project, specifically designed tracer studies might be conducted to create a reliable data base of the program beneficiaries for further analysis.

In addition, the independent evaluation will use a case study methodology to assess the project logic, provide a rich analysis of project implementation, and distill lessons that can be valuable to: 1) the Georgian government in its objectives to improve STEM higher education quality; 2) MCC in future investments in tertiary education partnerships; 3) U.S. higher education institutions and associations; and 4) to the international donor community more broadly. The evaluation will be outcome/impact oriented and focus on uncovering concrete evidence on what worked, challenges, and opportunities for improvement. The Evaluator will, in dialogue with the Millennium Challenge Account-Georgia (MCA-G) and MCC, and in liaison with various stakeholders and partners, document the preparatory project development, process, successes, and lessons learned focusing on key outcomes of interest laid out in the project logic.

Data Sources

Administrative Data, Tracer studies, surveys of beneficiaries and non-beneficiaries after graduation, labor market surveys, and key informant interviews.

6. Implementation and Management of M&E

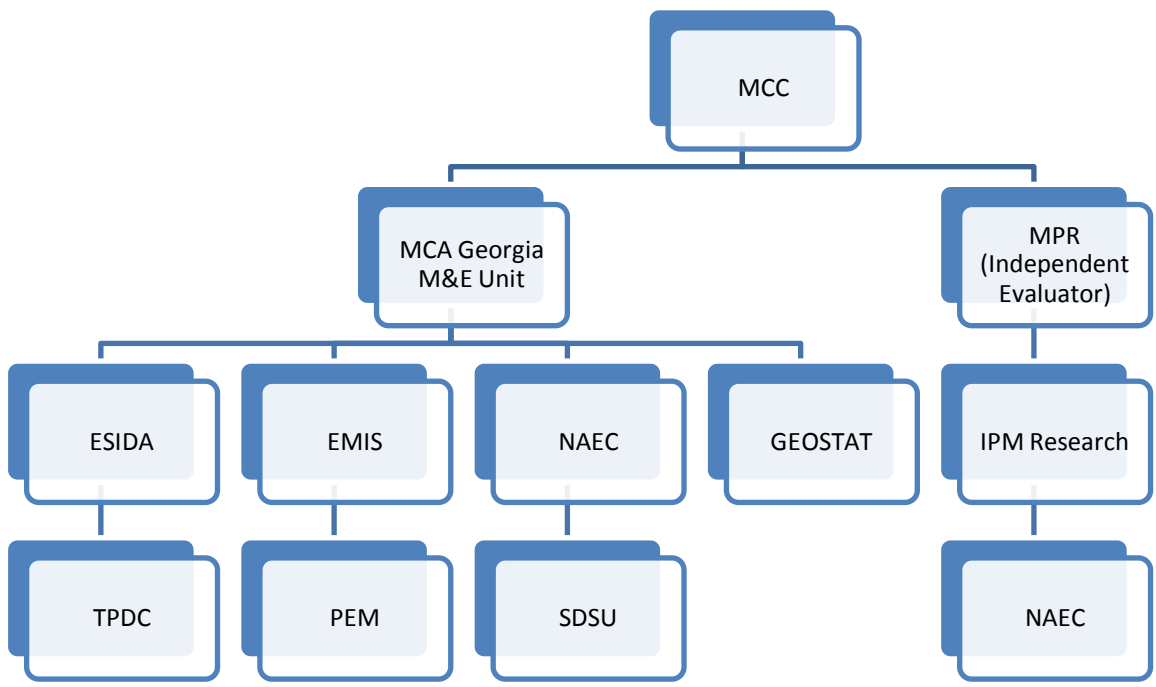
6.1. Responsibilities

The MCA-Georgia M&E Unit is part of the MCA Management Team, and is composed of an M&E Director who has the key responsibility of leading and managing all M&E activities. Additionally, the M&E Unit will hire short-term support on an as-needed basis.

The M&E Director will carry out, or hire contractors to complete the following and other related activities:

- Direct implementation of all activities laid out in the M&E Plan and ensure all requirements of the M&E Plan are met by MCA-Georgia
- Ensure that the M&E Plan and ERR analysis are modified and updated as improved information becomes available
- Develop and use a documentation system to ensure that key M&E actions, processes and deliverables are systematically recorded. This may be accomplished either as part of the M&E information system or independently. The documentation may encompass the following elements:
 - ✓ Process, output and outcome indicators,
 - ✓ Performance indicators (to be developed by implementers and added subsequently to the M&E Plan),
 - ✓ Changes to the M&E Plan,
 - ✓ Key M&E deliverables including TORs, contracts/agreements, data collection instruments, reports/analyses, etc.
- Develop (with the PR and ESA/Gender officers) and implement a systematic dissemination approach to ensure participation of all the stakeholders, and to facilitate feedback of lessons learned into the compact implementation process
- Organize and oversee regular independent data quality reviews (DQRs) on a periodic basis to assess the quality of data reported to MCA-Georgia;
- Ensure that findings and recommendations from DQRs are considered by implementing entities.
- Plan and conduct project monitoring through site visits, review of project reports and analysis of performance monitoring and other data
- Update the M&E work plan periodically
- Contribute to the design of the impact evaluation strategy
- Collaborate with the Procurement Director to prepare and conduct procurement of M&E contracts.

6.2. Reporting/Data Flow Structure of Georgia Compact



6.3. MCC’s Management Information System for MCA/M&E

The MCC MIS system was developed to replace the Excel submission of the ITT. The system will also aid in the automated reporting of ITT data. MCA-Georgia will be required to submit the ITT with the QDRP through the MCC MIS system and training for how to use the system is available. The ITT will be created upon the approval of the initial M&E Plan in the MCC MIS system. Any approved changes to the M&E Plan will be reflected in the ITT. In addition, the implementation of a Web-enabled MIS serves to support the timely and systematic reporting of MCA-Georgia to MCC on the ITT, and the M&E components of the Detailed Financial Plan, Procurement Plan and Narrative Report in the routine submission of the Quarterly Disbursement Request Package.

6.4. Review and Revision of the M&E Plan

The M&E Plan will be revised as needed during the life of the Compact to adjust to changes in the Program’s design and to incorporate lessons learned for improved performance monitoring and measurement. Any revision of the M&E Plan will follow MCC’s Policy for Monitoring and Evaluation of Compact approved May 2009 and updated in May 2012.

7. M&E Budget

The budget for the implementation of the proposed M&E activities for the five-year term of the Compact is US\$ 3.5 million. The line items of this budget will be reviewed and updated as the program develops, on an annual or quarterly basis, when the respective quarterly detailed financial plan is submitted to MCC with the quarterly disbursement request.

The M&E budget does not include the M&E director in the MCA-Georgia Management Unit whose salary and field trips are included in the administrative budget of the Compact. The budget should not exceed the total amount over the five years, but the distribution of funding between line items and years may be adjusted according to the results of the M&E Plan's regular reviews.

M&E Budget (2014-2019)

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Total (USD)
Capacity building	10,000	25,000	25,000	25,000	25,000	110,000
M&E Outreach	10,000	20,000	20,000	20,000	20,000	90,000
Administrative Expenses		75,000	150,000	150,000	75,000	450,000
Data collection	100,000	450,000	650,000	400,000	400,000	2,000,000
Data quality review				50,000	50,000	100,000
Reporting and dissemination ¹⁵					50,000	50,000
Other ¹⁶				50,000	50,000	100,000
Grand Total (USD)	120,000	570,000	845,000	695,000	670,000	2,900,000

While the resources for the carrying-out of surveys are allocated by MCA-Georgia from Compact funds, the cost of independent evaluators is to be funded directly by MCC. MCC expects to commit approximately \$5 million to fund the independent evaluators, divided among two to three evaluators.

8. Other

8.1. M&E Requirements for Disbursements

The MCC M&E Policy states that the M&E Plan should include “any M&E requirements that an MCA must meet in order to receive disbursements” (article 5.1.1). The Policy notes that substantial compliance with M&E Plan is a condition for approval of quarterly disbursements. In accordance with these guidelines, the following are envisaged to meet the requirements for substantial compliance with the M&E Plan including, but not limited to:

1. Having fully staffed M&E personnel or actively seeking to fulfill M&E staffing, to MCC's satisfaction.
2. Actively executing the M&E work plan to meet the reporting and data needs of professional monitoring and evaluation of the Compact Program, to MCC's satisfaction.
3. Timely managing and utilizing M&E budget in pursuing the Plan's purposes, to MCC's satisfaction.
4. Maintaining sufficient progress towards achievement of target indicators as outlined in the annexes to this Plan, to MCC's satisfaction.

¹⁵ Quality Review Discussions and Events

¹⁶ Technical Assistance (ERR Consultants, Data Quality Supervisors, Consultants to Analyze Data at IEs etc.), Special Studies, MCA Georgia Monitoring and Evaluation Plan

8.2. M&E Plan Assumptions and Risks

As with any large Compact program, a number of assumptions and risks could influence the normal process of its implementation according to the schedule and resources allocated. The assumptions and risks presented below are deemed to be applicable to this Monitoring and Evaluation Plan and other program components that relate directly to monitoring and evaluation issues. Assumptions are basically details associated with activities assumed ahead that need to occur for the monitoring and evaluation to be successfully implemented, while risks are considered factors that might restrict or limit the success of M&E.

Key Assumptions	Risks
Improving General Education Project: Improved Learning Environment Infrastructure Activity	
Improved maintenance practices will increase the lifespan of education facilities	Lack of school funds (or unwillingness of school management to allocate a bigger portion of budgetary funds to maintain newly installed facilities) shall be considered as a major risk for improved maintenance practices.
Increased GoG commitment to O&M to prevent continued deterioration schools' physical infrastructure	<p>Causal relationship between Government's commitment to O&M and school management practices are unclear. As mentioned above, lack of budgetary funds is a major constraint factor to impede school maintenance activities.</p> <p>GoG commitment to allocate sufficient budgetary funds on M&O shall not be deemed a risk factor.</p>
Maintenance costs will decrease in the medium and long terms based on improved maintenance policies that increase the life span of schools.	<p>Several programmatic risks could undermine this assumption:</p> <ol style="list-style-type: none"> 1. Construction costs might prove to be more expensive than anticipated, limiting the number of infrastructure systems that will be improved at treatment schools or the number of systems that can be rebuilt to high quality standards that increase building life spans. 2. Installing new systems that were not present previously (such as gas heating and additional lighting) might increase schools' running operations costs, relative to what they would have been otherwise. Although these increased expenditures can benefit students and teachers, the changes will not necessarily decrease operating costs at program schools. 3. Alternatively, investments in new school infrastructure might shift maintenance priorities away from older systems that are not improved under the ILEI program. Reducing maintenance spending on older legacy systems could reduce the life spans of schools in unanticipated ways.
Improved school infrastructure will lead to increased student and teacher attendance rates	Student attendance rates might be affected by additional factors such as low quality teachers, social and/or cultural behavior (e.g. early marriages.).

Key Assumptions	Risks
	Teacher attendance rates might be influenced by additional factors such as low financial incentives, lack of teaching staff in rural areas etc.
Decreased absenteeism and additional time on task shall be reflected in improved average standardized test scores	<p>Lack of reliable nationwide data on student absenteeism and time on-task, impedes the analysis of causal relationship between the three policy variables.</p> <p>In addition, student learning outcomes might be affected by various factors (e.g. teaching quality, social and cultural environment etc.) which must be taken into account.</p>
Improving General Education Project: Training Educators for Excellence Activity	
Better trained school managers (principals, other administrative staff) will be more sensitive to the needs of teachers and will be able to empower them toward improved teaching, which in its turn will lead to better learning outcomes.	<p>It appears plausible that the training program for principals could be designed and implemented in a manner that produces improved sensitivity to teachers' needs and improved management practices related to teachers' empowerment or improved teaching practices.</p> <p>There is limited descriptive evidence on the quality of school management decisions and practices in Georgia. However, effective school management decisions could plausibly be linked to learning outcomes through mechanisms such as teacher hiring and retention, the number of hours dedicated to instruction during the school day, and school directors' oversight of teaching quality and teacher practices.</p> <p>Lack of budgetary funds might be a risk factor for school management to provide sufficient financial benefits for teachers especially in rural areas.</p>
Better trained teachers will improve internal efficiency measures (repetition rates, internal transition rates, graduation rates etc.).	<p>There is no reliable nationwide data in Georgia to prove the casual relationship between those policy variables.</p> <p>Improved internal efficiency measures might be affected by various factors in addition to better trained teachers and effective management decisions.</p> <p>Social and cultural background of students in different settings needs to be taken into account.</p>
Better trained teachers will lead to improved learning outcomes which will be reflected in higher students' standardized test scores.	<p>An extensive literature provides rigorous evidence linking teacher quality and teacher performance to students' learning outcomes (for example, Chetty et al. 2011; Hanushek 2010).</p> <p>Insufficient financial benefits for teachers (especially in rural areas) might be a risk factor to sustain a qualified teaching level in the long run which will negatively affect learning outcomes.</p>

Key Assumptions	Risks
	Additional factors affecting student learning outcomes (e.g. student social and cultural background) need to be taken into account as well.
<p>Students experiencing improved learning outcomes will be more likely to advance to further education opportunities and experience increased lifetime earnings and higher employment rates.</p> <p>There is an under-provision of highly educated workers in the labor market. Students who demonstrate improved learning due to teachers' or principals' training will experience increased lifetime earnings and higher employment rates.</p>	<p>Although there is no rigorous evidence linking improved learning outcomes to increased educational attainment specifically in Georgia, there is substantial evidence that these outcomes are related in other settings (for example, Chetty et al. 2011) and it is possible that these two outcomes could be causally linked in this context.</p> <p>Under the assumption that improved learning produces higher educational attainment, it also appears reasonable to assume that this higher attainment could produce increases in employment rates and earnings. As shown in MCC's compact development materials, earnings and employment rates are associated with higher educational attainment in Georgia. Descriptive evidence also suggests a mismatch between the skills and training employers seek and the current workforce in Georgia (World Bank 2013).</p> <p>However, higher employability rates and income levels might be affected by exogenous as well as indigenous shocks to the Georgia's economy (e.g. soundness of the macroeconomic environment, political stability and global economy trends).</p>

Improving General Education Project: Education Assessment Activity

Better teaching practices implementing classroom assessment tools will lead to better student learning outcomes.	Measures to incentivize teachers to use classroom assessment results for better teaching practices are unclear.
The advent of international and national evaluation, in combination with better principal training, will enable and inspire principals to manage their schools better throughout the year.	There is limited existing evidence on the relationship between international and representative (sample-based) national assessment programs and principal performance. It is not clear why publishing the results of national or international assessments (which may or may not include data from a given principal's school) should be expected to increase principals' professional efforts or school management practices. It seems to be an unstated assumption that either principals will work harder once they see the relative performance of students in their schools, or public pressure will compel them to do so. This assumption might be overly optimistic unless the assessments provide school-level data on student achievement and are linked to clear incentives for principals to improve their schools' performances.

Industry-led Skills and Workforce Development Project

MCC-supported grantee programs will lead to higher employment rates and income levels for related TVET graduates.	Lack of reliable nationwide data on TVET graduates as well as low level of Georgia's labor market surveys impedes the analysis of causal relationship of this assumption.
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Key Assumptions	Risks
	In addition, employability and income levels might be affected by exogenous as well as indigenous shocks to the Georgia's economy (e.g. soundness of the macroeconomic environment, political stability, and global economy trends).
MCC supported TVET programs will cause change in social perceptions and recognition of vocational education in Georgia.	<p>Social recognition of TVET in Georgia shall be dependent on various factors among which private sector engagement and institutional framework for social partnership being considered to have the highest priority.</p> <p>Preliminary analysis outlined in the TVET industry engagement strategy submitted by MCA Georgia on July 29, 2013 stressed the lack of demand from the private sector as well as absence of institutional incentives a major risk factor for establishing a sustainable social partnership framework between vocational education and private sectors.</p>
STEM Higher Education Project	
MCC-supported Bachelor's programs will lead to higher employment rates and income levels of their graduates.	<p>Lack of reliable nationwide data on STEM graduates as well as low level of Georgia's labor market surveys impedes the analysis of causal relationship of this assumption.</p> <p>In addition, employability and income levels might be affected by exogenous as well as indigenous shocks to the Georgia's economy (e.g. soundness of the macroeconomic environment, political stability, and global economy trends).</p>
MCC-supported Bachelor's programs will provide qualified local labor force as a substitution for imported workers in STEM area.	<p>No data on STEM expatriates in Georgia have been collected as well as no STEM labor market surveys have been conducted to empirically support such an assumption.</p> <p>While STEM professionals are considered to be in demand at the Georgian marketplace it is difficult to quantify and provide a forecast of STEM demanded professionals.</p>

ANNEX 1.

1.1.Indicator Documentation Table (Monitoring Indicators for the MIS)

Common Indicator Code	Indicator Level	Indicator Name	Definition	Unit of Measure	Disaggregation	Primary Data Source	Responsible Party	Reporting Frequency	Additional Information
Improving General Education Project: Improved Learning Environment Infrastructure Activity									
E-4	Output	Educational facilities constructed or rehabilitated	The number of educational facilities constructed or rehabilitated according to standards stipulated in MCA contracts signed with implementers.	Number		ESIDA	MCAG/ESIDA	Annual	Those are secondary schools (grade 1-12)
	Output	Science labs installed and equipped	The total number of science labs installed through MCC-funded school rehabilitations. Science lab must be operational in order to be counted	Number		ESIDA	MCAG/ESIDA	Annual	
	Output	Students benefitting from MCC-rehabilitated school buildings	The number of students benefitting from MCC-rehabilitated school buildings	Number	Gender	ESIDA	MCAG/ESIDA	Annual	
	Process	Signing of Phase 1 Construction Contracts	Date on which the first Phase 1 construction contract is signed	Date		MCAG	MCAG	Annual	
	Process	Installation of Phase 1 Science Labs	Date on which all Phase 1 schools' science laboratories are installed	Date		MCAG	MCAG	Annual	
E-1	Process	Value of signed educational facility construction, rehabilitation, and equipping contracts	The value of all signed construction contracts for educational facility construction, rehabilitation, or equipping (e.g.	US Dollars		MCAG	MCAG	Quarterly	Those are secondary

Common Indicator Code	Indicator Level	Indicator Name	Definition	Unit of Measure	Disaggregation	Primary Data Source	Responsible Party	Reporting Frequency	Additional Information
			information technology, desks and chairs, electricity and lighting, water systems, latrines) using compact funds.						schools (grade 1-12)
E-2	Process	Percent disbursed of educational facility construction, rehabilitation, and equipping contracts	The total amount of all signed construction contracts for education facility works or equipping divided by the total value of all signed contracts.	Percentage		MCAG	MCAG	Quarterly	
E-2.1	Process	Value disbursed of educational facility construction, rehabilitation, and equipping contracts	The amount disbursed of all signed construction contracts for educational facility construction, rehabilitation, or equipping (e.g. information technology, desks and chairs, electricity and lighting, water systems, latrines) using compact funds.	US Dollars		MCAG	MCAG	Quarterly	
Improving General Education Project: Training Educators for Excellence Activity									
	Output	School-based professional development facilitators who complete Leadership Academy 2	The number of school-based professional development facilitators who complete MCC-supported training focused on supporting teachers in implementing new techniques	Number	Gender	TPDC	MCAG/TPDC	Quarterly	Facilitators do not participate in Academy 1.
	Output	School-based professional development facilitators who complete Leadership Academy 3	The number of school-based professional development facilitators who complete MCC-supported training focused on supporting teachers in	Number	Gender	TPDC	MCAG/TPDC	Quarterly	Facilitators do not participate in Academy 1.

Common Indicator Code	Indicator Level	Indicator Name	Definition	Unit of Measure	Disaggregation	Primary Data Source	Responsible Party	Reporting Frequency	Additional Information
			implementing new techniques						
	Output	School principals who complete Leadership Academy 1	The number of school principals who complete MCC-supported training focused on supporting teachers in implementing new techniques	Number	Gender	TPDC	MCAG/TPDC	Quarterly	
	Output	School principals who complete Leadership Academy 2	The number of school principals who complete MCC-supported training focused on supporting teachers in implementing new techniques	Number	Gender	TPDC	MCAG/TPDC	Quarterly	
	Output	School principals who complete Leadership Academy 3	The number of school principals who complete MCC-supported training focused on supporting teachers in implementing new techniques	Number	Gender	TPDC	MCAG/TPDC	Quarterly	
	Output	Teachers who have completed full course and received a certificate	Number of teachers who have completed all three core modules and one subject training.	Number	Gender	TPDC/PMU	TPDC/PMU	Quarterly	
	Output	Teachers who have completed Core Module 1	Number of teachers who have complete Core Module 1	Number	Gender	TPDC/PMU	TPDC/PMU	Quarterly	
	Output	Teachers who have completed Core Module 2	Number of teachers who have complete Core Module 2	Number	Gender	TPDC/PMU	TPDC/PMU	Quarterly	

Common Indicator Code	Indicator Level	Indicator Name	Definition	Unit of Measure	Disaggregation	Primary Data Source	Responsible Party	Reporting Frequency	Additional Information
	Output	Teachers who have completed Core Module 3	Number of teachers who have complete Core Module 3	Number	Gender	TPDC/PMU	TPDC/PMU	Quarterly	
	Output	Teachers who have a completed a Subject Module	Number of teachers who have completed a Subject Module	Number	Gender	TPDC/PMU	TPDC/PMU	Quarterly	
	Process	Core Trainings for teachers completed	Date on which core training for teachers is completed	Date		TPDC/PMU	TPDC/PMU	Once	
	Process	Subject Matter training for teachers completed	Date on which subject matter training for teachers is completed	Date		TPDC/PMU	TPDC/PMU	Once	
	Process	Leadership Academies completed	Creation of an annual leadership conference for schools principals	Date		TPDC/PMU	TPDC/PMU	Once	
	Process	Completion of teacher training design framework	Date on which design consultant's final activity design deliverable is formally approved by MCA	Date		MCAG/Design Consultant	MCAG/Design Consultant	Once	
Improving General Education Project: Education Assessment Activity									
	Output	National assessments	The number of national assessments/testing frameworks developed and implemented with MCC funding	Number		NAEC	NAEC/MCAG	Annual	

Common Indicator Code	Indicator Level	Indicator Name	Definition	Unit of Measure	Disaggregation	Primary Data Source	Responsible Party	Reporting Frequency	Additional Information
	Output	International assessments	The number of international assessments implemented with MCC funding.	Number		NAEC	NAEC/MCAG	Annual	Indicator will be counted upon completion of full reporting cycle specific to each international assessment (TIMSS, PISA, and TALIS)
	Process	Completion of pilot testing of national assessment instruments	Date on which MCC-funded national assessment instruments are implemented in pilot form for feedback and further development	Date		NAEC	NAEC/MCAG	Once	
Industry-led Skills and Workforce Development Project									
E-6	Outcome	Students participating in MCC-supported education programs	The number of students enrolled or participating in MCC-supported educational schooling programs	Number	Gender	PEM	MCAG/PEM	Annual	The number of students enrolled or participating in MCC-supported TVET programs
E-7	Outcome	Graduates from MCC-supported education activities	The number of students graduating from the highest grade (year) for that educational level in MCC-supported education schooling programs	Number	Gender	PEM	MCAG/PEM	Annual	
	Output	Industry co-investment in TVET provision	Industry co-investment in supported programs, including both cash and in kind support	US Dollars		PEM	MCAG/PEM	Quarterly	Started in 2017. Quarter lag in data.

Common Indicator Code	Indicator Level	Indicator Name	Definition	Unit of Measure	Disaggregation	Primary Data Source	Responsible Party	Reporting Frequency	Additional Information
	Output	Conferences held which showcase provider best practice	The number of conferences held which showcase provider best practice	Number		PEM	MCAG/PEM	Quarterly	
	Output	TVET grants fully disbursed	Number of competitive grants whose full amount is disbursed before the compact end date	Number		PEM	MCAG/PEM	Quarterly	
	Output	TVET small grants fully disbursed	Number of small grants whose full amount is disbursed before the compact end date	Number		PEM	MCAG/PEM	Quarterly	
E-5	Output	Instructors trained	The number of classroom instructors who complete MCC-supported training focused on instructional quality as defined by the compact training activity.	Number	Gender	PEM	MCAG/PEM	Quarterly	The number of teachers trained throughout TVET supported programs
	Process	Date first grant agreement is signed	Date on which first grant agreement is signed with the winner of competitively-selected TVET provider	Date		PEM	MCAG/PEM	Once	
	Process	Date final grant agreement is signed	Date on which final grant agreement is signed with the winner of competitively-selected TVET provider	Date		PEM	MCAG/PEM	Once	
	Process	Date first small grant agreement is signed.	Date on which first small grant agreement is signed	Date		PEM	MCAG/PEM	Once	
	Process	Date final small grant agreement is signed	Date on which final small grant agreement is signed	Date		PEM	MCAG/PEM	Once	

Common Indicator Code	Indicator Level	Indicator Name	Definition	Unit of Measure	Disaggregation	Primary Data Source	Responsible Party	Reporting Frequency	Additional Information
	Process	Total grant outlays	Total disbursement of grant funding under compact's competitive grant facility	US Dollars		PEM	MCAG/PEM	Quarterly	
	Process	Disbursement of TA Contracts	Value of all TA contracts disbursed disbursement under TA Contracts	US Dollars		PEM	MCAG/PEM	Quarterly	
STEM Higher Education Project									
E-6	Outcome	Students participating in MCC-supported education activities	The number of students enrolled or participating in MCC-supported educational schooling programs.	Number	Gender	SDSU	MCAG/SDSU	Quarterly	The number of students enrolled in MCC-supported US Bachelor's programs. For Common Indicator reporting purposes, all students included here should be considered "Tertiary"
	Outcome	Formal ABET accreditation for Georgian degree program	Date on which the Georgian degree program receives its formal ABET accreditation	Date		MoES/EQE	MoES/EQE	Once	This indicator assumes that the option of ABET accreditation is pursued. This indicator is not relevant if this option is not pursued with Compact funds.

Common Indicator Code	Indicator Level	Indicator Name	Definition	Unit of Measure	Disaggregation	Primary Data Source	Responsible Party	Reporting Frequency	Additional Information
	Outcome	Students participating in schools/programs on the ABET accreditation track.	Number of students participating in schools/programs that have formed an ABET Committee.	Number	Gender	Partner Universities	Partner Universities	Quarterly	
	Outcome	ABET Committee Formed	ABET Committee formed by partner institutions	Date	University: GTU, TSU, ISU	Partner Universities	Partner Universities	Once	
	Outcome	Formal ACS accreditation for Chemistry degree program	Date of formal ACS accreditation for Chemistry degree program	Date	None	Partner University	Partner University	Once	
	Outcome	Retention Rate of Students in MCC-funded Bachelor's programs	Percentage of students advancing from one level (year) of study to the next	Percentage	(A) Georgian/International (A.1) Male/Female	SDSU	SDSU	Quarterly	
E-5	Output	Instructors trained	The number of classroom instructors who complete MCC-supported training focused on instructional quality as defined by the compact training activity.	Number	Gender	SDSU	SDSU	Quarterly	The number of Georgian faculty members receiving US or Georgia- based training from US partner institution. For Common Indicator reporting purposes, all instructors included here should be considered "Tertiary"

Common Indicator Code	Indicator Level	Indicator Name	Definition	Unit of Measure	Disaggregation	Primary Data Source	Responsible Party	Reporting Frequency	Additional Information
	Output	Georgian faculty members receiving US-based training from US partner institution	The number of Georgian faculty members receiving US-based training from US partner institution	Number	Gender	SDSU	SDSU	Quarterly	This indicator is used to calculate “Instructors trained”
	Output	Georgian faculty members receiving Georgia-based training from US partner institution	The number of Georgian faculty members receiving Georgia-based training from US partner institution	Number	Gender	SDSU	SDSU	Quarterly	This indicator is used to calculate “Instructors trained”
	Output	Amount in U.S. Dollars leveraged - Private	Money as direct leverage through MCC programs; formally memorialized through MoU, MoA, grant agreement, or other form of partnership agreement	US Dollars		Respective Programs	Respective Programs	Quarterly	
	Output	Amount in U.S Dollars leveraged - Public	Money as direct leverage through MCC programs; formally memorialized through MoU, MoA, grant agreement, or other form of partnership agreement	US Dollars		Respective Programs	Respective Programs	Quarterly	
	Process	Signing of partnership agreement	Date on which a formal partnership agreement is signed between U.S. institution(s) and Georgian institution(s)	Date		MCAG	MCAG	Once	
	Process	First cohort of students enters MCC-funded Bachelor's program	Date on which a cohort of incoming students begins study in an MCC-funded Bachelor's program.	Date		MCAG	MCAG	Once	

1.2.Indicator Documentation Table (Evaluation Indicators for Specific Evaluation Plans)

N	Indicator Level	Indicator Name	Definition	Unit of Measure	Disaggregation	Primary Data Source	Responsible Party
Improving General Education Project: Improved Learning Environment Infrastructure Activity							
1	Goal	Transition Rate from 9th to 10th grade	The number of students who enter 10th grade divided by number of students who completed 9th grade	Percentage	Gender/Social Vulnerability/Urban/Rural	EMIS/Survey	MCAG/Data IPM Research/EMIS
2	Goal	Percentage of 10 th grade entrants who graduate from 12 th grade	The number of 12th grade students who take and pass the 11th-12th grade exit examinations in math and science, divided by the number of 10th grade entrants in same cohort	Percentage	Gender/Social Vulnerability/Urban/Rural	EMIS/Survey	MCAG/Data IPM Research/EMIS
3	Goal	Percentage of high school graduates who enter university studies	The number of 12th grade students who take the UEE and are placed in a university program, divided by the number of 12th grade students who take the 12th grade exit exam	Percentage	Gender/Social Vulnerability/Urban/Rural	EMIS/NAEC/Survey	MCAG/Data IPM Research/EMIS/ NAEC
4	Outcome	Students enrolled in MCC-rehabilitated schools	The number of students enrolled or participating in MCC-rehabilitated schools.	Number	Gender	ESIDA/EMIS	MCAG/ESIDA /EMIS
5	Outcome	Student attendance rates	To be defined in collaboration with standard measurement practices in Georgia (e.g. average percentage of enrolled students marked as present during one-month period of analysis)	Percentage	Gender/Social Vulnerability/Urban/Rural	EMIS/Survey	EMIS/IPM Research

N	Indicator Level	Indicator Name	Definition	Unit of Measure	Disaggregation	Primary Data Source	Responsible Party
6	Outcome	Teacher attendance rates	To be defined in collaboration with standard measurement practices in Georgia (e.g. average percentage of teachers marked as present during one-month period of analysis)	Percentage	Rural/Urban	Survey	IPM Research
7	Outcome	Average Standardized Test Scores	Specific evaluations will be employed to track improvements in TIMSS (Trends in Mathematics and Science Study), PISA (Program for International Student Assessment), In-Class and National Assessment	Number		NAEC	NAEC/MCAG
8	Outcome	Time study of students' daily time allocation	Measurement of changes in proportion of time spent on various education-enhancing activities as well as overall amount of time spent at school	Percentage	Rural/Urban	Survey	IPM Research
9	Outcome	Average classroom temperature differential in winter	Average temperature of completed classrooms during a one-month sample of observations with respect to comparison classroom	Degrees Celsius	Rural/Urban/School Size	Survey	IPM Research
10	Outcome	Utilization of science labs	Total time spend in labs divided by total time spend in science classes	Percentage	Rural/Urban	Survey	IPM Research
11	Outcome	Teacher satisfaction with school facilities	Perception of teachers (satisfaction level measured on a scale from 1 to 5)	Number	Rural/Urban	Survey	IPM Research
12	Outcome	Parent/Student satisfaction with school facilities	Perception of parents/students (satisfaction level measured on a scale from 1 to 5)	Number	Rural/Urban	Survey	IPM Research
13	Outcome	Improved maintenance practices	Number of O&M related trainings, manuals, official guidelines and procedures established	Number	Rural/Urban	ESIDA	ESIDA/MCAG

N	Indicator Level	Indicator Name	Definition	Unit of Measure	Disaggregation	Primary Data Source	Responsible Party
14	Outcome	Improved ratings on school facilities condition assessments (at beneficiary schools)	Average Infrastructure condition assessment ranking scores elaborated by MCC/MCAG as per RDD	Number		ESIDA	ESIDA/MCAG
Improving General Education Project: Training Educators for Excellence Activity							
15	Outcome	Teacher improvement of content knowledge over baseline score	Pre-test, post-test comparison of trained teachers' knowledge in training-relevant content areas	Number	Rural/Urban/Subject	TPDC/Survey	TPDC/Data Collection Firm/ MCAG
16	Outcome	Internal Efficiency Measures (Repetition Rates, Internal Transition Rates, etc.)	As possible, evaluation strategy will attempt to measure changes in averages in schools' internal efficiency which are attributable to compact training activity	Percentage	Gender/Social Vulnerability/Urban/ Rural	EMIS	EMIS/MCAG
17	Outcome	Students' standardized test scores	As possible, evaluation strategy will attempt to measure attributable changes in average student score on test instrument related to areas relevant to teacher training (using national assessment)	Number	Gender/Social Vulnerability/Urban/ Rural	TPDC/NAEC/ Survey	NAEC/ TPDC/Data Collection Firm/ MCAG
18	Outcome	Graduates from MCC-supported education activities	The number of students graduating from the highest grade (year) for that educational level in MCC-supported education schooling programs.	Number	Gender/Social Vulnerability/Urban/ Rural	EMIS	EMIS/MCAG
Industry-led Skills and Workforce Development Project							

N	Indicator Level	Indicator Name	Definition	Unit of Measure	Disaggregation	Primary Data Source	Responsible Party
21	Goal	Employment rate differential of graduates of MCC-supported grantee programs	Average post-graduation employment rate of graduates of MCC-supported grantee programs with respect to students graduating from non-priority areas (one year after graduation)	Percentage	Gender/Social Vulnerability	Survey	Data Collection Firm
22	Goal	Wage differential of graduates of MCC-supported grantee programs	Average wage differential of graduates of MCC-supported grantee programs with respect to students graduating from non-priority areas (one year after graduation)	Number	Gender/Social Vulnerability	Survey	Data Collection Firm
23	Outcome	Change in social perceptions around MCC supported TVET programs	Survey instruments will be developed to explore the ways in which social perceptions around the value and/or social stigma of TVET act as a constraint to the supply of qualified labor (and any changes in these perceptions which can be directly/indirectly attributed to the project)	Number	Gender/Social Vulnerability	Survey	Data Collection Firm/Evaluator
24	Outcome	Students participating in MCC-supported education activities	The number of students enrolled or participating in MCC-supported educational schooling programs.	Number	Gender/Social Vulnerability	Grant Managing Company/MoES	MCAG/PEM
25	Outcome	Drop-out rate of program beneficiaries	Number of graduates divided by total number of enrollees (weighted average across grantee's programs)	Percentage	Gender/Social Vulnerability	Grant Managing Company/MoES	MCAG/PEM
26	Outcome	Student Internships with Industry Partners	The number of Student Internships with Industry Partners	Number	Gender/Social Vulnerability	Grant Managing Company	MCAG/PEM
STEM Higher Education Project							

N	Indicator Level	Indicator Name	Definition	Unit of Measure	Disaggregation	Primary Data Source	Responsible Party
27	Goal	Wage differential of the graduates of MCC-supported Bachelor's program	Average wage differential of graduates of MCC-supported Bachelor's program with respect to average wage of comparable graduates (one year after graduation)	Number	Gender/Social Vulnerability/ABET/ US Bachelor's Program	Survey	Data Collection Firm/Evaluator
28	Outcome	Proportion of imported workers in relevant fields/program	Evaluation of the number of foreign workers hired in relevant fields. "Relevant fields" will be the specific fields in which the University Partnership will be granting Bachelor's degree	Percentage		Survey	Data Collection Firm/Evaluator
29	Outcome	Proportion of Bachelor's-level students who study abroad in relevant fields/programs	Evaluation of the number of Georgian students studying abroad in relevant fields. "Relevant fields" will be the specific fields in which the University Partnership will be granting Bachelor's degree	Percentage	Gender	Survey	Data Collection Firm/Evaluator
30	Outcome	Increased demand for enrollment into MCC-funded Bachelor's programs over pre-existing programs	Specific evaluation instruments will explore whether increased demand exists and the degree to which it reveals students' perceptions of the programs' quality	Number	Gender/Social Vulnerability	Survey	Data Collection Firm/Evaluator
31	Outcome	Field-relevant employment rate of the graduates of MCC-supported Bachelor's program	Percentage of graduates employed in their field of study one year after graduation	Percentage	Gender/Social Vulnerability	Endline Tracer Study	Data Collection Firm/Evaluator
32	Outcome	Overall employment rate of the graduates of MCC-supported Bachelor's program	Percentage of graduates reporting remunerated employment one year after graduation	Percentage	Gender/Social Vulnerable	Endline Tracer Study	Data Collection Firm/Evaluator

ANNEX 2.

2.1. Indicator Baselines and Targets (Monitoring Indicators for the MIS)

N	Common Indicator Code	Indicator Level	Indicator Name	Unit of Measure	Indicator Classification	Baseline (Year)	Y1	Y2	Y3	Y4	Y5	Note
Improving General Education Project: Improved Learning Environment Infrastructure Activity												
1	E-4	Output	Educational facilities constructed or rehabilitated	Number	Cumulative	0	30				130	
2		Output	Science labs installed and equipped	Number	Cumulative	0	30				130	
3		Output	Students benefitting from MCC-rehabilitated school buildings	Number	Level	0	10,500				37,450	As per ERR assumptions (see Section 3.3.4.).
4		Process	Signing of Phase 1 Construction Contracts	Date	Date	N/A		8/30/2015				Complete
5		Process	Installation of Phase 1 Science Labs	Date	Date	N/A		10/30/2015				

N	Common Indicator Code	Indicator Level	Indicator Name	Unit of Measure	Indicator Classification	Baseline (Year)	Y1	Y2	Y3	Y4	Y5	Note
6	E-1	Process	Value of signed educational facility construction, rehabilitation, and equipping contracts	US Dollars	Cumulative	0		17,280,000	34,560,000	43,200,000	43,200,000	
7	E-2	Process	Percent disbursed of educational facility construction, rehabilitation, and equipping contracts	Percentage	Level	0		40.00%	80.00%	100.00%	100.00%	The Compact year breaks July 1st. Each construction season will include two Compact years respectively. Disbursement rates are rough estimates (the more accurate numbers will be available once phase I and II seasons are over).
8	E-2.1	Process	Value disbursed of educational facility construction, rehabilitation, and equipping contracts	US Dollars	Cumulative	0		6,912,000	27,648,000	43,200,000	43,200,000	
Improving General Education Project: Training Educators for Excellence Activity												
9		Output	School-based professional development facilitators who complete Leadership Academy 2	Number	Cumulative	0				1,384	1,528	"Projections made under IEA with TBDC (Signed on December 25, 2015). Facilitators do not participate in Academy 1."

N	Common Indicator Code	Indicator Level	Indicator Name	Unit of Measure	Indicator Classification	Baseline (Year)	Y1	Y2	Y3	Y4	Y5	Note
10		Output	School-based professional development facilitators who complete Leadership Academy 3	Number	Cumulative	0					1,528	
11		Output	School principals who complete Leadership Academy 1	Number	Cumulative	0			1,497	1,668	1,668	Projections made under IEA with TBDC (Signed on December 25, 2015).
12		Output	School principals who complete Leadership Academy 2	Number	Cumulative	0				1,497	1,668	Projections made under IEA with TBDC (Signed on December 25, 2015).
		Output	School principals who complete Leadership Academy 3	Number	Cumulative	0					1,668	Projections made under IEA with TBDC (Signed on December 25, 2015).
		Output	Teachers who have completed full course and received a certificate	Number	Cumulative	0				13,666	13,666	Targets come from the Implementing Entity Agreement.
		Output	Teachers who have completed Core Module 1	Number	Cumulative	0			7,091	14,578	14,578	Targets come from the Implementing Entity Agreement.
		Output	Teachers who completed Core Module 2	Number	Cumulative	0			7,091	14,578	14,578	Targets come from the Implementing Entity Agreement.

N	Common Indicator Code	Indicator Level	Indicator Name	Unit of Measure	Indicator Classification	Baseline (Year)	Y1	Y2	Y3	Y4	Y5	Note
		Output	Teachers who have completed Core Module 3	Number	Cumulative	0			7,091	14,578	14,578	Targets come from the Implementing Entity Agreement.
		Output	Teachers who have completed a Subject Module	Number	Cumulative	0			7,091	14,578	14,578	Targets come from the Implementing Entity Agreement.
13		Process	Core Training for teachers completed	Date	Date	N/A				07/30/2018		Projections made under IEA with TBDC (Signed on December 25, 2015)
14		Process	Subject Matter training for teachers completed	Date	Date	N/A					10/30/2018	Projections made under IEA with TBDC (Signed on December 25, 2015)
15		Process	Leadership Academies completed	Date	Date	N/A					12/30/2018	Projections made under IEA with TBDC (Signed on December 25, 2015)
16		Process	Completion of teacher training design framework	Date	Date	N/A	2/28/2015					Complete
Improving General Education Project: Education Assessment Activity												
17		Output	National assessments	Number	Cumulative	0	0	1	5	6	10	As per Implementing Entity Agreement (IEA) with NAEC.
18		Output	International assessments	Number	Cumulative	0	1	3	3	3	5	As per IEA with NAEC.

N	Common Indicator Code	Indicator Level	Indicator Name	Unit of Measure	Indicator Classification	Baseline (Year)	Y1	Y2	Y3	Y4	Y5	Note
19		Process	Completion of pilot testing of national assessment instruments	Date	Date	N/A		12/31/2015				As per project lead assumptions.
Industry-led Skills and Workforce Development Project¹⁷												
20	E-6	Outcome	Students participating in MCC-supported education programs	Number	Cumulative	0					1,500	Total number defined as per ERR assumptions.
21	E-7	Outcome	Graduates from MCC-supported education activities	Number	Cumulative	0						Monitoring Only
22		Output	Industry co-investment in TVET provision	US Dollars	Cumulative	0	0	450,000	1,200,000	1,500,000	1,800,000	This did not start until 2017. There is a quarter lag in data for this indicator because it takes a quarter to validate the data.
23		Output	Conferences held which showcase provider best practice	Number	Cumulative	0		1	2	3	3	Defined by PEM
24		Output	TVET grants fully disbursed	Number	Cumulative	0	0	0	5	5	10	This indicator tracks large grants.

¹⁷ Indicators will be revised upon completion of the grant manual.
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N	Common Indicator Code	Indicator Level	Indicator Name	Unit of Measure	Indicator Classification	Baseline (Year)	Y1	Y2	Y3	Y4	Y5	Note
		Output	TVET small grants fully disbursed	Number	Cumulative	0	No Target	No Target	No Target	No Target	No Target	Indicator tracks small grants. Monitoring Only.
25	E-5	Output	Instructors trained	Number	Cumulative	0	0	0	20	20	40	
26		Process	Date first grant agreement is signed	Date	Date	N/A		9/30/2015				
27		Process	Date final grant agreement is signed	Date	Date	N/A				9/30/2017		This indicator tracks large grants.
		Process	Date first small grant agreement is signed.	Date	Date	N/A	No Target	No Target	No Target	No Target	No Target	Monitoring Only
		Process	Date final small grant agreement is signed	Date	Date	N/A	No Target	No Target	No Target	No Target	No Target	Monitoring Only

N	Common Indicator Code	Indicator Level	Indicator Name	Unit of Measure	Indicator Classification	Baseline (Year)	Y1	Y2	Y3	Y4	Y5	Note
28		Process	Total grant outlays	US Dollars	Cumulative	0	0	3,000,000	8,000,000	10,000,000	12,000,000	This indicator tracks large grants."
29		Process	Disbursement of TA Contracts	US Dollars	Cumulative	0	0	190,000	380,000	570,000	760,000	
STEM Higher Education Project												
30	E-6	Outcome	Students participating in MCC-supported education activities	Number	Cumulative	0	0	495	999	1519	2008	As per original ERR assumptions.
31		Outcome	Formal ABET accreditation for Georgian degree program	Date	Date	N/A					8/28/2019	ABET Accreditation will be available after 5 years since the beginning of the program (4 years of bachelor's program plus 1 year).
		Output	Students participating in schools/programs on the ABET accreditation track.	Number	Cumulative	0	No Target	No Target	No Target	No Target	No Target	Monitoring Only
		Outcome	ABET Committee Formed	Date	Date	N/A	No Target	No Target	No Target	No Target	No Target	Monitoring Only

N	Common Indicator Code	Indicator Level	Indicator Name	Unit of Measure	Indicator Classification	Baseline (Year)	Y1	Y2	Y3	Y4	Y5	Note
		Outcome	Formal ACS accreditation for Chemistry degree program	Date	Date	N/A	No Target	No Target	No Target	No Target	No Target	Monitoring Only
32		Outcome	Retention rate of students in MCC-funded Bachelor's programs	Percentage	Level	0	N/A	80%	80%	80%	80%	As discussed with SDSU
33	E-5	Output	Instructors trained	Number	Cumulative	0	30	60	90	120	150	As per SDSU.
33(a)		Output	Georgian faculty members receiving US-based training from US partner institution	Number	Cumulative	0	15	30	45	60	75	As per SDSU. This is an input to instructors trained.
33(b)		Output	Georgian faculty members receiving Georgia-based training from US partner institution	Number	Cumulative	0	15	30	45	60	75	As per SDSU. This is an input to instructors trained.
		Output	Amount in U.S. Dollars leveraged - Private	Number	Cumulative	0	No Target	No Target	No Target	No Target	No Target	Monitoring Only
		Output	Amount in U.S. Dollars leveraged - Public	Number	Cumulative	0	No Target	No Target	No Target	No Target	No Target	Monitoring Only
34		Process	Signing of partnership agreement	Date	Date	N/A	8/30/2014					Accomplished.

N	Common Indicator Code	Indicator Level	Indicator Name	Unit of Measure	Indicator Classification	Baseline (Year)	Y1	Y2	Y3	Y4	Y5	Note
35		Process	First cohort of students enters MCC-funded Bachelor's program	Date	Date	N/A		10/1/2015				Accomplished

2.2. Indicator Baselines and Targets (Evaluation Indicators for Specific Evaluation Plans)

N	Indicator Level	Indicator Name	Unit of Measure	Indicator Classification	Baseline (Year)	Y1	Y2	Y3	Y4	Y5
Improving General Education Project: Improved Learning Environment Infrastructure Activity										
1	Goal	Transition Rate from 9th to 10th grade	Percentage	Level	TBD	TBD	TBD	TBD	TBD	TBD
2	Goal	Percentage of 10th grade entrants who graduate from 12th grade	Percentage	Level	TBD	TBD	TBD	TBD	TBD	TBD
3	Goal	Percentage of high school graduates who enter university studies	Percentage	Level	TBD	TBD	TBD	TBD	TBD	TBD
4	Outcome	Students enrolled in MCC-rehabilitated schools	Number	Cumulative	0	TBD	TBD	TBD	TBD	TBD
5	Outcome	Student attendance rates	Percentage	Level	TBD	TBD	TBD	TBD	TBD	TBD

N	Indicator Level	Indicator Name	Unit of Measure	Indicator Classification	Baseline (Year)	Y1	Y2	Y3	Y4	Y5
6	Outcome	Teacher attendance rates	Percentage	Level	TBD	TBD	TBD	TBD	TBD	TBD
7	Outcome	Average Standardized Test Scores	Number	Level	TBD	TBD	TBD	TBD	TBD	TBD
8	Outcome	Time study of students' daily time allocation	Percentage	Level	TBD	TBD	TBD	TBD	TBD	TBD
9	Outcome	Average classroom temperature differential in winter	Degrees Celsius	Level	TBD	TBD	TBD	TBD	TBD	TBD
10	Outcome	Utilization of science labs	Percentage	Level	TBD	TBD	TBD	TBD	TBD	TBD
11	Outcome	Teacher satisfaction with school facilities	Number	Level	TBD	TBD	TBD	TBD	TBD	TBD
12	Outcome	Parent/Student satisfaction with school facilities	Number	Level	TBD	TBD	TBD	TBD	TBD	TBD
13	Outcome	Improved maintenance practices	Number	Level	TBD	TBD	TBD	TBD	TBD	TBD

N	Indicator Level	Indicator Name	Unit of Measure	Indicator Classification	Baseline (Year)	Y1	Y2	Y3	Y4	Y5
14	Outcome	Improved ratings on school facilities condition assessments (at beneficiary schools)	Number	Level	TBD	TBD	TBD	TBD	TBD	TBD
Improving General Education Project: Training Educators for Excellence Activity										
15	Outcome	Teacher improvement of content knowledge over baseline score	Number	Level	TBD	TBD	TBD	TBD	TBD	TBD
16	Outcome	Internal Efficiency Measures (Repetition Rates, Internal Transition Rates, etc.)	Percentage	Level	TBD	TBD	TBD	TBD	TBD	TBD
17	Outcome	Students' standardized test scores	Number	Level	TBD	TBD	TBD	TBD	TBD	TBD
18	Outcome	Graduates from MCC-supported education activities	Number	Cumulative	0	TBD	TBD	TBD	TBD	TBD
Improving General Education Project: Education Assessment Activity										
19	Outcome	Students participating in MCC-supported classroom assessment activities	Number	Cumulative	0	TBD	TBD	TBD	TBD	TBD
20	Outcome	Percentage of secondary teachers implementing classroom assessment tools	Percentage	Level	0	TBD	TBD	TBD	TBD	50%

N	Indicator Level	Indicator Name	Unit of Measure	Indicator Classification	Baseline (Year)	Y1	Y2	Y3	Y4	Y5
Industry-led Skills and Workforce Development Project										
21	Goal	Employment rate differential of graduates of MCC-supported grantee programs	Percentage	Level	N/A					9% increase over comparison group
22	Goal	Wage differential of graduates of MCC-supported grantee programs	Number	Level	N/A					23% increase over comparison group
23	Outcome	Change in social perceptions around MCC supported TVET programs	Number	Level	TBD	TBD	TBD	TBD	TBD	TBD
24	Outcome	Students participating in MCC-supported education activities	Number	Cumulative	0	N/A	TBD	TBD	TBD	TBD
25	Outcome	Drop-out rate of program beneficiaries	Percentage	Level	0	N/A	TBD	TBD	TBD	TBD
26	Outcome	Student Internships with Industry Partners	Number	Cumulative	0	N/A	TBD	TBD	TBD	TBD
STEM Higher Education Project										
27	Goal	Wage differential of the graduates of MCC-supported Bachelor's program	Number	Level	N/A	N/A	N/A	N/A	N/A	44% increase over top Georgian degree

N	Indicator Level	Indicator Name	Unit of Measure	Indicator Classification	Baseline (Year)	Y1	Y2	Y3	Y4	Y5
28	Outcome	Proportion of imported workers in relevant fields/program	Percentage	Level	TBD	TBD	TBD	TBD	TBD	TBD
29	Outcome	Proportion of Bachelor's-level students who study abroad in relevant fields/programs	Percentage	Level	TBD	TBD	TBD	TBD	TBD	TBD
30	Outcome	Increased demand for enrollment into MCC-funded Bachelor's programs over pre-existing programs	Number	Level	0	TBD	TBD	TBD	TBD	TBD
31	Outcome	Field-relevant employment rate of the graduates of MCC-supported Bachelor's program	Percentage	Level	0	N/A	N/A	N/A	N/A	N/A
32	Outcome	Overall employment rate of the graduates of MCC-supported Bachelor's program	Percentage	Level	0	N/A	N/A	N/A	N/A	N/A

ANNEX 3.

3.1. Modifications to the M&E Plan

The following are changes which have occurred to the M&E framework (Compact's Annex III) since the signature of the Compact in June 2013:

- Indicators have been separated into two types:
 - ✓ “Monitoring” indicators, referring to those indicators whose progress is expected to be reported on at least on an annual basis.
 - ✓ “Evaluation” indicators are those whose progress will be reported less than annually, generally in coordination with the delivery of survey reports and/or evaluation reports.
- Evaluation methodology has changed for the ILEI activity of the Improving General Education Quality Project.
 - ✓ Formerly expected to evaluate the project's impacts using a Regression Discontinuity Design (RDD), the ILEI evaluation is now planned as a randomized controlled trial (RCT), in coordination with the project's stakeholders and its independent Evaluator (Mathematica Policy Research).

3.2. Modifications to the M&E Plan (official revision made in March, 2016)

The following are changes which have occurred to the M&E framework (Compact's Annex III) since the signature of the Compact in June 2013:

- 1) Implementing status of the activities has been updated
- 2) Specific evaluation plan for Teacher Training Activity have been updated based on the implementing status of the activities
- 3) M&E budget has been updated based on the current status of implementation
- 4) Reporting data flow structure has been amended based on the current status of implementation
- 5) Monitoring indicators have been amended based on the current status of implementation as follows:

Evaluation Change Design:

Evaluation Title: Teacher Training Evaluation		
Project:	General Education Project	
Activity:	Training Teachers for Excellence	
Sub-Activity:	N/A	
22-February-2016	Change Description:	Modifying the Primary Methodology
	Justification:	Change in evaluation type
	Justification Description:	Implementation plans will make an impact evaluation of the whole activity very difficult. However, the Ministry has agreed a small component can be randomized at the teacher level.

Indicator Changes:

<i>Educational facilities constructed or rehabilitated</i>		
Project:	Improving General Education Project	
Activity:	Improved Learning Environment Infrastructure Activity	
Sub-Activity:	N/A	
March 2016	Change Description:	Indicator name change
	Justification:	To align with MCC’s common indicator guidance
	Justification Description:	MCC requires that all common indicators using the common indicator code have the same name, definition, level, classification, and unit of measure. Therefore, the indicator previously named “Schools fully rehabilitated” has been changed to reflect the appropriate common indicator name.
<i>Value of signed educational facility construction, rehabilitation, and equipping contracts</i>		
Project:	Improving General Education Project	

Activity:	Improved Learning Environment Infrastructure Activity						
Sub-Activity:	N/A						
March 2016	Change Description:	Indicator name and definition change					
	Justification:	To align with MCC’s common indicator guidance					
	Justification Description:	MCC requires that all common indicators using the common indicator code have the same name, definition, level, classification, and unit of measure. Therefore, the indicator previously named “Total value of construction contracts” has been changed to reflect the appropriate common indicator name and definition.					
March 2016	Change Description:	Target Modification					
		Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact
	Revised Targets		17,280,000	34,560,000	43,200,000	43,200,000	43,200,000
	Previous Targets	5,000,000	35,000,000	54,000,000	54,000,000	54,000,000	54,000,000
	Justification:	Reflecting costs related to construction, rehabilitation and equipment (excluding cost for supervision, contingency etc.)					
	Justification Description:	Targets were changed to reflect construction costs only as per definition of the indicator.					
Percent disbursed of educational facility construction, rehabilitation, and equipping contracts							
Project:	Improving General Education Project						
Activity:	Improved Learning Environment Infrastructure Activity						
Sub-Activity:	N/A						
March 2016	Change Description:	Indicator definition change					
	Justification:	To align with MCC’s common indicator guidance					

	Justification Description:	MCC requires that all common indicators using the common indicator code have the same name, definition, level, classification, and unit of measure. Therefore, the indicator definition has changed to reflect the appropriate common indicator definition.					
March 2016	Change Description:	Target Modification					
		Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact
	Revised Targets		40.00	80.00	100.00	100.00	100.00
	Previous Targets	1.50	40.00	80.00	100.00	100.00	100.00
	Justification:	Reflects the fact that no targets were set for the input indicators in Y1. It thus does not make sense to have a target for the percentage indicator.					
	Justification Description:	There are no values for the input indicators.					
Value disbursed of educational facility construction, rehabilitation, and equipping contracts							
Project:	Improving General Education Project						
Activity:	Improved Learning Environment Infrastructure Activity						
Sub-Activity:	N/A						
March 2016	Change Description:	New indicator					
	Justification:	To align with MCC’s common indicator guidance					
	Justification Description:	MCC requires that all common indicators measuring percentage of contracts disbursed have both input indicators (value disbursed and value signed) included as indicators as well.					
Science, math, English and ICT teachers trained							
Project:	Improving General Education Project						
Activity:	Training Educators for Excellence Activity						
Sub-Activity:	N/A						

March 2016	Change Description:	Indicator removed
	Justification:	To clarify how we are counting teachers. This specifies the difference between completing the core modules and the subject matter training.
	Justification Description:	Indicator removed to be replaced by two more specific indicators defined by Implementing Entity Agreement with TPDC as of December 25, 2015.
Teachers enrolled in training who complete core modules		
Project:	Improving General Education Project	
Activity:	Training Educators for Excellence Activity	
Sub-Activity:	N/A	
March 2016	Change Description:	New indicator
	Justification:	To clarify how we are counting teachers. This specifies the difference between completing the core modules and the subject matter training.
	Justification Description:	Indicator added to reflect targets defined by Implementing Entity Agreement with TPDC as of December 25, 2015.
Teachers enrolled in training who complete subject trainings		
Project:	Improving General Education Project	
Activity:	Training Educators for Excellence Activity	
Sub-Activity:	N/A	
March 2016	Change Description:	New indicator
	Justification:	To clarify how we are counting teachers. This specifies the difference between completing the core modules and the subject matter training.
	Justification Description:	Indicator added to reflect targets defined by Implementing Entity Agreement with TPDC as of December 25, 2015.
Core training for teachers completed		

Project:	Improving General Education Project	
Activity:	Training Educators for Excellence Activity	
Sub-Activity:	N/A	
March 2016	Change Description:	New indicator
	Justification:	To reflect the date on which core training shall be completed.
	Justification Description:	Indicator added to reflect implementation/process defined by Implementing Entity Agreement with TPDC as of December 25, 2015.
<i>Subject matter training for teachers completed</i>		
Project:	Improving General Education Project	
Activity:	Training Educators for Excellence Activity	
Sub-Activity:	N/A	
March 2016	Change Description:	New indicator
	Justification:	To reflect the date on which subject matter training shall be completed.
	Justification Description:	Indicator added to reflect implementation/process defined by Implementing Entity Agreement with TPDC as of December 25, 2015.
<i>Leadership (Principals) Academies completed</i>		
Project:	Improving General Education Project	
Activity:	Training Educators for Excellence Activity	
Sub-Activity:	N/A	
March 2016	Change Description:	New indicator
	Justification:	To track principal training as part of the TEE Activity.
	Justification Description:	Indicator added to reflect implementation/process defined by Implementing Entity Agreement with TPDC as of December 25, 2015.

<i>Secondary teachers trained in-class assessments</i>		
Project:	Improving General Education Project	
Activity:	Education Assessment Activity	
Sub-Activity:	N/A	
March 2016	Change Description:	Indicator removed
	Justification:	The classroom assessment activity is under the Teacher Training Activity, according to the current designs. Leaving the indicator in would result in double counting teachers.
	Justification Description:	Indicator removed since it duplicates indicators defined by Implementing Entity Agreement with NAEC and TPDC as of December 25, 2015.
<i>Teachers enrolled in training who complete training course</i>		
Project:	Improving General Education Project	
Activity:	Training Educators for Excellence Activity	
Sub-Activity:	N/A	
March 2016	Change Description:	Indicator removed
	Justification:	To clarify how we are counting teachers. This specifies the difference between completing the core modules and the subject matter training.
	Justification Description:	Indicator removed to be replaced by two more specific indicators defined by Implementing Entity Agreement with TPDC as of December 25, 2015.
<i>Completion of first cohort of teacher/principals/facilitators training</i>		
Project:	Improving General Education Project	
Activity:	Training Educators for Excellence Activity	
Sub-Activity:	N/A	
March 2016	Change Description:	Indicator removed

	Justification:	To disaggregate the specific training dates for different target groups.					
	Justification Description:	Indicator removed to be replaced by more specific indicators defined by Implementing Entity Agreement with TPDC as of December 25, 2015.					
<i>Instructors trained</i>							
Project:	STEM Higher Education Project						
Activity:	N/A						
Sub-Activity:	N/A						
March 2016	Change Description:	New indicator					
	Justification:	To indicate total number of instructors trained under the project.					
	Justification Description:	Indicator added to summarize the number of trained faculty members who get Georgia and US based trainings.					
<i>Students participating in MCC-supported education programs</i>							
Project:	STEM Higher Education Project						
Activity:	N/A						
Sub-Activity:	N/A						
March 2016	Change Description:	Indicator name change					
	Justification:	To align with MCC’s common indicator guidance					
	Justification Description:	MCC requires that all common indicators using the common indicator code have the same name, definition, level, classification, and unit of measure. Therefore, the indicator previously named “Schools fully rehabilitated” has been changed to reflect the appropriate common indicator name.					
March 2016	Change Description:	Targets Change; Name changed in accordance with the Common Indicators					
		Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact

	Revised Targets		495	999	1519	2008	2008
	Previous Targets		425	850	1275	1700	1700
	Justification:	The original numbers in the M&E plan were incorrect. They have been updated to reflect what was in SDSU’s financial plan.					
	Justification Description:	Targets were changed to correct for a mistake in the first M&E plan.					
First cohort of students enters MCC-funded Bachelor's program							
Project:	STEM Higher Education Project						
Activity:	N/A						
Sub-Activity:	N/A						
March 2016	Change Description:	Disaggregation deleted					
	Justification:	In accordance with the Common Indicator Guidance					
	Justification Description:	Date indicator is not a subject to disaggregation.					
Students participating in MCC-supported education programs							
Project:	ISWD						
Activity:	Competitive Grants Activity						
Sub-Activity:	N/A						
March 2016	Change Description:	Name Change					
	Justification:	In accordance with the Common Indicator Guidance					
	Justification Description:	The name was change to match MCC’s common indicators.					
Instructors trained							
Project:	ISWD						
Activity:	Competitive Grants Activity						
Sub-Activity:	N/A						

March 2016	Change Description:	Name Change; disaggregation added
	Justification:	In accordance with the Common Indicator Guidance
	Justification Description:	The name was change to match MCC's common indicators. A gender disaggregation was added.

3.3. Modifications to the M&E Plan (official revision made in January, 2018)

The following are changes which have occurred to the M&E framework (Compact's Annex III) since the signature of the Compact in June 2013:

- 1) Implementing status of the activities has been updated
- 2) Specific evaluation plan for Teacher Training Activity have been updated based on the evaluation design prepared by MPR
- 3) Education Assessment Activity specific evaluation plan removed
- 4) ISWD Project specific evaluation plan updated based on the evaluation design prepared by MPR
- 5) M&E budget has been updated based on the current status of implementation (budget reduced by USD 600,000.00 based on the needs of reallocation to school rehabilitation activity)
- 6) The evaluation indicators "Students participating in MCC-supported classroom assessment activities" and "Percentage of secondary implementing classroom assessment tools" were removed because they are no longer relevant, because the classroom assessments are part of the TEE activity now.
- 7) Monitoring indicators have been amended based on the current status of implementation as follows:

Evaluation Change Design:

Evaluation Title: Teacher Training Evaluation		
Project:	General Education Project	
Activity:	Training Teachers for Excellence	
Sub-Activity:	N/A	
January 2018	Change Description:	Modifying the Primary Methodology
	Justification:	Change in evaluation design

	Justification Description:	Evaluation design prepared by MPR
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Evaluation Title: ISWD Evaluation		
Project:	ISWD Project	
Activity:	N/A	
Sub-Activity:	N/A	
January 2018	Change Description:	Modifying the Primary Methodology
	Justification:	Change in evaluation design
	Justification Description:	Evaluation design prepared by MPR

Indicator Changes:

<i>Students benefitting from rehabilitated schools</i>		
Project:	Improving General Education Project	
Activity:	Learning Environment Infrastructure Activity	
Sub-Activity:	N/A	
January 2018	Change Description:	Indicator Name Modification from “Students benefitting from MCC-installed/improved science labs” to “Students benefitting from rehabilitated schools”
	Justification Description:	Revised indicator name better reflects the targets.
<i>School-based Professional Development Facilitators Trained</i>		
Project:	Improving General Education Project	
Activity:	Training Educators for Excellence	
Sub-Activity:	N/A	

January 2018	Change Description:	Indicator Removed					
	Justification:	Indicator split in two to reflect implementation progress					
	Justification Description:	This change was introduced to reflect current implementing status based on the IEA with TPDC					
<i>School-based professional development facilitators who complete Leadership Academy 2</i>							
Project:	Improving General Education Project						
Activity:	Training Educators for Excellence						
Sub-Activity:	N/A						
January 2018	Change Description:	New Indicator					
	Justification:	The first indicator to replace “School-based Professional Development Facilitators Trained” indicator					
	Justification Description:	This change was introduced to reflect current implementing status based on the IEA with TPDC					
January 2018	Change Description:	Target Modification					
		Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact
	Revised Targets				1,384	1,528	1,528
	Previous Targets		417	938	1,564	2,085	2,085
	Justification:	Reflecting numbers based on the implementation status					
	Justification Description:	Targets were changed to reflect current implementing status based on the IEA with TPDC					
<i>School-based professional development facilitators who complete Leadership Academy 3</i>							
Project:	Improving General Education Project						
Activity:	Training Educators for Excellence						
Sub-Activity:	N/A						

January 2018	Change Description:	New Indicator						
	Justification:	The first indicator to replace “School-based Professional Development Facilitators Trained” indicator						
	Justification Description:	This change was introduced to reflect current implementing status based on the IEA with TPDC						
January 2018	Change Description:	Target Modification						
		Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact	
	Revised Targets					1,528	1,528	
	Previous Targets		417	938	1,564	2,085	2,085	
	Justification:	Reflecting numbers based on the implementation status						
	Justification Description:	Targets were changed to reflect current implementing status based on the IEA with TPDC						
School Principals Trained								
Project:	Improving General Education Project							
Activity:	Training Educators for Excellence							
Sub-Activity:	N/A							
January 2018	Change Description:	Indicator Removed						
	Justification:	Indicator split in three to reflect implementation progress						
	Justification Description:	This change was introduced to reflect current implementing status based on the IEA with TPDC						
School principals who complete Leadership Academy 1								
Project:	Improving General Education Project							
Activity:	Training Educators for Excellence							
Sub-Activity:	N/A							

January 2018	Change Description:	New Indicator					
	Justification:	The first indicator to replace “School Principals Trained” indicator					
	Justification Description:	This change was introduced to reflect current implementing status based on the IEA with TPDC					
January 2018	Change Description:	Target Modification					
		Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact
	Revised Targets			1,497	1,668	1,668	1,668
	Previous Targets		417	938	1,564	2,085	2,085
	Justification:	Reflecting numbers based on the implementation status					
	Justification Description:	Targets were changed to reflect current implementing status based on the IEA with TPDC					
<i>School principals who complete Leadership Academy 2</i>							
Project:	Improving General Education Project						
Activity:	Training Educators for Excellence						
Sub-Activity:	N/A						
January 2018	Change Description:	New Indicator					
	Justification:	The second indicator to replace “School Principals Trained” indicator					
	Justification Description:	This change was introduced to reflect current implementing status based on the IEA with TPDC					
January 2018	Change Description:	Target Modification					
		Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact
	Revised Targets				1,497	1,668	1,668
	Previous Targets		417	938	1,564	2,085	2,085

	Justification:	Reflecting numbers based on the implementation status						
	Justification Description:	Targets were changed to reflect current implementing status based on the IEA with TPDC						
School principals who complete Leadership Academy 3								
Project:	Improving General Education Project							
Activity:	Training Educators for Excellence							
Sub-Activity:	N/A							
January 2018	Change Description:	New Indicator						
	Justification:	The second indicator to replace “School Principals Trained” indicator						
	Justification Description:	This change was introduced to reflect current implementing status based on the IEA with TPDC						
January 2018	Change Description:	Target Modification						
		Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact	
	Revised Targets					1,668	1,668	
	Previous Targets		417	938	1,564	2,085	2,085	
	Justification:	Reflecting numbers based on the implementation status						
	Justification Description:	Targets were changed to reflect current implementing status based on the IEA with TPDC						
Teachers Enrolled in Training Who Completed Core Modules								
Project:	Improving General Education Project							
Activity:	Training Educators for Excellence							
Sub-Activity:	N/A							

January 2018	Change Description:	Indicator Removed
	Justification:	Indicator split in three to reflect implementation progress
	Justification Description:	This change was introduced to reflect current implementing status based on the IEA with TPDC
Teachers who have completed Core Module 1		
Project:	Improving General Education Project	
Activity:	Training Educators for Excellence	
Sub-Activity:	N/A	
January 2018	Change Description:	New Indicator
	Justification:	Indicator split in three to reflect implementation progress
	Justification Description:	This change was introduced to reflect current implementing status based on the IEA with TPDC
Teachers who have completed Core Module 2		
Project:	Improving General Education Project	
Activity:	Training Educators for Excellence	
Sub-Activity:	N/A	
January 2018	Change Description:	New Indicator
	Justification:	Indicator split in three to reflect implementation progress
	Justification Description:	This change was introduced to reflect current implementing status based on the IEA with TPDC
Teachers who have completed Core Module 3		
Project:	Improving General Education Project	
Activity:	Training Educators for Excellence	
Sub-Activity:	N/A	

January 2018	Change Description:	New Indicator						
	Justification:	Indicator split in three to reflect implementation progress						
	Justification Description:	This change was introduced to reflect current implementing status based on the IEA with TPDC						
Teachers who have completed a Subject Module								
Project:	Improving General Education Project							
Activity:	Training Educators for Excellence							
Sub-Activity:	N/A							
January 2018	Change Description:	Indicator Name Modification						
	Justification:	Indicator name modified to reflect current implementing status						
	Justification Description:	This change was introduced to reflect current implementing status based on the IEA with TPDC						
January 2018	Change Description:	Target Modification						
		Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact	
	Revised Targets			7,091	14,578	14,578	14,578	
	Previous Targets					15,460		
	Justification:	Reflecting numbers based on the implementation status						
	Justification Description:	Targets were changed to reflect current implementing status based on the IEA with TPDC						
Teachers who have completed full course and received a certificate								
Project:	Improving General Education Project							
Activity:	Training Educators for Excellence							
Sub-Activity:	N/A							
January 2018	Change Description:	New Indicator						

	Justification:	This indicator will fully reflect teachers who complete the trainings required to receive a certificate.						
	Justification Description:	This change was introduced to reflect current implementing status based on the IEA with TPDC						
Core Training for teachers completed								
Project:	Improving General Education Project							
Activity:	Training Educators for Excellence							
Sub-Activity:	N/A							
January 2018	Change Description:	Target Modification						
		Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact	
	Revised Targets				07/30/2018			
	Previous Targets				12/30/2017			
	Justification:	Reflecting numbers based on the implementation status						
	Justification Description:	Targets were changed to reflect current implementing status based on the IEA with TPDC						
Subject Matter trainings for teachers completed								
Project:	Improving General Education Project							
Activity:	Training Educators for Excellence							
Sub-Activity:	N/A							
January 2018	Change Description:	Target Modification						
		Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact	
	Revised Targets				10/30/2018			

	Previous Targets				12/30/2018		
	Justification:	Reflecting numbers based on the implementation status					
	Justification Description:	Targets were changed to reflect current implementing status based on the IEA with TPDC					
Leadership Academies completed							
Project:	Improving General Education Project						
Activity:	Training Educators for Excellence						
Sub-Activity:	N/A						
January 2018	Change Description:	Target Modification					
		Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact
	Revised Targets				12/30/2018		
	Previous Targets			12/30/2017			
	Justification:	Reflecting numbers based on the implementation status					
	Justification Description:	Targets were changed to reflect current implementing status based on the IEA with TPDC					
January 2018	Change Description:	Indicator Name Modification					
	Justification:	Removed principals from name.					
	Justification Description:	This change was introduced to reflect current implementing status based on the IEA with TPDC					
Students participating in MCC-supported education programs							
Project:	Industry-led Skills and Workforce Development Project						
Activity:	N/A						

Sub-Activity:	N/A	
January 2018	Change Description:	Data Source Modification
	Justification:	Data source clarified as PEM. Was previously listed as Grant Managing Company.
<i>Enrollment in qualifications-granting programs (as a % of total TVET enrollment)</i>		
Project:	Industry-led Skills and Workforce Development Project	
Activity:	N/A	
Sub-Activity:	N/A	
January 2018	Change Description:	Indicator Removed
	Justification:	Indicator removed based on relevancy considerations
<i>Industry co-investment in TVET provision</i>		
Project:	Industry-led Skills and Workforce Development Project	
Activity:	N/A	
Sub-Activity:	N/A	
January 2018	Change Description:	Data Source Modification
	Justification:	Data source clarified as PEM. Was previously listed as Grant Managing Company.
<i>Conferences held which showcase provider best practice</i>		
Project:	Industry-led Skills and Workforce Development Project	
Activity:	N/A	
Sub-Activity:	N/A	
January 2018	Change Description:	Data Source Modification
	Justification:	Data source clarified as PEM. Was previously listed as Grant Managing Company.
<i>TVET grants fully disbursed</i>		

Project:	Industry-led Skills and Workforce Development Project	
Activity:	N/A	
Sub-Activity:	N/A	
January 2018	Change Description:	Data Source Modification
	Justification:	Data source clarified as PEM. Was previously listed as Grant Managing Company.
<i>TVET small grants fully disbursed</i>		
Project:	Industry-led Skills and Workforce Development Project	
Activity:	N/A	
Sub-Activity:	N/A	
January 2018	Change Description:	New Indicator
	Justification:	Monitoring Only
	Justification Description:	Adding indicator to track small grants.
<i>Instructors trained</i>		
Project:	Industry-led Skills and Workforce Development Project	
Activity:	N/A	
Sub-Activity:	N/A	
January 2018	Change Description:	Data Source Modification
	Justification:	Data source clarified as PEM. Was previously listed as Grant Managing Company.
<i>Date first grant agreement is signed</i>		
Project:	Industry-led Skills and Workforce Development Project	
Activity:	N/A	
Sub-Activity:	N/A	

January 2018	Change Description:	Data Source Modification
	Justification:	Data source clarified as PEM. Was previously listed as Grant Managing Company.
<i>Date first small grant agreement is signed</i>		
Project:	Industry-led Skills and Workforce Development Project	
Activity:	N/A	
Sub-Activity:	N/A	
January 2018	Change Description:	New Indicator
	Justification:	Monitoring Only
	Justification Description:	Adding indicator to track small grants.
<i>Date final grant agreement is signed</i>		
Project:	Industry-led Skills and Workforce Development Project	
Activity:	N/A	
Sub-Activity:	N/A	
January 2018	Change Description:	Data Source Modification
	Justification:	Data source clarified as PEM. Was previously listed as Grant Managing Company.
<i>Date final small grant agreement is signed</i>		
Project:	Industry-led Skills and Workforce Development Project	
Activity:	N/A	
Sub-Activity:	N/A	
January 2018	Change Description:	New Indicator
	Justification:	Monitoring Only
	Justification Description:	Adding indicator to track small grants

Total grant outlays		
Project:	Industry-led Skills and Workforce Development Project	
Activity:	N/A	
Sub-Activity:	N/A	
January 2018	Change Description:	Data Source Modification
	Justification:	Data source clarified as PEM. Was previously listed as Grant Managing Company.
Disbursement of TA Contracts		
Project:	Industry-led Skills and Workforce Development Project	
Activity:	N/A	
Sub-Activity:	N/A	
January 2018	Change Description:	Data Source Modification
	Justification:	Data source clarified as PEM. Was previously listed as Grant Managing Company.
Students participating in schools/programs on the ABET accreditation track		
Project:	STEM Higher Education Project	
Activity:	N/A	
Sub-Activity:	N/A	
January 2018	Change Description:	New Indicator
	Justification:	Monitoring Only
	Justification Description:	New indicator to track the number of students participating in schools/programs on the ABET accreditation track
ABET Committee Formed		
Project:	STEM Higher Education Project	
Activity:	N/A	
Sub-Activity:	N/A	

January 2018	Change Description:	New Indicator
	Justification:	Monitoring Only
	Justification Description:	Indicator to track when an ABET Committee is formed
Formal ACS accreditation for Chemistry degree program		
Project:	STEM Higher Education Project	
Activity:	N/A	
Sub-Activity:	N/A	
January 2018	Change Description:	New Indicator
	Justification:	Monitoring Only
	Justification Description:	New indicator to track ACS accreditation for a Chemistry degree program.
Retention Rate of students in MCC-funded Bachelor's programs		
Project:	STEM Higher Education Project	
Activity:	N/A	
Sub-Activity:	N/A	
January 2018	Change Description:	Name Modification
	Justification:	Clarification of name
Amount in U.S. Dollars leveraged - Private		
Project:	STEM Higher Education Project	
Activity:	N/A	
Sub-Activity:	N/A	
January 2018	Change Description:	New Indicator
	Justification:	Monitoring Only

	Justification Description:	New indicator to track money leveraged through the project.
<i>Amount in U.S Dollars leveraged - Public</i>		
Project:	STEM Higher Education Project	
Activity:	N/A	
Sub-Activity:	N/A	
January 2018	Change Description:	New Indicator
	Justification:	Monitoring Only
	Justification Description:	New indicator to track money leveraged through the project.

3.4. Modifications to the M&E Plan (official revision made in November 2018)

<i>Graduates from MCC-Supported education activities</i>		
Project:	Industry-led Skills and Workforce Development Project	
Activity:	N/A	
Sub-Activity:	N/A	
November 2018	Change Description:	New Indicator
	Justification:	MCC requires new common indicator
	Justification Description:	Team realized we had this data so we should be reporting on it.

Retention Rate of Students in MCC-funded Bachelor’s programs			
Project:	Industry-led Skills and Workforce Development Project		
Activity:	N/A		
Sub-Activity:	N/A		
November 2018	Change Description:	Disaggregation Modification	
	Change:	Previous	Revised
		Male/Female	(A) Georgian/International (A.1) Male/Female
	Change Description:	We want to be able to see the difference between Georgian and International students.	