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Report No: PAD3221

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT APPRAISAL DOCUMENT
ON A
PROPOSED LOAN

IN THE AMOUNT OF US$102.7 MILLION

TO

GEORGIA

FOR A

GEORGIA I2Q PROJECT

(INNOVATION, INCLUSION AND QUALITY)

April 22, 2019

Education Global Practice
Europe and Central Asia

CURRENCY EQUIVALENTS

(Exchange Rate Effective February 28, 2019)

Currency Unit =	GEL (Georgian Lari)
GEL 2.66 =	US$1

FISCAL YEAR
January 1 - December 31

ABBREVIATIONS AND ACRONYMS

ASA	Analytical and Advisory Services
CIF	Competitive Innovation Fund
CIS	Commonwealth Independent States
CPF	Country Partnership Framework
DCFTA	The Deep and Comprehensive Free Trade Agreement
DFID	Department for International Development
DPO	Development Policy Operation
ECA	Europe and Central Asia
ECEC	Early Childhood Education and Care
EMIS	Education Management Information System (EMIS)
EOIs	Expressions of Interest
ESIDA	Education and Science Infrastructure Development Agency
ESMF	Environment and Social Management Framework
ESMP	Environment and Social Management Plan
EU	European Union
FM	Financial Management
GDP	Gross Domestic Product
M&E	Monitoring and Evaluation
MELQO	Measuring Early Learning Quality and Outcomes
MESCS	Ministry of Education, Science, Culture and Sport
MICs	Middle-Income Countries
MRDI	Ministry of Regional Development and Infrastructure
NAEC	National Assessment and Examination Center
NCEQE	National Center for Education Quality Enhancement
NGOs	Non-Governmental Organizations
OECD	Organization for Economic Co-operation and Development
PAD	Project Appraisal Document
PDO	Project Development Objective
PIRLS	Progress in International Reading Literacy Study
PISA	Programme for International Student Assessment
PMU	Project Management Unit (under MESCS)
PMT	Project Management Team (under MDF)
PPAs	Power Purchase Agreements

GEL	Georgian Lari	PPSD	Project Procurement Strategy for Development
GITA	Georgia Information and Technology Agency	PPPs	Public-Private Partnerships
GIZ	The Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH	SCD	Systematic Country Diagnostic
GoG	Government of Georgia	SOEs	State-Owned Enterprises
GRM	Grievance Redress Mechanism	SORT	Systematic Operations Risk-rating Tool
GRS	Grievance Redress System	SRP	School Readiness Program
HCP	Human Capital Project	STEP	Systemic Tracking
HES	Higher Education System	STEAM	Science, Technology, Engineering, Arts, and Mathematics
IBRD	International Bank for Reconstruction and Development	STI	Science, Technology and Innovation
ICT	Information and Communication Technology	TIMSS	Trends in International Mathematics and Science Study
IDA	International Development Association	TOR	Terms of Reference
IMF	International Monetary Fund	TPDC	Teacher Professional Development Center
IFR	International Financial Reporting	TTL	Task Team Leader
IPF	Investment Project Financing	UNICEF	United Nations International Children's Emergency Fund
IRR	Internal Rate of Return	USAID	United States Agency for International Development
LMIS	Labor Market Information System	USD	United States Dollar
MCC	Millennium Challenge Corporation	VET	Vocational Education and Training
MDF	Municipal Development Fund of Georgia	WBG	World Bank Group

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GEORGIA
Innovation, Inclusion and Quality Project

TABLE OF CONTENTS

DATA SHEET

Georgia I2Q

Innovation, Inclusion and Quality Project (P168481)

PROJECT APPRAISAL DOCUMENT

EUROPE AND CENTRAL ASIA

Report No: PCBASIC0166876

DATASHEET

BASIC INFORMATION

Country(ies)	Project Name	
Georgia	Georgia I2Q - Innovation, Inclusion and Quality	
Project ID	Financing Instrument	Environmental Assessment Category
P168481	Investment Project Financing	B-Partial Assessment

Financing & Implementation Modalities

[ ] Multiphase Programmatic Approach (MPA)	[ ] Contingent Emergency Response Component (CERC)
[ ] Series of Projects (SOP)	[ ] Fragile State(s)
[ ] Disbursement-linked Indicators (DLIs)	[ ] Small State(s)
[ ] Financial Intermediaries (FI)	[ ] Fragile within a non-fragile Country
[ ] Project-Based Guarantee	[ ] Conflict
[ ] Deferred Drawdown	[ ] Responding to Natural or Man-made Disaster
[ ] Alternate Procurement Arrangements (APA)	

Expected Approval Date	Expected Closing Date
29-May-2019	31-Mar-2026
Bank/IFC Collaboration	

No

Proposed Development Objective(s)

The project development objectives are to (i) expand access to preschool education and (ii) improve the quality of education and learning environments.

Components

Component Name	Cost (US$, millions)
Improving the Quality of and Access to Early Childhood Education and Care	11,737,000.00
Fostering Quality Teaching and Learning in General Education	91,312,000.00
Strengthening Financing Options and Promoting Internationalization in Higher Education	17,575,000.00
System Strengthening and Stakeholder Communication	3,088,000.00
Supporting Project Management, Monitoring, and Evaluations	4,342,000.00

Organizations

Borrower:	Ministry of Finance
Implementing Agency:	Ministry of Education, Science, Culture and Sport/Municipal Development Fund

PROJECT FINANCING DATA (US$, Millions)

SUMMARY

Total Project Cost	128.31
Total Financing	128.31
of which IBRD/IDA	102.70
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Bank for Reconstruction and Development (IBRD)	102.70

Non-World Bank Group Financing	
Counterpart Funding	25.61
Borrower/Recipient	25.61

Expected Disbursements (in US$, Millions)

WB Fiscal Year	2019	2020	2021	2022	2023	2024	2025	2026	2027
Annual	0.00	6.58	13.86	21.08	20.11	17.62	13.65	9.72	0.08
Cumulative	0.00	6.58	20.44	41.52	61.63	79.25	92.91	102.62	102.70

INSTITUTIONAL DATA

Practice Area (Lead)

Education

Contributing Practice Areas

Jobs, Poverty and Equity

Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

Gender Tag

Does the project plan to undertake any of the following?	
a. Analysis to identify Project-relevant gaps between males and females, especially in light of country gaps identified through SCD and CPF	Yes
b. Specific action(s) to address the gender gaps identified in (a) and/or to improve women or men's empowerment	Yes
c. Include Indicators in results framework to monitor outcomes from actions identified in (b)	Yes

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

Risk Category	Rating
1. Political and Governance	Low
2. Macroeconomic	Moderate

3. Sector Strategies and Policies	Low
4. Technical Design of Project or Program	Moderate
5. Institutional Capacity for Implementation and Sustainability	Moderate
6. Fiduciary	Substantial
7. Environment and Social	Low
8. Stakeholders	Moderate
9. Other	
10. Overall	Moderate

COMPLIANCE

Policy

Does the project depart from the CPF in content or in other significant respects?

[ ] Yes [✓] No

Does the project require any waivers of Bank policies?

[ ] Yes [✓] No

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment OP/BP 4.01	✓	
Performance Standards for Private Sector Activities OP/BP 4.03		✓
Natural Habitats OP/BP 4.04		✓
Forests OP/BP 4.36		✓
Pest Management OP 4.09		✓
Physical Cultural Resources OP/BP 4.11		✓
Indigenous Peoples OP/BP 4.10		✓
Involuntary Resettlement OP/BP 4.12	✓	
Safety of Dams OP/BP 4.37		✓
Projects on International Waterways OP/BP 7.50		✓

Projects in Disputed Areas OP/BP 7.60	✓

Legal Covenants

Conditions

Type	Description
Effectiveness	The Additional Conditions of Effectiveness consist of the following: (a) The Project Operational Manual has been adopted in a manner satisfactory to the Bank. (b) The MDF Project Operational Manual has been adopted in a manner satisfactory to the Bank. (c) The Subsidiary Agreement has been executed in a manner satisfactory to the Bank.

I. STRATEGIC CONTEXT

A. Country Context

Introduction - Investing in human capital

1. **Boosting human capital to increase productivity, innovation, and competitiveness:** About 40-80 percent of economic growth in the fastest growing economies can be explained by investment in human capital both in the short term (by investing in skills upgrading and the renewal of skills) as well as in the longer term. This approach is essentially based on a macroeconomic model for gross domestic product (GDP) growth (GDP = physical capital x human capital to the power of learning level).[1] While sustained investment in physical capital is essential, given the multiplier effect on human capital (based on the overall 'learning/knowledge within a society) for technological adaptation and innovation, most forward-looking countries (i.e. Finland, Singapore, and South Korea) have set out to invest heavily in education, skills renewal and learning to drive innovation, productivity and technological adaptation and development. This requires a new type of learner and worker and thus, a fundamental shift in the approach to learning and education.

2. **After decades of strategic and effective investments in infrastructure, the Government of Georgia (GoG) has strategically set out a goal to improve productivity, innovations and competition further by investing and increasing spending on human capital - also to counter the negative impact of a declining population.** In return, greater level of productivity, innovation and competitiveness will result in increased economic growth and rise in salaries and incomes. While some policies are critical to realize this ambition, it is not a matter of policies, but rather to change the minds, learning and thinking of current and future generations. Therefore, Georgia has set out to be one of the first in the region to drive through the needed changes, including on attitudes and educational approaches that will create a new foundation and generation of human capital akin to the best examples from the USA and EU. This will require a radical and sustained reforms in the education sector that will be supported by Georgia I^2Q project. Sustainability of reforms will be further strengthened by the Development Policy Operation (DPO) 2020 currently under discussion, which will include key policy triggers to be supported under the education sector.

Economic growth and reforms

3. **Deep reforms in economic management and governance have contributed to Georgia's spectacular recovery in recent years.** Georgia, a former Soviet republic located in the Caucasus region, has overcome tremendous hardship. After the breakup of the Soviet Union in 1991 and the following civil war, Georgia's economy contracted by 65 percent over three years until 1993—an unprecedented collapse even among former Soviet Union states. However, between 2006 and 2016, the Georgian economy grew robustly at an average annual rate of 4.5 percent.[2] To bolster the private sector, Georgia introduced rules and regulations that make it easier to do business, and the country's international ratings on governance and the investment climate have soared. The Deep and Comprehensive Free Trade Area (DCFTA) agreement with the European Union (EU) and the proposed Free Trade Area with China are also expected to boost trade integration.[3] Energy, tourism, and agribusiness offer strong potential to integrate the country further into the regional and global economy as

[1] Lucas 1988; MIT Professor Robert Solow concluded that technological progress has accounted for 80 percent of the long-term rise in U.S. per capita income, with increased investment in capital explaining only the remaining 20 percent.
[2] GDP growth (annual percent) data for Georgia are from World Bank Indicators (database), World Bank, Washington, DC (accessed on August 28, 2018), https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?end=2017&locations=GE&start=2006
[3] World Bank. 2018. *Georgia From Reformer to Performer: A Systematic Country Diagnostic (SCD)*. Washington, DC: World Bank. http://documents.worldbank.org/curated/en/496731525097717444/Georgia-Systematic-Country-Diagnostic-from-reformer-to-performer

well as posing challenges to the skills required from the education sector. Consequently, Georgia is a fundamentally different and better country today than it was a generation ago. Georgians can be proud of having achieved middle-income status, dramatically reduced extreme poverty to 8 percent, and implemented social policies that support the poorest people and regions.[4] Nevertheless, the country is still far from the level of broad-based prosperity that EU accession countries enjoy, such as developing vibrant and highly skilled human capital.

4. **While socioeconomic progress has been good, it falls short of expectations, and some gains could be reversed.** Despite relatively high rates of economic growth, the pace of Georgia's poverty reduction has been muted and relies heavily on pensions and social transfers to a large share of the population that is either unemployed or underemployed. Accordingly, one-in-five Georgians still lives in poverty[5] and half of the population is considered vulnerable to falling into poverty. Moreover, poverty in Georgia measured using the global poverty headcount ratio at US$3.2 per day (2011 purchasing power parity) is higher than in neighboring Armenia, a country with a similar level of GDP per capita.[6] Georgia also has a higher poverty rate than some lower middle-income countries, despite having a higher GDP per capita. Inequality is also still among the highest in the Europe and Central Asia (ECA) region and is evident along geographic and demographic dimensions. Job creation is weak, and women's economic participation and employment rates are lower than men's, impacting the country's income generation and growth. While earned income is the clearest path toward sustainable welfare improvements, formal job creation has been modest; a large share of employment remains in unproductive agriculture and unsophisticated services indicating the need to upgrade skills and educational levels further.

5. **Further jeopardizing Georgia's economy is a declining and underutilized population.** Georgia's population is shrinking fast due to low fertility and outmigration. It has declined from 5 million in 1997 to approximately 3.7 million in 2018 and is projected to fall to 3.4 million by 2050.[7] Moreover, the country's labor force is currently underutilized. Labor productivity in Georgia remains significantly lower than in the EU. Georgia's per capita income – a proxy for labor productivity – is currently a fraction of what it is in the leading EU countries (USD 5,400 PPP).[8] Additionally, unemployment is high (11.8 percent in 2016), especially among youth, women, and rural populations.[9] High unemployment among those with even a tertiary education reflects the relative scarcity of jobs and a mismatch between existing skills and labor market needs, which constrains business expansion and growth. The World Bank's 2018 Systematic Country Diagnostic (SCD) for Georgia highlights that innovative and growing firms suffer from skill shortages the most. Georgia's employers regularly report their dissatisfaction with the supply of skills and unmet demand for job-relevant and socioemotional skills. Moreover, the prevalence of entrepreneurship is low as indicated by the share of employer enterprises. Enhancing productivity will require improving skills and making better use of labor resources.

6. **Participating fully in the global economy as technology accelerates requires a continuous investment in skills and learning built on solid foundational skills acquired from early childhood.** Georgian authorities are aware that the country risks marginalization in a competitive global knowledge economy if its education system is not able to equip learners with the skills they need in the 21st century. The quality of education remains poor, which is evidenced by

[4] Ibid.
[5] Based on national poverty line.
6 Poverty gap at $3.20 a day (2011 PPP) (percent of population) for ECA region are from World Bank Indicators (database), World Bank, Washington, DC (accessed August 28, 2018), https://data.worldbank.org/indicator/SI.POV.LMIC.GP
[7] Population data for Georgia taken from GeoStat 2018 (database), Georgia. Accessed March 28, 2019, http://www.geostat.ge/index.php?action=page&p_id=473&lang=eng
[8] European Commission. 2013. *Costs and Benefits of Labour Mobility between the EU and the Eastern Partnership Partner Countries. Country Report: Georgia.* Retrieved from http://legacy.iza.org/files/ENPIgeorgia.pdf
[9] Posadas, Josefina, Makovec, Mattia, Jaef, Roberto F., Gruen, Carola, and Ajwad, Mohamed, I. 2018. *Georgia at Work: Assessing the Jobs Landscape*. Washington, DC: World Bank.

consistently low student learning outcomes.[10] Georgia remains far behind countries with similar per capita income. Moreover, there are substantial in-country differences in performance, which are determined by location, socioeconomic status, and the availability of school resources. Furthermore, the existing public financing model of higher education based on a fixed grant per student provides no incentive to improve the quality of teaching and learning or research capacity. The systemic as well as institutional reforms should emphasize building a close link with the labor market's need for a skilled and innovative labor force. Early childhood education and care interventions will also be critical for preparing Georgians for their working future, as most essential higher order cognitive and socioemotional skills, along with a strong sense of empathy, have their roots in the early years.

B. Sectoral and Institutional Context

7. **Since 2004, the Government of Georgia has introduced sweeping reforms to the education system in an effort to modernize the system.** Currently, education is mostly publicly provided with over half a million students enrolled in the system. Education in Georgia is mandatory for all children aged 6–14. The school system is divided into primary (6 years; age level 6–12), basic (3 years; age level 12–15), and secondary (3 years; age level 15–18), or alternatively vocational studies (2 years). Students with a secondary school diploma have access to higher education. It is important to note, the MESCS recently abolished School Graduation Exams in grades 11 and 12 effective as of 2019. Moreover, Unified National Examinations (university entrance exams) will now be conducted in three instead of four compulsory subjects (*Georgian language* and *literature, foreign language, social/natural science* exams will remain). The Government's stated objective in introducing these reforms is to emphasize innovation and human capital development in the country.

8. **Despite this focus on education, government spending on education in Georgia is low – compared to countries with similar per-capita incomes and relative to both the shortage of human capital and the country's ambitions.** Despite a real increase of nearly 47 percent in education expenditures since 2006, Georgia's education budget amounted to 3.8 percent of GDP in 2016, below the ECA and Middle Income Countries (MIC) averages (approximately 5.1 and 4.1, respectively).[11] Additionally, even though teacher salaries are one of the lowest among public employees in Georgia, teacher and administrator salaries account for more than 70 percent of the education sector budget, leaving little space for expenditures directed at curriculum improvements, trainings for teachers, grants for research and development, scholarships for disadvantaged students and capital investments to enhance school facilities.[12]

9. **Research shows that investing in the early years of life is the most effective way of building human capital and driving economic growth and equity.** Access to high quality preschool education is essential for the development of higher-order cognitive and socioemotional skills, along with preparing for the future of work. In Georgia, preschool education (covering 2-6-year-olds) falls mostly under the responsibility of municipalities. Nevertheless, the Government recognizes the importance of early childhood education and care (ECEC) and has introduced a legal framework and guidelines for a School Readiness Program (SRP) for 5-6-year-olds. However, neither the SRP nor ECEC is mandatory and enrollment in SRP is only 80 percent.[13] Furthermore, the quality of preschool services needs attention: (i) there is no

[10] In the most recent Program for International Student Assessment (PISA), for example, Georgia ranked 60th of 72 participating countries in mathematics, 63rd in science, and 65th in reading. In the Trends in International Mathematics and Science Study (TIMSS), Georgia ranked 33rd and 35th in 4th grade math and science, respectively, out of 42 participating countries, and 25th and 30th in 8th grade math and science out of 38 countries.

[11] Government expenditure on education, total (% of GDP) for Georgia are from World Bank (database), World Bank, Washington, DC (accessed August 28, 2018), https://data.worldbank.org/indicator/SE.XPD.TOTL.GD.ZS?locations=GE-XP.

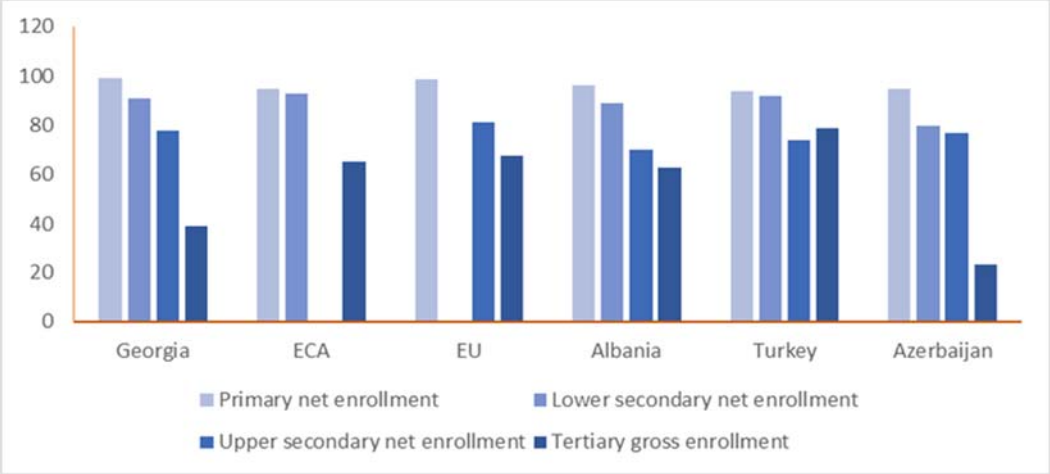
[12] World Bank. 2014. *Georgia Public Expenditure Review: Strategic Issues and Reform Agenda (Volume 1)*. Washington, DC: World Bank. http://documents.worldbank.org/curated/en/779561468275119198/pdf/781430GE0v10RE0Box0385291B00PUBLIC0.pdf.

[13] Based on Geostat data received from MESCS during September 2018.

BA/MA qualification requirement for ECEC educators; (ii) local capacity for managing ECEC provision needs to be strengthened; (iii) nationwide provision and coordination among ECEC/ECD services are weak; (iv) ECEC professionals lack the capacity and teaching materials to apply the ideas of the new child-centered curriculum; and (v) the infrastructure requires renovation to ensure quality of ECEC service provision. Therefore, many children in Georgia arrive at school unprepared to benefit fully from the education system. Since learning is cumulative, the cognitive and socioemotional developmental gaps that emerge at young ages hinder further learning over the life-cycle. Future jobs will invariably demand soft skills – such as teamwork, empathy, responsibility, perseverance, and knowledge of digital tools. Investments in the early years are among the best investments to build these skills and result in high rates of returns.

10. **In terms of other levels of education, Georgians enjoy relatively wide access to education, but with loose links between education and employment.** Enrollment figures suggest that while secondary and tertiary enrollment can improve, access to education is high (Figure 1). Access to primary education is nearly universal and enrollment in secondary education is comparable to peers. Even in tertiary education, Georgia has caught up in recent years: about 35 percent of the population aged 25–64 years old have completed tertiary education, which compares well even with high-income European countries. Gender parity has generally been achieved at all levels of education enrollment. At the same time, as many as 40 percent of Georgia's unemployed have a higher education degree. According to the 2017-18 Global Competitiveness Report, "inadequately educated workforce" is the single most problematic factor for doing business in Georgia. Like most former socialist countries, Georgia's population is highly literate. Thus, the main issue for employers is not a lack of candidates with diplomas and formal certificates, but a lack of professional skills. Therefore, the issue is not about access to education per se, but access to relevant education and training.

Figure 1: Net Enrollment Rates by Level of Education for Georgia and Comparators, 2015

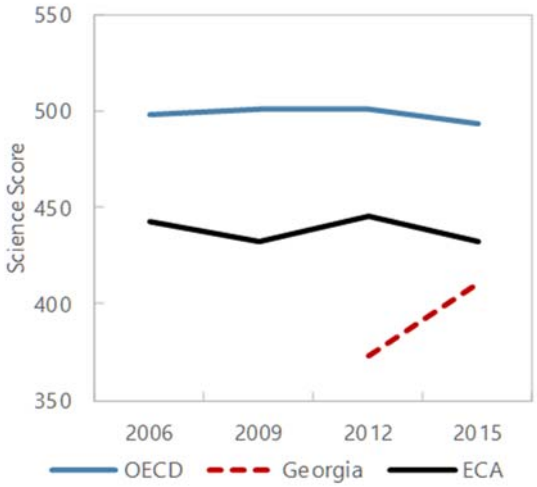


Source: World Development Indicators, World Bank, 2016

11. **The quality of education—particularly in STEAM, which have a strong correlation with economic growth, has improved in recent years but remains poor.** According to the World Bank's recently launched Human Capital Index, a child born in Georgia today will be 61 percent as productive as she could be if she enjoyed a completed education, among other human capital development benefits. For instance, although a Georgian child who starts school at age 4 can expect to complete 12.5 years of school by her 18th birthday, after accounting for her learning gains, the expected years of education is only 8.9. Using harmonized international assessment scores as a measure of education quality, students in Georgia score 445 on a scale where 625 represents advanced attainment and 300 represents minimum attainment. Also, in the latest PISA (2015), Georgia remains two-and-a-half years behind the average for countries in the Organization for

Economic Co-operation and Development (OECD) in science achievement, and more than half of all children in Georgia perform below basic proficiency levels in literacy and numeracy (Figure 2). In 2013 the Millennium Challenge Corporation (MCC) in partnership with the GoG, launched an education investment in the amount of 140 million USD. Its aim was to boost the quality and relevance of education, particularly in STEM by improving the learning environment, strengthening school leaders' and teachers' professional development and national assessments, and developing classroom assessment system and operations and maintenance of schools system.[14] The 5-year program, which has proven successful in developing a framework for systemic improvements of the general education, vocational education and training (VET), and higher education system, will close in July 2019.[15] Therefore, the GoG will need support with capacity-building to implement these systems.

Figure 2: PISA Science Score: OECD, ECA and Georgia

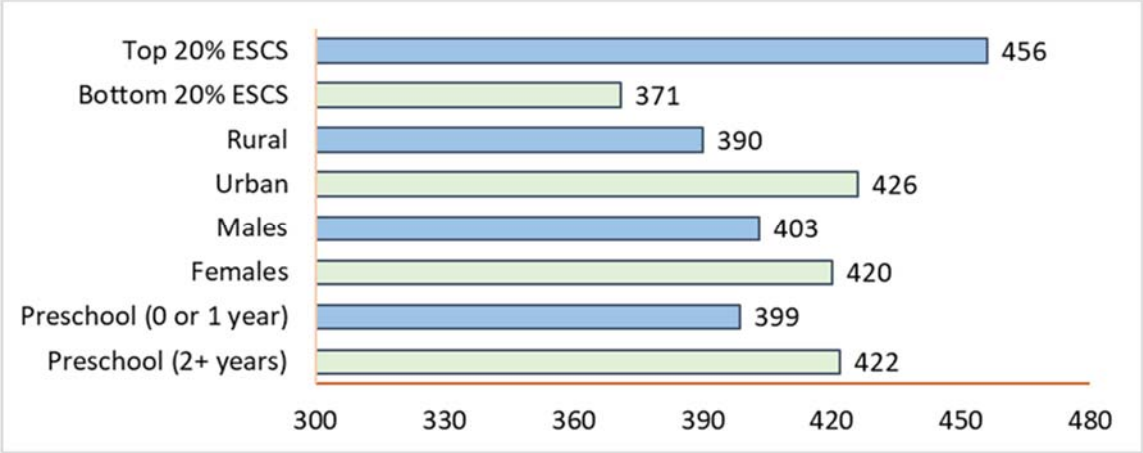


Sources: OECD PISA and TIMSS, 2018

12. **Lack of equity in student learning outcomes also raises concerns.** According to PISA 2015 results, students from the poorest 20 percent of households exhibit a significant skills gap across reading, mathematics, and science compared to the richest 20 percent (Figure 3). The difference for Georgia in science performance between students in the top and bottom quintiles by socioeconomic status accounts for about 85 score points and is equivalent to almost three years of schooling. The gap between rural and urban students is also more than one year of schooling (36 points). In science, girls slightly outperforming boys. PISA 2015 results also show that students who were enrolled in preschool for more than two years performed better in all subjects compared to those who were enrolled for one year or less.

[14] Notes from World Bank meeting with Magda Magradze, CEO and Nino Udzilauri, General Education Project Director, Millennium Challenge Account-Georgia, September 13, 2018.
[15] Ibid.

Figure 3: Student Performance in PISA Science by Socioeconomic Status, 2015



Source: OECD, 2016

13. **Two important reasons why Georgia trails behind other countries in PISA performance relates to learning strategies and teaching practices.** After controlling for socioeconomic status and parental education, an index measuring learning strategies explains a 26-point PISA reading scores gap (equivalent to more than half a year of schooling) between Georgia and new EU member states.[16] Therefore teachers, who are responsible for teaching practices and helping children learn, have an important role in improving education quality in Georgia. However, teaching is not an attractive career choice in Georgia for highly skilled, young workers primarily due to a low pay scale. The GoG is working with the International Monetary Fund (IMF) to gradually increase teachers' salaries from the current 800 GEL up to 1800 by 2023, which will be commensurate with increased work load and professional development. Moreover, a new Teacher Recruitment, Evaluation, Professional Development and Career Advancement Scheme (named the 'Scheme') was introduced in 2015/2016 academic year to foster higher quality teaching practices. Until now, adoption of the Scheme by teachers in the classroom is not obligatory and results have been mixed.

Gender, Inclusive Education, and Climate Co-benefits

14. **Concrete governmental actions have been taken in Georgia to prevent gender-based discrimination and provide women with equal rights under the law.** In 2005, Georgia adopted the State Concept on Gender Equality as a framework policy document for equal rights and opportunities. The Gender Equality National Action Plan for 2014–2016 is the latest national gender plan to be approved. It addresses gender equality issues in economic, health, and social protection fields, and promotes women's engagement in environmental protection and law-enforcement. It also envisages improvement of legislative and institutional frameworks on gender equality. Adoption of the Law on Gender Equality in 2010 is a significant step toward greater equality in Georgia. Most important, in May 2014, the Law of Georgia on the Elimination of All Forms of Discrimination came into force, moving Georgia's antidiscrimination framework closer to international standards.

15. **Gender imbalances exist in the education system, especially in STEAM subjects.** Primary and secondary school Gender Equality in Georgia, found more than one study that showed if parents could not afford to educate all their

[16] Ibid.

children, they preferred to send their sons to obtain tertiary education. Despite, this cultural bias, girls who do enroll in school consistently outperform boys in reading, mathematics and science, and they are more likely than boys to enroll in tertiary education. Nevertheless, only about 61 percent of women ages 15-64 participate in the labor market compared to 79 percent of men. In addition, women are overrepresented in education, health-care and social work, careers often considered better suited for women who need to balance household work with paid employment. This concentration of women in certain sectors plays a role in the gender wage gap, which was 37 percent in 2014. Thus, it is important to address this cultural bias and facilitate the school-to-work transition by encouraging girls to study fields that are projected to grow, for example science, technology, engineering and math.

16. **Despite efforts from the MESCS to promote inclusive education across all levels of education in Georgia, capacity remains low.** In 2005, the MESCS committed to supporting inclusive education, starting with amendments to the Law in General Education requiring the support of all types of disabilities in the school environment, in the learning environment and curriculum. In 2019, the MESCS has also sought to expand inclusive education in preschools with the support of other development partners, such as UNICEF, Save the Children, and World Vision. According to the MESCS, there are 10,000 children with disabilities in the education system and 1,000 inclusive education teachers. Special schools for children with disabilities have been converted to resource schools to support more complex cases of students with disabilities. While the Teacher Professional Development Center (TPDC) has started providing teacher training modules on inclusive education, there is a critical need for further improving the pedagogical knowledge of inclusive and special education teachers. Moreover, coordination between MESCS and other line ministries in ECEC is insufficient to ensure smooth transition from ECE to general education for all children, especially for children with disabilities.

17. **The environment is an important factor that should be considered in the construction and rehabilitation of school infrastructure.** While Georgia is known internationally for the richness of its culture and nature, the country's environment is under threat, with high levels of indoor and outdoor pollution, illegal logging, and insufficiently controlled exploitation of natural resources. This has adverse impacts on people's health and threatens Georgia's environmental sustainability. Mitigation action in energy sector and adaptation needs are parts of Georgia's Nationally Determined Contribution (NDC) under the Paris Agreement. Current school infrastructure designs have yet to address further climate change vulnerability by specific measures aimed at increasing resilience to expected adverse impacts of climate change, as well as to support climate change mitigation by improving energy efficiency of buildings towards best OECD and EU practices. Moreover, gradually the education philosophy and pedagogy will embrace sustainability and learners' awareness related to climate change and the environment.

18. **Quality issues also hinder higher education's potential to contribute innovation and relevant skills to society.** A major challenge affecting quality in higher education is the low level of preparedness of many students that are admitted to higher education studies. This is a consequence of the poor performance of the general education segment. Nevertheless, the higher education system has not been able to mitigate these learning gaps and deliver the quality of teaching, learning, or research capacity that Georgia needs. Low quality faculty and curricula that are outdated and out of touch with the labor market, lack of quality assurance mechanisms, and insufficient funding (0.47 percent of GDP) are characteristic issues of the system.[17] The Georgian higher education system must keep modernizing and improving to contribute more decisively to the development of the country, both by raising the level of human capital in the country and generating innovative research. An interesting concept at the core of Europe's higher education modernization agenda is the "knowledge triangle," which could be relevant to higher education reform In Georgia.[18] This concept

17 Pignatti, Norberto. n.d. "Higher Education Reform in Georgia: Challenges and Opportunities." Policy Report, International School of Economics at Tbilisi State University, Tbilisi, Georgia.
18 Ibid.

summarizes recent worldwide trends towards open innovation resulting in increased flows of knowledge and new types of cooperation between higher education institutions, research organizations, and businesses. The knowledge triangle's societal impact can be enhanced by the adoption of public policies encouraging national and international partnerships between professional institutions, research universities, business and high-tech centers.

19. **Shifting the "culture of learning" will require the support of parents and changing of public attitudes.** Educators, including in the MESCS and NGOs point to a lack of vested parent participation in the education process.[19] Recent efforts have been made to improve the engagement of parents in schools through the establishment of parent associations by NGOs and school-parent working groups at the school-level. Furthermore, despite teachers receiving on-going professional development, many school principals point to a resistance among teachers to adopt new student-centered pedagogy. A national strategy promoting greater public discourse on a philosophical shift in education (from rote and didactic learning to more active child-centered learning) is needed. Thus, moving the needle on education quality will not be achieved without the active support of parents and teachers and a public supportive discourse.

20. **Finally, Georgia lacks an integrated Education Information Management System (EMIS) and strong data analytics to inform education policies.** The first general education online information system was implemented in 2011 to produce basic education data to inform the MESCS and other stakeholders with timely, precise, and reliable information.[20] In 2012, the MESCS further elaborated on this system with the creation of an EMIS, which was established to develop information and communication technology (ICT) in the education system with new management systems and databases, as well as by providing IT support of various educational processes.[21] Today, the EMIS captures for general education through higher education school and student-level data . However, it does not include data on preschool education as this sector is under the responsibility of municipalities. Furthermore, despite the robustness of the data collection, it is not well-integrated within the system (i.e. eSchool, eVET, and higher education) and other sources of education data, such as those from the National Assessment and Examination Center (NAEC), TPDC, and other ministries (i.e. the Labor Market Information System (LMIS) of the Ministry of Economy and Sustainable Development and Georgia's Innovation and Technology Agency data on ICT and entrepreneurship. This lack of integrated data collection and reporting hinders the ability of the MESCS to make informed and timely policy decisions.[22]

21. **The Government of Georgia is aware of the existing education challenges and has taken steps including partnering with the World Bank to find viable solutions.** In 2018, the GoG updated its Education Reform Agenda for 2018-2023. The document identifies five main strategic goals: (i) increase access to quality preschool education for all and prepare children for school; (ii) ensure access to quality general education to prepare students for future work and improve their educational competencies by national and international standards; (iii) increase student participation in VET, enhance their competitiveness by providing professional and life skills to support socioeconomic development of the country; (iv) internationalize higher education system (HES) and ensure quality education for professional and personal development of individuals and their better employability; and (v) modernize and internationalize the Science, Technology, and Innovation (STI) system to generate new knowledge and contribute to the country's sustainable development. The World Bank's proposed project aims to inform key areas of the comprehensive education reform, including everything from preschool education through higher education with the exception of VET. However, the World Bank is supporting the United Kingdom's Department of International Development through a 2.5 million USD grant to assist in the development of inclusive and demand-oriented cooperative training in technical professions in growth

19 Notes from meetings with school leaders, MES, Millennium Challenge Account, and Education for All Georgia, September 10-13, 2018.
20 MES. 2018. "EMIS 2012-2018." Tbilisi, Georgia: Ministry of Education and Science.
21 Ibid.
22 Notes from World Bank meetings with MES and EMIS, September 13, 2018.

sectors. Other development partners, such as the GIZ, KfW Bank, United Nations Children's Fund, European Union, Swiss Cooperation, and United Nations Development Program are also involved in this effort. Moreover, the IFC will seek opportunities to support companies that provide on-the-job training and to finance providers of private higher education, including global or regional institutions. The IFC will explore the potential for developing viable public-private partnerships (PPPs) in education services provision.

C. Relevance to Higher Level Objectives

22. **The proposed project is well aligned with the Country Partnership Framework (CPF) for 2019-2022.** Specifically, the proposed project would contribute directly to the CPF's strategic *Focus Area 2: Invest in Human Capital and* is articulated by *Objective 2.1: Support the education system for improved quality and relevance*. Moreover, the proposed project would support the GoG's efforts to improve the innovation and provision of quality education throughout the system as embodied in the Government's 2018-2023 Education Reform Agenda.

23. **In addition to national goals articulated in the CPF, the proposed project is aligned with the World Bank Group's goals of ending extreme poverty and boosting shared prosperity.** Education is a fundamental building block of human capital. A high-quality education is linked with both poverty reduction and productivity growth, both of which contribute to shared prosperity. Because improving access to quality education has a direct impact on social inclusion, poverty alleviation, and income growth, the proposed project is also aligned with: (i) the World Bank's twin goals of ending extreme poverty and promoting shared prosperity; (ii) the World Bank's recently launched corporate priority of Investing in Early Years for Growth and Productivity; (iii) the Europe and Central Asia Regional Strategy; (iv) the newly launched Human Capital Project (HCP).

II. PROJECT DESCRIPTION

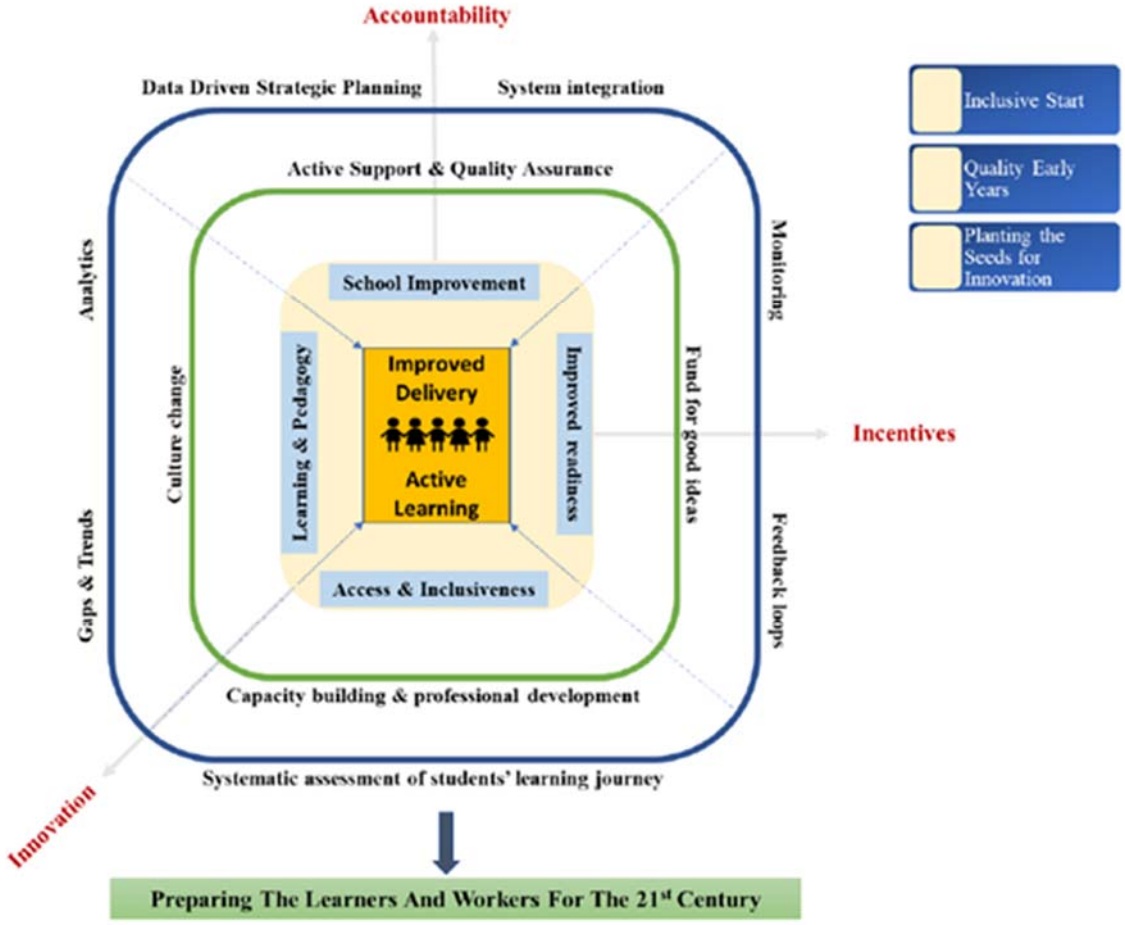
A. Project Development Objectives

24. **The project development objectives are to:** (i) expand access to preschool education; and (ii) improve the quality of education and the learning environments. Below (Figure 4) is a conceptual framework illustrating elements of the project.

25. **The proposed project outcome indicators are:**

(a) Percentage of 5-6-year-old children enrolled in School Readiness Programs (preschools), including percentage of 5-6- year-old girls.
(b) Number of beneficiary students with access to improved learning environments in project-supported schools.
(c) Learning outcomes of students in national formative assessments in project-supported general education schools measured (baseline/endline).

Figure 4: Conceptual Framework for Proposed Project



26. **Link to Development Policy Operation 2020:** Key policy triggers will be included in the DPO 2020 currently being developed with the government/MOF/MESCS to drive forward the reforms and using the investment project financing (IPF) as the instrument for policy development and implementation. Once key policies have been agreed an updated policy matrix will be included.

B. Project Beneficiaries

27. **The proposed project's activities would affect beneficiaries at two distinct levels.** Direct beneficiaries of the first two components of this project would include students and teachers in public preschools and general education schools who would benefit from access to an improved learning environment financed by this project. Special consideration would be given to ensure gender equity and support to vulnerable populations, including students and schools from low socio-economic status located in rural and mountainous areas, ethnic minorities, and students with diverse learning needs. The

direct beneficiaries include a total of about 116,000 students[23] in project-supported schools. Additional direct beneficiaries would include school leaders (principals), teachers and mentors. Target institutions would provide improved teaching and learning environments, including better infrastructure, Information and Communication Technology (ICT), and digital teaching and learning materials. The support to higher education (component 3) through the implementation of the Competitive Innovation Fund (CIF) would impact about 3,000 students per year, whose academic programs would be modernized and made more responsive to the needs of employers. The remaining two components, on the other hand, are designed to support the overall system and perception of education in Georgia. Through project interventions, it is expected that the system would be managed more effectively with a focus on inclusion, innovation, and quality. Thus, the project would benefit generations of current and future students and indirectly benefit parents and caregivers, employers, and the community at-large.[24]

C. Project Components

28. The proposed project is organized into the following five components (as per Schedule 1 in Loan Agreement, referred to as parts):

Component 1 – Improving Quality of and Access to Early Childhood Education and Care: Support to facilitate expanded access to quality pre-school education in Selected Pre-Schools, including through the following:

(a) – Improving the quality of ECEC programs across the country
(b) – Increasing equitable access to Pre-School education for successful transition to school
(c) – Improving infrastructure to support innovative primary education, including Pre-School

Component 2 – Fostering Quality Teaching and Learning in General Education: Support to provide a learning environment that is conducive to quality education in Selected General Education Schools, including through the following:

(a) – Improving the educational infrastructure to support learning
(b) – Supporting the scaling up of the whole-school improvement pilot
(c) – Supporting capacity-building of teachers and school leaders to adapt, develop, and implement school-based curriculum
(d) – Development of a national assessment framework

Component 3 – Strengthening Financing Options and Promoting Internationalization in Higher Education: Support to improve the quality and international competitiveness of higher education, including through the following:

(a) – Development of new options for higher education financing, including performance-based options to support the Borrower's strategic objectives
(b) – Establishment of a competitive innovation fund for public and private universities.
(c) – Promoting internationalization of higher education.
(d) – Strengthening the quality of pre-service teacher education programs for all levels of education professionals from the inception.

[23] This is a conservative figure of direct beneficiary count for one cohort which assumes 250 students each in 2 newly constructed model buildings including preschools, 15 students each in 150 better equipped preschool classrooms, and 428 students per school benefiting in public general education schools through 60 fully rehabilitated schools, 200 schools receiving a pilot school improvement package and 5 new construction.
[24] This figure excludes students enrolled in VET.

Component 4 – System Strengthening and Stakeholder Communication: Support to facilitate a shift in attitude towards learning, including through the following:

(a) – Supporting data-driven decision-making accessible the entire education system.

(b) – Communication and stakeholder consultations for education reform to help the Borrower craft an effective communication strategy on the current education reforms.

Component 5 – Supporting Project Management, Monitoring, and Evaluations: Support capacity-building for effective management and monitoring of the Project including provision of Operating Costs, Training, outreach and awareness campaigns, consulting services, M&E and, Project audits; for: (a) PMT; and (b) PMU.

Below is an elaborated project description:

Component 1 – Improving Quality of and Access to Early Childhood Education and Care (IBRD: US$9.39 million; Counterpart US$2.34 million)

29. The objective of this component is to provide support to facilitate expanded access to quality pre-school education in selected pre-schools.

Sub-Component 1.1 – Improving the quality of ECEC programs across the country

30. The objective of this sub-component is to introduce systems that improve the quality of ECEC programs in Georgia. To achieve this, the project will conduct a diagnostic study of school-based preschool services and make recommendations to inform infrastructure and service delivery design (supply-side planning) as well as profile of ECEC public demand (demand-side planning) to improve access and quality. An ECEC quality monitoring instrument to support school readiness and smooth transition to school based on best practices (i.e. using MELQO or another applicable instrument) would be developed, tested and introduced.

31. Additionally, a systematic and robust preschool data reporting and consolidation mechanism established and incorporated with the EMIS systems to strengthen intra- and intersectoral coordination for ECEC. Currently, there is no formalized system to ensure regular coordination among ministries and agencies supporting early childhood interventions. To this end, a preschool reporting system to collect and disseminate important early childhood data across the MESCS, Ministry of Health and Social Welfare, MOF, municipalities, and other key agencies will be established.

32. Another important activity of this sub-component will be to strengthen the professional development system for ECEC professionals. The project will support the development of teaching and learning resources for professionals in the School Readiness Program. Consideration will be given to ensure resources can be adapted to support diverse educational needs in the classroom. This component would aid in the establishment of a certification and licensing system for existing and novice ECEC professionals. Development of in-service teacher training modules on modern child-centered pedagogical approaches that consider gender, diversity, and inclusive education, ECE subject-matter (content) knowledge, and classroom management utilizing enhanced learning environments would also be created. Moreover, methodologists responsible for training ECEC staff will be trained on implementing these teacher training modules to build system capacity. Finally, a new remuneration policy for ECEC teachers will be developed by MESCS in collaboration with MOF and MRDI as prompted by the new Preschool Education Law.

Sub-Component 1.2 – Increasing equitable access to preschool education for successful transition to school

33. The aim of this sub-component is to improve access to preschool education for successful transition to school starting with children in the School Readiness Program (SRP), aged 5-6-years-old. It is expected that participation in preschool education will increase up to 92 percent by 2025. As such, this sub-component will support the revision of the existing SRP based on the diagnostic study conducted under sub-component 1.1 and introduction of modern and child-centered SRPs in about 150 general education schools. The project would support professional development of teachers in target programs and provide much-needed equipment, furniture and technology. The MESCS, through state budget, will support minor rehabilitation of the targeted classrooms, as needed.

Sub-Component 1.3 – Improving infrastructure to support innovative primary education, including preschool (this sub-component will be implemented by MDF)

34. The objective of the sub-component is to introduce a new model of primary education (grades 1-6) accommodating preschool programs. As such, this sub-component would include the development and adoption of new architectural blueprints for the construction of 2 to 10 new model schools. These designs would consider modern learning environment, renewable energy and carbon neutral materials, as well as accessibility standards to ensure accommodation for children with disabilities (such as ramps, toilets, transportation, etc.). The new model will be piloted to test the effectiveness and viability of separating primary schools from secondary schools and adding pre-school to primary education in Georgia.

35. In addition, the new schools would support the creation of innovative spaces as "third learning environments." According to international research, learning environments can engage and foster a sense of ownership and respect when they are aesthetically pleasing, reflect the identity and culture of children and families, and encourage a connection to place.

Component 2 – Fostering Quality Teaching and Learning in General Education (IBRD: US$73.05 million; Counterpart: US$18.26 million)

36. The objective of this component is to provide a learning environment that is conducive to quality education in selected general education schools.

Sub-Component 2.1 – Improving the educational infrastructure to support learning (this sub-component will be implemented by MDF)

37. This sub-component will support the construction of 5 to 8 new model buildings as well as support the full rehabilitation of up to 60 selected public general education schools[25] using the revised standards and design blueprints developed by the MESCS as part of sub-component 2.2. This will also encompass best practice OECD-EU climate, environment and energy efficient standards. This activity will be supported by supervision services for construction and rehabilitation as well as trainings for school personnel on school maintenance based on new standards.

[25] Per school rehabilitation cost is estimated at USD 600,000 assuming avg school size of 428 students, per square meter cost of USD 191 and space allocation / child of 15 square meter based on MCC estimates thus estimating 52,000 beneficiaries over 2 years. The MCA program invested USD 57million in the full rehabilitation of 91 schools affecting 39,000 beneficiaries.

Sub-Component 2.2 – Supporting the scaling up of the whole-school improvement pilot

38. This sub-component will focus on the GoG's new, ongoing whole-school improvement pilot program in general education that aims to strengthen and modernize teaching and learning practices as well as support efforts to develop positive school culture. The aim of this sub-component would be to assess and offer additional support for strengthening and scaling up the ongoing pilot. Under this sub-component, a rapid education system diagnostic and functional review will be conducted which will include elements of governance, alignment and efficiency, delivery processes, teacher/staff policies, financing, resources, and student outcomes. This sub-component will also aim to foster high-quality learning environments and enhance school safety. To this end, this sub-component would support the review and modernization of school infrastructure standards and develop new architectural design blueprints based on international best practices to support innovative, inclusive and accessible spaces, conducive to fostering collaboration and project-based learning opportunities as well as to ensure energy efficiency and safety. Review and modernization of the school infrastructure standards will be aligned with EU standards for specifications such as the number of square meters per child, ceiling heights, natural light per square meter, noise level, etc. The standards and designs will support the creation of innovative spaces in schools as the "third learning environment."

39. In addition, this sub-component will evaluate the 150 pilot program schools selected by MESCS to identify best practices for scaling up of the whole-school improvement approach for teaching and learning and for improving governance in all Georgian general education schools. These evaluations will be compared to and informed by international best practices.

40. Furthermore, under this sub-component, select project-supported schools, including but not limited to the MESCS's pilot program schools, would be provided with innovative and accessible resources as part of a school improvement package to strengthen the implementation of the whole school approach. This package can include one or more resources for promoting accessibility and innovation, including multimedia lab, science lab, reading library, technology upgrades and equipment, learning enrichment modules, training on data utilization, community engagement activities, and support for scalable ideas of school improvement.

41. This sub-component will also support the development of innovation initiatives with a special focus on the inclusion of girls. This will include setting up Thematic Innovation Clubs in every region/municipality targeting gifted and other students' interests. To ensure sustainability, it will support the development of strategy and curriculum for enhancing teaching for gifted students (sports, math, technology, art, and science) and set up of STEAM extracurricular programs/clubs including arts, entrepreneurship, gaming (e.g. Mindcraft), paying special attention to gender parity. A survey/qualitative assessment will be conducted among beneficiary participants of the Clubs to assess changes in attitudes or increased interest towards STEAM, particularly among girls.

Sub-Component 2.3 – Supporting the capacity-building of teachers and school leaders (principals) to adapt, develop, and implement school-based curriculum

42. The aim of this sub-component is to support capacity-building among teachers and school leaders in all general education schools. Under this sub-component, the proposed project would review and improve continuous professional development framework for education professionals. The new professional development framework is already under development by the MESCS's teacher professional development arm, TPDC. The I^2Q project will support the review and enhancement of new programs for school leaders, teachers, mentors and subject teachers. This activity will also include creating new and utilizing existing professional support networks as well as developing guidelines and regulations for

allocating teaching hours towards collaboration among teachers and peer-to-peer learning in project-supported schools. In addition, this sub-component will support the development and incorporation of modules on modern pedagogy and formative continuous assessment, including training manuals and modules on modern, inclusive child-centered pedagogy and content knowledge as well as materials on diversity management, gender sensitivity and inclusive education. Further, materials for the training of trainers for the capacity building of school leaders, coaches, mentors and subject teachers on the new whole-school improvement approach will be developed and implemented.

43. Further, this sub-component will leverage technology for capacity-building. It will support the development of a collaborative e-platform for sharing teaching and learning practices as well as for the development of distance education programs in a blended model (combining face-to-face and online learning). These will aim to not only target teachers and school leaders, but also parents and students, including children with disadvantages and diverse learning needs. The e-platform will support and strengthen the development of peer-to-peer school networks using resources such as lesson plans, videos, pictures, weblinks. The distance learning program will include e-modules on select topics such as an online algebra module, project and problem-based modules etc.

Sub-Component 2.4 – Assisting the development of a national assessment framework

44. This sub-component will provide technical assistance for introducing and establishing the national formative assessment system in primary and secondary grades. The aim of these new assessments will be to inform policymakers about strengths and areas of improvement of the education system as well as to inform curriculum and training for teachers to support learning. The assessment data will include disaggregation by gender to identify any differential effects on outcomes and support an equitable policy response, action and intervention. This sub-component will include updating the national assessment framework and methodology, particularly aimed at the development and effective use of formative continuous assessments to support learning and for informing education policy. Further, it will include support for the capacity building of the state agency, NAEC and MESCS as well as support for developing and offering school-based trainings in the design, conduct, analysis and research on formative assessments. This activity will also support trainings for reporting, dissemination, consultations, adjustment, accommodations for students with disabilities and/or diverse education needs, and related policy actions (such as incorporation in EMIS to support development of school dashboards). Further, this will include development of materials, such as manuals and training modules to help all staff members move away from focusing on the average or the excellent student to understanding and supporting individual student learning needs of all students.

45. This sub-component would also support the conduct of a functional review and make recommendations to establish a National Institute for Education Research to use research and analysis and to inform policy actions for the improvement of teaching and learning at all levels of education. Such an institute is envisioned to not only ensure that best practices for effectiveness, equity and efficiency are researched, highlighted and infused in the education practices paying special attention to teaching and learning for all students.

46. Finally, this sub-component would support the development of remedial programs at the municipality level. These remedial programs would seek to accommodate the needs of students with disabilities, students with diverse educational needs, vulnerable students, and national minorities. Essentially, the goal of these programs would be to steer education away from focusing on the average student and steer towards individual student learning needs.

Component 3 – Strengthening Financing Options and Promoting Internationalization in Higher Education (IBRD: US$14.06 million; Counterpart: US$3.51 million)

47. The objective of this component is to improve the quality and international competitiveness of higher education.

Sub-Component 3.1 – Developing new options for higher education financing, including performance-based options to support the Government's strategic objectives

48. Under this sub-component, the project would provide support for improving funding mechanisms for higher education. Along these lines, this component would review the available financing options, and propose new ones including performance-based funding to reflect strategic priorities of the Government (such as better fixed assets management).

Sub-Component 3.2 – Establishment of a Competitive Innovation Fund (CIF) for public and private universities, in partnership with private sector

49. This sub-component would aid the establishment of a Competitive Innovation Fund (CIF) (for public and private universities. The Fund would be developed in collaboration with the private sector to award up to 45 CIF grants to foster modernization of higher education programs and strengthen labor market linkages. Examples of the grants supported include grants focused on research and technology in support of the reform and labor market linkages, support for classroom teaching utilizing technology and modern pedagogical approach, such as problem-solving and project-based learning, and improvement of e-learning methods. This activity would also facilitate the development of grants' design by establishing an implementation and management committee and a grants application portal.

Sub-Component 3.3 – Promoting internationalization of higher education

50. This sub-component aims to support the process of integrating an international dimension into the purpose, functions and delivery of higher education in Georgia. This sub-component would include establishing twinning and partnerships with international institutions, universities, and the private sector forging research and other initiatives relevant to the private sector and education sector. Finally, this activity would support the expansion of 4 course offerings with English as language of instruction to increase the intake of foreign students.

Sub-Component 3.4 – Strengthening the quality of pre-service teacher education programs for all levels of education

51. The purpose of this sub-component is to modernize and strengthen the quality of education professionals from the inception of professional development. In this regard, a needs assessment of faculty professional development in existing university programs would first be conducted with recommendations for enhancing the quality. Additionally, this activity would support the establishment of international standards for pre-service teacher education programs in three state universities (Tbilisi, East, West) in partnership with a prominent International Teacher Education Institution, including obtaining accreditation for at least one program. To improve the faculty of existing programs on pedagogy and subject-matter (content) knowledge, training modules would be developed to build the capacity of faculty trainers.

52. Another priority of this sub-component would be to increase the program/curricula offerings in key areas. Given analysis of the current professional development system, two courses on assessment and psychometrics would be prioritized. Additionally, Bachelor of Arts and/or Master's degree programs would be specifically developed for preschool education and inclusive education in partnership with national and international partner universities to support the capacity building of teachers in these critical areas of education.

Component 4 – System Strengthening and Stakeholder Communication (IBRD: US$2.47 million; Counterpart: US$0.62 million)

53. The objective of this component is to facilitate a shift in attitude toward learning in Georgia to one that is more pro-active, student-centered, innovative, and evidence-based.

Sub-Component 4.1 – Supporting data-driven decision-making accessible to the entire education system

54. The objective of this sub-component is to improve the capacity of the overall education system to collect, analyze, and disseminate data and information for monitoring and decision-making purposes and interventions, including among others, gender disaggregate information. This component will support a diagnostic of the current EMIS system and data needs in Georgia to identify areas of further system development and upgrading. Based on the diagnostic assessment of the existing EMIS database, this sub-component would support the development of a data integration policy, strategy and action plan from preschool to higher education. This will include aspects related to data collection, management, linkages with other data systems, security and maintenance as well as focus on strengthening the capacity of National Assessment and Examination Center (NAEC) and National Center for Education Quality Enhancement (NCEQE) in the areas of assessments, examinations and quality assurance.

55. This sub-component will support the development and operationalization of a dashboard system (i) at ministry-level, to monitor the entire education system for policy action and, (ii) at school-level, for evidence-based school improvement actions to support and strengthen learning (ex. covering pedagogical methods, learning assessments, learning environment, school inputs such as school infrastructure, resources/materials, etc.). The dashboard will monitor among other measures, indicators to gather evidence on the differential effects of policy and school-improvement actions on males and females. This sub-component will support the procurement of hardware and software for implementation of the dashboards with servers and security software. Additionally, this sub-component will provide support to develop and deploy analytics system for education system mapping for all levels of education covering infrastructure and human capital development: including (i) acquisition of up to 20 CLICK licenses to analyze data and generate ad hoc reports; (ii) GIS mapping and link with other data systems; (iii) Reinforce Planning Department's capacity for analysis and forecasting.

Sub-Component 4.2 – Communication and stakeholder consultations for education reform

56. Under this sub-component, the proposed project will help the Government craft an effective communication strategy on the current education reforms and proposed project supported activities. The communication strategy would target key stakeholders, such as education professionals, teachers, principals, government officials, parents, youth and the public at large to engage them about their own perspectives, advocate on behalf of reforms and the project, and finally work towards boosting positive behavior change for new learning approaches, which better prepare youth for the 21st century world of work.

57. This sub-component will provide support towards public engagement and advocacy efforts of the education reform. To begin, engagement will work towards building a shared vision for education reform in Georgia, which includes but is not limited to innovation, inclusion, and quality. To this end, a multi-year communications strategy would be drafted and adopted to engage various stakeholders and their representative groups, including students, parents, the wider education sector, the private sector, and civil society. This strategy will include the development of guiding principles for education and human capital development in Georgia, agreed and endorsed through a nation-wide consultation process,

with the active involvement of representative groups. This sub-component will also support advocacy efforts to rally public support. Advocacy will aim to increase awareness of Georgia's new vision for human capital investment and education reform in alignment with EU goals through various forums such as public debates and social media, and information sessions for journalists and media. Advocacy efforts will also help manage reputational risks associated with reform efforts. Finally, to rally public support, showcase of early adopters and practitioners such as Vladimir Apkhazava[26] for role modelling the whole-school approach and modern pedagogy among education professionals and champions among parents.

Component 5 – Supporting Project Management, Monitoring, and Evaluations (IBRD: US$3.47 million; Counterpart: US$ 0.87 million)

58. The objective of this component is to support capacity-building for effective management of proposed project.

Sub-Component 5.1 – Facilitating the establishment, staffing, and evaluation of project operations

59. This sub-component would support the day-to-day management and monitoring of the proposed project through the establishment and maintenance of a Project Management Unit (PMU) under the MESCS and maintaining adequate capacity in the Municipal Development Fund of Georgia (MDF) under the Ministry of Regional Development and Infrastructure. The PMU and the Project Management Team (PMT) at MDF would provide operational and management support for the proposed project for its full duration. This sub-component would also finance salaries for PMU staff and incremental consultants to MDF, training activities, and operating costs. This sub-component would also provide targeted technical assistance on Bank-specific procurement processes. Under this sub-component, assistance would be provided for evaluation and monitoring the progress of the project-supported activities.

D. Project Financing

60. **The proposed project is to be implemented over a period of six years, between 2019 and 2025.** Total project cost is US$128,054,000 of which the proposed IBRD loan in the amount of US$102,700,000 (Euro 90,000,000), inclusive of taxes will finance 80 percent, thus with the remaining 20% of Borrower financing covering counterpart funding. Table 2 below shows the breakdown (rounded figures) including front-end-fee fully financed by IBRD.

Table 2: Proposed Project Financing Disaggregated by Component (rounded)

Project Components	Project Cost (US$)	IBRD Financing	Percent Financing
1. Improving Quality of and Access to Early Childhood Education and Care (ECEC)	11,737,000	9,390,000	80.0
2. Fostering Quality Teaching and Learning in General Education	91,312,000	73,050,000	80.0
3. Strengthening Financing Options and Promoting Internationalization in Higher Education	17,575,000	14,060,000	80.0
4. System strengthening and Stakeholder Communication	3,088,000	2,470,000	80.0

[26] Amongst the top 10 finalists for the 2019 Global Teacher Prize by Varkey Foundation: *https://www.globalteacherprize.org/person?id=7507*; *http://georgiatoday.ge/news/14550/Vladimer-Apkhazava-Makes-Top-10-for-%241-Mln-Global-Teacher-Prize*

5. Supporting Project Management, Monitoring, and Evaluations	4,342,000	3,473,250	80.0
Total Costs	**128,054,000**	**102,443,250**	**80.0**
Front End Fees	**256,750**	**256,750**	**100.0**
Total Project Costs	**128,310,750**	**102,700,000**	
Total Financing Required	**128,310,750**	**102,700,000**	

E. Rationale for Bank Involvement and Role of Partners

61. **There are three main reasons that justify the World Bank's support in this project.** The World Bank Group (WBG) has broad experience in supporting the implementation of activities to assess and improve the quality and innovation of education systems across the world and in ECA. The World Bank also has substantial experience supporting Georgia's education sector in the past decade, including the previous Education System Realignment and Strengthening Project (2001-2008). The Bank's more recent engagement in the education sector include the series of Development Policy Operations (DPOs), Just-in-Time technical advice to the Government, and Analytical and Advisory Services (ASA). These instruments have supported the following areas: (i) support for new teacher recruitment, evaluation, professional development and career advancement scheme, including the development of an innovative teacher classroom observation tool; (ii) assessment of Georgia's supply of and demand for skills in the labor market; (iii) analysis of education sector performance; (iv) public expenditure review analyzing efficiency of education sector spending. The WBG also provides Georgia with ongoing technical assistance to support reforms to the higher education financing system and improving preschool education through the Social Accountability Processes Grant; and the Education Policy Forum in collaboration with UNICEF and ISET. Finally, given the impending completion of the successful MCC education project, the World Bank will help fill a critical gap to sustain existing development and augment activities to ensure the implementation of the Government's education priorities.

F. Lessons Learned and Reflected in the Project Design

62. **The proposed project design incorporates key lessons learned from existing research, as well as from previous Bank-supported education operations, including:**

(a) **Impact of improvements in the learning environment on student achievement.** Glewwe et al[27] conducted a literature review followed by a meta-analysis study of the relationship between school resources and student test scores. Better resources such as textbooks, basic furniture, blackboards, school libraries and better infrastructure were found to have a positive impact on test scores. The authors concluded that "a fully functional school – one with better-quality roofs, walls or floors, with desks, tables and chairs and with a school library – appears to be conducive to student learning." Branham[28] studied over 200 schools in the Houston Independent School District in the US and found that the quality of school infrastructure has a significant effect on student attendance and drop-out rates. Cuyvers et al[29] analyzed the impact of school infrastructure on the well-being of students in Flemish secondary schools in Belgium and concluded that the

[27] Glewwe, P., Hanushek, E., Humpage, S. & Ravina, R. (2011) School Resources and Educational Outcomes in Developing Countries: A Review of the Literature from 1990 to 2010, *NBER Working Paper 17554*.

[28] Branham, D. (2004) "The Wise Man Builds His House Upon the Rock: Effects of Inadequate School Building Infrastructure and Attendance", *Social Science Quarterly*, 85(5), pp. 1112-1128.

[29] Cuyvers, K., G. De Weerd, S. Dupont, S. Mols, and C. Nuytten (2011) "Well-being at school: does infrastructure matter", *CELE Exchange 2011/10*, OECD.

quality of school infrastructure has a strong impact on a student's perception of his or her well-being. Research has also shown that increases in learning and cognitive skill development have a strong causal relationship with individual lifetime earnings and national economic growth. Hanushek and Woessmann (2008)[30] find that a one standard deviation increase in learning outcomes is associated with an increase in annual earnings of around 12 percent. Countries' economic growth is also dependent on individuals' cognitive skills—with a change of one standard deviation in student performance accounting for 1.2-2.0 percentage point difference in annual GDP growth rates, all else being equal.[31]

(b) **Student assessments and use of data in system management.** To certify that their education systems are imparting skills that are conducive to growth, countries must develop advanced systems of measuring student learning. By investing in improved student assessment and education information systems, countries as diverse as Poland and Brazil were able to reform their approaches to delivering education services to better meet the needs of a globalized economy. Without precise assessment and thorough analysis, policymakers have little chance of aligning their teacher policies and curricula with the needs of a modern knowledge economy. Thus, student assessments along with education information systems are crucial prerequisites for effective sector management.

(c) **Management of school rehabilitation activities to guarantee effective education service delivery.** To ensure that the temporary relocation of students resulting from school infrastructure rehabilitation is not disruptive for affected families, advanced planning, due diligence, and clear communication are keys to mitigating potential risks. In neighboring Armenia, a recent World Bank education project aimed at improving quality in general education, including the improvement of upper-secondary schools' physical conditions, required the temporary displacement of some students during rehabilitation. The Armenian government used a "round robin" approach to organize the temporary relocation of students. Using annexed space in rehabilitated schools, neighboring schools not under construction, and nearby schools with empty space, the government carefully moved students and teachers to nearby schools to ensure no interruption to education service delivery. To do this, officials exercised due diligence both in the identification of schools to be rehabilitated and those used as alternatives, carefully planned the allocation of time needed in each school and the related number of students, and effectively communicated school attendance modifications to schools, students, and parents. These carefully planned processes led to smooth school attendance modifications without grievance from stakeholders. Additional possibilities for addressing temporary relocation resulting from rehabilitation include the use of community public spaces, such as libraries or community centers. In addition, the United States and Finland use mobile classrooms to compensate for the displacement effects of rehabilitation in schools or a lack of space. These classrooms are created in trailers or containers, carefully retrofitted to serve as classrooms, and can be moved from school to school depending on needs at different times in different locations.

III. IMPLEMENTATION ARRANGEMENTS

A. Institutional and Implementation Arrangements

63. **The proposed project will be implemented over a six-year period by the Ministry of Education, Science, Culture and Sport of Georgia and its subordinate government agencies and by the Municipal Development Fund of Georgia.** The MESCS would have the overall responsibility for project coordination and monitoring of the implementation progress. A

[30] Hanushek, E.A. & L. Woessmann (2008) "The Role of Cognitive Skills in Economic Development", *Journal of Economic Literature*, 46(3), pp. 607-668.

[31] Hanushek, E.A. & L. Woessmann (2012) "Do better schools lead to more growth? Cognitive skills, economic outcomes, and causation", *Journal of Economic Growth*, 17(4), pp. 267-321.

Project Management Unit (PMU) will be created within MESCS. MDFwill have responsibility for the implementation of infrastructure activities under the project. A Project Management Team (PMT) will be created within MDF. Capacity enhancement of the MDF will be financed by the Borrower to maintain, throughout project implementation, qualified staff in sufficient numbers, as well as adequate funds, facilities, services and other resources for project implementation (including, procurement, financial management, environmental and social aspects and monitoring and evaluation), all acceptable to the Bank. The PMU would consist of fiduciary consultants who would support the MESCS on financial management, procurement, monitoring, and administration; and thematic consultants who would coordinate with the MESCS's subordinate agencies (i.e. TPDC, NAEC, NCEQE, ESIDA, and EMIS) on thematic activities related to teacher training, assessments, inclusive education, early childhood education, general education, and higher education, etc. The MDF will be responsible for the preparation and implementation of school infrastructure and equipment-related activities, including financial management, disbursement, procurement, application of safeguard policies and reporting.

B. Results Monitoring and Evaluation Arrangements

64. **The Project Development Objective level and intermediate result indicators would be monitored using the following data collection instruments:** (i) regular surveys and data collection processes; (ii) administrative data; and (iii) monitoring reports prepared by the PMU.

65. **The PMU would carry out the day-to-day coordination of monitoring and evaluation activities.** It would bring together consultants and representatives of various subdivisions of the Ministry to monitor the project's objectives and results and would communicate with the World Bank according to the frequency of reports described in Annex 1. The PMU consultants would be responsible for the provision of timely and accurate information required for monitoring the proposed project's objectives and results achieved under their respective sub-components, as shown in Annex 3.

66. **The proposed project envisions beneficiary and stakeholder participation in project monitoring activities.** Beneficiary and stakeholder feedback would be gathered through surveys or other appropriate community engagement mechanism and conducted periodically by the MESCS. This exercise could serve as one of the key monitoring and evaluation mechanisms used by the MESCS to assess quality of education services in Georgia. The construction of new schools and rehabilitation of selected schools proposed under Components 1 and 2 allow for comparisons in beneficiary satisfaction with the quality of the learning environment in "treatment" and "control" schools.

C. Sustainability

67. **The sustainability of the proposed project would be determined by two factors.** First, the Government's ownership of this project and other activities implemented under the current Country Partnership Framework; and, second, the fiscal sustainability and cost-effectiveness of project activities. The former is derived from the project's support for the Government's demonstrated commitment to comprehensive education reform under the 2018-2023 Education Reform Agenda. The latter factor—on fiscal sustainability—will derive from increased cost-effectiveness of the rehabilitated school facilities, which will reduce over time the amount of resources that must be allocated from central and local budgets to maintain the existing facilities. Meanwhile, the systems strengthening activities reflect new Government priorities that are aimed at modernizing the country's education sector in line with best global practices.

IV. PROJECT APPRAISAL SUMMARY

A. Technical, Economic and Financial Analysis (if applicable)

(i) Technical

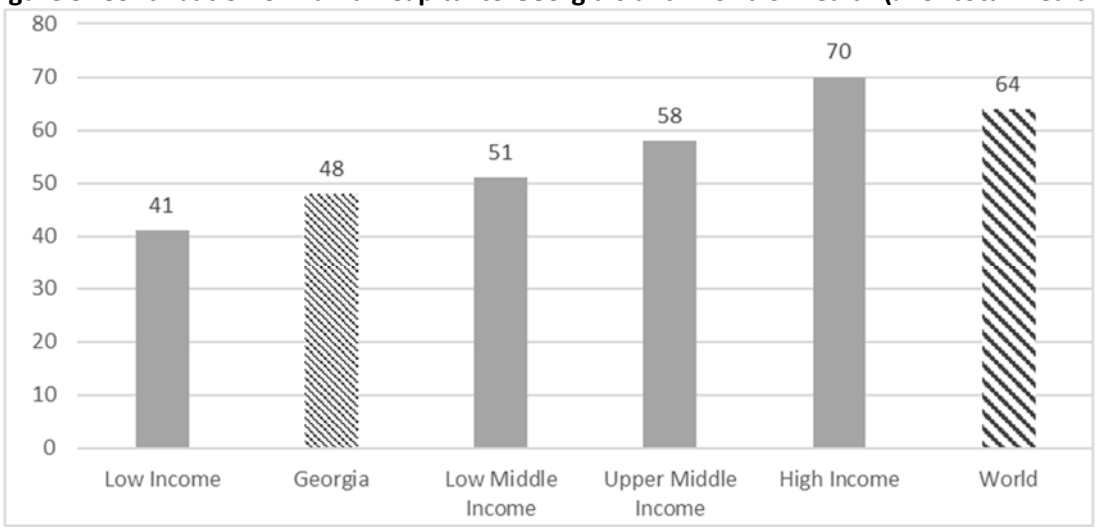
68. **The development objectives would be achieved through a sound project design, which balances investments in infrastructure with education system strengthening.** The proposed project would help the Government to improve the quality and innovation of the education system, while ensuring access to equal educational opportunities. The project design is informed by a long track record of similar interventions financed by the World Bank in other countries of the world, whose lessons are applied to design the mix of activities appropriate for Georgia, along with learnings from in-country interventions, such as the MCC's Second Compact to Georgia. The proposed activities are designed keeping in mind the relevant international standards and the borrower's needs and capacities.

(i) Economic and Financial Analysis

69. The proposed project aims to strengthen different aspects of the learning environment, which is strongly associated with the development of key cognitive and non-cognitive skills that drive economic growth. The results of the economic and financial analysis justify the appropriateness of the proposed investments. Specifically, a cost-benefit analysis has been used to quantify the benefits from (i) one year of preschool focusing on school readiness (Component 1) and, (ii) the improvements in the learning environment in general education schools (Component 2), comparing these against the project's direct and indirect costs. Cost-benefit analysis and rate of return calculations from two of the largest investment components in the project envelope show that the investment will have a considerably large IRR and BCR.

70. The wealth estimates of 141 countries suggests that human capital accounts for the lion's share of a country's wealth, and accounts for approximately 64 percent of global wealth according to the 2018 World Bank Group's *The Changing Wealth of Nations* report (Figure 5). Typically, human capital has a higher share in upper-middle-income and high-income countries than in poorer countries. Empirical research also shows that sustaining economic growth over the long term and building capacity to overcome the 'middle-income trap' would require significant investments in human capital formation, especially in improving the quality and relevance of education and skills. Such investments are vital for Georgia to build on its past progress while alleviating the adverse impacts of the demographic decline and reducing inequalities. Thus, the proposed Georgia I^2Q Project aims to boost the quality of human capital by strengthening and promoting 21st century skills and mindsets required to increase productivity, innovation, and competitiveness.

Figure 5: Contribution of Human Capital to Georgia's and World's Wealth (% of total wealth)



Source: The Changing Wealth of Nations, World Bank, 2018

71. The proposed project envisages that modernizing general education along with improving early childhood education and care can give momentum to greater short- and long-run economic returns and increased equity. The expected developmental impact is the increased access to relevant and high-quality education and training that will enable Georgian children and youth to be competitive and have fulfilling lives given the changing nature of work in an increasingly technologically advancing world. Substantive research shows that quality early childhood education and care (ECEC) programs are highly cost-efficient with significant and long-lasting social and economic benefits, especially for disadvantaged children. Further, research strongly suggests that educational attainment and performance greatly influence the labor market outcomes.

72. Public investment in the sub-sectors of early childhood education and care and general education are strongly justified in Georgia because these services are mainly under public provision with gross enrollment cover estimates of 80% (in school readiness programs and/or preschools) and over 90% (in K-12). Demand is highly sensitive to parental fees and there is very limited or no private sector regulation. Fiscal budgets are tight with over 70 per cent spending on salaries. There is an urgent need for supporting public expenditures on quality improvement efforts. The role of the Bank is important to not only leverage and build upon learnings from significant analytical work over the last decade in Georgia and from its global knowledge pool, but also to strengthen its support and commitment to human capital development. Finally, the Bank investment will play a crucial role of sustaining existing and well-regarded efforts in financing and implementation support provided by the Millennium Challenge Corporation (sponsored by USAID for US$ 140 million ending in July 2019).

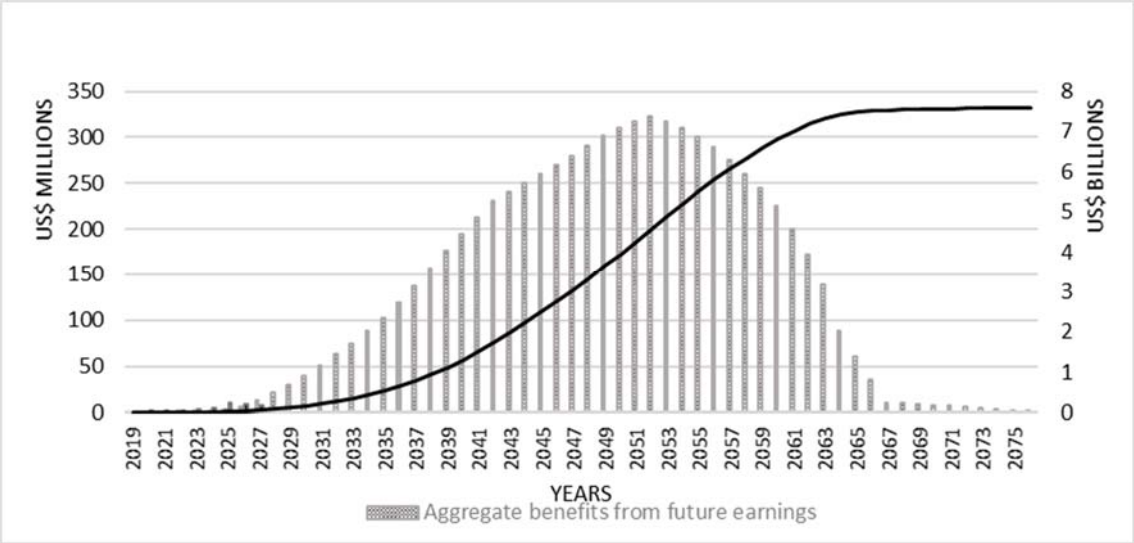
73. For the Early Childhood Education and Care component, the estimated IRR is 7.1% and a benefit to cost ratio of 1.8. A sensitivity analysis was conducted and even in the high cost scenario, the project reports a positive NPV and BCR greater than one. Note that this IRR estimate is project specific and hence calculated for access to 1 year of preschool for 5- to 6- year old children in Georgia. Accumulating global evidence shows that an additional dollar invested in quality early childhood programs yield returns between US$ 6 and US$ 17. The General Education component is estimated to have an IRR of 26.9% and a benefit to cost ratio of 21.3. The sensitivity analysis considered three scenarios – benefits from future earnings alone, from future earnings and GDP growth, and from earnings, GDP and private returns through parental savings from private tutoring. The CBR is in the range of 21.0 to 21.4 and the IRR is considerable, with the range of 23% to

28%. The largest contribution to the NPV in the general education component comes from the Teacher Training[32] and Assessments sub-component, which standalone, has an IRR of 36% to 41%. Reported values are calculated at 5% discount rate. The detailed assumptions, analysis and scenarios are presented in Annex 5.

74. For the Early Childhood and Care component, the impact estimates[33] of attending preschool for one or more years was found to have a 0.053 standard deviation increase in PISA scores, with significance for the Europe and Central Asia region[34]. In other words, when a child in the ECA region attends preschool for one or more years, we can say with 99 per cent confidence that his or her PISA score at age 15 is likely to increase by 5.0 points with a SD of 0.053. Thus, this impact was assumed for estimating the effect of 1 year of preschool in Georgia on participants' educational outcomes. In general education, impact estimates of improved infrastructure, materials and equipment and teacher training was based on available international research findings[35]. Lifetime earnings were calculated using an estimated economic return of 12 percent (as individual expected income) for one standard deviation increase in academic achievement.

75. The cumulative benefits accruing from Future earnings and GDP through human capital investments in education show that the aggregate annual benefits will sustain well beyond 2025, the last year of the project (Figure 6). The sub-component of teacher training and assessments will likely have the largest contribution towards sustaining the annual aggregate benefits followed by the subcomponents on education equipment and infrastructure.

Figure 6: Cumulative benefits from GDP and Future Earnings from Human Capital Investment



Source: World Bank staff calculations

B. Fiduciary

[32] Teacher Training literature referred to impact values for methods included coaching, mentoring, collaboration as well as traditional training methods.

[33] The estimates from Hanushek and Woessmann (2007) suggest that an increase of one standard deviation in average performance on internationally validated tests such as PISA (a 100-point difference or approximately the difference between Norway and Mexico) will increase annual long-run GDP growth by 1–2 percent.

[34] Average private RoR for one year of schooling for Georgia is 7.7 percent with a standard deviation of 2.8 percent relative to Europe and Central Asia of 7.8 percent (Patrinos, H., 2016).

[35] There are very few rigorous studies examining the impact of infrastructure, education material and in-service teacher professional development on learning outcomes in developing countries, including LMIC countries like Georgia.

(i) Financial Management

76. The overall residual financial management (FM) risk for the project is substantial, given MESCS's lack of previous experience implementing World Bank-financed projects, and the fact that the required FM arrangements are still not in place. However, FM and disbursement arrangements are expected to be acceptable after a set of agreed actions have been met as described in Annex 3.

77. The MESCS (through its PMU) and MDF (through the PMT) will be responsible for FM and disbursement aspects during project implementation including planning, budgeting, accounting, financial reporting, funds flow, internal controls, and auditing. The MDF has extensive experience in implementing World Bank financed projects. However, the MESCS has no prior experience in the implementation of the World Bank-financed projects and projects financed by other international financial institutions. The PMU within MESCS still needs to be established. Likewise, the PMT within MDF needs to be established.

(ii) Procurement

78. Procurement will be carried out in accordance with the World Bank's "Procurement Regulations for IPF Borrower July 2016 revised August 2018". A Project Procurement Strategy for Development (PPSD) has been developed and finalized with support from the World Bank. A detailed procurement plan has also been prepared for the first 18 months of the project implementation. Project procurement communication and Procurement Plan implementation will be performed through STEP (Systemic Tracking of Exchanges in Procurement) system.

79. Procurement is planned to be conducted by two separate entities: (i) MESCS/PMU and (ii) MDF/PMT. MESCS/PMU will be responsible for all procurements other than civil works, whereas MDF/PMT will be responsive for all civil works contracts and related consultancy services. Both PMU and PMT are expected to oversee procurement under their respective components and activities. MESCS has no experience to implement Bank funded projects. MESCS will responsible for significant number of high value consultancy contracts with international competition. Though MDF has good experience and capacity to implement Bank funded project, but past working exposure to the Bank's procurement procedures. Considering these factors Procurement Risk Rating is assessed as "Substantial". Details of the procurement arrangements have been described in Annex 3.

C. Safeguards

(i) Environment (including Safeguards)

80. The project will provide technical assistance for the improvement of the quality, provision and relevance of education in Georgia and will finance small-scale physical works for the provision of adequate learning environment in the educational institutions. This technical assistance will not have either direct or indirect environmental impacts. Physical works will be undertaken for the rehabilitation of the existing premises or construction of school facilities. Environmental and social risks associated with these works are typical for reconstruction and construction of small to medium-size buildings, well-known upfront, and easy to mitigate. A few aspects related to refurbishment of school buildings that call for attention are as follows: older buildings, especially outside Tbilisi, are likely to have asbestos-containing roof tiling and its replacement will require preventing workers' health damage and environmental pollution. Structural integrity of buildings selected for refurbishment should be checked prior to approving project interventions and retrofitting be considered as required. Finally, works should be scheduled during school breaks or, if impossible, adequate arrangements

should be made for safeguarding students and teachers from nuisance/accidents that may occur if works are underway in parts of the buildings where classes are being held at the same time.

81. The Borrower developed an Environmental and Social Management Framework (ESMF) for the purposes of project implementation. This document contains detailed instructions on the environmental and social screening of the proposed individual investments, lists common types of risks that may be encountered while rehabilitating school premises, and provides a menu of generic measures to mitigate expected negative environmental and social risks. Institutional arrangements for environmental and social management of project activities are also laid out in the Framework document. Templates for developing simplified Environmental and Social Management Plan (ESMP) and producing field environmental and social monitoring reports are attached to the ESMF.

82. ESMF was disclosed in Georgian and English languages through the web pages of the MESCS and MDF. It will be discussed with stakeholders and finalized to the satisfaction on the Bank. Site-specific ESMPs will also the disclosed in draft, discussed with local stakeholders and agreed with the Bank. Project implementing entities will continue receiving feedback from the project-affected people through the Grievance Redress Mechanism to be established and operated by the MESCS and MDF.

83. The MDF has extensive experience of implementing Bank-financed operations and is well familiar with its safeguard policies. MDF's track record of implementing projects in adherence with the Bank's policies and the national environmental legislation is good. None of the current operations have unsatisfactory rating on environmental compliance. MESCS has no capacity for safeguards management. PMU to be established for day-to-day Project management within MESCS will not require much human resource for environmental and social management, because civil works to be undertaken on the project proceeds will be fully handled by MDF. However, at least one person qualified for overseeing environmental aspects along with social implications of the project implementation will be placed in the PMU.

(ii) Climate co-benefits

84. ***Climate co-benefits.*** Mitigation and adaptation co-benefits may exist in energy efficiency improvements of buildings (moving towards carbon neutral standards and buildings) and in enhanced resilience to anticipated climate-related conditions (raising temperatures and heat waves, reduced water availability) and natural hazards (floods, flash floods, droughts, landslides, avalanches, and mud flows) that will be achieved through construction and rehabilitation of school infrastructure in Components 1 and 2. Sub-component 1.3 will fund the construction of 2 to 10 new model schools accommodating preschool. At the same time, sub-component 2.1 will support the construction of 5 to 8 new schools and rehabilitate 60 selected general education schools. The schools where the rehabilitation will take place and exact nature of rehabilitation needs in each school is not defined yet, and may include work on external walls, roofs, windows, floors, basements, laboratories, gymnasiums, and heating and sewer systems, among others. Overall and estimated 10-30% of the project funding will be geared towards climate benefits.

(iii) **Social (including Safeguards)**

85. ***Social safeguards.*** The social risk rating of the project is Low. OP 4.10 on Indigenous Peoples is not applicable to Georgia. The World Bank's Involuntary Resettlement policy OP 4.12 has been triggered as the project may support construction of new school buildings along with the rehabilitation of the existing public buildings. The new construction is expected to occur on public land plots designated for this purpose and free of private assets or use. However, the sites of potential new construction are not yet known and cannot be screened prior to Project Appraisal. Therefore, a

Resettlement Policy Framework is prepared to define the measures and institutional responsibilities in line with OP 4.12 in the event of any land, asset, or livelihood impacts. Negative social impacts arising from rehabilitation of educational facilities will be minimized and mitigated as per provisions set in the project Environmental and Social Management Framework (ESMF) and site-specific Environmental and Social Management Plans (ESMPs), to be attached to all civil works contracts. Such measures would include regular monitoring and reporting on safety at and around a construction site, occupation safety for project personnel, proper signage of construction sites, designation of community liaison officers, ensuring that grievance and redress information is clearly displayed at project sites, ensuring that safe alternative arrangements are provided for students and teachers during rehabilitation with the active school year, among others. Accidental damages incurred during civil works will be compensated and/or fully restored by the contractor. The PMU will retain a qualified social specialist who will be responsible for ESMP monitoring and broader social impacts.

The institutional responsibilities for mitigation of resettlement impacts (temporary or permanent land acquisition, resettlement, impacts on assets or livelihoods) have been defined in the RPF. The MESCS will take on primary responsibility for any relocation arrangements that are related to the core school functioning and fall within the Mandate of MESCS, such as temporary accommodation of students, teachers, related transportation, payment of salaries for teachers and school personnel, among others. MDF will ensure screening and mitigation of any resettlement related activities that are not directly related to the educational process (e.g., impact on physical assets or businesses on or around land plots selected for construction). A Grievance Redress Mechanism will be established for the project with clearly defined responsibilities. MESCS PMU and MDF PMT will maintain grievance logs and report regularly on the status of grievance resolution.

86. ***Social impact.*** While the project is not expected to cause any negative social impact, special effort is required to ensure that project benefits can be equally shared across different segments of the population. Certain population groups face particularly high barriers to access quality education. These include, among others, children in remote and rural areas, Azerbaijani minority and other ethnic and linguistic minorities, and children with limited abilities. The project will take special measures to reduce barriers for such groups. This will be pursued, on the one hand, through the promotion of inclusive teaching methods and practices (in early childhood education and general education) as part of Components 1 and 2. Additionally, the project will undertake review of education and consultative processes needed to promote equitable access to education for marginalized groups, such as students from low income, rural, and minority backgrounds, and females and students with disabilities and special education needs under Component 4.

87. ***Gender.*** Discrepancies in educational achievement between male and female students are not significant in the context of Georgia. Still, such discrepancies can be observed in some minority communities where girls are less likely than boys to complete basic education. It is also notable that despite the average equity in completing educational degrees, gender gaps in the labor market remain significant – both in equity of payments, as well as in the types of occupations taken by men and women in the labor market. While these signals barriers present in the labor market and other social services, such as child and elderly caregiving, it is also a reflection of gender norms within the education system. The project will address gender equity across all components by promoting of equitable teaching practices and regulations that are sensitive to reducing gender barriers i.e. gender-neutral language in curriculum, gender sensitization content in the teacher training material, addressing gender discrepancies in STEAM fields by producing evidence of girls' engagement through the policy dashboard and gender disaggregated monitoring of formative assessments to identify any differential effects on outcomes.

88. ***Citizens' engagement and beneficiary feedback.*** Citizen engagement would be promoted through two main

mechanisms: (i) for the development of guiding principles for education and human capital development in Georgia, agreed and endorsed through a nation-wide consultation process, with the active involvement of representative groups. Appropriate citizen engagement mechanisms for beneficiary awareness raising will be selected (component 4.2). The project would also pilot at least one innovative tool to collect beneficiary feedback and analysis and to participate in additional communication and engagement activities targeted at parents, teachers, students, and community at-large to support behavior change toward education reforms (such as demonstrated understanding of student-centered learning) (sub-component 4.2). (ii) a Grievance Redress Mechanism (GRM) will be set up for the I2Q Project to deal with both the environmental and social issues of the subprojects. The MDF and the PMU within the MESCS as the implementation agencies have the overall responsibility for Project implementation in general, including its environmental and social compliance. MESCS and MDF will be in close cooperation throughout the cycle of the Project planning and implementation to facilitate the grievance redress procedures and to make it easily available for Project-Affect Persons (PAPs) raise their feedbacks and complaints if any. Once the complaints/feedback is received in MDF or MESCS, this will be shared between these two institutions immediately. A grievance redress contact point will be appointed in PMU, along with grievance focal point in MDF; contact information of the PMU shall be displayed in a visible way at project sites, that all grievances are recorded and addressed in a timely manner (within two weeks of receipt), and a grievance redress log is maintained within the PMU as well as MDF. Beneficiary feedback indicators would be adopted to monitor quality of parent engagement as well as of the GRM. The design and monitoring measures of all citizen engagement mechanisms will be elaborated in detail in the Project Operations Manual and included in the project budget.

89. ***Grievance redress.*** Communities and individuals who believe that they are adversely affected by specific activities financed by the proposed project may submit complaints to the responsible country authorities, appropriate local/national grievance redress mechanisms, or the World Bank's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed to address pertinent concerns. Affected communities and individuals may submit their complaint to the World Bank's independent Inspection Panel, which determines whether harm occurred, or could occur, because of World Bank non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate GRS, please visit http://www.worldbank.org/GRS. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

V. KEY RISKS

A. Overall Risk Rating and Explanation of Key Risks

90. **The overall implementation risk is moderate** (Table 3). The proposed *Environmental Risk* of low is consistent with potential risks and impacts, with or without the school rehabilitation. However, the proposed *Social Risk* of low may not adequately account for vulnerability of the economically disadvantaged minors as the project's target beneficiaries as well as the possible impacts of school rehabilitation. Moreover, *Technical Design of Project or Program* and *Stakeholders* are calculated as moderate due to the multiple actors. In addition, *Institutional Capacity for Implementation and Sustainability* is determined as moderate and *Fiduciary* is determined as substantial since the MESCS does not have sufficient experience implementing World Bank-financed education projects. This risk will be mitigated through the capacity-building of the MESCS/PMU and MDF/PMT to oversee Bank policies and procedures, including fiduciary obligations.

Table 3: The key risks summarized in the Systematic Operations Risk-Rating Tool (SORT)

Systematic Operations Risk- Rating Tool (SORT)	
Risk Category	**Rating**
1. Political and Governance	Low
2. Macroeconomic	Moderate
3. Sector Strategies and Policies	Low
4. Technical Design of Project or Program	Moderate
5. Institutional Capacity for Implementation and Sustainability	Moderate
6. Fiduciary	Substantial
7. Environment and Social	Low
8. Stakeholders	Moderate
9. Other	N/A
OVERALL	**Moderate**

ANNEX 1: Results Framework and Monitoring

Results Framework
COUNTRY: Georgia
Georgia I2Q - Innovation, Inclusion and Quality

Project Development Objectives(s)

The project development objectives are to (i) expand access to preschool education and (ii) improve the quality of education and learning environments.

Project Development Objective Indicators

Indicator Name	DLI	Baseline	End Target
Expand access to preschool education			
5 to 6-year old children enrolled in School Readiness Programs (Pre-school level) (Percentage)		80.00	92.00
Female children enrolled (Percentage)		80.00	92.00
Improve the quality of education and learning environments			
Beneficiary students with access to improved learning environments in project-supported schools (Number)		0.00	116,000.00
Female beneficiary students with access to improved learning environments in project-supported schools (Number)		0.00	58,065.00
Learning outcomes of students in national formative assessments in project-supported general education schools (Text)		Baseline to be determined and set in 2020	Endline to be measured
Learning outcomes of Female children (Text)		Baseline to be determined and set in 2021	Endline to be measured

Intermediate Results Indicators by Components

Indicator Name	DLI	Baseline	End Target
Improving quality of and access to early childhood education and care			
New architectural blueprints developed and 2 to 10 new model buildings accomodating preschools constructed (Number)		0.00	2.00
New School Readiness Programs introduced and provided with equipment, furniture and technology (Number)		0.00	150.00
Diagnostic study completed and recommendations made for development and expansion of quality ECEC completed in Yr 1 and Yr 4 (Text)		No diagnostic study	Diagnostic study completed and recommendations made
System for preschool data reporting and consolidation mechanism established and incorporated in the EMIS (Text)		No systematic reporting and consolidation mechanisms exist	Systematic data reporting and consolidation mechanism established and streamlined in EMIS
Child-level ECEC quality monitoring instrument to strengthen support for school readiness and smooth transition to school introduced (based on MODEL/MELQO or other appropriate instrument) (Text)		No quality monitoring instrument in place	Quality monitoring instrument developed, tested and introduced
Fostering quality teaching and learning in general education			
School architectural standards reviewed and updated to be used in the construction and rehabilitation of schools (Text)		Standards not updated	Standards updated
Number of rehabilitated general education schools (Number)		0.00	60.00
Number of new general education schools constructed (Number)		0.00	5.00
New teacher training modules and manuals developed on modern child centred pedagogy and formative continuous assessment (Text)		Does not exist	New modules developed
Collaborative e-platform identified and strengthened to support audiovisuals, weblinks, lesson plans documents for teachers and education professionals (Text)		Currently does not exist	Collaborative e-platform identified, strengthened and used

Indicator Name	DLI	Baseline	End Target
Establishment of Thematic Innovation Clubs in every region/municipality targeting gifted and other student interests and a system to ensure its sustainability (Number)		0.00	200.00
Percentage of girls participating in the Thematic Innovation clubs (Percentage)		0.00	50.00
Select schools resourced with a school improvement package to strengthen the implementation of the whole school approach (Number)		0.00	200.00
National formative assessment system introduced and established for primary and secondary grades (Text)		No formative national assessments conducted	Formative assessment system established
Feasibility study conducted with recommendations for the establishment of National Institute of Educational Research completed (Text)		Not undertaken	Feasibility study completed and recommendations made
Trainers and coaches of education workforce staff that receive training (ToT) (Number)		0.00	1,600.00
Survey of change in female attitudes towards STEAM conducted amongst girls participating in the Thematic Innovation clubs (Text)		Baseline to be determined and set in 2020.	Endline to be measured
Strengthening financing options and and promoting internationalization in Higher Education			
Higher education grants established under Competitive Innovation Fund achieving at least 80 percent of their proposed objectives (Text)		Not present	Upto 45 grants awarded to foster modernization of teacher education programs and strengthen labor market linkages
Pre-service teacher education program accredited by EU in at least one university (Text)		Not undertaken	Accreditation received in one university program
System strengthening and stakeholder communication			
Development of a data integration strategy and action plan from PreK to HE (Text)		A data integration strategy action plan does not exist	A data integration strategy and action plan developed
Development of a data monitoring dashboard with quality monitoring indicators based on whole school approach (Text)		No monitoring dashboard exists	A data monitoring dashboard developed and operationalized
GIS education mapping system established and integrated		Under initial development	Fully developed and established

Indicator Name	DLI	Baseline	End Target
educational tracking system in place (Text)			
Multiyear communications strategy drafted and adopted based on general education policy principles (Text)		Does not exist	Developed and adopted
Representative groups who report that the national consultation (and feedback) process on Georgia's Education policy principles was responsive to their views through an appropriate CE mechanism (Percentage)		0.00	70.00
Parents that report satisfaction with their engagement in the whole school improvement effort and demonstrate understanding of student-centered learning through beneficiary surveys in Year 1, 4 and 6 (Percentage)		0.00	30.00

Monitoring & Evaluation Plan: PDO Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
5 to 6-year old children enrolled in School Readiness Programs (Pre-school level)	Expand access for 5 year old children in Preschools	Annually	MESCS, Municipalities, EMIS	Through municipal surveys and EMIS with MESCS oversight	MESCS with support from Municipality
Female children enrolled	Expand access for 5 year old female children in Preschools	Annually	MESCS, Municipalities, , EMIS	Through municipal surveys and EMIS with MESCS oversight	MESCS with support from Municipality
Beneficiary students with access to improved learning environments in	Number of students who have access to improved	Annually	EMIS	MESCS will monitor through the data	MESCS with support

project-supported schools	learning environments			reports produced by EMIS	from EMIS and MDF
Female beneficiary students with access to improved learning environments in project-supported schools	Number of female students who have access to improved learning environments	Annually	EMIS	MESCS will monitor through the data reports produced by EMIS	MESCS with support from EMIS and MDF
Learning outcomes of students in national formative assessments in project-supported general education schools	This indicator refers to the learning outcomes of students in national formative assessments aligned to the new competency-based curriculum	Annually	EMIS, NAEC	Data collection by EMIS and / or NAEC	MESCS with support from Municipality
Learning outcomes of Female children	Competency based assessment of female students including assessment of socioemotional skills	Annually	EMIS, NAEC	Data collection by EMIS and / or NAEC	MESCS with support from Municipality

Monitoring & Evaluation Plan: Intermediate Results Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
New architectural blueprints developed and 2 to 10 new model buildings accomodating preschools constructed	This indicator measures number of new model buildings accommodating preschools constructed using design & adoption of new architectural blueprints	Semiannua lly	MESCS & MDF Reports and documents, random site visits	MESCS staff will monitor the design, adoption and construction on a regular basis	MESCS with support from MDF

	that support innovative and inclusive spaces as 'third learning environments'				
New School Readiness Programs introduced and provided with equipment, furniture and technology	This indicator measures the number of rehabilitated facilities serving preschool programs	Annually	MESCS & MDF Reports and documents, random site visits	MESCS will monitor the rehabilitation works in alignment with agreed standards and designs	MESCS with support from MDF
Diagnostic study completed and recommendations made for development and expansion of quality ECEC completed in Yr 1 and Yr 4	This indicator measures the status of ECEC system diagnostic study. This study would include (i) existing school-based preschool services to inform infrastructure and service delivery design of project (supply-side planning) and (ii) profile of ECEC public demand (demand-side planning) to support increase in quality and access.	Year 1 and Year 4	Surveys, reports and analysis to accurately determine the supply and demand for quality ECEC services for 3-6 year old children	MESCS will monitor the development of the diagnostic study	MESCS with support from Municipalities and EMIS
System for preschool data reporting and consolidation mechanism established and incorporated in the EMIS	This indicator measures the status of systematic ECEC data reporting and consolidation and its incorporation in EMIS (including enrollment, parental background, fees, facilities, staffing etc.)	Semi-annually	MESCS & Municipality reports and documents	MESCS will monitor the establishment of the data reporting and consolidation system with the municipalities and in the EMIS.	MESCS with support from Municipalities and EMIS

Child-level ECEC quality monitoring instrument to strengthen support for school readiness and smooth transition to school introduced (based on MODEL/MELQO or other appropriate instrument)	This indicator measures the status of development of the ECEC Quality monitoring instrument	Semiannually	MESCS, NCEQE and Municipality reports and documents	MESCS will monitor the development of the quality monitoring instrument for ECEC	MESCS with support from NCEQE
School architectural standards reviewed and updated to be used in the construction and rehabilitation of schools	This indicator measures the status of development of standards to support innovative spaces as third learning environments and ensure accessibility for students with disabilities (e.g. m2 per child, safety, ceiling heights, natural light per m2, noise level, braille etc.)	Semiannually	MESCS & MDF Reports and documents, random site visits	MESCS staff will monitor the design, adoption and construction on a regular basis	MESCS with support from MDF
Number of rehabilitated general education schools	This indicator measures the number of project-supported rehabilitated general education schools	Annually	MESCS & MDF Reports and documents, random site visits	MESCS will monitor the rehabilitation works in alignment with agreed standards and designs	MESCS with support from MDF
Number of new general education schools constructed	This indicator measures the number of general education schools constructed	Annually	MDF and MESCS reports and documents, random site visits	MDF and MESCS staff will monitor the design, adoption and construction on a regular basis	MDF with support from MESCS

New teacher training modules and manuals developed on modern child centred pedagogy and formative continuous assessment	This indicator measures the status of development of agreed upon modules and manuals with gender, diversity, and inclusive education content for teacher professional development	Semiannually	MESCS reports and documents	MESCS will regularly monitor the module and manual development for quality and relevance for implementing the whole school approach	MESCS with support from TPDC
Collaborative e-platform identified and strengthened to support audiovisuals, weblinks, lesson plans documents for teachers and education professionals	This indicator measures the status of identification, strengthening and usage of a collaborative e-platform for education professionals	Quarterly	MESCS and EMIS reports and documents; Annual survey of teachers to determine uptake and improve usage	MESCS staff will regularly monitor the use of the collaborative e-platform and make recommendations to improve uptake	MESCS
Establishment of Thematic Innovation Clubs in every region/municipality targeting gifted and other student interests and a system to ensure its sustainability	This indicator measures progress towards establishment of thematic innovation clubs	Annually	MESCS reports and documents	MESCS staff will monitor the design, adoption and establishment of the Innovation clubs on a regular basis	MESCS
Percentage of girls participating in the Thematic Innovation clubs	This indicator measures the proportion of female children participating in the Innovation Clubs	Semiannually	EMIS and MESCS reports and documents	MESCS will monitor the number of unique girls participating in the Innovation Club	MESCS with support from EMIS

Select schools resourced with a school improvement package to strengthen the implementation of the whole school approach	This indicator measures the number of select schools (upto 500) identified to receive school improvement package. This package can include one or more of resources for multimedia lab, science lab, reading library, technology upgrades and equipment, learning enrichment modules, training on data utilization, community engagement and support for scalable ideas of school improvement.	Semiannua lly	EMIS and MESCS reports and documents such as operations manual of school improvement packages, for vetting and selecting scalable ideas for school improvement etc.	MESCS will monitor the number of students studying in the selected project-supported schools identified to receive a school improvement package	MESCS
National formative assessment system introduced and established for primary and secondary grades	This indicator measures status of establishment of the national formative assessment system in for low-, middle- and higher-grades	Semiannua lly	MESCS and NAEC reports and documents	MESCS will monitor the status of establishment of the assessment system	MESCS with support from NAEC
Feasibility study conducted with recommendations for the establishment of National Institute of Educational Research completed	This indicator measures the status of the feasibility study	Annually	MESCS reports and documents	MESCS will monitor the status of the feasibility study	MESCS
Trainers and coaches of education workforce staff that receive training (ToT)	This indicator measures the number of trainers who receive training and capacity building to be able to	Semi-annually	MESCS reports and documents		MESCS with support from TPDC

	coach/train education workforce staff				
Survey of change in female attitudes towards STEAM conducted amongst girls participating in the Thematic Innovation clubs	This indicator measures the change in attitude of females participating in the Thematic Innovation Clubs towards STEAM.	Baseline, plus surveys in Year 3 (MTR) and 6 (EOP)	Surveys based on statistical sampling and methodology to be designed and established in year 1.	Sampling of surveys to be established in year 1 by MESCS.	MESCS
Higher education grants established under Competitive Innovation Fund achieving at least 80 percent of their proposed objectives	This indicator measures the number of grants established that achieve 80 pc of the objecives	Semiannua lly	MESCS reports and documents	MESCS will monitor the number and type of grants established and track progress against stated objectives	MESCS
Pre-service teacher education program accredited by EU in at least one university	This indicator measures the status and progress towards EU accreditation of one pre-service teacher education program	Semiannua lly	MESCS reports and documents	MESCS monitors the program quality and progress towards EU accreditation	MESCS
Development of a data integration strategy and action plan from PreK to HE	Measures status of a data integration strategy and action plan for PreK to HE	In Year 1	MESCS and its affiliate agencies and related sectoral ministries		MESCS
Development of a data monitoring dashboard with quality monitoring	This indicator measures the status of development of	Semiannua lly	MESCS and EMIS reports	MESCS will monitor the collection of the data	MESCS

indicators based on whole school approach	the data monitoring dashboard for the schools as well as for ministry level		and documents	for agreed quality monitoring indicators and consolidation into dashboards	
GIS education mapping system established and integrated educational tracking system in place	Measure status of establishment of GIS Education mapping and linkage and integration with other systems for longitudinal tracking of education (learning journey)	Semiannually	MESCS and EMIS reports and documents	MESCS will monitor the GIS mapping and its use for data analytics and support integration with other systems	MESCS
Multiyear communications strategy drafted and adopted based on general education policy principles	Measures status of creation and adoption of the communications strategy	Year 1	MESCS		MESCS
Representative groups who report that the national consultation (and feedback) process on Georgia's Education policy principles was responsive to their views through an appropriate CE mechanism	Engagement mechanism can be determined through beneficiary surveys or community scorecard or a social audit meeting or a forum page or feedback box/function or mini pop-surveys				
Parents that report satisfaction with their engagement in the whole school improvement effort and demonstrate understanding of student-centered learning through beneficiary surveys in Year 1, 4 and 6	This indicator measures the proportion of parents who engaged actively with the school improvement efforts and also the level of understanding of the new modern pedagogic methods	Year 1, Year 4 and Year 6			

Expand access to preschool education

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Improve the quality of education and learning environments

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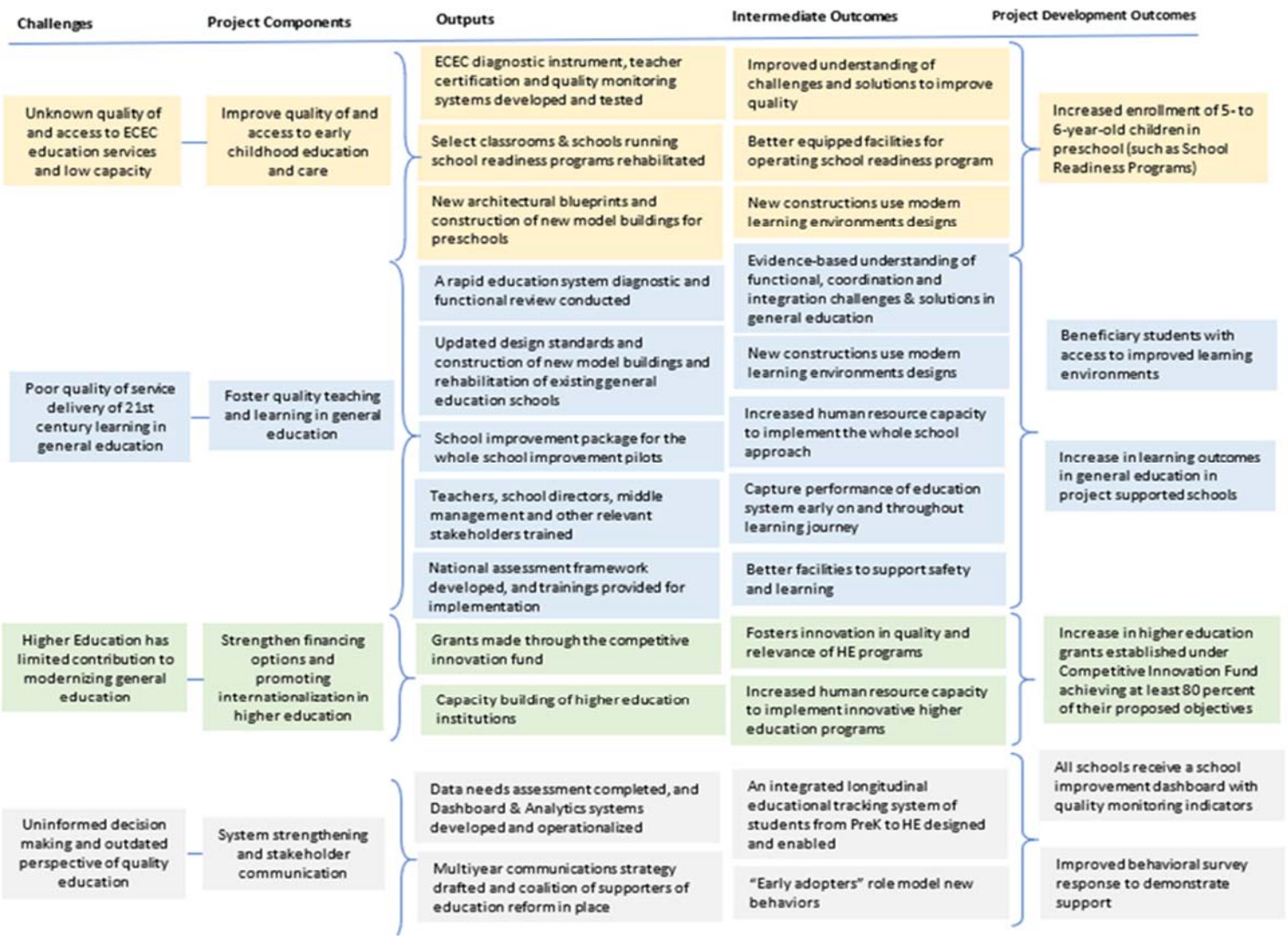
Outcome: New foundation for human capital development in Georgia

Results Framework Diagram for Georgia I^{2}Q Project


Challenges
Project Components
Outputs
Intermediate Outcomes
Project Development Outcomes
Unknown quality of and access to ECEC education services and low capacity
Improve quality of and access to early childhood education and care
ECEC diagnostic instrument, teacher certification and quality monitoring systems developed and tested
Improved understanding of challenges and solutions to improve quality
Select classrooms & schools running school readiness programs rehabilitated
Better equipped facilities for operating school readiness program
Increased enrollment of 5- to 6-year-old children in preschool (such as School Readiness Programs)
New architectural blueprints and construction of new model buildings for preschools
New constructions use modern learning environments designs
Poor quality of service delivery of 21st century learning in general education
Foster quality teaching and learning in general education
A rapid education system diagnostic and functional review conducted
Evidence-based understanding of functional, coordination and integration challenges & solutions in general education
Updated design standards and construction of new model buildings and rehabilitation of existing general education schools
New constructions use modern learning environments designs
Beneficiary students with access to improved learning environments
School improvement package for the whole school improvement pilots
Increased human resource capacity to implement the whole school approach
Teachers, school directors, middle management and other relevant stakeholders trained
Capture performance of education system early on and throughout learning journey
Increase in learning outcomes in general education in project supported schools
National assessment framework developed, and trainings provided for implementation
Better facilities to support safety and learning
Higher Education has limited contribution to modernizing general education
Strengthen financing options and promoting internationalization in higher education
Grants made through the competitive innovation fund
Fosters innovation in quality and relevance of HE programs
Increase in higher education grants established under Competitive Innovation Fund achieving at least 80 percent of their proposed objectives
Capacity building of higher education institutions
Increased human resource capacity to implement innovative higher education programs
Uninformed decision making and outdated perspective of quality education
System strengthening and stakeholder communication
Data needs assessment completed, and Dashboard & Analytics systems developed and operationalized
An integrated longitudinal educational tracking system of students from PreK to HE designed and enabled
All schools receive a school improvement dashboard with quality monitoring indicators
Multiyear communications strategy drafted and coalition of supporters of education reform in place
"Early adopters" role model new behaviors
Improved behavioral survey response to demonstrate support

ANNEX 2: Detailed Project Description

Georgia I2Q – Inclusion, Innovation and Quality Project

1. **The project development objectives are to:** (i) expand access to quality preschool education; (ii) improve the quality of education and learning environments.

2. **The proposed project is organized into the following five components:** (i) Improving Quality of and Access to Early Childhood Education and Care; (ii) Fostering Quality Teaching and Learning in General Education; (iii) Strengthening Financing Options and Promoting Internationalization in Higher Education; (iv) System Strengthening and Stakeholder Communication; and (v) Supporting Project Management, Monitoring, and Evaluations.

Component 1 – Improving Quality of and Access to Early Childhood Education and Care (IBRD: US$9.39 million; Counterpart: US$2.34 million)

91. The objective of this component is to provide support to facilitate expanded access to quality pre-school education in selected pre-schools.

Sub-Component 1.1 – Improving the quality of ECEC programs across the country

92. The objective of this sub-component is to introduce systems that improve the quality of ECEC programs in Georgia. To achieve this, the project will conduct a diagnostic study of school-based preschool services and make recommendations to inform infrastructure and service delivery design (supply-side planning) as well as profile of ECEC public demand (demand-side planning) to improve support access and quality. An ECEC quality monitoring instrument to support school readiness and smooth transition to school-based on best practices (i.e. using MELQO or another applicable instrument) would be developed, tested and introduced.

93. Additionally, a systematic and robust preschool data reporting and consolidation mechanism established and incorporated with the EMIS systems to strengthen intra- and intersectoral coordination for ECEC. Currently, there is no formalized system to ensure regular coordination among ministries and agencies supporting early childhood interventions. To this end, a preschool reporting system to collect and disseminate important early childhood data across the MESCS, Ministry of Health and Social Welfare, MOF, municipalities, and other key agencies will be established.

94. Another important activity of this sub-component will be to strengthen the professional development system for ECEC professionals. The project will support the development of teaching and learning resources for professionals in the School Readiness Program. Consideration will be given to ensure resources can be adapted to support diverse educational needs in the classroom. This component would aid in the establishment of a certification and licensing system for existing and novice ECEC professionals. Development of in-service teacher training modules on modern child-centered pedagogical approaches that consider gender, diversity, and inclusive education, ECE subject-matter (content) knowledge, and classroom management utilizing enhanced learning environments would also be created. Moreover, methodologists responsible for training ECEC staff will be trained on implementing these teacher training modules to build system capacity. Finally, a new remuneration policy for ECEC teachers will be developed by MESCS in collaboration with MOF and MRDI as prompted by the new Preschool Education Law.

Sub-Component 1.2 – Increasing equitable access to preschool education for successful transition to school

95. The aim of this sub-component is to improve access to preschool education for successful transition to school starting with children in the School Readiness Program, aged 5-6-years-old. It is expected that participation in preschool education will increase up to 92 percent by 2025. As such, this sub-component will support the revision of the existing SRP based on the diagnostic study conducted under sub-component 1.1 and introduction of modern and child-centered SRPs in about 150 general education schools. The project would support professional development of teachers in target programs and provide much-needed equipment, furniture and technology. The MESCS, through state budget, will support minor rehabilitation of the targeted classrooms, as needed.

Sub-Component 1.3 – Improving infrastructure to support innovative primary education, including preschool (this sub-component will be implemented by MDF)

96. The objective of the sub-component is to introduce a new model of primary education (grades 1-6) accommodating preschool programs. As such, this sub-component would include the development and adoption of new architectural blueprints for the construction of 2 to 10 new model schools. These designs would consider modern learning environment, renewable energy and carbon neutral materials, as well as accessibility standards to ensure accommodation for children with disabilities (such as ramps, toilets, transportation, etc.). The new model will be piloted to test the effectiveness and viability of separating primary schools from secondary schools and adding pre-school to primary in Georgia.

97. In addition, the new schools would support the creation of innovative spaces as "third learning environments." According to international research, learning environments can engage and foster a sense of ownership and respect when they are aesthetically pleasing, reflect the identity and culture of children and families, and encourage a connection to place.

Component 2 – Fostering Quality Teaching and Learning in General Education (IBRD: US$73.05 million; Counterpart: US$18.26)

98. The objective of this component is to provide a learning environment that is conducive to quality education in selected general education schools.

Sub-Component 2.1 – Improving the educational infrastructure to support learning (this sub-component will be implemented by MDF)

99. This sub-component will support the construction of 5 to 8 new model buildings as well as support the full rehabilitation of up to 60 selected public general education schools[36] using the revised standards and design blueprints developed by the MESCS as part of sub-component 2.2. Part of these new standards and blueprints will encompass the best practice OECD-EU energy (R-values) and environmental standards moving toward carbon neutral construction as well as optimizing the learning environment. This activity will be supported by supervision services for construction and rehabilitation as well as trainings for school personnel on school maintenance based on new standards.

Sub-Component 2.2 – Supporting the scaling up of the whole-school improvement pilot

[36] Per school rehabilitation cost is estimated at USD 600,000 assuming avg school size of 428 students, per square meter cost of USD 191 and space allocation / child of 15 square meter based on MCC estimates thus estimating 52000 beneficiaries over 2 years. The MCA program invested USD 57million in the full rehabilitation of 91 schools affecting 39000 beneficiaries.

100. This sub-component will focus on the GoG's new, ongoing whole-school improvement pilot program in general education that aims to strengthen and modernize teaching and learning practices as well as support efforts to develop positive school culture. The aim of this sub-component would be to assess and offer additional support for strengthening and scaling up the ongoing pilot. Under this sub-component, a rapid education system diagnostic and functional review will be conducted which will include elements of governance, alignment and efficiency, delivery processes, teacher/staff policies, financing, resources, and student outcomes.

101. This sub-component will also aim to foster high-quality learning environments and enhance school safety. To this end, this sub-component would support the review and modernization of school infrastructure standards and develop new architectural design blueprints based on international best practices to support innovative, inclusive and accessible spaces, conducive to fostering collaboration and project-based learning opportunities as well as to ensure energy efficiency and safety. Review and modernization of the school infrastructure standards will be aligned with EU standards for specifications such as the number of square meters per child, ceiling heights, natural light per square meter, noise level, etc. The standards and designs will support the creation of innovative spaces in schools as the "third learning environment."

102. In addition, this sub-component will evaluate the 150 pilot program schools selected by MESCS to identify best practices for scaling up of the whole-school improvement approach for teaching and learning and for improving governance in all Georgian general education schools. These evaluations will be compared to and informed by international best practices.

103. Furthermore, under this sub-component, select project-supported schools, including but not limited to the MESCS's pilot program schools, would be provided with innovative and accessible resources as part of a school improvement package to strengthen the implementation of the whole school approach. This package can include one or more resources for promoting accessibility and innovation, including multimedia lab, science lab, reading library, technology upgrades and equipment, learning enrichment modules, training on data utilization, community engagement activities, and support for scalable ideas of school improvement.

104. This sub-component will also support the development of innovation initiatives with a special focus on the inclusion of girls. This will include setting up Thematic Innovation Clubs in every region/municipality targeting gifted and other students' interests. To ensure sustainability, it will support the development of strategy and curriculum for enhancing teaching for gifted students (sports, math, technology, art, and science) and set up of STEAM extracurricular programs/clubs including arts, entrepreneurship, gaming (e.g. Mindcraft), paying special attention to gender parity. A survey/qualitative assessment will be conducted among beneficiary participants of the Clubs to assess changes in attitudes or increased interest towards STEAM, particularly among girls.

Sub-Component 2.3 – Supporting the capacity-building of teachers and school leaders (principals) to adapt, develop, and implement school-based curriculum

105. The aim of this sub-component is to support capacity-building among teachers and school leaders in all general education schools. Under this sub-component, the proposed project would review and improve continuous professional development framework for education professionals. The new professional development framework is already under development by the MESCS's teacher professional development arm, TPDC. The I^2Q project will support the review and enhancement of new programs for school leaders, teachers, mentors and subject teachers. This activity will also include creating new and utilizing existing professional support networks as well as developing guidelines and regulations for

allocating teaching hours towards collaboration among teachers and peer-to-peer learning in project-supported schools. In addition, this sub-component will support the development and incorporation of modules on modern pedagogy and formative continuous assessment, including training manuals and modules on modern, inclusive child-centered pedagogy and content knowledge as well as materials on diversity management, gender sensitivity and inclusive education. Further, materials for the training of trainers for the capacity building of school leaders, coaches, mentors and subject teachers on the new whole-school improvement approach will be developed and implemented.

106. Further, this sub-component will leverage technology for capacity-building. It will support the development of a collaborative e-platform for sharing teaching and learning practices as well as for the development of distance education programs in a blended model (combining face-to-face and online learning). These will aim to not only target teachers and school leaders, but also parents and students, including children with disadvantages and diverse learning needs. The e-platform will support and strengthen the development of peer-to-peer school networks using resources such as lesson plans, videos, pictures, weblinks. The distance learning program will include e-modules on select topics such as an online algebra module, project and problem-based modules etc.

Sub-Component 2.4 – Assisting the development of a national assessment framework

107. This sub-component will provide technical assistance for introducing and establishing the national formative assessment system in primary and secondary grades. The aim of these new assessments will be to inform policymakers about strengths and areas of improvement of the education system as well as to inform curriculum and training for teachers to support learning. The assessment data will include disaggregation by gender to identify any differential effects on outcomes and support an equitable policy response, action and intervention. This sub-component will include updating the national assessment framework and methodology, particularly aimed at the development and effective use of formative continuous assessments to support learning and for informing education policy. Further, it will include support for the capacity building of the state agency, NAEC and MESCS as well as support for developing and offering school-based trainings in the design, conduct, analysis and research on formative assessments. This activity will also support trainings for reporting, dissemination, consultations, adjustment, accommodations for students with disabilities and/or diverse education needs, and related policy actions (such as incorporation in EMIS to support development of school dashboards). Further, this will include development of materials, such as manuals and training modules to help all staff members move away from focusing on the average or the excellent student to understanding and supporting individual student learning needs of all students.

108. This sub-component would also support the conduct of a functional review and make recommendations to establish a National Institute for Education Research to use research and analysis and to inform policy actions for the improvement of teaching and learning at all levels of education. Such an institute is envisioned to not only ensure that best practices for effectiveness, equity and efficiency are researched, highlighted and infused in the education practices paying special attention to teaching and learning for all students.

109. Finally, this sub-component would support the development of remedial programs at the municipality level. These remedial programs would seek to accommodate the needs of students with disabilities, students with diverse educational needs, vulnerable students, and national minorities. Essentially, the goal of these programs would be to steer education away from focusing on the average student to individual student learning needs.

Component 3 – Strengthening Financing Options and Promoting Internationalization in Higher Education (IBRD: US$14.06 million; Counterpart: US$3.51 million)

110. The objective of this component is to improve the quality and international competitiveness of higher education.

Sub-Component 3.1 – Developing new options for higher education financing, including performance-based options to support the Government's strategic objectives

111. Under this sub-component, the project would provide support for improving funding mechanisms for higher education. Along these lines, this component would review the available financing options, and propose new ones including performance-based funding to reflect strategic priorities of the Government (such as better fixed assets management).

Sub-Component 3.2 – Establishment of a Competitive Innovation Fund (CIF) for public and private universities, in partnership with private sector

112. This sub-component would aid the establishment of a Competitive Innovation Fund (CIF for public and private universities. The Fund would be developed in collaboration with the private sector to award up to 45 CIF grants to foster modernization of higher education programs and strengthen labor market linkages. Examples of the grants supported include grants focused on research and technology in support of the reform and labor market linkages, support for classroom teaching utilizing technology and modern pedagogical approach, such as problem-solving and project-based learning, and improvement of e-learning methods. This activity would also facilitate the development of grants' design by establishing an implementation and management committee and a grants application portal.

Sub-Component 3.3 – Promoting internationalization of higher education

113. This sub-component aims to support the process of integrating an international dimension into the purpose, functions and delivery of higher education in Georgia. This sub-component would include establishing twinning and partnerships with international institutions, universities, and the private sector forging research and other initiatives relevant to the private sector and education sector. Finally, this activity would support the expansion of 4 course offerings with English as language of instruction to increase the intake of foreign students.

Sub-Component 3.4 – Strengthening the quality of pre-service teacher education programs for all levels of education

114. The purpose of this sub-component is to modernize and strengthen the quality of education professionals from the inception of professional development. In this regard, a needs assessment of faculty professional development in existing university programs would first be conducted with recommendations for enhancing the quality. Additionally, this activity would support the establishment of international standards for pre-service teacher education programs in three state universities (Tbilisi, East, West) in partnership with a prominent European Teacher Education Institution, including obtaining accreditation for at least one program. To improve the faculty of existing programs on pedagogy and subject-matter (content) knowledge, training modules would be developed to build the capacity of faculty trainers.

115. Another priority of this sub-component would be to increase the program/curricula offerings in key areas. Given analysis of the current professional development system, two courses on assessment and psychometrics would be prioritized. Additionally, Bachelor of Arts and/or Master's degree programs would be specifically developed for preschool education and inclusive education in partnership with national and international partner universities to support the capacity building of teachers in these critical areas of education.

Component 4 – System Strengthening and Stakeholder Communication (IBRD: US$2.47 million; Counterpart: 0.62 million)

116. The objective of this component is to facilitate a shift in attitude toward learning in Georgia to one that is more pro-active, student-centered, innovative, and evidence-based.

Sub-Component 4.1 – Supporting data-driven decision-making accessible to the entire education system

117. The objective of this sub-component is to improve the capacity of the overall education system to collect, analyze, and disseminate data and information for monitoring and decision-making purposes and interventions, including among others, gender disaggregate information. This component will support a diagnostic of the current EMIS system and data needs in Georgia to identify areas of further system development and upgrading. Based on the diagnostic assessment of the existing EMIS database, this sub-component would support the development of a data integration policy, strategy and action plan from preschool to higher education. This will include aspects related to data collection, management, linkages with other data systems, security and maintenance as well as focus on strengthening the capacity of National Assessment and Examination Center (NAEC) and National Center for Education Quality Enhancement (NCEQE) in the areas of assessments, examinations and quality assurance.

118. This sub-component will support the development and operationalization of a dashboard system (i) at ministry-level, to monitor the entire education system for policy action and, (ii) at school-level, for evidence-based school improvement actions to support and strengthen learning (ex. covering pedagogical methods, learning assessments, learning environment, school inputs such as school infrastructure, resources/materials, etc.). The dashboard will monitor among other measures, indicators to gather evidence on the differential effects of policy and school-improvement actions on males and females. This sub-component will support the procurement of hardware and software for implementation of the dashboards with servers and security software. Additionally, this sub-component will provide support to develop and deploy analytics system for education system mapping for all levels of education covering infrastructure and human capital development: including (i) acquisition of up to 20 CLICK licenses to analyze data and generate ad hoc reports; (ii) GIS mapping and link with other data systems; (iii) Reinforce Planning Department's capacity for analysis and forecasting.

Sub-Component 4.2 – Communication and stakeholder consultations for education reform

119. Under this sub-component, the proposed project will help the Government craft an effective communication strategy on the current education reforms and proposed project supported activities. The communication strategy would target key stakeholders, such as education professionals, teachers, principals, government officials, parents, youth and the public at large to engage them about their own perspectives, advocate on behalf of reforms and the project, and finally work towards boosting positive behavior change for new learning approaches, which better prepare youth for the 21st century world of work.

120. This sub-component will provide support towards public engagement and advocacy efforts of the education reform. To begin, engagement will work towards building a shared vision for education reform in Georgia, which includes but is not limited to innovation, inclusion, and quality. To this end, a multi-year communications strategy would be drafted and adopted to engage various stakeholders and their representative groups, including students, parents, the wider education sector, the private sector, and civil society. This strategy will include the development of guiding principles for education and human capital development in Georgia, agreed and endorsed through a nation-wide consultation process,

with the active involvement of representative groups. This sub-component will also support advocacy efforts to rally public support. Advocacy will aim to increase awareness of Georgia's new vision for human capital investment and education reform in alignment with EU goals through various forums such as public debates and social media, and information sessions for journalists and media. Advocacy efforts will also help manage reputational risks associated with reform efforts. Finally, to rally public support, showcase of early adopters and practitioners such as Vladimir Apkhazava[37] for role modelling the whole-school approach and modern pedagogy among education professionals and champions among parents.

Component 5 – Supporting Project Management, Monitoring, and Evaluations (IBRD: US$3.47 million; Counterpart: 0.87 million)

121. The objective of this component is to support capacity-building for effective management of proposed project.

Sub-Component 5.1 – Facilitating the establishment, staffing, and evaluation of project operations

122. This sub-component would support the day-to-day management and monitoring of the proposed project through the establishment and maintenance of a Project Management Unit (PMU) under the MESCS and maintaining adequate capacity in the Municipal Development Fund of Georgia (MDF) under the Ministry of Regional Development and Infrastructure. The PMU and the Project Management Team (PMT) at MDF would provide operational and management support for the proposed project for its full duration. This sub-component would also finance salaries for PMU staff and incremental consultants to MDF, training activities, and operating costs. This sub-component would also provide targeted technical assistance on Bank-specific procurement processes. Under this sub-component, assistance would be provided for evaluation and monitoring the progress of the project-supported activities.

[37] Amongst the top 10 finalists for the 2019 Global Teacher Prize by Varkey Foundation: *https://www.globalteacherprize.org/person?id=7507*; *http://georgiatoday.ge/news/14550/Vladimer-Apkhazava-Makes-Top-10-for-%241-Mln-Global-Teacher-Prize*

ANNEX 3: Implementation Arrangements

Georgia I2Q – Innovation, Inclusion and Quality Project

Project Institutional and Implementation Arrangements

Leadership level

3. The official representative of the Borrower is the Ministry of Finance (MOF). The MOF will maintain overall responsibility for ensuring compliance with the conditions of the Loan Agreement. The Ministry of Finance will be responsible for ensuring the proper flow of funds, the timely provision of counterpart funding, financial monitoring of project activities, the replenishment of Designated Accounts and allocation of funds for project activities.

4. The Ministry of Education, Science, Culture and Sports (MESCS) will be responsible for the overall implementation of the project, under the leadership of the Minister and Deputy Minister, except for infrastructure activities which will be carried out by the Ministry of Regional Development and Infrastructure (MRDI) through MDF as described below. Specifically, the MESCS will be responsible for education policy dialogue, decision-making and interface and coordination among key units and beneficiaries under the project: state management institutions (Technical Departments in the Ministry, municipal authorities,), agencies under the Ministry such as Teachers Professional Development Center (TPDC); National Assessment and Examination Center (NAEC); Education Management Information Center (EMIS); Education and Science Infrastructure Development Agency (ESIDA), higher education institutions and entities related to tertiary education, such as the National Center for Educational Quality Enhancement (NCEQE); Early Childhood Education (ECD) institutions and schools, and other relevant institutions targeted under the proposed project. For purposes of carrying out MDF's respective components under the Project (infrastructure activities), MoF shall make available to MDF part of the proceeds of the Loan allocated to Category 2 of the table in Schedule 2 to the Loan Agreement (LA) under a Subsidiary Agreement on a grant basis. The Bank shall enter into a Project Agreement with MDF for the implementation of MDF's respective components under the Project.

5. Given the scope of the project, there are several relevant stakeholders (principals, teachers, parents, community at large, government officials, multiple education agencies subordinated to the Ministry, higher education institutions) that can be influential or have a stake in the education sector. The proposed project strengthens the accountability framework between the Ministry, key educational agencies and the public by putting in place an integrated Education Management Information System and supporting the monitoring of student learning outcomes, which would provide solid and regular information on the status of the education system's performance. To properly address the needs and concerns of these stakeholders, the Ministry would conduct stakeholder consultations and focus group discussions during the implementation of the proposed project and will develop a solid communication strategy.

Project Management & Administration mechanisms

6. The MESCS will be supported in the project implementation by the services of the Project Management Unit (PMU).

The Municipal Development Fund of Georgia (MDF) by a Project Management Team (PMT). Each of the implementing entities will be responsible for specific project components and interventions in line with their direct lines of responsibilities.

7. With respect to Components 1 and 2 (excluding activities related to construction and rehabilitation of ECEC and general education infrastructure), Component 3 and Component 4, the MESCS will delegate day-to-day implementation of activities to the PMU. The PMU will be responsible for the activities under Component 1, 2, 3 and 4, except for interventions related to the construction and rehabilitation of ECEC and general education infrastructure which will be implemented by the MDF. The PMU will be set up with consultants supporting the existing organizational structure of the Ministry and will be led by the Deputy Minister, who will act as Project Coordinator. The Deputy Minister will interface with the technical departments of the Ministry, which include Strategic Development Department, International Relations Department, Preschool and General Education Development Department, Higher Education and Science Development Department. These departments would coordinate their relevant areas of work with the state institutions. For activities related to ECEC, PMU will work closely with local municipalities, as this level of education is under the management of the local government. For all other project activities, the MESCS will collaborate with its subordinate agencies: 1.) For activities related to the professional development of school staff, the PMU will consult with the TPDC; 2.) For activities related to data management and integration, PMU will work closely with EMIS; 3.) For activities related to Higher Education, PMU will work closely with NCEQE and higher education institutions; and 4.) For activities related to school refurbishment and equipment, MESCS will collaborate with ESIDA; 5.) For activities related to student national and international assessments, the PMU will work with NAEC.

8. The PMU would administer, coordinate, implement, monitor and evaluate the proposed project components (1, 2, 3 and 4, except for sub-components 1.3 and 2.1), as well as facilitate the decision-making process of the Project. It will also be responsible for the procurement and financial management functions, the flow of funds and for budgeting, accounting, and reporting. As the project will be streamlined within the current structure of the Ministry, the PMU will be led by the Deputy Minister and will only comprise a core group of technical and fiduciary staff to support implementation of components 1, 2, 3 and 4 (except for sub-components 1.3 and 2.1). The detailed description of PMU staff will be provided in the Project Operational Manual (POM), but it is envisioned to comprise of specialists with experience in preschool education, higher education, EMIS, assessments, communications. The PMU will be supported by procurement and financial management specialists.

9. With respect to Component 2, the MESCS will be responsible for managing the day-to-day responsibilities and will work closely with the TPDC, agency subordinated to MESCS, with the aim to improve the quality of teaching and learning in schools through implementation of teachers' professional knowledge and performance standards and improvement of the status of the teaching profession. The Center carries out its activities in three priority areas: (i) Ensure the development and implementation of professional standards; (ii) Support the development and implementation of continuous professional development and career advancement system; and (iii) Plan and implement the target projects determined by the National Education Policy and the Center strategy. TPDC has adequate staffing and technical capacity to support the MESCS in carrying out teacher related work envisaged under the project. Before assuming the financial and procurement management responsibility for the project's component implementation, the MESCS should have financial management and procurement arrangements acceptable to the Bank.

10. MDF will take responsibility envisaged under sub-component 1.3 and 2.1. MDF will be an implementing entity responsible for the construction and rehabilitation of general education schools, including preschools. MDF is a legal entity of public law with the primary responsibility of investing financial resources in local infrastructure and services and improving on a sustainable basis, primary economic and social services for communities. For the implementation of infrastructure activities under the project, the Ministry of Finance will enter into a Subsidiary Agreement with MDF. MDF will be responsible for the construction and rehabilitation of school buildings identified by the MESCS and reporting to the MESCS, MOF and the Bank on the use of loan funds. Before assuming of the financial and procurement management

responsibility for the project's component implementation, MDF should have financial management, procurement and safeguards management arrangements acceptable to the Bank. Operating Costs of the MDF related to this project, including remuneration for consultants and excluding salaries of the Recipient's civil service staff, communication, editing, printing and publication, translation, vehicle operation and maintenance, bank charges, local travel costs and field trip expenses, office rentals, utilities and supplies, will be covered based on its performance. The performance of the implementing agencies will be measured towards progress in projects disbursements.

11. With respect to Component 5, MESCS will be supported by the PMU and the MDF by a PMT. The objective of this component is to provide institutional support to MESCS and MDF related to the project related operations, audits and project monitoring and evaluation. To implement the objectives of this component, the Bank loan will be used to finance development of the monitoring and evaluation system and project audits under MESCS and MDF. The project will also finance operating costs for MDF.

12. The implementation arrangements under the proposed project would be governed by the guidelines and procedures set out in the Project Operational Manual (POM), and MDF POM, which will reflect the financial management, procurement, safeguards management and reporting arrangements planned for the proposed project. Development and adoption of the POMs by MESCS and MDF, including Operation Manual for Competitive Innovation Fund, all satisfactory to the Bank.

Component and Target Intervention Assignments

Project Components and Target Interventions	Technical Units in MESCS, government body	Implementing Entity
1.Improving Quality of and Access to Early Childhood Education and Care		
Policy level support	Preschool Education Development Department/local municipalities	PMU (managed by Reform Group within PMU)
Capacity-building/trainings	Preschool Education Development Department/local municipalities	PMU (in close collaboration with local municipalities and TPDC)
Construction/rehabilitation of ECEC infrastructure	Preschool Education Development Department/local municipalities	PMT of MDF
2.Fostering Quality Teaching and Learning in General Education		
Policy level support	General Education Development Department	PMU (managed by Reform Group within PMU)
National assessment framework	General Education Development Department	PMU (in close partnership with NAEC)
Whole-school improvement pilot support	General Education Development Department	PMU
Capacity-building/trainings	General Education Development Department	PMU
Construction/rehabilitation of schools	General Education Development Department	PMT of MDF
3. Strengthening Financing Options and Accreditation in Higher Education		
Policy Level Support	Higher Education and Science	PMU (managed by Reform

	Development Department	Group within PMU)
Internationalization of higher education institutions	Higher Education and Science Development Department	PMU (in close partnership with private sector and international and national universities)
Expansion of pre-service teaching programs	Higher Education and Science Development Department	PMU (in close partnership with universities and NCEQE)
Grants under Competitive Innovation Fund (CIF)	Higher Education and Science Development Department	PMU (in close partnership with HED institutions)
4. System Strengthening and Stakeholder Communication		
Support to data management and integration (EMIS, GIS)	Strategic Development Department	PMU
Communication Strategy	Strategic Development Department	PMU
5. Supporting project management, monitoring, and evaluation		
Facilitating the establishment, staffing, and evaluation of Project operations	Strategic Development Department	PMU and PMT

Financial Management, Disbursements and Procurement

13. ***Financial Management.*** The MESCS (through its PMU) and MDF (through it PMT) will be responsible for FM and disbursement aspects during project implementation including planning, budgeting, accounting, financial reporting, funds flow, internal controls, and auditing. The MDF extensive experience in implementing World Bank financed projects. The MESCS has no prior experience in the implementation of the World Bank-financed projects and projects financed by other international financial institutions. The PMU within MESCS is still to be established. The MDF has acceptable FM arrangements for the implementation of this Project, but a dedicated PMT will need to be identified. The FM arrangements in MESCS will meet minimum Bank FM requirements once capacity building activities are implemented.

The following activities should be implemented by the MESCS to meet minimum Bank FM requirements:

Actions for capacity building	**Responsible**	**Completion Date**
1. Develop the FM chapter of the POM and MDF/POM to reflect the project related internal control, budgeting, external auditing, financial reporting and accounting policies and procedures.	MDF and MESCS	*By effectiveness*
2. Recruit the FM staff (financial management specialist) with relevant experience for the PMU under MESCS and PMT under MDF.	MESCS and MDF	*Within 30 days after effectiveness*
3. Introduce module for Project accounting and reporting under existing accounting system. The accounting system shall have functionality of automatic generation of Statement of Expenditures (SOEs), IFRs for the project and have the functionality for dual-currency accounting, and with inbuilt controls to ensure data security, integrity and reliability.	MESCS	*Within 90 days after effectiveness*

14. The MDF and MESCS will be responsible for financial management of all project components including submission of bi-annual unaudited interim financial reports (IFRs) and audited annual project financial statements to the World Bank. The MDF will produce a full set of IFRs every calendar semester and submit it to MESCS, MESCS will be responsible for submitting consolidated bi-annual IFRs to the Bank after 45 days after the end of each calendar semester. The format of IFRs has been agreed during the assessment and includes (i) Project Sources and Uses of Funds, (ii) Uses of Funds by Project Activities, (iii) Designated Account Statements, (iv) Disbursement Summary, and (v) a Statement of Expenditure and Withdrawal Schedule.

15. The annual audited project financial statements together with the auditor's opinion and the management letter will be provided to the Bank within six months after the end of each fiscal year and at the closing of the project. The MESCS will be responsible for selection and appointment of the project auditor, according to the Terms of Reference acceptable to the Bank.

The following table identifies the required audit reports that will be submitted by the MESCS together with the due date for submission.

Audit Report	Due date
The Project Financial Statements include Project Sources and Uses of Funds, Uses of Funds by Project Activities, SOE Withdrawal Schedule, DA Statement, Notes to the Financial Statements, Project assets and liabilities, and Reconciliation Statement.	Within 6 months of the end of each fiscal year and at the closing of the Project.

16. The audited project financial statements will be disclosed to the public in a manner acceptable to the Bank. Following the Bank's formal receipt of these statements from the borrower, the Bank makes them available to the public in accordance with the World Bank Policy on Access to Information.

17. The World Bank will conduct risk-based FM implementation support and supervision within six months of the project effectiveness date, and then at appropriate intervals, as part of its project implementation and supervision missions. During project implementation, the World Bank will supervise the project's FM arrangements in the following ways: (a) it will review the project's quarterly interim financial reports and annual audited project financial statements and the auditor's management letters and remedial actions recommended in the auditor's management letters; and (b) during the World Bank's on-site missions, it will review the following key areas: (i) project accounting and internal control systems; (ii) budgeting and financial planning arrangements; (iii) disbursement arrangements and financial flows, including counterpart funds, as applicable; and (iv) any incidences of corrupt practices involving project resources. As required, a World Bank-accredited Financial Management Specialist will participate in the implementation support and supervision process.

18. ***Disbursement.*** Each implementing agency will establish a Designated Account (DA) in EUR and maintain it until project completion. The DAs will be opened at Treasury Account of the Ministry of Finance of Georgia held at the National Bank of Georgia, and on terms and conditions acceptable to the Bank. The DA will be drawn upon to meet payments to contractors, suppliers and consultants under the project. Detailed instructions on withdrawal of the loan proceeds will provided in the Disbursement Letter.

19. Project funds will likely flow from the World Bank via a separate DA held by each implementing agency at a Treasury that will be replenished based on traditional World Bank disbursement procedures (advance to the DAs, documentation of the advance based on full documentation and Statements of Expenditures, direct payments, reimbursements, and special commitments). Details on the ceiling of the DAs will be provided in the Disbursement Letter. Withdrawal applications for the replenishments of the DA will be sent to the World Bank at least quarterly

20. ***Procurement****. Procurement Procedure*: Procurement will be carried out in accordance with the World Bank's "Procurement Regulations for IPF Borrower July 2016 revised August 2018" A Project Procurement Strategy for Development (PPSD) has been developed and finalized with support from the World Bank. A detailed procurement plan has also been prepared for the first 18 months of the project implementation. Project procurement communication and Procurement Plan implementation will be performed through STEP (Systemic Tracking of Exchanges in Procurement) system.

21. *Procurement Implementation arrangement*: Procurement is planned to be conducted by two separate entities: (i) MESCS/PMU and (ii) MDF/PMT. MESCS/PMU will responsible for all procurement other than civil works, whereas MDF/PMT will be responsive for all civil works contracts and related consultancy services.

22. *Procurement capacity*: These two entities are expected to oversee procurement under respective components and activities. MDF has good experience and capacity to implement Bank-funded projects based on past working exposure to the Bank's procurement procedures. However, the MESCS has no experience to implement Bank-funded projects. MESCS will responsible for a significant number of high value consultancy contracts with international competition. Considering this factors Procurement Risk Rating is assessed as "Substantial".

23. *Major Procurements and market assessment:* The key procurement under the project is works contracts with an estimated value of US$ 57 million. The works contracts include construction of new school buildings and rehabilitation of existing school premises throughout the country. As the construction works are expected to be scattered throughout the country, international bidders will not be interested in such work. Based on the market assessment, there are significant number of national bidders who has adequate capacity to perform construction contract in the range of US$ 6 to 8 million. Construction of schools will be grouped on regional basis with few packages to attract potential bidders to participate and ensure value for money. There are significant number of high value consultancy contracts with a value from US$ 500,000 to 3 million. Total aggregate value of consultancy service will be about US$ 24 million. Market assessment showed international competition is required with association with national consulting firms as most of the assignment related to training, consultation, behavioral change etc.

24. *Procurement risk mitigation measures:* (a) hiring of full time, experienced procurement consultant throughout the project live for both for MESCS/PMU and MDF; (ii) use of Government electronic procurement (e-GP) portal for all works and goods procurement; (iii) Provide customized procurement training for both agencies on Procurement Regulations and STEP; (iv) Submission of monthly contract monitoring report by both MESCS/PMU and MDF/PMT mentioning both physical & financial progress and other key implementation issues.

25. *Review by the Bank:* Prior review of contract is determined based on the Procurement risk of the project and agreed it the procurement plan. Bank will do periodic procurement post review as sample basis.

26. Apart from costs for goods, services and works the Project will also finance micro project costs/grants for

preschool education. Exact modality of operation under grant/micro projects will be further elaborated in the operational manual.

Environmental and Social (including Safeguards)

27. Components 1 and 2 of the proposed project include activities to construct and rehabilitate school facilities. The new construction is expected to occur on public land plots designated for this purpose and free of private assets or use. However, the sites of potential new construction are not yet known and cannot be screened prior to Project Appraisal. Therefore, a Resettlement Policy Framework is prepared to define the measures and institutional responsibilities in line with OP 4.12 in the event of any land, asset, or livelihood impacts. Negative social impacts arising from rehabilitation of educational facilities will be minimized and mitigated as per provisions set in the project Environmental and Social Management Framework (ESMF) and site-specific Environmental and Social Management Plans (ESMPs), to be attached to all civil works contracts. Such measures would include regular monitoring and reporting on safety at and around a construction site, occupation safety for project personnel, proper signage of construction sites, designation of community liaison officers, ensuring that grievance and redress information is clearly displayed at project sites, ensuring that safe alternative arrangements are provided for students and teachers during rehabilitation with the active school year, among others. Accidental damages incurred during civil works will be compensated and/or fully restored by the contractor. The PMU and PMT will retain a qualified social specialist who will be responsible for ESMP monitoring and broader social impacts.

28. If physical works at school premises may not be begun and completed during school breaks and these works may not be safely undertaken while the building is in use, the schooling process will need to be moved out to alternative premises until completion of rehabilitation and hand-over of the building. In such cases, MESCS will absorb full responsibility for providing all temporary arrangements for the provision and safe and adequate premises for teaching as well as transportation of students to the alternative premises. If there are contractual agreements for the provision of catering or other services to the school which moves out to temporary alternative premises, or for the provision of extra-curricular arts and sports classes within the school premises that must be vacated for rehabilitation, MESCS will be responsible for settling such cases between the parties involved in accordance with RPF.

29. The Borrower developed ESMF for the purposes of project implementation. This document contains detailed instructions on the environmental and social screening of the proposed individual investments, lists common types of risks that may be encountered while rehabilitating school premises, and provides a menu of generic measures to mitigate expected negative environmental and social risks. Institutional arrangements for environmental and social management of project activities are also laid out in the Framework document. Templates for developing simplified ESMPs and producing field environmental and social monitoring reports are attached to the ESMF.

30. ESMF was disclosed in Georgian and English languages through the web pages of the MESCS and MDF. It will be discussed with stakeholders and finalized to the satisfaction on the Bank. Site-specific ESMPs will also the disclosed in draft, discussed with local stakeholders and agreed with the Bank. Project implementing entities will continue receiving feedback from the project-affected people through the Grievance Redress Mechanism to be established and operated by the MESCS and MDF.

31. The MDF has long experience of implementing Bank-financed operations and is well familiar with its safeguard policies. MDF's track record of implementing projects in adherence with the Bank's policies and the national environmental legislation is good. None of the current operations have unsatisfactory rating on environmental

compliance. MESCS has no capacity for safeguards management. PMU to be established for day-to-day Project management within MESCS will not require much human resource for environmental and social management, because civil works to be undertaken on the project proceeds will be fully handled by MDF. However, at least one person qualified for overseeing environmental aspects along with social implications of the project implementation will be placed in the PMU.

Monitoring and Evaluation

32. The PDO level and intermediate results indicators would be monitored using the following data collection instruments:

(a) Regular surveys and data collection processes
(b) Administrative data currently available in the education sector and the integrated EMIS to be developed under the proposed project; and
(c) Monitoring reports prepared by the PMU

33. The monitoring and evaluation function would be carried out by the PMU. One staff member would be assigned the responsibility for monitoring and evaluation of the project, including coordinating the collection of information from the MESCS and communicating these results to the World Bank according to the frequency of reports described in Annex 1. The selection of project indicators was guided by the current state of data availability in the education sector and the reasonable expectations about the development of sector monitoring systems because of the proposed project. Under the Project, the monitoring and evaluation capacity of the MESCS would be further developed to allow more effective sector management going forward.

ANNEX 4: Implementation Support Plan

Georgia I2Q – Innovation, Inclusion and Quality Project

Strategy and Approach for Implementation Support

34. The strategy for supporting implementation of the proposed project would emphasize three primary regular activities: (i) dialogue with the Government, (ii) joint review of project implementation, and (iii) exercise of fiduciary oversight throughout the implementation period.

35. Regular dialogue with the Government would facilitate early identification of problems and obstacles, which could potentially delay implementation and would enable timely provision of technical advice and support to remove such obstacles. This will contribute to a "just-in-time" identification of issues, without the need to raise these during joint reviews.

36. Joint reviews, which would occur semi-annually, would be aimed at reviewing the progress and achievement of agreed targets and results, as indicated in the project's Results Framework (RF). The World Bank Task Team would participate in such reviews with representatives of the GoG and other relevant stakeholders. During each review, the necessity for and type of implementation support would be identified.

37. Fiduciary oversight would enable the World Bank to fulfill its fiduciary obligations and ensure compliance with the Bank's fiduciary standards through the ongoing supervision of the project's FM and procurement arrangements and outcomes.

38. FM implementation support and supervision will be performed in two ways: (i) desk reviews of the project's quarterly international financial reporting standards (IFRs) as well as the reviews of the project's audited annual financial statements and annual auditor's report and management letter; and (ii) on-site supervision to review the continuous adequacy of the project's FM and disbursement arrangements. This would include monitoring and reviewing any agreed actions, issues identified by the auditors, randomly selected transactions, as well as other issues related to project accounting, reporting, budgeting, internal controls, and flow of funds. Special emphasis would be placed on the adequacy of the budgetary allocations to pre-finance project expenses and internal controls framework instituted for the grants. The on-site reviews may include visits to selected beneficiaries of grants, depending on the level of risk and findings identified.

39. Procurement supervision will be provided through prior reviews in accordance with procurement thresholds. Supervision will be carried out twice per year, through both desk and on-site reviews of procurement arrangements and results, including post review of contracts selected in a random manner. As needed, on-site procurement training may be provided upon request to the MESCS/PMU or MDF/PMT staff.

Implementation Support Plan

40. The implementation support plan identifies the level of technical and safeguard support required for successful project implementation and indicated in the following table:

Time	Focus	Skills Needed	Resource Estimate	Partner Role
Years 1-6	Technical and operational support: (i) improving the learning environment of selected schools, (ii) strengthening of education management systems, (iii) M&E, and (iv) overall implementation	Education Economist (TTL) Education Specialist Senior Education Specialist Operations Officer Infrastructure Specialist (architect/engineer)	12 weeks 8 weeks 6 weeks 10 weeks 2 weeks	Participation in joint reviews
	Financial Management support	Financial Management Specialist	2 weeks	
	Procurement support	Procurement Specialist	2 weeks	
	Social Development support	Social Development Specialist	2 weeks	
	Environmental support	Environmental Specialist	2 weeks	

ANNEX 5: Economic Analysis (detailed)

Georgia I2Q – Innovation, Inclusion and Quality Project

Introduction

41. The proposed Georgia I^2Q Project aims to boost the quality of human capital by strengthening and promoting 21st century skills and mindsets required to increase productivity, innovation, and competitiveness in Georgia. The project emphasizes modernizing key aspects of the education system that can act as a leverage to give momentum to greater short- and long-run economic returns and increased equity. Towards this, the project focuses on the following five components: (i) Improving the quality of and access to early childhood education and care; (ii) Fostering quality teaching and learning in general education; (iii) Strengthening financing options and accreditation in higher education; (iv) System strengthening and stakeholder communication; and (v) Supporting Project Management, Monitoring, and Evaluations.

42. This annex presents the economic analysis that addresses four key questions regarding the proposed investment: the project's development impact in terms of benefits; (ii) the rationale of public investment; (iii) the added value of World Bank's assistance; and (iv) measurement of the costs and benefits of key project components. These are elaborated in greater depth below.

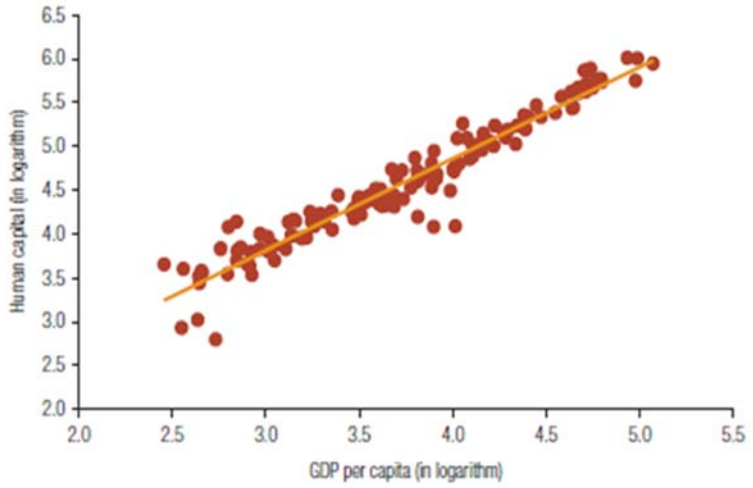
Expected development impact of the project

43. A lack of quality education greatly diminishes a student's future possibilities to accumulate human capital and develop career opportunities (Psacharopoulos and Patrinos, 2004). Widespread access to high-quality schooling generate greater economic returns as well as positive externalities such as a more productive workforce, higher innovation and faster dispersion of ideas throughout society, greater social mobility, a better-informed citizenry, reduced crime and healthier and better-educated children. In sum, countries with high-quality, relevant education systems tend to produce abundant human capital, which is needed for economic production, innovation, and competitiveness in a globalized market.

44. The proposed project was designed with the understanding that investing in human capital development through education and skills are vital for increasing Georgia's productivity and growth. According to the 2017-18 Global Competitiveness Report, "Inadequately educated workforce" is the single most problematic factor for doing business in Georgia. Just like most other former socialist countries, Georgia's population is highly literate, as measured, i.e. by the share of those completing secondary education. Thus, the main issue for employers is not a lack of candidates with diplomas and formal certificates, but a lack of professional skills. Therefore, the issue is not about access to education per se, but access to relevant and high-quality education and training that will enable Georgian children and youth to be competitive and have fulfilling lives with the changing nature of work in an increasingly technologically advancing world.

45. According to the 2018 World Bank Group (WBG)'s The Changing Wealth of Nations report, human capital is by far the largest component of global wealth, accounting for approximately 64 percent of global wealth. Georgia can build on its past progress by preparing its people for the challenges and opportunities that lie ahead. Empirical research shows that sustaining economic growth over the long term and capacity to overcome the 'middle-income trap' would require significant investments in human capital formation, especially in improving the quality and relevance of education and skills. Such investments are vital for alleviating the adverse impacts of the demographic decline and reducing inequalities in Georgia.

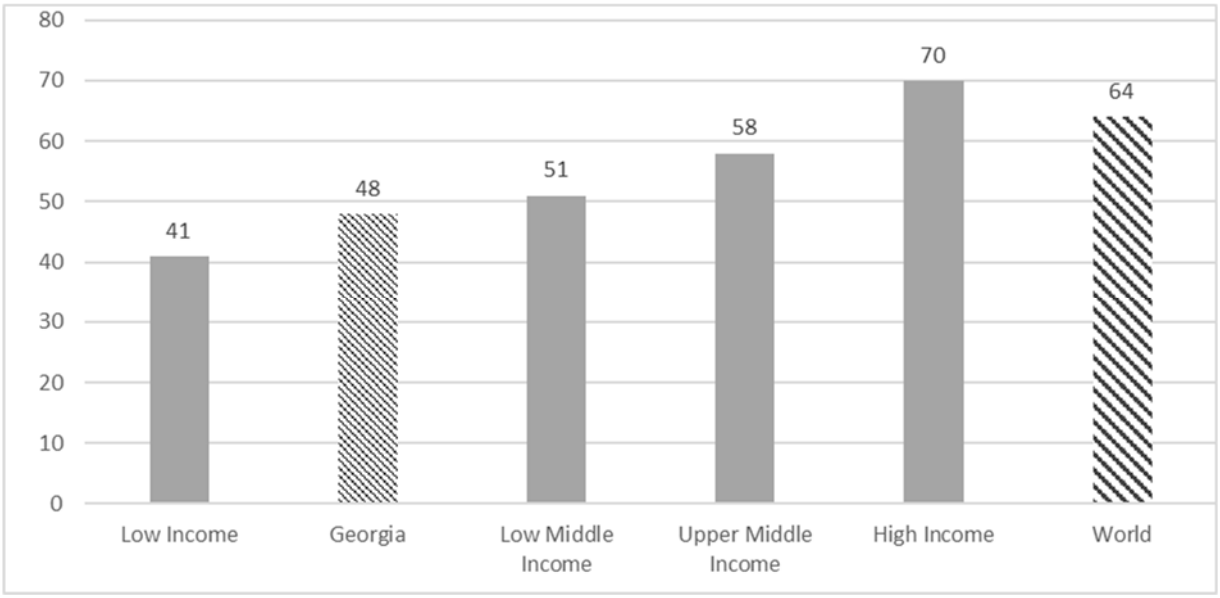
Figure 1a. Human Capital Wealth Per Capita and GDP Per Capita



The wealth estimates of 141 countries suggests that human capital accounts for the lion's share of a country's wealth, and typically a higher share in upper-middle-income and high-income countries than in poorer countries. Overall, estimates of human capital wealth per capita are closely correlated with GDP per capita.

Source: The Changing Wealth of Nations, World Bank, (2018)

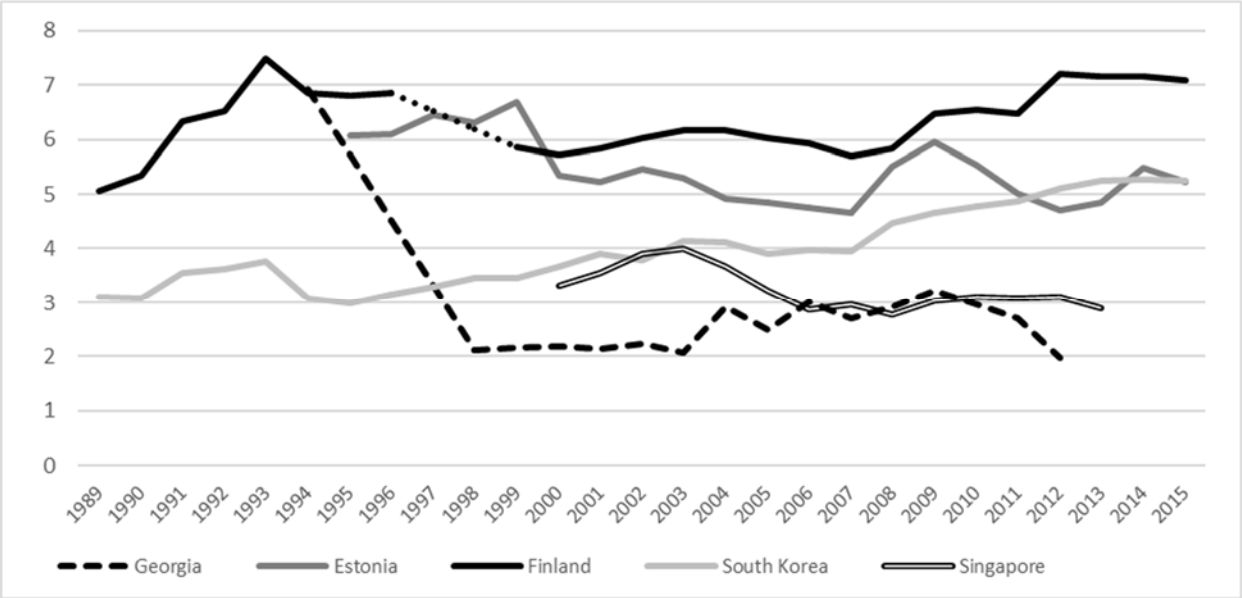
Figure 1b: Contribution of Human Capital to Georgia's and World's Wealth (% of total wealth)



Source: The Changing Wealth of Nations, World Bank, 2018

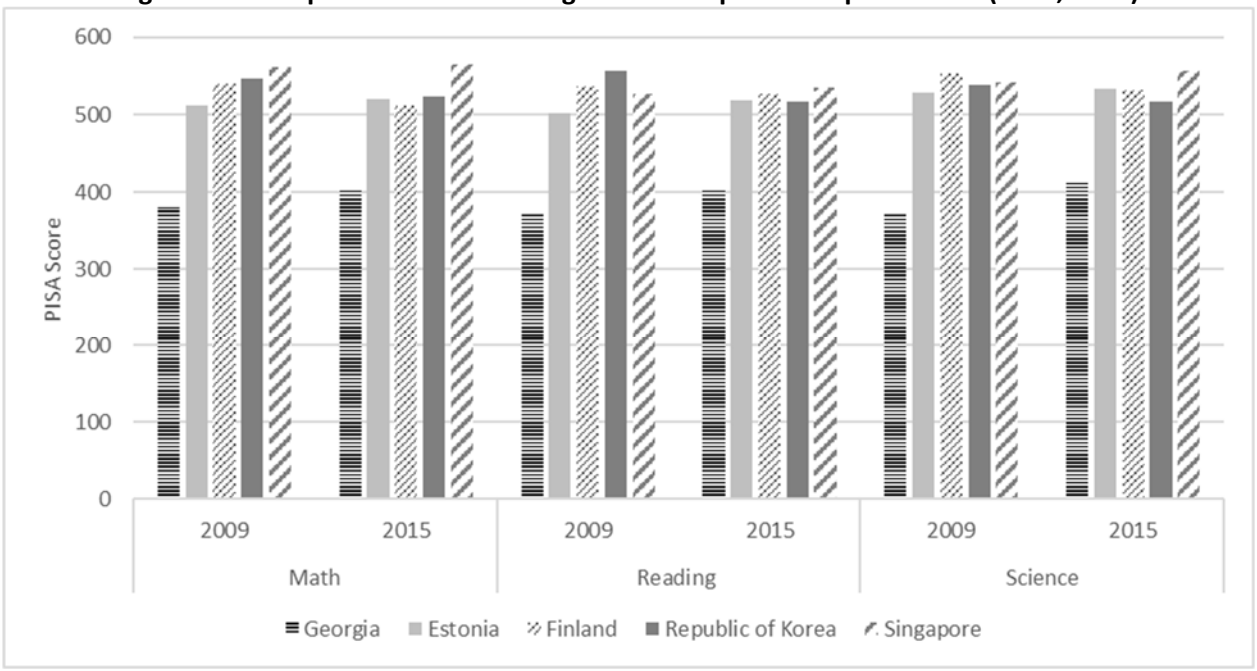
46. Based on the Program for International Student Assessment of 15-year-olds conducted by the OECD in 72 participating countries (2015) in Math, Reading and Science, consistently high performing countries like Finland, Estonia, Singapore and Korea also invested in building their human capital over several decades. In Figure 2b, the PISA scores of Georgia and these aspirational countries are depicted for 2009 and 2015. Undoubtedly, Georgia has gained in Math, Reading and Science since 2009, yet there is a significant potential for further growth and improvement. In the case of Singapore, while the investments have been stable, it has made significant efficiency gains while also outperforming other participating countries.

Figure 2a. Government expenditure on education as a percentage of GDP (%)



Source: UIS Stat Data Extracted Dec18, 2018; WB Analysis

Figure 2b. PISA performance of Georgia and its aspirational performers (2009, 2015)



Source: OECD – PISA Results in Focus (2015), UNICEF Student Performance in Georgia according to PISA (2013), OECD – PISA Results (2009)

47. Efforts to improve the quality and relevance of the education system through the implementation of the Georgia I^2Q project is a step towards sustaining recent gains in economic growth. While human capital already contributes substantial amount to its national wealth, Georgia remains far from its potential frontier or from that of its peers. Human

capital, measured by the value of earnings over a person's lifetime, contributes about 48 percent of Georgia's wealth, compared to 70 percent for high income countries (Figure 2). Moreover, according to the World Bank's newly launched Human Capital Index, a child born in Georgia today will be 61 percent as productive as she could be if she enjoyed a completed education, among other human capital development benefits. For instance, although a Georgian child who starts school at age 4 can expect to complete 12.5 years of school by her 18th birthday, after accounting for her learning gains, the expected years of education is only 8.9 years. Upon the project's completion, it is expected that Georgian students in project supported schools will have expanded access to an educational system that individually tracks and ensures a quality learning environment throughout their developmental journey, beginning from the early years. Consequently, Georgian students would become better equipped with the 21st century skills needed for future success.

48. The proposed Georgia I^{2}Q project is well aligned with the World Bank's 2019-2022 Country Partnership Framework (CPF), which guides the engagement between the Bank and the client. The proposed project would contribute directly to the CPF's strategic *Focus Area 2: Invest in Human Capital* and is articulated by *Objective 2.1: Support the education system for improved quality and relevance*. Moreover, the proposed project would support the GoG's efforts to improve the innovation and provision of quality education throughout the system as embodied in the Government's 2018-2023 Education Reform Agenda.

Rationale for public investment

49. While extreme poverty around the world is at an all-time low, the pace of poverty reduction is slowing. To rapidly accelerate progress toward further reducing poverty, increasing shared prosperity and thus becoming better prepared for the economy of the future is by making the right investments in people. Education is a key lever to drive long-term economic growth, spur innovation, strengthen institutions, and foster social cohesion. This section will primarily focus on the rationale for public investment through the proposed project covering increasing access to quality preschool education and general education (Components 1 and 2), which make up about 83 percent of the envelope.

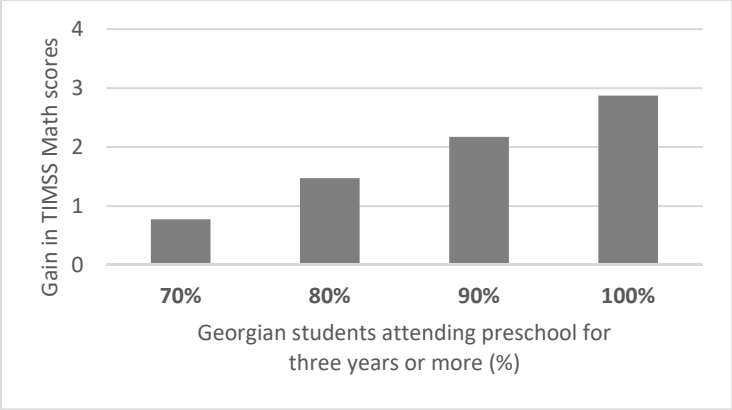
Early childhood education and care

50. Improving access to quality early childhood education and care (ECEC) in Georgia is expected to have significant and long-lasting social and economic benefits, especially for disadvantaged children. Early childhood (ages 0-6) is a critical period in a child's physical, cognitive, linguistic, and socio-emotional development. Substantive research equivocally shows that holistic ECEC interventions have benefits in three broad categories of interrelated outcomes: (i) enhancing school readiness and educational outcomes; (ii) improving physical and mental health and reducing reliance on the health care system; and (iii) reducing engagement in high-risk behavior. ECEC has also been linked with societal benefits, such as lower welfare participation rates, reduced criminality, and greater maternal labor force participation.

51. An analysis of Georgia's performance in the Trends in International Mathematics and Science Study (TIMSS) in 2015 reveals a strong association between a 7-point increase in 4th grade students' math scores and three or more years of preschool (Figure 3). A World Bank Group (WBG) analysis of the long-term benefits of early childhood education in 12 countries found that children who attend preschool stay in school for nearly a year longer, on average, and are more likely to be employed in high-skilled jobs. High quality interventions in the early years have a high cost-benefit ratio and can deliver about 13% per year return on investment[38]. Over the longer term, ECEC interventions are also linked with higher educational attainment, post-school productivity, and increased income levels.

[38] https://heckmanequation.org/resource/research-summary-lifecycle-benefits-influential-early-childhood-program/

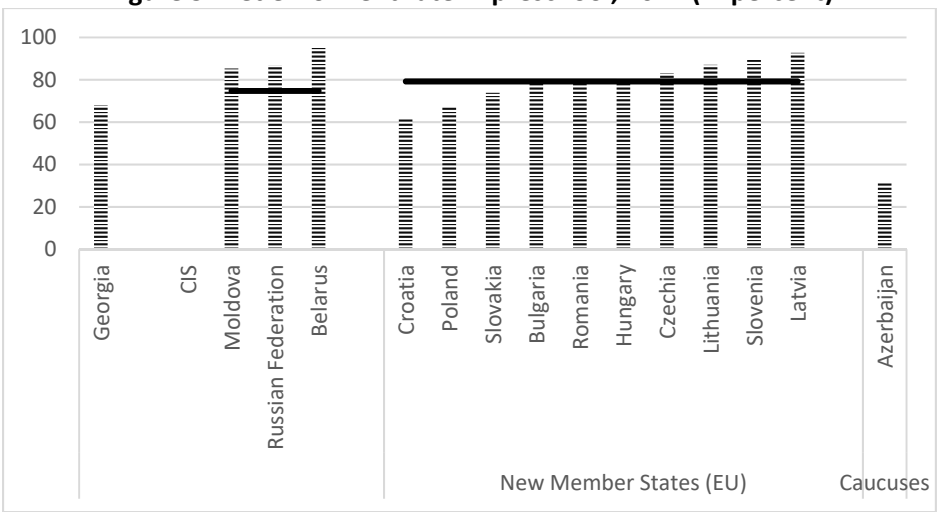
Figure 4: Simulation of Georgia's improvement in TIMSS Math scores (4th grade) as proportion of students who attend preschool for 3 years or more increases (in percent), 2015



Source: World Bank staff calculations using TIMSS data, 2015

52. In Georgia, public provision covers 86% of all preschool institutions. Enrollments in preschool increased from 46% in 2012 to 66% in 2013 when parent contributions to the extent of 30% to preschool education was abolished indicating that demand is sensitive to fees (See Figure 2.4 and 2.5). This subsector is under local governance with wide variation across municipalities in terms of cost per child, teacher salaries and qualifications. Also, there are no private sector regulations in place that can strengthen the quality of private provision. Based on the latest Public Expenditure Review (2014), the education expenditure on preschools was GEL 97million, a 12.4% share of GDP per capita (2013 estimates). Since then, fiscal share has increased slowly while the access to preschool education continues to lag the EU and remains highly inequitable.

Figure 5. Net enrolment rate in preschool, 2017 (In percent)

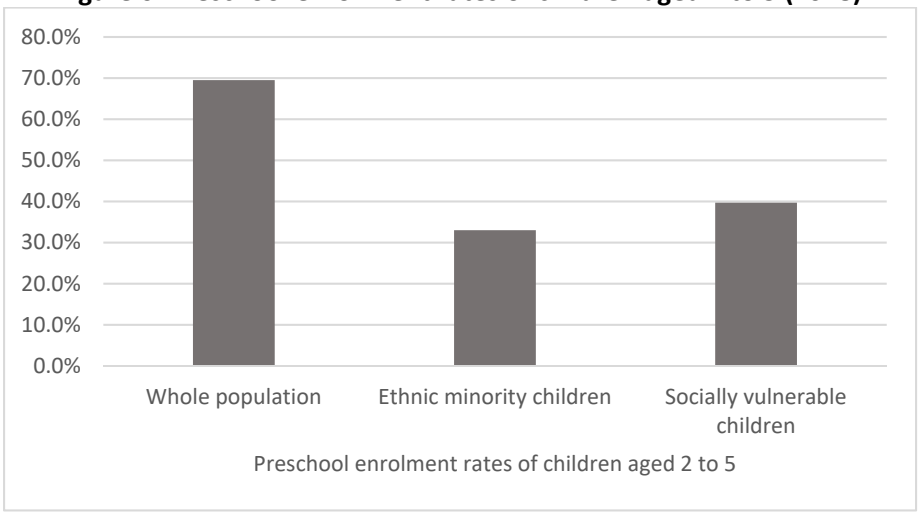


Source: UNESCO UIS and own calculations based on Household Integrated Survey 2016 for Georgia; Note: Net enrolment for ages 3-6 or 3-5. All figures for 2016 except Azerbaijan, Belarus and Moldova (2017). Data not available in source for Armenia and Ukraine.

53. The total enrollment of young children ages 2-5 years in preschool (69.5 percent) in Georgia is low compared to

the EU target (95 percent) (Figure 3) with significantly lower rates for children with special needs, ethnic minorities, socially vulnerable and those living in rural areas. For 5-6-year-old children, the enrolment is better at 80% but far from the desired target. In sum, public financing is justifiable to address the above constraints, given the long run returns of these investment. The proposed project aims to support the MESCS and municipalities in their agenda to expand early childhood education starting with support to increase the enrollment in one-year quality School Readiness Programs for 5-6-year-olds. Globally, there is a 9 percent increase in hourly earnings for one extra year of schooling.[39]

Figure 6: Preschool enrollment rates of children aged 2 to 5 (2018)



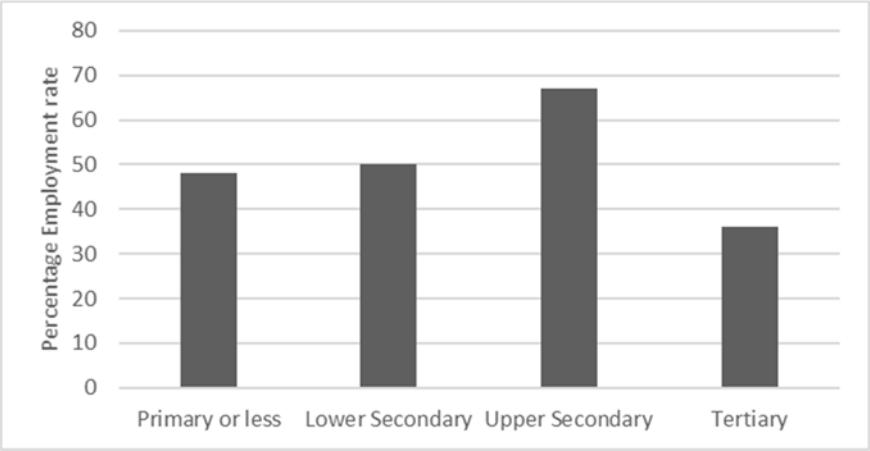
Source: UNICEF Study on Quality of Early Childhood Education and Care in Georgia, 2018

General Education

54. Extensive research strongly suggests that educational attainment and performance greatly influences the labor market outcomes. For example, highly educated workers on average are better paid than other workers. They are also less at risk of unemployment; if they should lose their jobs, these displaced workers are more likely than others to find new jobs.[40] These findings are consistent in most EU countries, where unemployment is heavily concentrated among less educated workers.[41] However, in Georgia, unemployment is high among youth (60 percent for 15-24-year-olds) and across all levels of educational attainment, including almost 38 percent graduates with higher education degrees, indicating a skills gap.[42]

[39] Psacharopoulos, G. and Patrinos, H.A. 2018. Returns to Investment in Education: A Decennial Review of the Global Literature. Policy Research Working Paper; No. 8402. World Bank, Washington, DC.
[40] Congressional Research Service. 2009. Education Matters: Earnings and Employment Outcomes by Educational Attainment. Washington, DC: Congress. Retrieved from https://www.everycrsreport.com/files/20090409_RS22792_e4d1cea958e6ca286b8aee91f1eccec7bc56ed81.pdf
[41] World Bank. 2013. *Skills Mismatch and Unemployment Labor Market Challenges in Georgia*. Washington, DC: World Bank.
[42] Ibid.

Figure 7: Georgia. Unemployment rate by educational attainment, 2013



Source: World Bank staff calculations using 2015 STEP Skills Survey Findings

55. A substantial body of research also indicates the importance of teachers and the learning environment as crucial to student learning outcomes[43,44]. International evidence-based research suggests the quality of teaching and learning provision are by far the most salient influencers on students' cognitive, socio-emotional, and behavioral outcomes of schooling – regardless of gender or background[45]. Additionally, according to findings from the 2018 World Bank Group report, *The Impact of School Infrastructure on Learning: A Synthesis of the Evidence,* physical characteristics of learning spaces have a significant impact on educational progress estimated to explain 16 percent of the variation in pupils' learning. Drawing on this evidence, upgrading existing Georgian public schools can facilitate the learning imperative.

56. Ninety percent of all children aged 6-18 years in Georgia are enrolled in the 2085 public general education schools. Thus, allocation size and efficiency of public expenditure on general education plays a key role in providing skills to young Georgian students who want to enter the labor force or pursue vocational or tertiary education. With a declining student population and high youth unemployment despite higher educational attainment, there is an urgent need for public financing to address key challenges related to teacher qualification and better learning environments to strengthen the quality of teaching and learning.

57. Currently, government spending on education in Georgia is low – compared to countries with similar per-capita incomes and relative to both the shortage of human capital and the country's ambitions. Out of the total education spending, 90 per cent continues to be on current expenses, with over 70 percent on salaries. Combined with a relatively low government spending on education, there is a serious fiscal constraint, leaving little space for expenditures directed at curriculum improvements, trainings for teachers, grants for research and development, scholarships for disadvantaged students and capital investments to enhance school facilities. Thus, there is an urgent need for addressing these issues through public investments. Most of the funding (66 percent) for the proposed project will be directed toward improving the quality of general education (Component 2).

58. Overall, public financing is justifiable to address the constraints discussed above. The proposed project would

[43] Hanushek, Eric A. and Rivkin, Steven G. (2006). "Teachers Quality." *Handbook of the Economics of Education* 2.
[44] Rowe, Ken. "The Importance of Teacher Quality as a Key Determinant of Students' Experiences and Outcomes of Schooling." Australian Council for Educational Research. (2003). DOI: http://dx.doi.org/10.14507/epaa.v8n1.2000
[45] Ibid. "What matters most" is quality teachers and teaching, supported by strategic teacher professional development.

prioritize under-resourced preschool and general education schools, including those serving students from disadvantaged groups. Grants would be provided to select schools as part of pilot programs to implement whole-school improvement plans and innovative solutions to support increased access to quality teaching and learning. This approach would help achieve efficiency in the allocation of limited resources.

Value Added by the World Bank

59. The World Bank can leverage and build upon learnings from supporting Georgia in its previous education project and continued engagements through technical and advisory services. The Bank's more recent engagement in Georgia's education sector include a series of Development Policy Operations (DPOs), Just-in-Time technical advice to the Government, and Analytical and Advisory Services (ASA). These instruments have supported the following areas: (i) support for new teacher recruitment, evaluation, professional development and career advancement scheme, including the development of an innovative teacher classroom observation tool; (ii) assessment of Georgia's supply of and demand for skills in the labor market; (iii) analysis of education sector performance; (iv) public expenditure review analyzing efficiency of education sector spending. The World Bank Group (WBG) also provides Georgia with ongoing technical assistance to support reforms to the higher education financing system and improving preschool education through the Social Accountability Processes Grant; and the Education Policy Forum in collaboration with UNICEF and ISET.

60. The Bank provided IDA financing of approximately US$31 million for the Education System Realignment and Strengthening Project (2001-2008) to improve the quality, and relevance of primary, and general secondary learning outcomes to better prepare them to meet the demands of a market economy and a democratic society mainly by: 1) developing and implementing an outcome-based national curriculum for primary, and general secondary education, which should include the development of a national assessment/examinations system; 2) strengthening the management capacity at central, and local levels, through the development, and implementation of policies to improve the financial, human, and physical resource management; and 3) Technical assistance and training to support project management, including procurement, financial management and disbursement, and key software programs, such as financial accounting packages. The proposed project will build upon the work completed during the prior project by providing greater investment in the amount of US$100.5 million to support systematic policy reform, public communication strategy, capacity-building, teacher training, and notably—expanding the scope to include early childhood education and care and higher education levels—supporting comprehensive reform.

61. The WBG is the largest financier of education in the developing world. In 2018, the WBG provided about US$4.5 billion for education programs, technical assistance, and other projects designed to improve learning and provide everyone with the opportunity to get the education they need to succeed. Its current portfolio of education projects totals US$17 billion, highlighting the importance of education for the achievement of the institution's twin goals of ending extreme poverty and boosting shared prosperity. Additionally, the WBG works on *education programs* in more than 80 countries and is committed to helping countries reach *Sustainable Development Goal (SDG) 4*, which calls for access to quality education and lifelong learning opportunities for all by 2030. Aside from technical knowledge, the Bank brings several very important innovations to the proposed project in Georgia. First is a culture of regular supervision and project monitoring. Second are the Bank fiduciary proceeds, which are highly transparent and competitive. Third are the safeguard policies of the Bank, which set highest standards on protection of the environment, local population, and indigenous peoples.

62. Finally, the Bank's support is especially critical at this juncture, given the impending completion of the successful

Millennium Challenge Corporation (MCC) 2nd Compact in July 2019. The MCC project sponsored by the United States Agency for International Development (USAID) and in partnership with the GoG, invested US$140 million to boost the quality and relevance of education, particularly in STEM by improving the learning environment through school rehabilitation, refurbishment and O&M, strengthening school leaders' and teachers' professional development, and developing classroom assessment system.[46] The 5-year program, which has proven successful[47] in developing a framework for systemic improvements of the general education, vocational education and training (VET), and higher education system, will close in July 2019[48]. The proposed World Bank project will help fill a critical gap in terms of financial and implementation support to sustain existing efforts and further augment developmental activities, to carry out the Government's education priorities.

Direct and Indirect Beneficiaries

63. The Project Component 1 will directly benefit the following groups:

(a) 5- to 6- year old children who will enroll into school readiness programs across the country
(b) 12394 caregiver pedagogues along with caregiver assistants, managers and other staff from the 76 municipalities who will receive training
(c) Municipality Agencies who will have improved capacity to support, monitor and evaluate the school readiness programs
(d) Preschools that will apply for and gain from innovative grant funds for improvement mini-projects
(e) Students and faculty members of Pedagogical Universities as well as Ministry of Education staff who receive short- or long-term support and training financed by the project

The Project Component 1 is expected to indirectly benefit the following groups:

(a) Parents and caregivers of young children who will participate in the program enhancing their skills and knowledge on value of school readiness as well as good ECE practices
(b) Municipalities that run the school readiness programs by having its agencies participate in the capacity building financed by the project
(c) Communities that host this program as it will potentially induce higher female labor force participation.
(d) Society beneficiaries as ECE investments lead to better health, educational retention and attainment, higher productivity and earnings, reduced crime and reduced social inequalities.

The Project Component 2 will directly benefit the following groups:

(a) Children enrolled in general education public schools will gain from improved learning environments – both infrastructural and facilities improvements and better teaching learning practices
(b) Teachers, school directors and staff will receive support for continuous capacity building opportunities and continuous professional development
(c) All schools will benefit from the school mapping, data analytics and dashboards to inform better decision making
(d) Schools that will be part of the pilot programs will gain from the implementation of the whole school improvement approach

[46] Notes from World Bank meeting with Magda Magradze, CEO and Nino Udzilauri, General Education Project Director, Millennium Challenge Account-Georgia, September 13, 2018.
[47] The economic rate of return (ERR) for the investment in professional development of educational staff was estimated at 18 percent and in school infrastructure was estimated at 11 percent.
[48] Ibid.

(e) Staff of the MESCS and its agencies who will receive trainings to implement the new approach, conduct and utilize national assessments to inform policy making

The Project Component 2 is expected to indirectly benefit the following groups:

(a) Parents and siblings of children who will participate in the program enhancing their skills and knowledge by association
(b) Higher education institutions – vocational and tertiary and the private sector who will admit better prepared students
(c) Civil society organizations who participate in the project
(d) Public at large as it gains from a better understanding and creates sustained demand for high quality general education

Cost Benefit Analyses

64. We examined the economic feasibility of the proposed GE I^2Q project using cost-benefit analysis and rate of return calculations. Based on the project description, two analyses have been conducted to determine the potential returns from the largest investment components in the project envelope – (i) Improving the Quality of and Access to Early Childhood Education and Care; and (ii) Fostering Quality Teaching and Learning in General Education.

Summary of Findings

65. The estimated Rate of Return and Number of beneficiaries are summarized in the table below for the mid scenario at 5% discount rate:

Table 1

Component	Est. Budget	Estimated IRR	Estimated NPV	Estimated Beneficiaries
1. Early Childhood Education and Care*	US$ 19 million	7.1%*	US$ 16.99 million	5289
2. General Education**	US$ 66 million	26.9%	US$ 1644 million	677833
2a. Infrastructure Rehabilitation	US$ 15 million	15.8%	US$ 70.1 million	9489 (38 schools)
2b. Education Equipment & Material	US$ 10 million	24.2%	US$ 164.8 million	84344 (333 schools)
2c. Teacher Training & Assessments	US$ 30 million	34.3%	US$ 1418 million	584000

* Note that this IRR estimate of 7.1% is project specific and hence calculated for access to 1 year of preschool for 5- to 6- year old children in Georgia. Accumulating evidence shows that an additional dollar invested in quality early childhood programs yield returns between $6 dollars and $17 dollars[49].

** Including Fixed Costs estimates (such as Grants, Policy development) ~US$ 11 million

Cost Benefit Analysis for Component 1: Early Childhood Education and Care

[49] https://www.worldbank.org/en/topic/earlychildhooddevelopment

66. We have found the following results from this analysis assuming a 5% discount rate for period 2019-2024:

Table 2

Scenarios	Low Cost	Mid Cost	High Cost
Unit cost per child	US$ 50	US$ 90	US$ 120
Present Value of Benefits	US$ 37,462,415	US$ 37,462,415	US$ 37,462,415
Present Value of Costs	US$ 17,672,267	US$ 20,472,517	US$ 22,572,704
Benefit Cost Ratio	2.1	1.8	1.7
Net Present Value	US$ 19,790,148	US$ 16,989,898	US$ 14,889,711
Internal Rate of Return	7.55%	7.09%	6.77%

The findings are based on the following methodology, assumptions and benefit and cost calculations, followed by a sensitivity analysis.

Methodology

67. This cost-benefit analysis considers quantifiable benefits of cash flows from lifetime earnings of the number of children who enroll and receive an additional one year of pre-school through the school readiness program against relevant project costs, considered at present value of benefits and costs. This is compared to the counterfactual of the current enrollment levels and program quality as implemented by the 76 Municipality agencies. Lifetime earnings are calculated using an estimated economic return of 12 percent (as individual expected income) for one standard deviation increase in academic achievement (Lazear, 2003)[50]. These benefits are expected to arise primarily from Sub-component 1.2 on ECEC quality and access for 5- to 6-year old children.

Assumptions

68. The proposed project component is estimated to have an investment cost of US$19 million for the period of 2019-2024. Costs up to 100% will be covered by a World Bank loan.

Table 3

Parameters to estimate Benefits	Unit	Value
Impact of preschool education on academic achievement	Standard deviation	0.053
Returns on academic achievement[51] (returns to 1 SD increase in student achievement)	%	12
Initial year of project development	Years	2020
Number of years to labor market entry (first cohort)	Years	14
Years of labor market participation	Years	25

Parameters to estimate Costs	Unit	Value
Cost of Project (Project Investment in Component 1)[52]	US$	19,000,000

[50] Lazear, Edward P. 2003. Firm Specific Human Capital: a skill-weights approach. NBER. Working Paper 9679. http://www.nber.org/papers/w9679
[51] Lazear (2003)
[52] WB Operations Portal, December 2018

Expenditure on pre-primary & primary education (2017)[53]	US$ million	316
Total pupils pre-primary & primary education	Number	469744
Per student cost for pre-primary & primary education (2017)	US$	672
Per student cost as a share of GDP per capita	%	18
Estimated Cost per student	US$	121

General Parameters	**Unit**	**Value**
Exchange Rate[54]	LARI/US$	2.6
Average monthly nominal earnings of employees[55] (2017)	LARI	999.1
Earnings per month (2017)	US$	380
Earnings per year (2017)	US$	4,565
Annual earnings growth (= Inflation rate) (10-year average)[56]	%	3.8
Year to discount benefits and cost	Current Year	2018
Population for the beginning of the year (2017)	Thousands	3726
Gross Domestic Product[57] (2017)	US$ million	14411
GDP Per capita (2017)	US$	3867
Total Expenditure on education[58] (2017)	US$ million	555

Estimating the number of Beneficiaries

69. For this analysis, we assume a 1% demographic decline (using a 10-year average) based on live births[59] and an additional 1.4% mortality rate for children below 5 years.

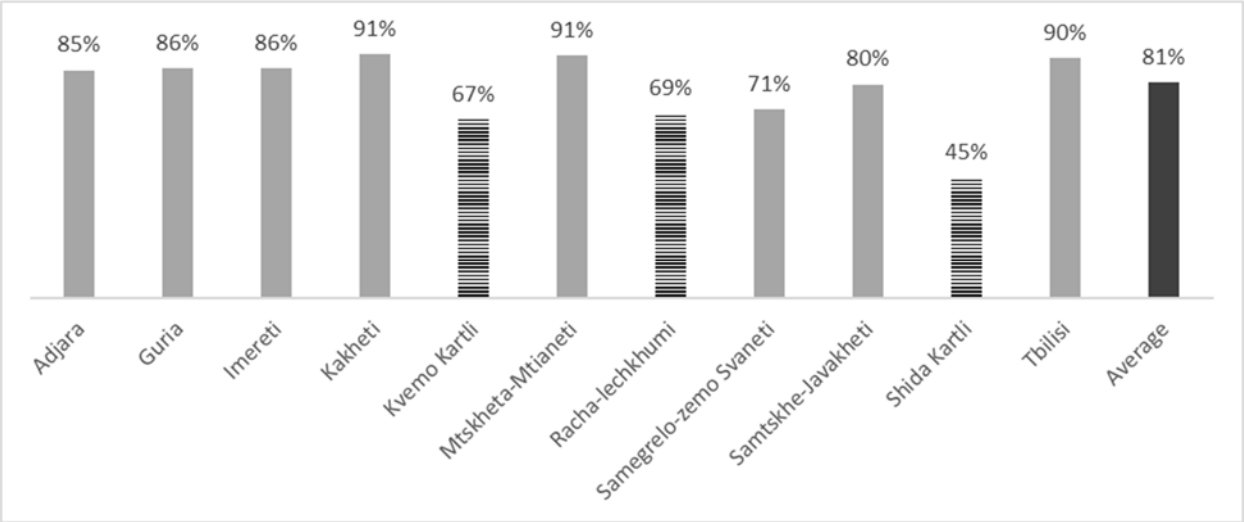
Table 4

Year	2007	2008	2009	2010	2011		2012	2013	2014	2015	2016	2017
Live Births	49287	56565	63377	62585	58014		57031	57878	60635	59249	56569	53293

70. Currently, 80.9% of 5-year old students are estimated to be enrolled in Kindergartens (2018) with over 75% in School Readiness programs based on Municipality and GeoStat data. Three regions, Kvemo Kartli, Racha-lechkhumi and Shida Kartli have the lowest enrollments of 5-year old children in programs focused on school transition.

[53] *IMF Government Finance Statistics*
[54] *National Bank of Georgia*
[55] *National Statistical Office of Georgia or GeoStat*
[56] *National Bank of Georgia*
[57] *National Statistical Office of Georgia or GeoStat*
[58] *IMF Government Finance Statistics*
[59] *GeoStat Population Data 2016 and 2017*

Figure 8. Share of 5-year old children enrolled in kindergartens in Georgia (2018)



Source: MESCS and GeoStat

71. The MESCS aims to increase the enrollment of all children aged 5-6 years in school readiness programs (SRP) to 95% by 2024. Successful enrollment into SRPs is a function of availability of new places, vacancies, quality of services and parental demand. In adherence to the Law and the National Educational Standard for School Readiness[60], the school readiness program should be 3 hours per day with the child to adult ratio of 15:1 and a maximum of 30 children per group. However, the current distribution of places in SRPs widely varies between the regions with a high prevalence of over-crowding (more than 40 students/group) in large cities and vacancies in mountainous regions. Of the 56529 students who enrolled in grade 1 in 2018-19, only 75.2% or 42504 students enrolled in the school readiness program.

72. Based on GeoStat data, taking the net enrolment rate of 5-6-year-old children in kindergarten at 80% (2018) and targeting the goal of 95% enrollments by 2024, we estimate that 5289 children of this age group can benefit from this project. For this analysis, we have not considered vacancies, demand and enrollment variability by municipality due to paucity of data.

Table 5

Year	2018	2024
Population aged 5-6 years old	57,059	53,617
Net enrollment rate	80%	95%
Number of enrolled children	45,647	50,936
Beneficiaries	-	**5,289**

73. It is assumed that the beneficiaries affected by the project will grow at the same rate as the investment flow, that is, the 5289 beneficiaries are spread over project period based on the investment distribution. Based on this, since the number of beneficiaries in 2019 was only 13 children, and since the project design includes a detailed diagnostic exercise of the ECEC sector in 2019, these beneficiaries were projected into the following years.

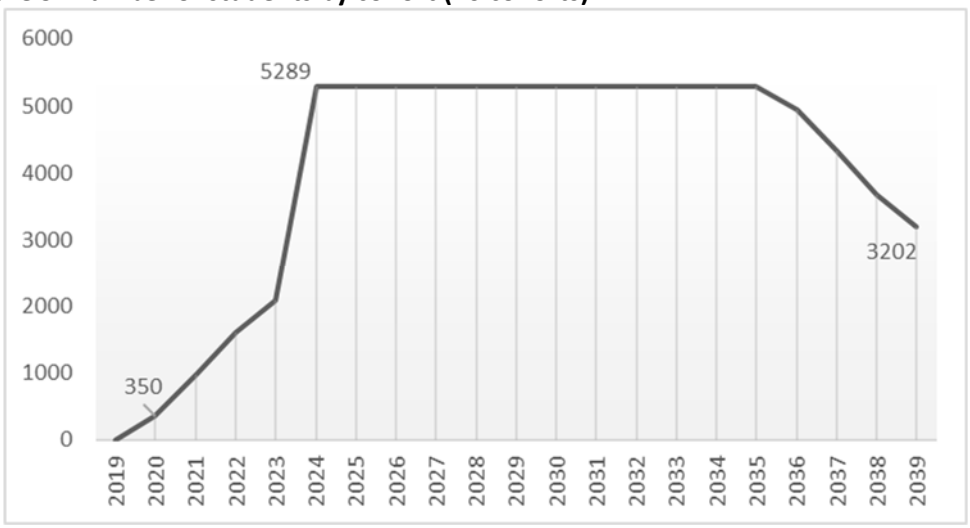
[60] The Law on Early and Preschool Education and Care was adopted by the Parliament of Georgia in 2016. Article 22 states "Children from 5 years, before they enter the first grade of primary education, may study and/or be taught in the school readiness program group. The number of children in such group shall not exceed 30. The number of care-giver pedagogues and/or caregivers: number of children should not exceed 1:15." Article 21 stipulates that SRP should be 3 hours per day.

Table 6

Implementation (year-by-year)							
Year	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**Total**
Number of places	-	350	612	645	480	3202	
Implementation (cumulative)							
Number of places	-	350	962	1607	2087	5289	5289

74. Assuming the first cohort enters the labor market at the age of 20 years, and 100% of the children in the 5-6-year School Readiness Program enter primary school[61], the benefits will accrue and continue for children in 20 cohorts starting with the first cohort of 350 children in 2020.

Figure 9. Number of students by cohort (20 cohorts)



Estimating the Project Costs

75. The project cost includes 100% World Bank investment and the operational cost of the project. Since all public programs for preschools are state supported, we assume nil household expenditure to enroll children into the program. To estimate the cost for the project in each implementation year, we assume the distribution of the project costs based on disbursement projections[62]. The cumulative distribution of the investment during the project period was assumed as below:

Table 7

Year	2019	2020	2021	2022	2023	2024
Discount year	0	1	2	3	4	5
Cumulative Investment Allocation per year	0.2%	6.3%	18.2%	30.4%	39.5%	100%

[61] Compulsory schooling starts at age 6 in Georgia, enrollment is 100% and average dropout rate Grades 1-12 is 2%.
[62] Operations Portal Disbursement Projections Project Georgia I²Q: Inclusion, Innovation & Quality (P168481)

76. For determining the operational costs, based on estimations using cost parameters – total education expenditure in Georgia on pre-primary and primary education and the total number of children in pre-primary and primary school, a per capita cost per child of US$ 672 is estimated, which is 17% of the GDP per capita (2017 figures). Based on the 2014 Georgia Public Expenditure Review, 18% of total education expenditure are current expenses other than salaries. Cost per child is estimated at 18% of US$ 672 = US$ 121, as a conservative estimate. Based on similar half day programs in neighboring East European countries, a lower end cost estimate of US$ 50 was determined, and three plausible scenarios envisaged for further estimations:

Table 8

Cost per child (Scenario 1)	US$ 50
Cost per child (Scenario 2)	US$ 90
Cost per child (Scenario 3)	US$ 120

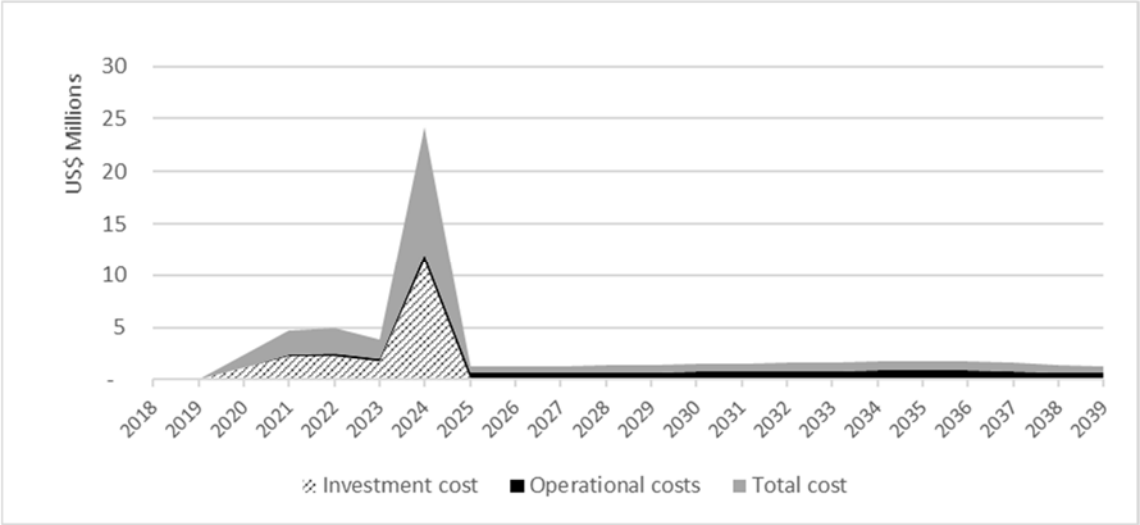
77. Under each scenario, the total operational cost is calculated by multiplying the number of beneficiaries of that year with the unit cost and adjusted by the inflation rate. The cost schedule is presented below with operational costs until the 20th cohort enters the labor market in 2039.

Table 9

Year	Disc. year	Investment cost	Operational costs			Total cost		
		Component 1	Scenario 1 (US$ 50)	Scenario 2 (US$ 90)	Scenario 3 (US$ 120)	Scenario 1	Scenario 2	Scenario 3
2018	0	-	0	0	0	0	0	0
2019	1	45,600	-	-	-	45,600	45,600	45,600
2020	2	1,166,600	18869	33964	45285	1185469	1200563.66	1211884.88
2021	3	2,243,900	53,825	96,884	129,179	2,297,725	2340784.4	2373079.2
2022	4	2,316,100	93,326	167,986	223,982	2,409,426	2,484,086	2,540,082
2023	5	1,725,200	125,845	226,520	302,027	1,851,045	1,951,720	2,027,227
2024	6	11,502,600	331,087	595,957	794,610	11,833,687	12,098,557	12,297,210
2025	7	-	343,722	618,699	824,932	343,722	618,699	824,932
2026	8	-	356,839	642,309	856,413	356,839	642,309	856,413
2027	9	-	370,456	666,820	889,094	370,456	666,820	889,094
2028	10							

		-	384,593	692,267	923,022	384,593	692,267	923,022
2029	11	-	399,269	718,684	958,246	399,269	718,684	958,246
2030	12	-	414,505	746,110	994,813	414,505	746,110	994,813
2031	13	-	430,323	774,582	1,032,776	430,323	774,582	1,032,776
2032	14	-	446,745	804,141	1,072,188	446,745	804,141	1,072,188
2033	15	-	463,793	834,827	1,113,103	463,793	834,827	1,113,103
2034	16	-	481,492	866,685	1,155,580	481,492	866,685	1,155,580
2035	17	-	499,866	899,758	1,199,678	499,866	899,758	1,199,678
2036	18	-	484,587	872,257	1,163,009	484,587	872,257	1,163,009
2037	19	-	440,747	793,344	1,057,792	440,747	793,344	1,057,792
2038	20	-	389,387	700,896	934,529	389,387	700,896	934,529
2039	21	-	351,523	632,742	843,656	351,523	632,742	843,656

Figure 10. Cost Distribution 2019-2039



Estimating the Effect of the Project on Educational Outcomes of the Participants

78. We know from macro and microeconomic research that expected wages for students depend on their level of schooling completed and their learning outcomes. Using the Mincer equation, earnings can be explained as a function of years of schooling and labor market experience. Hence, the Mincerian analysis has been widely used by policymakers to inform education spending (Patrinos, H.A., 2016). Further, in terms of learning outcomes, estimates suggest that an increase of one standard deviation in average performance on internationally validated tests such as PISA (a 100-point difference or approximately the difference between Norway and Mexico) will increase annual long-run GDP growth by 1–2 percent (Hanushek and Woessmann 2007).

79. Given the above, a Mincerian analysis of the labor market returns to schooling based on the 2016 Household Survey (for education attainment) and the use of PISA 2012 and TIMSS 2015 (for test performance) for Georgia was attempted but could not be utilized due to lack of relevant and sufficient data. Alternatively, a PISA 2015 analysis for the Europe and Central Asia region was carried out in which the impact of attending preschool for one or more years was found to have a 0.053 standard deviation increase in PISA scores, with significance. This means that when a child in the ECA region attends preschool for one or more years, we can say with 99 per cent confidence that his or her PISA score at age 15 is likely to increase by 5.0 points. Thus, this impact was assumed for estimating the effect of 1 year of preschool in Georgia on participants' educational outcomes.

Table 10

PISA Math performance, ECA		
VARIABLES	**Multilevel (PISA points)**	**Multilevel (Standard deviation)**
Age	-7.086***	-0.0746***
	(1.252)	(0.0132)
Female	-16.37***	-0.172***
	(0.631)	(0.00663)

Grade	30.60***	0.322***
	(0.919)	(0.00965)
Preschool (1=if student attended 1 year or more)	5.011***	0.0528***
	(0.778)	(0.00819)
ESCS	12.73***	0.134***
	(0.421)	(0.00447)
ESCSS school average	72.74***	0.766***
	(1.702)	(0.0178)
Proportion of funds from government	0.160***	0.00169***
	(0.0545)	(0.000573)
Rural schools	12.21***	0.129***
	(1.760)	(0.0185)
Disciplinary climate	9.747***	0.103***
	(0.344)	(0.00364)
Class size	0.0435	0.000458
	(0.107)	(0.00112)
Student-teacher ratio	0.0936	0.000985
	(0.117)	(0.00123)
School responsibility for curriculum	-0.161	-0.00170
	(1.011)	(0.0106)
School responsibility for resources	-1.919**	-0.0202**
	(0.914)	(0.00963)
Constant	597.0***	1.359***
	(23.03)	(0.242)
Observations	47,522	47,522
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1		

Estimating the effect of change in educational outcomes on earnings of participants

80. The value of the increase in future earnings from an additional year of preschool and better test performance is determined by the effect of one year or more of preschool education on academic achievement (0.053 standard deviation). The multiplication of the beneficiaries, average annual earnings adjusted by inflation rates, the effect of one year or more of preschool education on academic achievement (0.053 standard deviation) and economic returns from 1 standard deviation increase in educational achievement (12%).

Chart 1. Benefits 2019-2077 until the last cohort 20 exits the general education system

1. Additional gains for children :

USD

Year	Discount year	Average annual earnings (USD) - Adjusted by inflation rates	Cohort 1	Cohort 2	Cohort 3	Cohort 4	Cohort 5	Cohort 6	Cohort 7	Cohort 8	Cohort 9	Cohort 10	Cohort 11	Cohort 12	Cohort 13	Cohort 14	Cohort 15	Cohort 16	Cohort 17	Cohort 18	Cohort 19	Cohort 20	Total
2035	17	8959	0																				0
2036	18	9300	0	20,616																			20,616
2037	19	9655	0	21,403	58,810																		80,213
2038	20	10024	0	22,220	61,054	101,970																	185,244
2039	21	10406	0	23,068	63,384	105,861	137,501																329,813
2040	22	10803	0	23,948	65,803	109,901	142,748	361,753															704,152
2041	23	11216	0	24,862	68,314	114,095	148,195	375,558	375,558														1,106,381
2042	24	11644	0	25,811	70,921	118,448	153,850	389,890	389,890	389,890													1,538,699
2043	25	12088	0	26,796	73,627	122,969	159,721	404,768	404,768	404,768	404,768												2,002,185
2044	26	12549	0	27,818	76,437	127,661	165,817	420,214	420,214	420,214	420,214	420,214											2,498,804
2045	27	13028	0	28,880	79,354	132,533	172,144	436,250	436,250	436,250	436,250	436,250	436,250										3,030,411
2046	28	13525	0	29,982	82,382	137,590	178,713	452,898	452,898	452,898	452,898	452,898	452,898	452,898									3,598,951
2047	29	14042	0	31,126	85,526	142,841	185,533	470,181	470,181	470,181	470,181	470,181	470,181	470,181	470,181								4,206,471
2048	30	14577	0	32,314	88,790	148,292	192,613	488,123	488,123	488,123	488,123	488,123	488,123	488,123	488,123	488,123							4,855,116
2049	31	15134	0	33,547	92,178	153,951	199,964	506,750	506,750	506,750	506,750	506,750	506,750	506,750	506,750	506,750	506,750						5,547,141
2050	32	15711	0	34,827	95,695	159,826	207,594	526,088	526,088	526,088	526,088	526,088	526,088	526,088	526,088	526,088	526,088	526,088					6,284,913
2051	33	16311	0	36,156	99,347	165,925	215,516	546,164	546,164	546,164	546,164	546,164	546,164	546,164	546,164	546,164	546,164	546,164	546,164				7,070,914
2052	34	16933	0	37,536	103,138	172,256	223,741	567,006	567,006	567,006	567,006	567,006	567,006	567,006	567,006	567,006	567,006	567,006	567,006	529,470			7,870,217
2053	35	17579	0	38,968	107,074	178,830	232,279	588,644	588,644	588,644	588,644	588,644	588,644	588,644	588,644	588,644	588,644	588,644	588,644	549,675	481,569		8,652,120
2054	36	18250	0	40,455	111,160	185,654	241,143	611,107	611,107	611,107	611,107	611,107	611,107	611,107	611,107	611,107	611,107	611,107	611,107	570,651	499,946	425,453	9,407,744
2055	37	18947	0	41,999	115,402	192,739	250,345	634,427	634,427	634,427	634,427	634,427	634,427	634,427	634,427	634,427	634,427	634,427	634,427	592,428	519,025	441,688	9,766,751
2056	38	19670	0	43,602	119,806	200,094	259,898	658,637	658,637	658,637	658,637	658,637	658,637	658,637	658,637	658,637	658,637	658,637	658,637	615,036	538,831	458,543	10,139,458
2057	39	20420	0	45,266	124,378	207,730	269,816	683,771	683,771	683,771	683,771	683,771	683,771	683,771	683,771	683,771	683,771	683,771	683,771	638,506	559,393	476,042	10,526,388
2058	40	21200	0	46,993	129,124	215,657	280,113	709,865	709,865	709,865	709,865	709,865	709,865	709,865	709,865	709,865	709,865	709,865	709,865	662,872	580,740	494,208	10,928,083
2059	41	22009	0	48,786	134,052	223,887	290,802	736,954	736,954	736,954	736,954	736,954	736,954	736,954	736,954	736,954	736,954	736,954	736,954	688,167	602,902	513,067	11,345,108
2060	42	22848		50,648	139,167	232,430	301,899	765,076	765,076	765,076	765,076	765,076	765,076	765,076	765,076	765,076	765,076	765,076	765,076	714,428	625,909	532,646	11,778,046
2061	43	23720			144,478	241,300	313,420	794,272	794,272	794,272	794,272	794,272	794,272	794,272	794,272	794,272	794,272	794,272	794,272	741,692	649,794	552,972	12,174,925
2062	44	24626				250,508	325,380	824,582	824,582	824,582	824,582	824,582	824,582	824,582	824,582	824,582	824,582	824,582	824,582	769,995	674,591	574,074	12,485,538
2063	45	25565					337,797	856,049	856,049	856,049	856,049	856,049	856,049	856,049	856,049	856,049	856,049	856,049	856,049	799,379	700,334	595,981	12,706,081
2064	46	26541						888,717	888,717	888,717	888,717	888,717	888,717	888,717	888,717	888,717	888,717	888,717	888,717	829,884	727,059	618,725	12,840,268
2065	47	27554							922,631	922,631	922,631	922,631	922,631	922,631	922,631	922,631	922,631	922,631	922,631	861,553	754,804	642,336	12,407,632
2066	48	28605								957,839	957,839	957,839	957,839	957,839	957,839	957,839	957,839	957,839	957,839	894,430	783,608	666,848	11,923,278
2067	49	29697									994,391	994,391	994,391	994,391	994,391	994,391	994,391	994,391	994,391	928,562	813,511	692,295	11,383,889
2068	50	30830										1,032,338	1,032,338	1,032,338	1,032,338	1,032,338	1,032,338	1,032,338	1,032,338	963,997	844,556	718,714	10,765,969
2069	51	32006											1,071,733	1,071,733	1,071,733	1,071,733	1,071,733	1,071,733	1,071,733	1,000,784	876,785	746,140	10,125,838
2070	52	33228												1,112,631	1,112,631	1,112,631	1,112,631	1,112,631	1,112,631	1,038,975	910,243	774,614	9,399,617
2071	53	34496													1,155,090	1,155,090	1,155,090	1,155,090	1,155,090	1,078,623	944,979	804,173	8,603,224
2072	54	35812														1,199,169	1,199,169	1,199,169	1,199,169	1,119,784	981,040	834,861	7,732,361
2073	55	37179															1,244,930	1,244,930	1,244,930	1,162,516	1,018,477	866,720	6,782,504
2074	56	38598																1,292,438	1,292,438	1,206,878	1,057,343	899,795	5,748,892
2075	57	40071																	1,341,758	1,252,934	1,097,692	934,132	4,626,516
2076	58	41600																		1,300,747	1,139,581	969,779	3,410,107
2077	59	43187																			1,183,068	1,006,787	2,189,855
2078	60	44835																				1,045,207	1,045,207
																						289,849,841	

Cost effectiveness

81. Some alternative options were considered such as focusing the project entirely or significantly on strengthening an undiagnosed, fragmented and under-resourced education subsector of ECD given significant long term economic and social returns, both public and private based on international evidence. However, based on the nature and structure of the challenge in ECD services and the deeper challenges related to quality of learning to prepare Georgian youth for the future, a focused intervention on enrolling 5-6-year old children is a stepping stone as well as is in alignment with government priorities. The interventions are estimated to be cost effective in the long run.

Cost Benefit Summary and the Internal Rate of Return

82. The internal rate of return (discount rate at which NPV=0) for all the three cost scenarios are as below:

Table 13

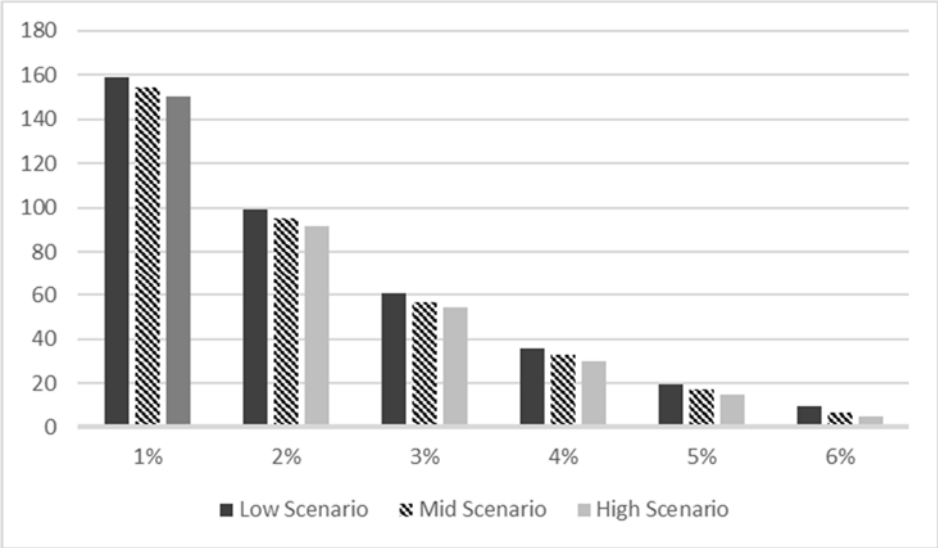
Internal Rate of Return		
Low Cost Scenario	Mid Cost Scenario	High Cost Scenario
7.55%	7.09%	6.77%

83. After converting the benefits and costs in present value terms, the benefits to cost ratio and the NPV was calculated at three discount rates of 3%, 5% and 7%. The NPV is positive and the BCR is greater than one at discount rates below 6.9%, irrespective of the cost-related scenarios. However, at the 7% discount rate, the model suggests a negative NPV and BCR below 1 in the high cost scenario. The results along with the sensitivity are shown below (Inflation rate is 3.8%).

Table 14

Discount Rate	**Net Present Value (million)**			**Benefit Cost Ratio**		
	Low Cost Scenario	**Mid Cost Scenario**	**High Cost Scenario**	**Low Cost Scenario**	**Mid Cost Scenario**	**High Cost Scenario**
1%	US$ 158.9	US$ 154.2	US$ 150.6	7.66	6.38	5.67
2%	US$ 99.0	US$ 94.8	US$ 91.7	5.49	4.62	4.13
3%	US$ 60.6	US$ 56.9	US$ 54.2	3.96	3.37	3.02
4%	US$ 35.8	US$ 32.6	US$ 30.2	2.89	2.47	2.23
5%	US$ 19.8	US$ 17.0	US$ 14.9	2.12	1.83	1.66
6%	US$ 9.4	US$ 6.9	US$ 5.1	1.57	1.36	1.24

Figure 11. Net Present Value (US$ million) at different Discount rates



Cost Benefit Analysis for Component 2: General Education

84. We have found the following result from this analysis assuming a 5% discount rate for the project period of 2019-2024:

Table 15

Scenarios	Future Earnings (Low)	Future Earnings & GDP (Medium)	Future Earnings, GDP & Private Savings (High)
Present Value of Benefits (USD)	US$ 1,698,805,940	US$ 1,724,873,647	US$ 1,729,760,241
Present Value of Costs (USD)	US$ 80,923,515	US$ 80,923,515	US$ 80,923,515
Benefit Cost Ratio	21.0	21.3	21.4
Net Present Value (USD)	US$ 1,617,882,426	US$ 1,643,950,132	US$ 1,648,836,726
Internal Rate of Return	23.5%	26.9%	27.5%

The findings are based on the following methodology, assumptions and benefit and cost calculations, followed by a sensitivity analysis.

Methodology

85. This cost-benefit analysis considers quantifiable benefits of cash flows from lifetime earnings of the children studying in general education public schools who stand to benefit through the project interventions measured against relevant project costs, considered at present value of benefits and costs. This is compared to the counterfactual of no intervention. Lifetime earnings are calculated from economic returns from increased student achievement resulting from better learning environment (improved teaching and assessments, physical infrastructure and availability of materials and equipment) as estimated from international benchmarks. These benefits are expected to arise primarily from Sub-components which focus on infrastructure rehabilitation, provision of educational materials and equipment, capacity building and assessments.

86. The proposed project component is estimated to have an investment cost of US$66 million for the period of 2019-2024. Costs up to 100% will be covered by a World Bank loan. Based on the request from the MESCS, the expected investment allocation by sub-component is estimated as below:

Table 16

Sub-Component	Investment Allocation	Est. Beneficiaries	Est. Impact Factor
i) Infrastructure Rehabilitation	US$ 15 million	9489 students (38 schools)	0.38
ii) Educational materials and equipment	US$ 10 million	84344 students (333 schools)	0.15
iii) Teacher capacity building and Assessments	US$ 30 million	584000 students	0.12
iv) Fixed Costs including Grants, Policy development	US$ 11 million	-	-
Total	US$ 66 million	-	-

87. The total benefits and total costs will be a summation of the benefits and costs from each of these sub-components respectively. Since the beneficiaries of improved education infrastructure and better education, material and equipment will also benefit from improved teaching and assessments, this will lead to double counting. However, for simplicity, we assume these groups to be mutually exclusive since the number of beneficiaries from sub-components (i) and (ii) are relatively smaller and there are positive externalities for indirect beneficiaries. Also, the investment allocations from each sub-component are expected to have differential impacts. Thus, we have conducted three sub-analysis for three Sub-components:

i) Infrastructure rehabilitation
ii) Provision of materials and equipment
iii) Capacity building and assessments, and then aggregated them.

Assumptions across All Sub-Components

88. To estimate the benefits and costs of investing in improving the quality of the teaching and learning environment in general education, the assumptions made are listed below.

Table 17

Parameters to estimate Benefits	Unit	Value
Initial year of project development	Year	2019
Number of years to labor market entry (first cohort)	Years	3
Years of labor market participation	Years	25
Impact of improved school infrastructure on academic achievement[63]	Standard deviation	0.38
Impact of improved educational material and equipment on academic achievement[64]	Standard deviation	0.15

[63] Krishnaratne, White and Carpenter (2013)
[64] McEwan, P.J. (2015)

Impact of teacher training on academic achievement[65]	Standard deviation	0.12
Returns on academic achievement[66] (returns to 1 SD increase in student achievement)	%	12
Spending multiplier[67]	Number	0.7
Students in private tutoring[68]	%	13
Expected reduction in private tutoring[69]	%	3

Parameters to estimate Costs	**Unit**	**Value**
Cost of Project (Project Investment in Component 2)[70]	US$	66,000,000
Unit Cost: Rehabilitation cost per school[71]	US$	400,000
Unit Cost: Education material and equipment cost per set per school[72]	US$	30,000
Unit Cost: Training cost per teacher per year[73]	US$	70
Fixed Costs	US$	11,000,000
Depreciation rate (Infrastructure)	%	5
Depreciation rate (Educational materials and equipment)	%	20
Depreciation rate (Teacher training)	%	20

General Parameters	**Unit**	**Value**
Exchange Rate[74]	LARI/US$	2.6
Average monthly nominal earnings of employees[75] (2017)	LARI	999.1
Earnings per month (2017)	US$	380
Earnings per year (2017)	US$	4,565
Annual earnings growth (= Inflation rate) (10-year average)[76]	%	3.8
Year to discount benefits and cost	Current Year	2018
Population for the beginning of the year (2017)	Thousands	3726
Gross Domestic Product[77] (2017)	US$ million	14411
GDP per capita (2017)	US$	3867
Total Expenditure on education[78] (2017)	USD million	555

[65] McEwan, P. J. (2015); Kraft, M. A., Blazar, D., & Hogan, D. (2016)
[66] Lazear (2003)
[67] Ilzetzki, Mendoza and Vegh (2009)
[68] Calculations based on Georgia HHS 2016
[69] Calculations based on Georgia PISA results 2015
[70] WB Operations Portal, December 2018
[71] Georgia Millennium Challenge Account 2018
[72] Georgia Millennium Challenge Account Estimate 2018
[73] Author estimates
[74] *National Bank of Georgia*
[75] *National Statistical Office of Georgia or GeoStat*
[76] *National Bank of Georgia*
[77] *National Statistical Office of Georgia or GeoStat*
[78] *IMF Government Finance Statistics*

Estimating the Project Costs

89. The project cost includes 100% World Bank investment and the operational cost of the project for the period of the project from 2019-24. Since all public general education schools are state supported, we assume nil household expenditure to enroll children into the program. To estimate the cost for the project in each implementation year, we assume the distribution of the project costs based on disbursement projections[79]. The cumulative distribution of investment during the project period was assumed as below:

Table 18

Year	2019	2020	2021	2022	2023	2024
Discount year	0	1	2	3	4	5
Cumulative Investment Allocation per year	0.2%	6.4%	18.2%	30.4%	39.5%	100%

90. Based on the above investment allocation percentages over the project period and the investment allocation for each sub-component, an investment cost distribution is estimated as below.

Table 19

Investment cost distribution across sub-components over 2019-24							
Years	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**Total**
Investment distribution	0.2%	6.1%	11.8%	12.2%	9.1%	60.5%	100%
i. Infrastructure Rehabilitation	US$ 36,000	US$ 921,000	US$ 1,771,500	US$ 1,828,500	US$ 1,362,000	US$ 9,081,000	US$ 15,000,000
ii. Educational materials and equipment	US$ 24,000	US$ 614,000	US$ 1,181,000	US$ 1,219,000	US$ 908,000	US$ 6,054,000	US$ 10,000,000
iii. Teacher training + assessment	US$ 72,000	US$ 1,842,000	US$ 3,543,000	US$ 3,657,000	US$ 2,724,000	US$ 18,162,000	US$ 30,000,000
Fixed cost	US$ 1,833,333	US$ 1,833,333	US$ 1,833,333	US$ 1,833,333	US$ 1,833,333	US$ 1,833,333	US$ 11,000,000
Total	US$ 1,965,333	US$ 5,210,333	US$ 8,328,833	US$ 8,537,833	US$ 6,827,333	US$ 35,130,333	US$ 66,000,000

91. A cost schedule is calculated for each subcomponent including investment costs and depreciated operational costs over a 20-year period. The cost distribution is shown as below.

[79] Operations Portal Disbursement Projections Project Georgia I²Q: Inclusion, Innovation & Quality (P168481)

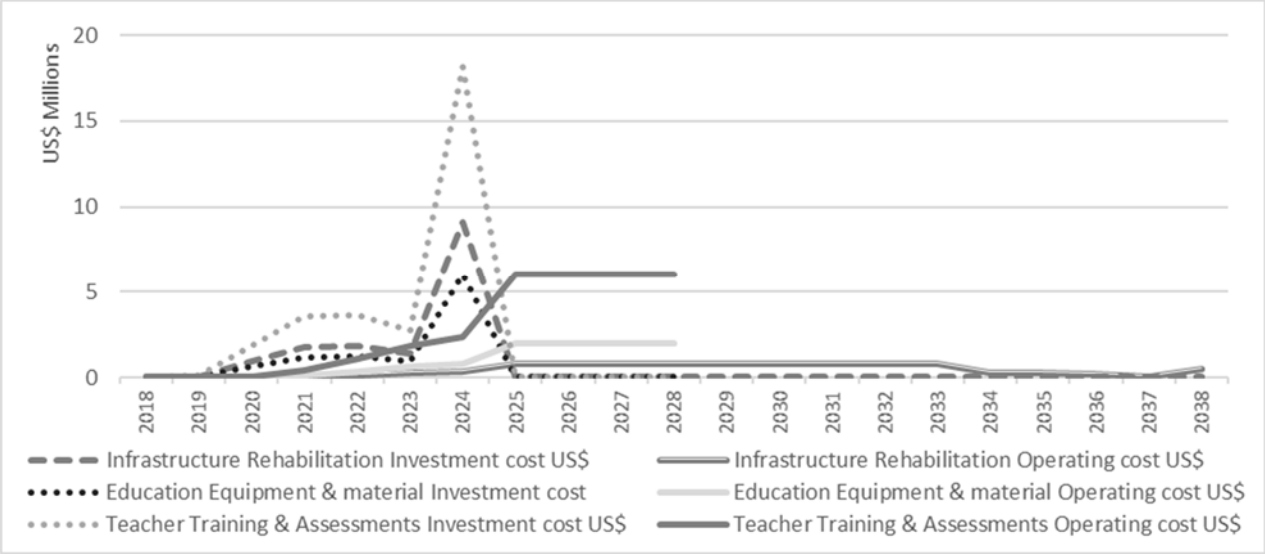
Table 20

Depreciation rate	**%**	Period
i. Infrastructure Rehabilitation	5%	20 years
ii. Educational materials and equipment	20%	5 years
iii. Teacher training + Assessment	20%	5 years

Table 21

Year	Discount Year	Infrastructure Rehabilitation			Education Equipment & material			Teacher Training & Assessments		
		Investment cost US$	Operating cost US$	Total cost US$	Investment cost	Operating cost US$	Total cost US$	Investment cost US$	Operating cost US$	Total cost US$
2018	0	0	0	0	0	0	0	0	0	0
2019	1	36000	0	36000	24000	0	24000	72000	0	72000
2020	2	921000	1800	922800	614000	4800	618800	1842000	14400	1856400
2021	3	1771500	47850	1819350	1181000	127600	1308600	3543000	382800	3925800
2022	4	1828500	136425	1964925	1219000	363800	1582800	3657000	1091400	4748400
2023	5	1362000	227850	1589850	908000	607600	1515600	2724000	1822800	4546800
2024	6	9081000	295950	9376950	6054000	789200	6843200	18162000	2367600	20529600
2025	7	0	750000	750000	0	2000000	2000000	0	6000000	6000000
2026	8	0	750000	750000	0	2000000	2000000	0	6000000	6000000
2027	9	0	750000	750000	0	2000000	2000000	0	6000000	6000000
2028	10	0	750000	750000	0	2000000	2000000	0	6000000	6000000
2029	11	0	750000	750000						
2030	12	0	750000	750000						
2031	13	0	750000	750000						
2032	14	0	750000	750000						
2033	15	0	750000	750000						
2034	16	0	294150	294150						
2035	17	0	248100	248100						
2036	18	0	159525	159525						
2037	19	0	68100	68100						
2038	20	0	454050	454050						

Figure 12. Investment and Operational Cost Distribution 2018-2038



Estimating the number of Beneficiaries

92. For this analysis, the number of general education public schools and the number of children studying in them[80] was used to estimate the average school size.

Table 22

Number of General Education Schools and Pupils in them (At the beginning of school year)	**2015/2016**	**2016/2017**	**2017/2018**	**2018/2019**
Total Number of General education schools	2331	2321	2308	2308
Number of pupils in General Education schools (thousands)	553.9	564.7	575.2	584
Public General Education schools	2085	2085	2085	2085
Number of pupils in public General Education schools (thousands)	498.9	508.9	518.0	523.3
Average School Size	238	243	249	253

93. To calculate the number of beneficiaries for each sub-component, unit costs are assumed as follows. The rehabilitation cost per school is based on the M&E Plan of the Millennium Challenge Account (MCA) that is currently in the last phase of rehabilitating 93 public general education schools at an average cost of US$ 400,000. Similarly, based on the cost of providing Science lab materials and equipment in schools by the MCA project, a unit cost of US$ 30,000 per set per school is assumed, at constant prices.

Table 23

Unit Costs	US$
Rehabilitation cost per school	400,000
Education material and equipment cost per set per school	30,000

Number of beneficiaries from Sub-component (i) Infrastructure Rehabilitation

94. Based on the average school size of 253 students in 2018/19, the unit cost of rehabilitating one school US$ 400,000 and the total investment on this subcomponent (US$ 15 million), the direct beneficiaries are estimated to be 9489 students in 38 schools. It is assumed that the beneficiaries affected by the project will grow at the same rate as the investment flow, that is, the 9489 beneficiaries are spread over project period based on the investment distribution. Based on this, the projection of the number of beneficiaries during the project implementation years is as follows:

Table 24

Implementation (year-by-year)							
Year	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**Total**
Number of places	23	583	1,121	1,157	862	5,744	
Implementation (cumulative)							
Number of places	23	605	1,726	2,883	3,744	9,489	9,489

[80] *National Statistical Office of Georgia (GeoStat)*

Number of beneficiaries from Sub-component (ii) Education Equipment and Materials

95. Based on the average school size of 253 students in 2018/19, the unit cost of providing one school with one set of education materials and equipment US$ 30,000 and the total investment on this subcomponent (US$ 10 million), the direct beneficiaries are estimated to be 84,344 students in 333 schools over 5 cohorts. It is assumed that the beneficiaries affected by the project will grow at the same rate as the investment flow, that is, the 84,344 beneficiaries are spread over project period based on the investment distribution. Based on this, the projection of the number of beneficiaries during the project implementation years is as follows:

Table 25

Implementation (year-by-year)							
Year	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**Total**
Number of places	202	5,179	9,961	10,282	7,658	51,062	
Implementation (cumulative)							
Number of places	202	5,381	15,342	25,624	33,282	84,344	84,344

Number of beneficiaries from Sub-component (iii) Teacher Training and Assessments

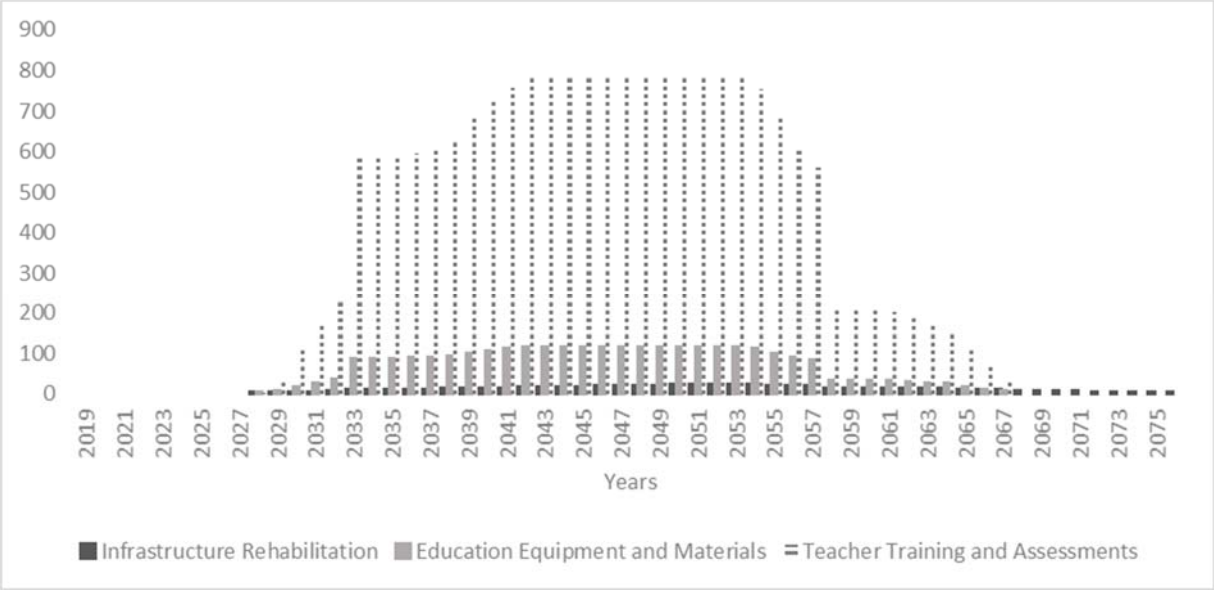
96. This sub-component would benefit all students in all general education public schools over a period of 5 cohorts. For the total investment on this subcomponent (US$ 30 million), the direct beneficiaries are estimated to be all students in general education schools. It is assumed that the beneficiaries affected by the project will grow at the same rate as the investment flow, that is, the 584,000 beneficiaries are spread over project period based on the investment distribution. Based on this, the projection of the number of beneficiaries during the project implementation years is as follows:

Table 26

Implementation (year-by-year)							
Year	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**Total**
Number of places	1,402	35,858	68,970	71,190	53,027	353,554	
Implementation (cumulative)							
Number of places	1,402	37,259	106,230	177,419	30,446	584,000	584,000

97. The cohorts of beneficiaries are calculated based on the period they enter and participate in the labor market, adjusted by incoming students. The first cohort enters the labor market in 2029. The sub-component of teacher training and assessments of US$ 30 million impacts the largest number of beneficiaries. The cohort distribution of the beneficiaries by the sub-component can be seen below.

Figure 13. Number of beneficiaries (Students) by year



Estimating the Effect of the Project on Educational Outcomes, Earnings of the Participants and Contribution to GDP

98. For each of the sub-components, the analysis assumes effect sizes of these interventions on educational outcomes for students from meta-analytic studies. Given the absence of comparable high-quality studies in relation to Georgia, the analysis in this section makes use of the finding that in-service teacher professional development programs and coaching programs can raise student achievement in the range of 0.13 to 0.25 of a standard deviation (Refer Assumptions). For the educational impact of infrastructure improvements, an average effect size of 0.38 is expected while from equipment and materials, a 0.12 standard deviation is expected.

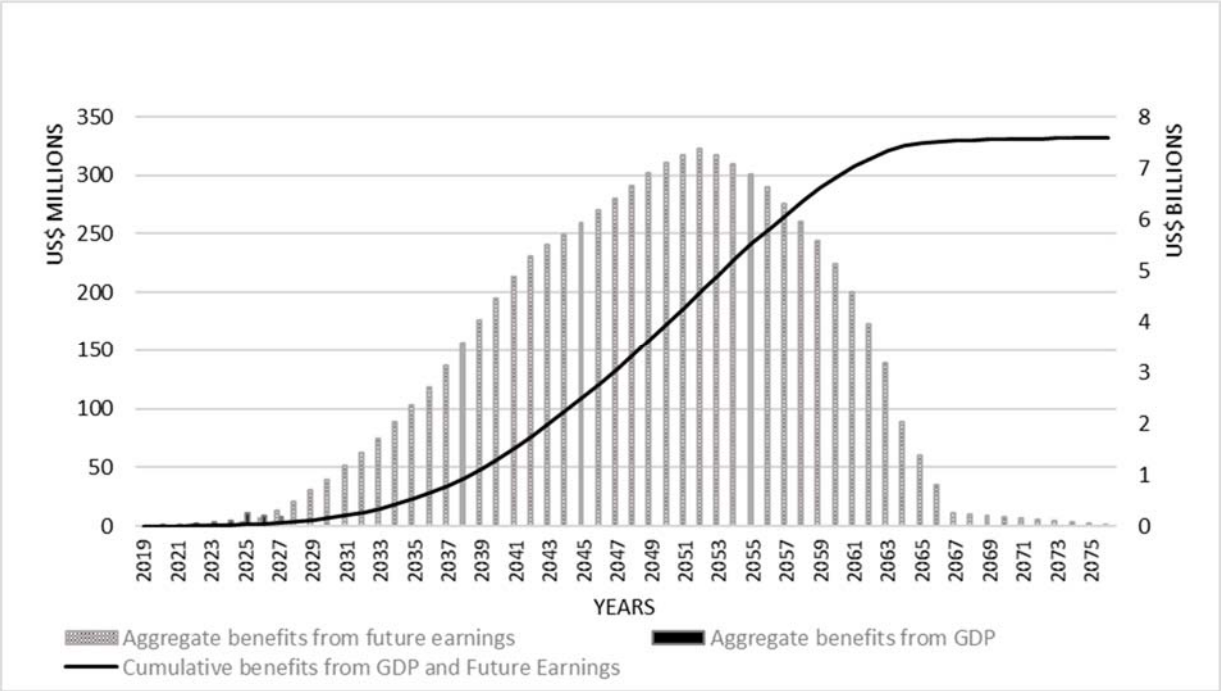
Three potential benefit scenarios are envisaged for Georgia:

Table 27

Scenario 1: Future earnings only	Accumulation of benefits after the first cohort enters the labor market in year 2022
Scenario 2: Future earnings + GDP	Accumulation of benefits from increase in GDP starting from project year 2020 as well as from accumulation of future earnings
Scenario 3: All benefits	This scenario includes both the above benefits plus the benefits from private returns due to parental savings from reduced private tutoring

99. The cumulative benefits accruing from Future earnings and GDP through human capital investments in education are shown below. The aggregate annual benefits from GDP and earnings will sustain well beyond 2028, the last year of the project.

Figure 14. Cumulative benefits from GDP and Future Earnings from Human Capital Investment



The sub-component of teacher training and assessments will likely have the largest contribution to sustaining the annual aggregate benefits followed by the subcomponents on education equipment and material and, infrastructure rehabilitation. The benefits from future earnings are estimated until 2076, when the last cohort of direct beneficiaries will exit. While the aggregate annual benefits from the GDP will slowly phase out, the overall impact is estimated to be sustained well beyond the project period.

Figure 15. Benefits from Future Earnings

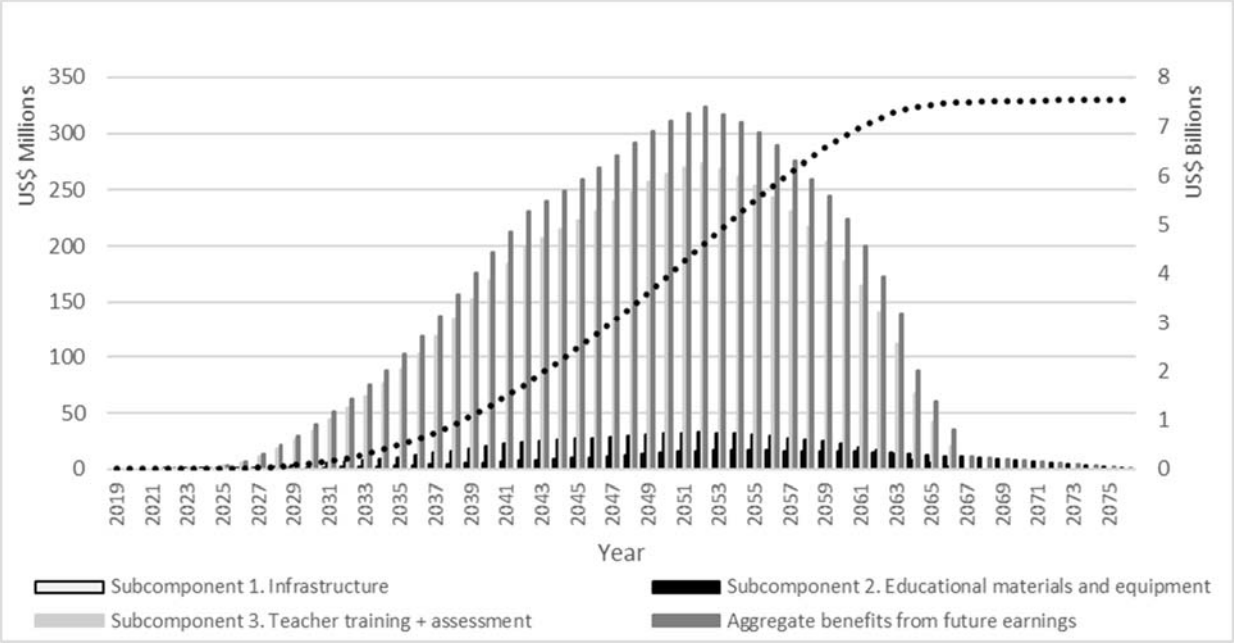


Figure 16. Benefits from GDP

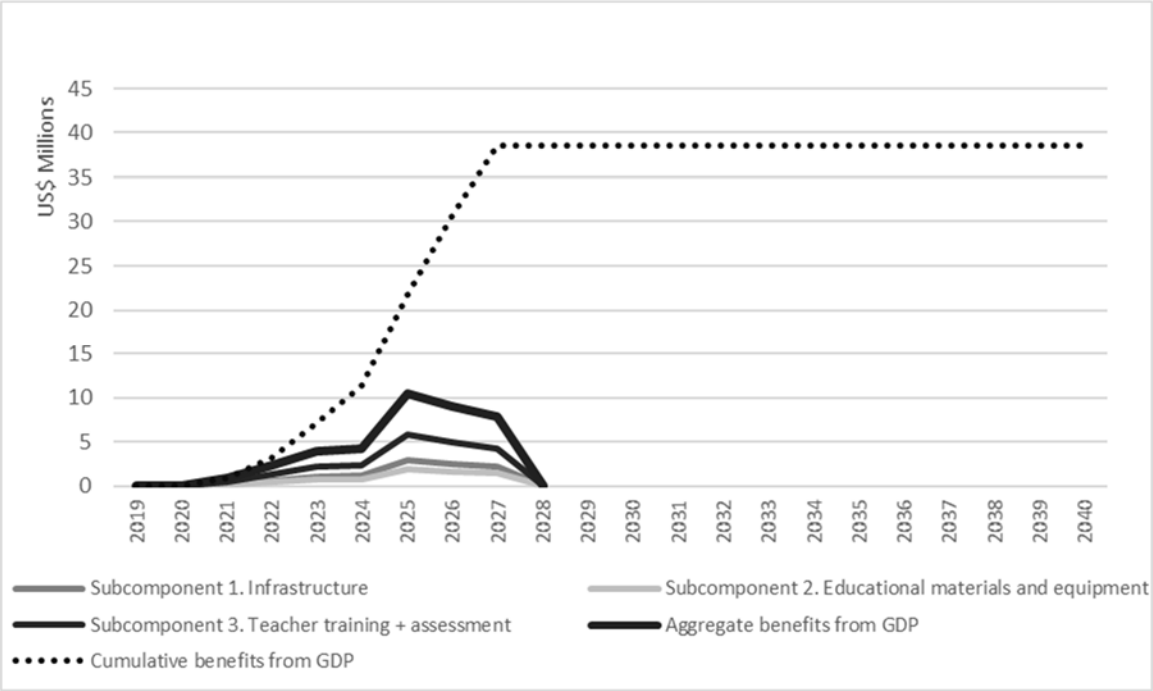
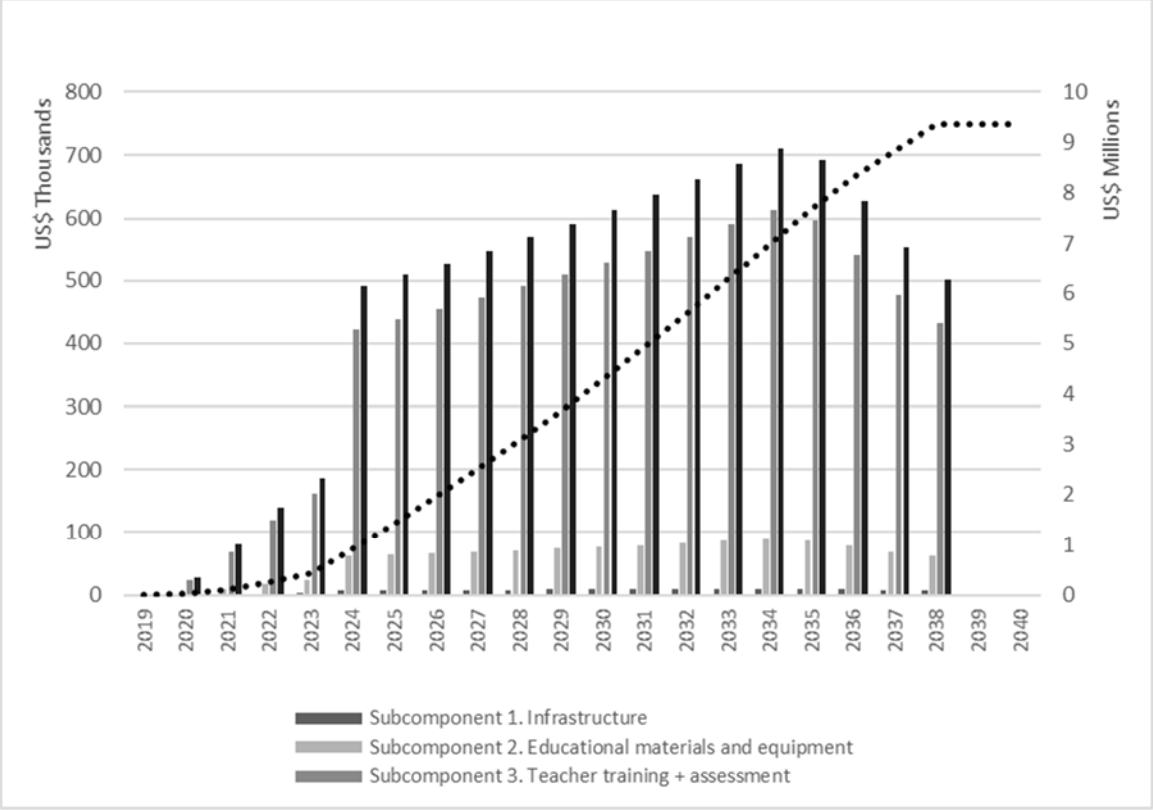


Figure 17. Benefit from Parents' Savings (private returns) through reduced from private tutoring



Cost Benefit Summary and the Internal Rate of Return

100. The analysis shows the IRR under all three benefit scenarios in the range of 23% to 28%. While the effect of the private returns are not large enough to affect the CBR and the IRR, in actual terms these represent valuable household savings given the per capita GDP in Georgia is considerably lower in comparison to neighboring Eastern European countries such as Ukraine, Serbia, Estonia, although highest amongst the Caucuses.

Table 28: Internal Rate of Return

At 5% Discount Rate	Internal Rate of Return		
Scenarios	**1: Future Earnings**	**2: Future Earnings + GDP**	**3: Future Earnings + GDP + Private Savings**
Subcomponent 1: Infrastructure Rehabilitation	13%	16.4%	16.5%
Subcomponent 2: Education Equipment and Materials	23%	27%	27%
Subcomponent 3: Teacher Training and Assessments	36%	40%	41%
Overall Component on General Education	23.5%	**27%**	27.5%

Sensitivity Analysis

101. After converting the benefits and costs in present value terms, the benefits to cost ratio and the NPV is reported here for three discount rates of 5%, 10% and 15% but was tested for multiple scenarios. Both the NPV and the BCR are strong positive and large even at higher discount rates indicating that this is a worthy investment. The results along with the sensitivity are shown below.

Table 29: Sensitivity Analysis

Discount rate	**5%**	**10%**	**15%**
Scenario 1	**Future Earnings only**		
Present Value of Benefits	1,698,805,940	487,214,202	171,029,079
Present Value of Costs	80,923,515	59,223,665	44,572,359
Benefit Cost Ratio	21.0	8.2	3.8
Net Present Value	1,617,882,426	427,990,537	126,456,720
Internal Rate of Return	23.5%		
Scenario 2	**Future earnings + GDP**		
Present Value of Benefits	1,724,873,647	505,290,266	183,838,585
Present Value of Costs	80,923,515	59,223,665	44,572,359
Benefit Cost Ratio	21.3	8.5	4.1
Net Present Value	1,643,950,132	446,066,602	139,266,226
Internal Rate of Return	26.9%		
Scenario 3	**Future earnings + GDP + Private Savings**		
Present Value of Benefits	1,729,760,241	508,041,914	185,493,271
Present Value of Costs	80,923,515	59,223,665	44,572,359
Benefit Cost Ratio	21.4	8.6	4.2
Net Present Value	1,648,836,726	448,818,250	140,920,911
Internal Rate of Return	27.5%		

ANNEX 6: Draft DPO Policy Matrix under Discussion

Georgia I2Q - Innovation, Inclusion and Quality Project

Policy Issue	Objective	Policy Actions	Responsible Party	Timeframe
Lifelong incomes and breaking inter-generational poverty is strongly correlated with education especially in the **early years**. Contextual constraint: The provision is strongly dependent on the Ministry of Finance's inter-governmental fiscal transfers to the municipalities, who are responsible to secure -pre-school services.	Increase Access to pre-school education to 80% by 2025;	1) Government is planning to expand pre-school access to reach 80% by 2025; this will require an increase in capital infrastructure investment and minimum level of guarantee for recurrent costs 2) Increase funding of preschools by x% via the intergovernmental fiscal transfers 3) Initiate policy for guaranteeing minimum transfers for preschool services	Ministry of Finance	2020-2025
For the 21st century worker and learner, Georgia needs to modernize the **school and preschool environment** (e.g. utilizing open spaces and energy efficient means) in line with best examples in the world (EU, USA) Current environment: Pre-school and general education infrastructure designs are still based on old settings	Percentage of students benefitting from conducive learning environment increased via infrastructure improvements	1) Update/introduce new standards for physical dimensions, spaces and resources (that support conducive learning environment and offer healthy offerings, energy efficient, accessible and safe) in line with international best practice (such as in EU countries) 2) Update interior and exterior designs for rehabilitation of pre-schools and general education	Ministry of Education (with World Bank Georgia I²Q project) and key line ministries involved	Completed by 2019 Implemented under Georgia I²Q from 2020-2025.

and conditions.		school buildings in line with best practice models 3) Conduct national open competition on best modern school designs 4) Carry out rehabilitation of targeted educational institutions		
Education is as good as the **quality of teachers and ECD professionals**: The qualifications of teachers are low. New teacher training approaches and professional development support at the school level are needed for pre-school, general education and for teacher preparation at universities.	A sustainable school-based teacher professional development model encouraging peer learning for rapid diffusion of good practices and coaching based on classroom observation implemented (Number of schools/preschools where whole school approach is implemented) Number of alliances between schools and universities increased to enhance the practical aspects of teacher preparation programs.	1) Complete the skills strengthening of all pre-school and general education teachers. 2) Develop new teacher Professional Development programs (in-service training models) and support improvement of in-service teacher training programs (learning from international expertise and universities from EU & USA) in close collaboration with TPDC and local universities and national experts. Inclusive education should be part of ongoing in-service and pre-service teacher education programs.	Ministry of Education (with World Bank Georgia I^2Q project)	2020-2025
Fully functional **school autonomy** is needed to improve education outcomes. Considering Georgia's *average* scores in both PISA and TIMSS, the most recent results (2015) demonstrate some	Accountability and incentive structure in place at the school level to encourage better performance. Decreasing share of students performing below level 2 in PISA;	1) Review existing regulations, standards and administrative procedures to improve effectiveness of teaching cadre and the management of schools including recruitment and evaluation policies	Ministry of Education with stakeholders (principals) (with World Bank Georgia I^2Q project)	2019-2025

progress over time (PISA, TIMSS). That said, Georgia remains far behind most countries that choose to participate in these tests. Despite progress in recent years, Georgia is still characterized by very substantial in-country differences in performance: by grade, location, poverty prevalence at the school level, gender, students' educational resources, and school resources. The large within-country disparity in TIMSS and PISA scores reflects deep cultural divides and socio-economic gaps within the Georgian society.	Addressing unequal distribution of results by socio-economic status in international assessments	2) Introduce school improvement standards and process to ensure achievement of targets. 3) Continued participation in international assessments, robust system of national assessments put in place, application of results to inform future reforms of teaching and learning;		
The share of **expenditure on education** as a percentage of GDP is relatively low in Georgia and pupil-teacher ratio (PTR) is relatively low.	Increased spending on education as a percentage of GDP by 2022 – also accompanied by increased efficiencies	1) Develop scheme to increase funding to ensure proper compensations and merit increases to attract and sustain the best teachers in the profession. 2) Analyze and update PTR targets for different sizes of schools/location with implementation target (efficiency) to be reached by year 2030.	Ministry of Finance with Ministry of Education (policy and procedural support through Georgia I^2Q project)	2020-2025
Attracting talented young individuals into teaching is perhaps the most	Reduction in the number of	Develop strategy to attract talented individuals into teaching will require	Ministry of Finance/Ministry	2020-2025

pressing challenge in Georgia. Notwithstanding the recent increases in teacher salaries and differentiated pay scheme, overall salary remains low and may not be appealing for talented candidates	pension age teachers. [81](By 2021 the share of pension-age teachers does not exceed 15 percent and by 2023 this share does not exceed 5 percent); At least half of the cohorts enrolled in new teacher preparation programs starting in 2019 demonstrate high average achievement in university entrance exams; Competitive pay tied to teacher accountability and performance; mechanisms in place to dismiss teachers for serious issues such as misconduct, child abuse and poor performance.	efforts targeting salary structure, oversupply of teachers, the prestige of the profession and the selectivity of entry into teacher preparation programs.	of Education (Support through Georgia I^{2}Q project)	
The **implementation of new curriculum** remains a challenge and school community needs further support to implement active and collaborative learning to ensure mastery of 21st and critical thinking skills and not utilizing digital	Number of schools implementing modern teaching and learning process through school-based curriculum increased	Introduction of accessible[82] learning modules, digital material and modern approaches accompanied with proper training offering to ensure utilization in Georgian schools. Engaging Higher education institutions	Ministry of Finance with Ministry of Education (policy and procedural support through Georgia I^{2}Q	2020-2025

[81] Policies to motivate a majority of current 25 percent of pension-age teachers to officially retire, these would eventually leave space to allow more teachers already in the system full-time positions and hire new teachers down the road from the pool who would be completing the new training program by 2023.
[82] Proposed learning materials would be accessible for students with print disabilities.

functionalities.		in support of teacher preparation and offerings. Incentivizing contribution and innovations using funds for good ideas to ensure support of all stakeholders in the education reform efforts.	project)	
Reforming education require **effective communication strategy**, community & stakeholders support, and a behavioral change.	Effective communication strategy, community and stakeholder support system in place and operational.	Establish a forward-looking national communication strategy with realistic action plan to ensure behavioral change and full support to education reform and schools improvement while utilizing active community participation.	Ministry of Education with support from Georgia I^2Q project.	2020-2025

ANNEX 7: Communication Strategy

Georgia I2Q – Innovation, Inclusion and Quality Project

Changing the Culture of Learning for the 21st century Learner and Worker Engagement, Advocacy and Behavior Change

Introduction

102. The government of Georgia has set out a goal to improve productivity, innovations and competition. To achieve this, then government needs to invest in its human capital. In return greater level of productivity, innovation and competitiveness will result in increased economic growth and rise in salaries and incomes. Concurrently citizens in Georgia are demanding with increasing resolve a better education for their children. The Government of Georgia (GoG) is embarking in a far-reaching reform effort to significantly enhance the quality and relevance of learning and provide students with the skills and knowledge necessary to carry more fulfilling and productive lives boosting overall productivity, economic growth and earning combined with a reduction in poverty levels.

103. This ambitious reform effort foresees a deep transformation of the education system embodied in the "whole school approach" and the transition from a traditional teaching process towards learning centered on the student. The GoG has requested the World Bank to support the reform process and prepare the Innovation and Quality Project (I^2Q Project). The necessary transformation in the education system will call for a culture change in Georgian society that new policies and interventions at the technical level will not achieve by themselves. The I^2Q Project therefore proposes a substantive communications component to support the various elements of the reform and accelerate the process of change.

Overall objective

104. The overall objective of the communications component is to advance education reform in Georgia by helping stakeholders coalesce around a shared vision, rallying public support and accelerating the adoption of new behaviors by education professionals.

Approach

105. This communications component would entail a two-pronged approach – *Engagement*, focusing on providing space for the Ministry of Education (MESCS) to interact with key stakeholders, solicit their inputs and build a coalition to advance the reform and *Advocacy*, aiming at fostering public understanding on the value of modern learning and building trust in the system as it is being overhauled.

1. ***Engagement***. MESCS will greatly benefit from involving key stakeholders early in the design of the reform process and, when appropriate, solicit inputs on specific issues. The project will help strengthen or establish mechanisms for systematic interaction with education professionals and external stakeholders. An important group to tap into would be students from secondary public schools. Students are direct beneficiaries of the reform, can be quite articulate in describing the challenges of the current system and could become an important force in advocating for change.

The Engagement effort could include, among others, the following activities:

- Strengthen or establish working groups of school principals, teachers and students that would accompany policy-makers in the design of specific measures and channel user feedback
- Help articulate a clear vision for the transformation of the education sector and rally behind it all key internal stakeholders, who in turn, will become instrumental in bringing the Georgian public on board
- Build a coalition of external stakeholders – NGOs, trusted public figures, private sector representatives, etc. - to support education reform and ensure its continuity over the long term
- Facilitate the establishment of a mechanism of social accountability to enable the monitoring of the delivery of high-quality education services

2. ***Advocacy.*** Georgians value education highly as illustrated by the number of parents who go out of their way to provide what they consider to be the best options for their children's schooling or by the investments they do in private tutoring. There does not seem to be, however, a shared understanding of the real problems affecting the education system, including the fact that children are not learning properly nor developing the types of skills that will enable them to live fulfilling lives and find good jobs in the 21st century.

The Advocacy effort could include, among others, a series of communications campaigns to:

- Raise awareness of the shortcomings of the current education system and how it is preventing Georgian youth from thriving
- Promote the overall reform agenda and rally support for its specific policies
- Showcase 21st century skills and explain their importance
- Identify early adopters and champions amongst education professionals and parents and role model desired mindsets, skills and behaviors at scale
- Sensitize parents about the importance of early childhood development
- Foster the full participation of ethnic minorities in the education system
- Document results of the reform and amplify their reach
- Elevate the prestige of the teaching profession and increase trust in the public school system
- Help manage reputational risks associated with the reform and the introduction of specific measures

Linkages to project components

106. In addition to the activities described above, there will be a series of discrete interventions to support the communication needs of specific components through engagement and advocacy. For instance, a continuous assessment approach (part of the General Education component) will necessitate a difficult mindset change amongst teachers, parents, and school directors, who typically would be resistant to modifying traditional testing and grading in lieu of continuous skills assessment and improvement feedback. To support this behavior change, an appropriate communications intervention will be designed and implemented.

Implementation arrangements

107. The Communications Component 4.2 will be implemented by the PMU in close coordination with MESCS's

Communications Unit and the various agencies responsible for the implementation of the other project components. It is expected that the PMU will need to outsource several activities to external organizations (i.e. communications firms, advocacy NGOs, audiovisual production companies)

Monitoring and evaluations

108. As an integral part of the communications effort, the PMU will conduct opinion research on the public's and stakeholder's understanding of learning, the importance of 21st century skills and the need for changes in education policy. The research will include quantitative surveys (baseline, tracking and endline surveys), focus groups as well as sentiment analysis through social media. This opinion research will help inform the various communications campaigns and will also serve as an indicator of the change in understanding and attitudes of the public and other key stakeholder towards the education system and the efforts to modernize it.

ANNEX 8: List of World Bank Task Team

Georgia I2Q – Innovation, Inclusion and Quality Project

Soren Nellemann	Senior Economist & Task Team Leader, GED03
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Subhashini Rajasekaran	Education Specialist, GED03
Dessislava Valerieva Kuznetsova	Education Specialist, GED03
Micheline Frias	Education Consultant, GED03
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Marta Helena Reis de Assis	Senior Program Assistant, GED03
Lela Ghongadze	Program Assistant, ECCGE

ANNEX 9: Map of Georgia (IBRD GEO33410)

Georgia I2Q – Innovation, Inclusion and Quality Project