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Report No: PAD1332

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED LOAN

IN THE AMOUNT OF US$178 MILLION

TO THE

REPUBLIC OF ECUADOR

FOR A

SUPPORTING EDUCATION REFORM IN TARGETED CIRCUITS PROJECT

September 9, 2015

Education Global Practice
Latin America and the Caribbean Region

CURRENCY EQUIVALENTS

(The U.S. dollar is the official currency of Ecuador, effective January 2000)
Currency Unit == U.S. dollar
US$1 = US$1

FISCAL YEAR
January 1 – December 31

ABBREVIATIONS AND ACRONYMS

BCE	Central Bank of Ecuador *(Banco Central de Ecuador)*
CAF	Andean Development Corporation *(Corporación Andina de Fomento)*
CCU	Treasury Single Account *(Cuenta Corriente Única)*
CEL	Online Educational Community *(Comunidad Educativa en Línea)*
CGE	Comptroller General of the State *(Contraloría General del Estado)*
CGP	National Coordination of Planning *(Coordinación General de Planificación)*
CNGE	National Strategic Management Coordination Unit *(Coordinación Nacional de Gestión Estratégica)*
COPLAFIP	Organic Code for Planning and Public Finance *(Código Orgánico de Planificación y Finanzas Públicas)*
DA	Designated Account
DNESI	National Directorade of Special and Inclusive Education (*Dirección Nacional de Educación Especial e Inclusiva)*
DAIE	Directorate for Analysis and Educational Information *(Dirección de Análisis e Información Educativa)*
DNI	National Directorate for Infrastructure *(Dirección Nacional de Infraestructura)*
ECE	Early Childhood Education
EGB	Basic General Education *(Educación General Básica)*
EMIS	Education Management Information System
EMP	Environmental Management Plan
E-Sigef	Financial Administration System *(Sistema de Administración Financiera)*
ESMF	Environmental and Social Management Framework
FMA	Financial Management Assessment
GoE	Government of Ecuador
GRM	Grievance Redress Mechanism
GRS	Grievance Redress Service
GUEM	Millennium Schools Management Unit (*Gerencia de las Unidades Educativas del Milenio*)
IBRD	International Bank for Reconstruction and Development
ICT	Information and Communications Technologies
IDB	Inter-American Development Bank
IPPF	Indigenous Peoples Planning Framework
INEVAL	National Institute for Educational Assessment *(Instituto Nacional de Evaluación Educativa)*

ISN	Interim Strategy Note
LOEI	Organic Law for Intercultural Education *(Ley Orgánica de Educación Intercultural)*
LOEP	Organic Law for Public Enterprises *(Ley Orgánica de Empresas Públicas)*
MINEDUC	Ministry of Education (*Ministerio de Educación*)
MOSEIB	Intercultural Bilingual Education Model *(Modelo de Educación Intercultural Bilingüe)*
MROE	Reorganization Model for the provision of Education *(Modelo de Reordenamiento de la Oferta Educativa)*
NDP	National Development Plan
OM	Operationl Manual
PDE	Ten-year Education Plan *(Plan Decenial de Educación)*
PDO	Project Development Objective
PNBV	National Development Plan for Well-Being *(Plan Nacional del Buen Vivir)*
POM	Project Operational Manual
RPF	Resettlement Policy Framework
SA	Secretariat for the Environment *(Secretaría de Ambiente)*
SAE	Undersecretariat for School Administration *(Subsecretaría de Administración Escolar)*
SDP	Undersecretariat for Professional Development
SECOB	Work Contracting Service *(Servicio de Contratación de Obras)*
SEIB	Undersecretariat for Bilingual Intercultural Education *(Subsecretaría de Educación Intercultural Bilingüe)*
SENPLADES	National Secretariat for Planning and Development *(Secretaría Nacional de Planificación y Desarrollo)*
SETEDIS	Technical Secretariat for Inclusive Management in Disabilities *(Secretaría Técnica para la Gestión Inclusiva en Discapacidades)*
SMP	Social Management Plan
SORT	Systemic Operations Risk Rating Tool
SPI	Interbank Payment System (*Sistema de Pagos Interbancarios*)
STC	Contracting Technical Under Directorate (*Subdirección Técnica de Contrataciones)*
SUIA	Unified Environment Information System (*Sistema Unificado de Información Ambiental*)
UDAF	Financial Administration Unit (*Unidad de Administración Financiera*)
UEM	Millennium Schools (*Unidad Educativa del Milenio*)
UNAE	National Education University (*Universidad Nacional de Educación)*
VGE	Vice-Ministry for Education Management (*Viceministerio de Gestión Educativa*)

Regional Vice President:	Jorge Familiar
Country Director:	Alberto Rodriguez
Senior Global Practice Director:	Claudia Maria Costin
Practice Manager:	Reema Nayar
Task Team Leader:	Marcelo Becerra

REPUBLIC OF ECUADOR
Supporting Education Reform in Targeted Circuits Project

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Supporting Education Reform in Targeted Circuits Project (P152096)

PROJECT APPRAISAL DOCUMENT

LATIN AMERICA AND CARIBBEAN

EDUCATION GLOBAL PRACTICE (GEDDR)

Report No.: PAD1332

Basic Information			
Project ID P152096	EA Category B - Partial Assessment	Team Leader Marcelo Becerra	
Lending Instrument Investment Project Financing	Fragile and/or Capacity Constraints [ ] Financial Intermediaries [ ] Series of Projects [ ]		
Project Implementation Start Date 07-Dec-2015	Project Implementation End Date 30-Jun-2020		
Expected Effectiveness Date 07-Dec-2015	Expected Closing Date 31-Dec-2020		
Joint IFC No			
Practice Manager/Manager Reema Nayar	Senior Global Practice Director Claudia Maria Costin	Country Director Alberto Rodriguez	Regional Vice President Jorge Familiar

Borrower: Republic of Ecuador			
Responsible Agency: Ministry of Education			
Contact:	Jose Diego Ramos Benalcazar	Title:	Under Secretary of School Management
Telephone No.:	593-3961300	Email:	diego.ramos@educacion.gob.ec

Project Financing Data(in USD Million)					
[X] Loan	[ ] IDA Grant	[ ] Guarantee			
[ ] Credit	[ ] Grant	[ ] Other			
Total Project Cost:	201.00		Total Bank Financing:	178.00	
Financing Gap:	0.00				

Financing Source	Amount
Borrower	23.00
International Bank for Reconstruction and Development	178.00
Total	201.00

Expected Disbursements (in USD Million)

Fiscal Year	2016	2017	2018	2019	2020	2021
Annual	20.00	40.00	70.00	30.00	18.00	0.00
Cumulative	20.00	60.00	130.00	160.00	178.00	178.00

Institutional Data

Practice Area (Lead)

Education

Cross Cutting Topics

[ ] Climate Change
[ ] Fragile, Conflict & Violence
[X] Gender
[ ] Jobs
[ ] Public Private Partnership

Sectors / Climate Change

Sector (Maximum 5 and total % must equal 100)

Major Sector	Sector	%	Adaptation Co-benefits %	Mitigation Co-benefits %
Education	General education sector	100		
Total		100		

☑ I certify that there is no Adaptation and Mitigation Climate Change Co-benefits information applicable to this project.

Themes

Theme (Maximum 5 and total % must equal 100)

Major theme	Theme	%
Human development	Education for all	50
Human development	Education for the knowledge economy	50
Total		100

Proposed Development Objective(s)	
The Project Development Objective is to increase enrollment in early education and improve the persistence rate in lower secondary education and upper secondary education in the targeted circuits.	
Components	
Component Name	**Cost (USD Millions)**
Component 1: Improving school services in targeted circuits	196.80
Component 2: Strengthening Planning, Management and Evaluation Capacity at MINEDUC	4.20

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

Compliance	
Policy	
Does the project depart from the CAS in content or in other significant respects?	Yes [ ] No [X]
Does the project require any waivers of Bank policies?	Yes [ ] No [X]
Have these been approved by Bank management?	Yes [ ] No [X]
Is approval for any policy waiver sought from the Board?	Yes [ ] No [X]
Does the project meet the Regional criteria for readiness for implementation?	Yes [X] No [ ]

Safeguard Policies Triggered by the Project	**Yes**	**No**
Environmental Assessment OP/BP 4.01	**X**	
Natural Habitats OP/BP 4.04		**X**
Forests OP/BP 4.36		**X**
Pest Management OP 4.09		**X**
Physical Cultural Resources OP/BP 4.11	**X**	

Indigenous Peoples OP/BP 4.10	**X**	
Involuntary Resettlement OP/BP 4.12	**X**	
Safety of Dams OP/BP 4.37		**X**
Projects on International Waterways OP/BP 7.50		**X**
Projects in Disputed Areas OP/BP 7.60		**X**

Legal Covenants

Name	**Recurrent**	**Due Date**	**Frequency**
Key Project Staff in GUEM and SECOB in place on a full-time basis		(60) days after the Effectiveness Date.	

Description of Covenant

Schedule 2, Section I. A, (iii)
Ensure that the four specialists working in the Project team within GUEM (monitoring and evaluation, procurement, financial management and social specialists), and the procurement and financial management specialists working in the team within SECOB are assigned to work full time starting sixty (60) days after the Effectiveness Date.

Legal Covenants

Name	**Recurrent**	**Due Date**	**Frequency**
Terms of Reference to hire an Independent Auditor		Not later than 120 days after the Effective Date	

Description of Covenant

Schedule 2, Section B.4
Borrower shall submit to the Bank for no-objection the terms of reference for the hiring of an independent auditor.

Legal Covenants

Name	**Recurrent**	**Due Date**	**Frequency**
School consolidation proposal including transportation arrangements	Yes		Continuous

Description of Covenant

Schedule 2, Section V.1, (a), (i)
Furnish to the Bank: (i) a school consolidation proposal including transportation arrangements; (ii) the updated Procurement Plan; (iii) the relevant SMP or IPP, as applicable; and (iv) the relevant RAP, if applicable, all in a manner and with contents acceptable to the Bank.

Legal Covenants

Name	**Recurrent**	**Due Date**	**Frequency**
Micro-Plan for transportation	Yes		Continuous

arrangements for each "School Hub"			

Description of Covenant

Schedule 2, Section V.2
The Borrower, through MINEDUC, for the purposes of carrying out Part 1(a)(i) of the Project, shall prepare a micro-plan for transport arrangements for each School Hub following the criteria and methodology set forth in the MINEDUC's guidelines *"Modelamiento del Transporte Escolar en Funcion del Reordenamiento de la Oferta Educativa"* included in the Operational Manual.

Legal Covenants

Name	Recurrent	Due Date	Frequency
Hiring entity to perform technical reviews of school transportation arrangements		Not later than 18 months after the Effective Date	

Description of Covenant

Schedule 2, Section V.3 (a)
Select and contract an entity, independent from the Borrower with experience and qualifications acceptable to the Bank for the carrying out of technical reviews of the implementation of the arrangements for school transportation for each school hub built under the Project (Transportation Review).

Legal Covenants

Name	Recurrent	Due Date	Frequency
Technical Reviews of implementation of school transportation arrangements	Yes		Continuous

Description of Covenant

Schedule 2, Section V.3 (b)
Carry out at least three Transportation Reviews during Project implementation, and thereafter, each time, prepare a report of such scope and in such detail as the Bank shall reasonably request.

Legal Covenants

Name	Recurrent	Due Date	Frequency
Transportation Review report findings, conclusions and recommendations	Yes		Continuous

Description of Covenant

Schedule 2, Section V.3 (d)
Furnish to the Bank as soon as available, but in any case not later than two months after each review, the Transportation Review report findings, conclusions and recommendations, for the Bank's review and comments.

Legal Covenants			
Name	**Recurrent**	**Due Date**	**Frequency**
Borrower's counterpart funds	Yes		Continuous

Description of Covenant

Schedule 2, Section V.4
Without limitation to the provision of Section 5.03 of the General Conditions, the Borrower shall provide the counterpart funds required for Project implementation currently estimated in the amount of Twenty-three Million Dollars (US$23,000,000), distributed in accordance with the table set forth in the Annex to the Loan Agreement, as such amount and table may be revised from time to time by mutual agreement, through an exchange of letters and communicated by the Bank by notice to the Borrower.

Conditions

Source Of Fund	Name	Type
IBRD	SECOB Agreement has been executed on behalf of the Borrower	Effectiveness

Description of Condition

Article IV, 4.01, (a)
The SECOB Agreement has been executed on behalf of the Borrower, through MINEDUC and SECOB in a manner acceptable to the Bank.

Source Of Fund	Name	Type
IBRD	Administrative act (*Acuerdo Ministerial*) approving the Operational Manual (OM) has been issued	Effectiveness

Description of Condition

Article IV, 4.01, (b)
The pertinent administrative act (*Acuerdo Ministerial*) approving the Operational Manual (OM) has been issued.

Team Composition

Bank Staff

Name	Role	Title	Specialization	Unit
Marcelo Becerra	Team Leader (ADM Responsible)	Lead Education Specialist	Lead Education Specialist	GEDDR
Jose Yukio Rasmussen Kuroiwa	Procurement Specialist	Senior Procurement Specialist	Senior Procurement Specialist	GGODR
Ana Lucia Jimenez Nieto	Financial Management Specialist	Financial Management Specialist	Financial Management Specialist	GGODR
Christopher James Wahoff	Team Member	Junior Professional Associate	Junior Professional Associate	GEDDR

Ciro Avitabile	Team Member	Senior Economist	Senior Economist	GEDDR
Dianna M. Pizarro	Safeguards Specialist	Senior Social Development Specialist	Senior Social Development Specialist	GSURR
Maria Caridad Gutierrez Cordoba	Team Member	Team Assistant	Team Assistant	LCCEC
Maria Elena Paz Gutzalenko	Team Member	Program Assistant	Program Assistant	GEDDR
Maria Virginia Hormazabal	Team Member	Finance Officer	Finance Officer	WFALN
Mariana Margarita Montiel	Counsel	Senior Counsel	Senior Counsel	LEGLE
Nelson Gutierrez	Team Member	Senior Social Protection Specialist	Senior Social Protection Specialist	GSPDR
Pablo Facundo Cuevas	Team Member	Senior Economist	Senior Economist	GPVDR
Raul Tolmos	Safeguards Specialist	Environmental Specialist	Environmental Specialist	GENDR
Reema Nayar	Practice Manager	Practice Manager	Education	GEDDR

Extended Team

Name	Title	Office Phone	Location
Ernesto Laval	EMIS Specialist		England
Irayda Ruiz Bode	School Infrastructure Specialist		Guatemala
Juan Sanguinetti	Economist		Argentina
Marcelo Rodriguez	Operational Manual Consultant		Ecuador
Mariana Yumbay	Social Development Specialist		Ecuador
Violeta Arancibia	Teachers Policy Specialist		Chile

Locations

Country	First Administrative Division	Location	Planned	Actual	Comments
Ecuador	Pichincha	Provincia de Pichincha		**X**	
Ecuador	Los Rios	Provincia de Los Rios		**X**	

Ecuador	Guayas	Provincia del Guayas		**X**	
Ecuador	Bolivar	Provincia de Bolivar		**X**	
Consultants (Will be disclosed in the Monthly Operational Summary)					
Consultants Required?	Consultants will be required				

I. STRATEGIC CONTEXT

A. Country Context

1. Ecuador has experienced a period of political stability during the past decade and the Government has invested important resources to reduce overall inequality and promote social inclusion, focusing investments in infrastructure and social sector projects. Between 2006 and 2014, poverty fell from 37.6 percent to 24.5 percent (measured by the national poverty line) and extreme poverty fell from 16.9 percent to 8 percent (living on less than $1.25 per day, Purchasing Power Parity (PPP). Income of the poorest 40 percent increased a total of 8.8 percent over the last 14 years while the national average increase was of 5.8 percent[i]. However, the decrease in the price of oil beginning in November 2014 has stunted the flow of national revenue and results achieved in the social sphere largely financed from public resources over the past decade might be negatively impacted.

2. The Government of Ecuador (GoE) is advancing in the implementation of a wide reform in the education sector. In order to increase the efficiency and agility of public entities, GoE is committed to promoting long-term, comprehensive, and sustainable investments in Ecuador's human capital. The Government has prioritized key issues related to education, health and social well-being. At the cornerstone of these structural reforms, GoE has emphasized the education sector, setting ambitious goals to universalize access and improve quality as catalyzers for positive effects throughout the sector.

B. Sector and Institutional Context

3. In an aim to strengthen the education system, the GoE has conducted multiple institutional changes over the last 8 years based on: the Ecuadorian Constitution of 2008; the Fundamental Law of Intercultural Education of 2011 (*Ley Orgánica de Educación Intercultural, LOEI*); the Ten-year Education Sector Plan 2006-2015 (*Plan Decenal de Educación, PDE*); and the National Development Plan 2013-2017 *("Plan del Buen Vivir"*). The GoE increased the allocation of resources to support the education sector: expenditure rose from 2.6 percent of GDP in 2006 to 5 percent in 2014, reaffirming its decisive and strong political commitment. The four key policies of the educational reform include: (i) the reorganization of the education opportunities supply through the creation of "hubs" or groups of pre-tertiary academic levels; (ii) improvements in infrastructure and equipment; (iii) the implementation of a national system of evaluation for students, teachers, and institutional performance assessments; and (iv) a new system of teachers' professional development.

4. The Ley Orgánica de Educación Intercultural led to important changes in education system's structure. The 2011 LOEI has led to important changes in the education system's structure. Based on the LOEI, the pre-tertiary education system is as follows: (i) four years of early education (0 to 4 years old), divided into two cycles: "*Inicial I*" (0 to 2 years old) and "*Inicial II*" (3 and 4 years old); (ii) ten years of compulsory general basic education (*Educación General Básica, EGB*), divided into one year of preschool (5 years old), six years of primary level (6 to 11 years old) and three years of lower secondary (EGB III, from 12 to 14 years old); and (iii) three years of upper secondary (15 to 17 years old), which includes an academic track (e.g. science, math, language) or a technical track. The system also provides for an intercultural bilingual education model (*Modelo de Educación Intercultural Bilingüe, MOSEIB*) which incorporates cultural and linguistic relevance to the national educational curriculum in targeted areas. The Ministry of Education (MINEDUC) management system also went through a significant reform,

establishing four levels of management: (i) the National Ministry (planta central); (ii) the nine (9) Zones established to cover all of Ecuador; (iii) the District level (140), and (iv) the Circuit level (1,134).

5. There have been significant improvements in both coverage and learning outcomes. Ecuador has seen significant improvements in school attendance at all levels between 2007 and 2013: (i) universal access to pre-school was almost reached; (ii) net enrollment in basic education increased from 91 percent to 95 percent; and (iii) net enrollment rate in upper-secondary increased from 52 percent to 66 percent. In 2013, around 76 percent of enrolled students attended public schools. In terms of quality, Ecuador was the country in Latin America with the highest improvement in TERCE[ii] (2013), when compared to its performance in SERCE[iii] (2006).

6. Important challenges remain in terms of attendance, equity and quality. Only 23 percent of children ages 3 and 4 were enrolled in early education in 2013. Given the robust body of evidence showing early childhood education (ECE) services can contribute to reduce the socioeconomic gradient in child development (e.g. Heckman and Cuna, 2006), differences in ECE coverage would partially explain the differences in learning outcomes and school growth trajectories in Ecuador across different socioeconomic levels. Results for the *Test de Vocabulario en Imágenes Peabody* (TVIP) among children ages 36-71 months in the poorest quartile differ by 1.21 standard deviations (sd) compared to those in the richest quartile and even more in rural areas (1.64 sd) (Schady 2014). While the gross enrollment rate in upper secondary was 83.3 percent in rural areas (2013), 96.5 percent were enrolled in urban locations for the same year. Starting from 8th grade of basic education through the end of upper secondary, dropouts are still significant and far from the national goal of increasing the net attendance rate for upper secondary education to 75 percent by 2018. Gender gaps are almost closed in basic education (gross enrollment rates for basic education (96.5 percent for girls and 95.8 percent for boys), though a small difference still persists in upper secondary (93.7 percent for girls versus 90 percent for boys). Significant differences across geographic areas and income levels persist in early education, third cycle of EGB and upper secondary. Finally, learning outcomes show significant differences within the country: the first national assessment for students in 4th and 7th EGB in 2013 (measured by an index from 0 to 1000), shows that while some provinces perform at a level above 800, others achieve less than 500 (as an example Math and Language), that is well below the sufficiency level (700).

7. Many contributing factors explain persistent inequality in education outcomes, both on the supply and the demand side**.** Factors contributing to persistent inequality in education outcomes concern both the supply and the demand side. On the supply side, infrastructure and teacher quality display differences across the country. Ecuador, together with Paraguay, Honduras, Nicaragua, and El Salvador - displays the highest within country inequality of education infrastructure (Duarte et al., 2011). The teacher assessment "*Quiero ser Maestro*" shows that in some provinces like Los Rios, teacher`s performance is considerably below the national average. On the demand side, liquidity constraints and lack of information can further explain differences in enrollment in lower and upper secondary completion. According to a sample of 5-17 year-old Ecuadorians not enrolled in school in 2013, 31 percent reported a lack of resources as their main reason for not attending school and 16 percent mentioned a lack of interest, the latter is commonly associated with a poor quality of education or, when quality is reasonable, with lack of information regarding returns to education[iv].

8. Recent reforms can potentially address quality issues. In an attempt to address quality issues, the GoE launched the Educational Opportunity Reorganization Model (*Modelo de Reordenamiento de la*

Oferta Educativa, MROE) in 2012, also called the "Millennium School" initiative (*Unidades Educativas del Milenio*, UEM). This program is based on determining "hub" schools that absorb or consolidate existing institutions from preschool to upper secondary (grades 11, 12, and 13). In a context where the school age population is expected to start declining after 2020, these "integrated schools" could improve the quality of educational opportunities by guaranteeing more efficient allocation of existing resources both physical and in human resources. The long-term target of the GoE is to reduce the current 18,400 institutions to about 5,000 "hubs" or "integrated schools", including new "hubs," expansions and renovations.

9. New criteria for the selection, promotion and training of teachers and school authorities have been introduced. As part of the strategy to improve the quality of the education inputs, new criteria for the selection, promotion and training of teachers and school authorities have also been introduced. Some GoE enacted reforms include: (i) higher standards for admission into the elite group of nationally-recognized teachers (*Magisterio Nacional*); (ii) better teacher remunerations, partially linked to evaluations; (iii) better teaching career development from a teacher's initial training to continued training and master-level education programs, and (iv) improved training system that builds on the use of new pedagogical and didactic models of discipline and the use of Information and Communications Technologies (ICTs). The National Education University (*Universidad Nacional de Educación*) has been created, following the Finnish system excellence standards, to ensure the development and provision of pre-service teacher training. In terms of school principals and authorities, the GoE has also implemented a comprehensive new strategy that includes: (i) high standards selection criteria and a competitive evaluation process, through the "*Quiero Ser Directivo*" test, which includes a propaedeutic course to enhance management capacities; and (ii) master level education on school management. High level of school management capacities are greatly needed in the case of the schools hubs in order to ensure an adequate management of large numbers of students, teachers and other personnel in all education levels as well as the maintenance of large facilities.

10. Efforts have also been made to improve equity and inclusion. The GoE has introduced a series of demand-side interventions that aim at increasing enrollment, such as: (i) the Conditional Cash Transfer Program "*Bono de Desarrollo Humano*" which provides a fixed amount of cash to all families in the poorest quintile and whose children ages 5-17 go to school; and (ii) national communication and sensitization radio and TV campaigns to emphasize the importance of education. Moreover, in order to promote greater inclusion within the system, selected "integrated schools" (at least one per district) will absorb students with disabilities in accordance with the Ecuadorian Constitution of 2008. Teachers and students throughout the system will receive sensitivity training and the GoE is in the process of developing kits and educational material that will be distributed to every eligible student.

11. There is an increased emphasis on monitoring and evaluation systems. To combat the dearth of reliable evaluations, MINEDUC has created the National Institute of Education Assessment ("*Instituto Nacional de Evaluación Educativa*", INEVAL) as an autonomous office within MINEDUC in charge of leading an unbiased collection and analysis of data provided by national assessments among students, teachers, and educational institutions. The evaluation of students starts with the "*Ser Estudiante*" assessment, which evaluates skills and learning standards for 4th, 7th and 10th grades, and ends with the "*Prueba Ser Bachiller*," assessment of each student's level of subject mastery in 13th grade. INEVAL works alongside MINEDUC to administer and assess both the "*Quiero Ser Maestro*" and "*Ser Maestro*"

exams for teachers. INEVAL is currently in the process of creating a set of indicators to measure and evaluate results on an institutional level (by school).

12. Despite the efforts and multiples changes in the sector, the MINEDUC information and management processes would benefit from increased integration to provide more reliable and complete data. MINEDUC is currently in the process of developing and determining the structure of a new system-wide approach that includes several complementary sub-systems of information. As a first step, the MINEDUC has developed the "Online Learning Community" (*Comunidad Educativa en Línea, CEL*), a school level portal where educational management is streamlined through the access and use of system-wide services available to all educational community members.

C. Higher Level Objectives to which the Project Contributes

13. The highest level objective of the proposed Project is to improve graduation and learning outcomes for all students in public schools at all education levels. The proposed Project contributes to the Bank's twin goals of eliminating extreme poverty and boosting shared prosperity by improving access to early childhood and upper secondary education as well as enhancing retention rates in lower and upper secondary among students in public schools, particularly those in disadvantaged areas. These objectives will be achieved through the combination of an innovative integrated full cycle organization within school "hubs", high-end educational infrastructure and learning facilities, better qualified teachers, and a new model of education system management. All these would complement existing demand-side interventions provided by the GoE.

14. The proposed operation is consistent with the strategic objectives set forth in the Bank's Interim Strategy Note (ISN) for Ecuador (FY2014-FY2015) discussed by the Executive Directors on April 19, 2013. The latest ISN recognizes the improvement in education outcomes in latest years and highlights the key remaining challenges, which the GoE strategy and the proposed Project address in a comprehensive and complementary manner. The proposed Project is completely aligned with three strategic priorities underlined in the ISN: (i) sustainable and inclusive economic growth; (ii) increased access to quality social services; and (iii) institutional strengthening of the public sector to improve services.

II. PROJECT DEVELOPMENT OBJECTIVES

A. PDO

15. The Project Development Objective (PDO) is to increase enrollment in early education and improve the persistence rate in lower secondary education and upper secondary education in the targeted circuits.

16. The Project would increase the quality of the school supply through improvements in the quality of the infrastructure, teacher quality, monitoring and evaluation and management information systems. As a result, the expected benefits of staying in school would increase, thus increasing the share of students benefiting from higher quality education services. In the short run, the increase in enrollment and graduation might not be associated with a dropout rate reduction, since a proportion of the additional students who enrolled might be less prepared to stay. Only after the end of the Project, there would be cohorts who would fully benefit from service improvements, thus leading dropouts to decrease in lower and upper secondary education.

B. Project Beneficiaries

17. Primary beneficiaries would be students from early education (*Inicial II*) to upper secondary in the targeted circuits. The Project would also benefit teachers, school directors, families and MINEDUC's staff at the central level and in the targeted circuits.

18. Targeted circuits.[v] The Project is aligned with the GoE national program, which is being implemented in the whole country and being financed through several complementary sources. In this context, education circuits with highest poverty rates have been previously selected to receive financing from other sources (fiscal, IDB and CAF). For the Project, 23 targeted circuits, belonging to 9 school districts[vi,] have been selected: 17 circuits in Zone 5 and 5 circuits in Zone 2 and 1 circuit in Zone 9. The selection was based on a combination of criteria that would enable piloting and evaluation in different contexts. First, given the innovative nature of the program, the Project would pilot the interventions in circuits with different levels of poverty, though all of them (with exception of one[vii]), have poverty levels higher than the national average of 60 percent (measured by NBI[viii)]: the poverty headcount of Project's districts ranges from 70 percent to 90 percent in Babahoyo, Guaranda, Milagro, Montalvo, Pedro Moncayo, Quevedo, and Ventanas and over 90 percent in Baba, Mocache, Santa Lucia, and Valencia. By targeting circuits with a level of poverty higher than the national average, the Project would reduce the between-circuits inequality. Secondly, the targeted circuits reflects a variety of contexts: both mestizo and indigenous population, "Sierra" and "Costa" school regimes, and urban and rural environments. Finally, the selection also took into account those circuits which faces high imbalance between demand and lack of proper education services supply (lack of, or, deteriorated infrastructure).

C. PDO Level Results Indicators

19. The proposed Project would have the following results indicators:

i. Enrollment in early education ("*Inicial II*") in the targeted circuits;
ii. Persistence rate from lower through upper secondary education in the targeted circuits.

III. PROJECT DESCRIPTION

A. Project Components

Component 1. Improving school services in targeted circuits (Total: US$196.8 million, Bank: US$174.5 million).

20. The objective of this component is to improve the actual and perceived quality of education services, accessed by students and families, which would lead to increases in enrollment and graduation from early childhood to upper secondary education. It would also enable a more efficient allocation of existing resources, both physical (e.g, infrastructure facilities, science labs) and in human resources. The four key policies to improve the quality of education services to be financed by the component are: (i) the reorganization of school supply, by consolidation of schools into "hubs", upgrading the infrastructure and facilities; (ii) in-service and master level training of teachers and master level training for principals; (iii) the implementation of CEL at school level and; (iv) the enhancement of special education and programs for children with disabilities, with the latter contributing to increased inclusion as well.

(a) Sub-Component 1.1. Infrastructure, Equipment and Furniture for Schools Hubs (Bank: US$ 159.5 million). This sub-component would finance technical design, construction, acquisition of equipment and furniture and supervision of school hubs in the targeted circuits, including the construction of new schools (UEMs), renovations and expansions of existing schools ("*Repotenciaciones*"). It is estimated that around 32 schools hubs would be built and about 3 schools for special education would be refurbished to adapt them to children with special needs. School hubs would encompass MINEDUC's full standards for integrated schools "hubs", including: infrastructure facilities to accommodate students throughout the "full education cycle", from early education to upper secondary (*bachillerato*); physics and chemistry labs, language classrooms, pedagogic ICT equipment, school cafeteria, a sports field and facilities for school faculty and teachers. Transportation of students to "hubs" would be financed by the GoE, when applicable, based on MINEDUC's criteria on distance and time of travelling and safety standards. Three annual Transportation Reviews would be conducted to verify compliance with the arrangements for school transportation for each school hub built under the Project. Is expected that around 45 percent of the students belonging to the targeted circuits (and about 70 percent of upper secondary students) would benefit from the new high quality facilities that foster retention and graduation by improving children's daily experience at school and by providing skills that are demanded by the labor market. The reorganization of the school supply into "hubs", would result in efficiency gains driven by reduction of small schools and better utilization of physical resources (infrastructure, labs) and human resources, contributing also to improved service delivery.

(b) Sub-Component 1.2. Professional Development for Teachers and Principals (Bank: US$8.5 million). This sub-component would finance: (i) in-service teacher training in the targeted circuits. This training would consist of a 330 hours on both content and pedagogy, to be provided by selected accredited higher education institutions. The training would take into account teachers and students' assessments and provision would be prioritized to the weakest performers; (ii) graduate degrees in selected programs for teachers belonging to the targeted circuits, provided by select accredited institutions. Priority subjects would be: subjects for upper secondary level (notably mathematics, physics and biology), inclusive and special education studies, and bilingual and intercultural education; (iii) graduates' degrees in school management programs for principals and school management staff belonging to the targeted circuits, provided by selected accredited institutions. Moreover, this sub-component may include technical assistance to be provided by the Bank to pilot classroom observations on teacher practices.

(c) Sub-Component 1.3. Academic Management System at School Level- CEL - (Bank: US$5.5 million). This sub-component would finance the implementation of CEL in all schools in the targeted circuits, including the provision of computers, internet connectivity, and training to all public schools teachers.

(d) Sub-Component 1.4. Services for Students with disabilities and Special Education (Bank: US$ 1 million). This sub-component would finance: (i) the provision of technical, didactic, and disability-specific materials to educational facilities at the district level[ix]; (ii) teacher training in areas that focus pedagogy on educational needs that arise in the course of a student´s individual development; and (iii) implementation of campaigns to raise awareness of the community to promote the enrollment of children with disabilities.

Component 2. Strengthening Planning, Management and Evaluation Capacity at MINEDUC (Total: US$4.1 million; Bank US$3.5 million).

21. The objective of this component is to strengthen MINEDUC's planning, management and evaluation capacity , including: (i) the development of modules of the management information system: (ii) the enhancement of GUEM and SECOB's Project management capacity; and (iii) the carrying out of two impact evaluations on the Program's outcomes.

(a) Sub-Component 2.1. Management and Information Systems (Bank: US$1.5 million). This sub-component would partially support the completion and implementation of a fully integrated Education Management Information System (EMIS). Specifically, it would finance the development and implementation of 4 modules: (i) institutional school management; (ii) school supply management; (iii) Project management; and (iv) business intelligence.

(b) Sub-component 2.2. Management, Monitoring and Specific Studies / Impact Evaluation (Bank: US$2 million). This sub-component would finance: (i) the technical and administrative management of the Project, including the hiring of specialists in financial management, procurement, monitoring and evaluation, social management and other technical temporary staff needed during Project implementation; (ii) the carrying out of Project external audits and Transportation Reviews; (iii) the financing of Operating Costs related to Project's activities; and (iv) the carrying out of two specific studies/impact evaluations: a quasi-experimental evaluation of the impact of the in-service training program for teachers on student learning; and the development of an analytical model to measure the direct and indirect effects of the consolidation of schools on education outcomes (dropout/retention/graduation; quality/learning assessments; equity; and efficiency gains on allocation of resources) and potential spillover effects on neighboring schools. Both evaluations would be led by INEVAL in coordination with MINEDUC.

B. Project Financing

22. The proposed loan instrument would be an Investment Project Financing in the amount of US$178 million. Preliminary discussions have led to a Project structure consisting of two components.

Project Cost and Financing

Project Components	Project Cost	IBRD Financing (US$ million)	% Financing
1. Improving school services in the targeted circuits	196.8	174.5	88%
2. Strengthening Planning, management and Evaluation Capacity at MINEDUC	4.2	3.5	88%
Total Financing Required	201.0	178.0	88%

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

23. MINEDUC would be the designated responsible agency for Project implementation. As part of the Under-secretariat for School Administration (*Subsecretaría de Administración Escolar*, SAE), which is part of to the Vice-Ministry of Education Managament (*Viceministerio de Gestión Educativa*, VGE), the Millennium Schools Management Unit (*Gerencia de las Unidades Educativas del Milenio*, GUEM) would be responsible for the Project fiduciary management (except for sub-component 1.1) and monitoring and evaluation, and would be supported by three main areas: (i) Financial Management; (ii) Procurement; and (iii) Monitoring and Evaluation, each one including a designated member for Project activities. The coordinator for Monitoring and Evaluation would be the interlocutor with the Bank. A social management specialist would be appointed from the National Coordination of Planning (*Coordinación General de Planificacion*, CGP) to work on all issues related to social safeguards.

24. For management of subcomponent 1.1, a specific arrangement would be made to delegate fiduciary and execution management of civil works to a public executing agency: *Servicio de Contratación de Obras* (SECOB). A subsidiary agreement would be signed between MINEDUC and SECOB to establish duties and responsibilities for both parties, including procurement, financial management, accounting, payments, and civil works supervision. SECOB would receive ad-hoc general coordination, procurement and financial management support from specialists as needed in order to ensure the timely implementation of Project activities.

25. The local authorities of MINEDUC's administrative Zones 2, 5 and 9, through their respective support units (planning, infrastructure, pedagogic, etc.), would have key supervision responsibilities in all components/subcomponents, in line with their respective mandate in the LOEI.

26. In terms of specific technical responsibilities, GUEM would coordinate with the respective technical units in each MINEDUC's involved Zones, based on their respective roles as established in the LOEI, and with SECOB regarding sub-component 1.1. The following table shows the responsible unit for each sub-component as follows:

Sub-Component	Responsible Technical Unit
1.1.	The Under-secretariat for School Administration (SAE) would be responsible for oversight, specifically in the development and implementation of the"*Information and Monitoring System for Civil Works Management*" ".The CGP would be responsible for the elaboration of consolidation proposals ("micro-planning"), including transportation arrangements. GUEM would be responsible for: (i) the review and approval of technical designs, implementation plans, and environmental management and social plans related to the construction of new schools (new UEMs); (ii) purchase of furniture and equipment for all schools. The Zones would be responsible, through their delegates for: (i) carrying out the "second level" supervision of design and implementation of Project works. SECOB would be responsible for: (i) hiring consultants to design technical specifications for civil works, carry out topographic studies and obtain environmental licenses for both new schools and "*Repotenciaciones*"; (ii) the procurement processes required for civil works; (iii) hiring supervisors ("*Fiscalizadores*"); (iv) hiring "contract administrator."

1.2.	"Undersecretariat for Professional Development" (SDP)
1.3.	"Bureau of Strategic Management" (CNGE)
1.4.	"Directorate for Special and Inclusive Education" (DNESI)
2.1.	"Bureau of Strategic Management" (CNGE)
2.2.	"Bureau of Strategic Management" (CNGE) for sub-component 1.1 and GUEM and "INEVAL" for sub-component 2.2.

B. Results Monitoring and Evaluation

27. Progress towards achieving the PDO and intermediate indicators would be monitored by GUEM, wherein it would be responsible for collecting and compiling the data on all indicators presented in Annex 1. GUEM would work closely with the CGP, though the National Directorate of Analysis of Education Information (DNAIE), who would be the main source for providing administrative data to GUEM. GUEM would send Biannual Progress Reports to the Bank, including progress towards targets in the Result Framework. INEVAL jointly with the Viceministry for Education Management (*Viceministerio de Gestión Educativa*), would be responsible for the analysis of the direct and indirect effects on student outcomes as related to the consolidation of schools, potential spillover effects on neighboring schools, and the impact evaluation of teacher training.

C. Sustainability

28. The proposed Project builds on the current GoE sound Education Sector reform. Many of the interventions supported by the Project have a recent track record, for instance: about 53 "hub" schools have been built and are currently functioning. The new teacher development framework is in place, wherein some teachers have received in-service training. INEVAL has successfully carried out standardized assessments of student learning outcomes and teacher quality. In addition, as sustainability is closely linked to ownership by GoE, the education reform is a priority and a Government's flagship policy. Finally, the Project would support an analysis of the ongoing school consolidation process and its effects on outcomes, allowing for reform Program interventions to be adapted/revised in the medium-term and helping to ensure sustainability in the long term.

V. KEY RISKS

Systematic Operations Risk-rating Tool (SORT)

Risk Category	Rating
1. Political and Governance	Substantial
2. Macroeconomic	Substantial
3. Sector Strategies and Policies	Moderate
4. Technical Design of Project or Program	Moderate
5. Institutional Capacity for Implementation and Sustainability	Substantial
6. Fiduciary	Substantial
7. Environment and Social	Substantial
8. Stakeholders	Substantial
9. Other	
OVERALL	Substantial

A. Overall Risk Rating and Explanation of Key Risks

29. The overall risk for the proposed Project is assessed as Substantial. The political and governance risks are Substantial due to current coordination complexities between local and national levels of government and possible political opposition; however, the education agenda enjoys broad-based political support. To manage the coordination complexities, the team has ensured buy-in from all levels of Project implementation units through institutional arrangements that clearly define the roles and responsibilities of the different decentralized MINEDUC's management levels, ensuring proper coordination with local governments.

30. The macroeconomic risks is rated Substantial due to the stunted flow of national revenue, largely resulting from current oil prices and an inability to control monetary policy during the rapid appreciation of the dollar. This risk is mitigated by the prioritization that the GoE has given to investment in education.

31. Sector strategies and policies' risk is Moderate as the GoE's National Development Plan reflects the high political and budgetary priority of the education sector, providing sufficient evidence to anticipate a continuation of the current administration's policies. This risk would be mitigated though broad communication campaigns to disseminate policies' results, fostering stakeholders' involvement and ownership.

32. Fiduciary risks are related to the recent creation of GUEM and inadequate staffing of the SECOB's Contracting Technical Under Directorate (*Subdirección Técnica de Contrataciones*, STC). The procurement capacity of the aforementioned units would need to be strengthened as the technical and fiduciary teams do not have sufficient knowledge of Bank procurement procedures and contract monitoring. Additional risks include the quality of works and implementation delays related to: (i)

contractors winning at significantly lower prices than engineers' estimates; (ii) timely supply of materials for the civil works; and (iii) SECOB's insufficient experience to manage large contracts.

33. Similarly, due to the lack of staff experienced in financial management, the following measures would need to be taken: (i) appointment of experienced FM professionals, fully dedicated to the Project; (ii) implementation of tailored process and procedures regarding funds flow and financial reporting between MINEDUC and SECOB; (iii) signing a subsidiary agreement between MINEDUC and SECOB with clear FM roles and responsibilities to assure suitable Project implementation; and (iv) an operational manual that describes in detail the financial management arrangements under the Project.

34. The social and stakeholder risks are both substantial due to potential opposition of families to the closing of local schools and longer school commutes. Consultations with key beneficiaries and the development of social management and indigenous people plans based on the Project's existing social and indigenous management frameworks would reduce the related risks.

VI. APPRAISAL SUMMARY

A. Economic and Financial Analysis

35. The economic and financial analysis addresses three key questions: (i) what is the proposed Project's development impact in terms of expected benefits and costs? (ii) is public sector provision of financing the appropriate vehicle? and (iii) what is the Bank's value added? First, as more Project beneficiaries enter the labor market and the number of additional years of schooling and learning achievement increases, the economic benefits of the workforce affected by the Project are expected to improve. Public sector provision is justified based on the high social returns of the investment and the reduction in poverty and inequality associated with it. In particular, households from circuits with high levels of poverty do not have many options other than to attend free public schools, which includes access to facilities, free pedagogic materials, meals, and transportation. Moreover, the Project aims to support key aspects to ensure the provision of quality public education services, including: rigorous standards for infrastructure and learning facilities, enhancing of MINEDUC's management capacity, and improved quality teachers and a robust evaluation of education outcomes.

36. The Bank's contribution is key in the following areas: first, the Bank has ample experience worldwide in supporting better supply of infrastructure and projects to improve Government's management capacity while grooming better teachers. Secondly, the Bank's expertise regarding impact evaluations (on teachers and on main outcomes of reforms) and evidence-based best-practices would provide added value to the sector. In particular, the Bank's value added would be crucial in bringing good practices on procurement, financial management, social management of school consolidation and inclusion of indigenous communities. On the other hand, the Bank would add to the GoE's strategy to finance the strengthening of the education system through the provision of infrastructure, better-qualified teachers, and an improved management structure.

37. A cost-benefit analysis and a fiscal impact analysis have been carried out. The cost-benefit analysis, focused in the Project's 23 targeted circuits and produced an Internal Rate of Return (IRR) of 11.2 percent. Project benefits over the next 10 years would result from higher graduation rates and better learning outcomes. The analysis have taken into account income premiums of completing lower and upper secondary schooling, based on official data regarding average salaries by level of education. In addition,

the cost-benefit analysis includes a cost-effectiveness analysis regarding the use of labs: a lower bound estimate of the efficiency gains that only uses information on the usage of laboratories, shows that with the Project MINEDUC would only need 121 laboratories, instead of 179 without the Project, for the same coverage. Finally, the fiscal impact analysis aimed at determining: (i) the fiscal sustainability of the Project over the next 5 years, including the budgetary impacts of the interventions in the 23 targeted circuits; and (ii) a simple simulation of fiscal impact of UEMs program. While the fiscal impact of the Project is very low (a 1.5 percent of the total annual budget), the fiscal impact of the overall national infrastructure of the UEMs program would depend on the number of "hubs" to be built. For example, while 40 "hubs" per year would require an increase of 9 percent in the education budget (or 0.3 percent of GDP), building 80 new "hubs" would represent a 20 percent increase in the education budget and 0.6 percent of GDP.

B. Technical

38. The reforms and the interventions proposed in this Project are based on international evidence and best practices. In terms of infrastructure, recent research (2011, 2012 and 2014) indicate that vast improvements in infrastructure, furniture, textbooks and other pedagogical materials (all of which are covered by the Project) have positive effects on learning outcomes[x]. There is evidence that school consolidation also shows positive results on learning outcomes[xi]. In terms of teachers, the reform that Ecuador is carrying out builds on best international practices (notably those of Finland and Singapore), and includes a set of comprehensive and consistent elements: high standards for admission into the elite group of nationally-recognized teachers; better teacher remunerations, which are partially linked to evaluations; better teaching career path from a teacher's initial training through continued training and master-level education programs; as well as an improved standards based pre and in-service training system that leverages the use of new pedagogical and didactic models of discipline and the use of ICTs. The new EMIS is considered a best practice in the region, comprising an integrated and beneficiary-centered framework. INEVAL follows cutting-edge practices in the LAC region in carrying out and analyzing students, teachers, and institutional assessments. Finally, the evaluation of results of the interventions on main outcomes would be monitored through the Analytical Model supported by the Project.

C. Financial Management

39. As part of project preparation, a Financial Management Assessment (FMA) was carried out to evaluate adequacy of financial management arrangements planned by MINEDUC in coordination with SECOB for the implementation of the Project. In accordance with proposed institutional arrangements MINEDUC, would be the main responsible implementing entity, through GUEM, with exception of Subcomponent 1.1, which would be managed by SECOB. In this framework, the financial management unit (*Unidad de Aministracion Financiera*, UDAF) of MINEDUC and SECOB would assume responsibility for the financial management with the support of appointed FM officers fully dedicated to the Project.

40. MINEDUC and SECOB have gained experience implementing projects financed by CAF and IDB establishing processes and procedures to implement and monitor civil infrastructure activities. MINEDUC and SECOB's organizational structure is exposed to potential changes, turnover of high level staff, and FM units may experience at some point heavy workload. Thus for project implementation purposes, reinforcement of organizational structure, with fully dedicated technical and administrative experienced staff has been considered essential. The design of Project activities involves participation of SECOB as

co-implementing entity of Subcomponent 1.1 demanding close operational coordination to ensure suitable Project implementation and maintain adequate arrangements, including specific roles, responsibilities, processes and procedures in order to monitor Project implementation, guarantee adequate use of funds and timely financial reporting of the Project. Additional details are presented in Annex 3.

D. Procurement

41. Procurement activities would be carried out by MINEDUC through GUEM, and SECOB's Contracting Technical Under Directorate (*Subdirección Técnica de Contrataciones*, STC). During Project preparation, the Bank carried out a preliminary assessment of MINEDUC and SECOB's procurement capacities in October 2014, February, May and August 2015. As a result, the Bank agreed that GUEM-GTI and SECOB–STC would implement procurement processes under the following conditions: (i) establish an organizational structure according to the legal covenants, (ii) maintain facilities and support capacity, (iii) set qualifications and experience of the staff that would work in procurement, (iv) organize record-keeping and filing systems, (v) carry out best practice procurement planning and monitoring/control systems, and (vi) maintain the capacity to meet the Bank's procurement contract reporting requirements.

42. Procurement activities under GUEM - GTI and SECOB – STC would be conducted by a dedicated procurement specialist and procurement analyst for each entity, supported by technical and administrative staff. As a result, the following corrective measures were agreed upon: (i) the Project Operational Manual (POM) includes procurement and contracting; (ii) the Loan Agreement includes additional provisions related to Project Implementation on Procurement, and (iii) the Bank's work in Ecuador includes a comprehensive procurement training program for existing and new lending operations, with a close monitoring and support from the Bank[1], particularly during the first two years of Project implementation. Additional details are presented in Annex 3.

E. Social (including Safeguards)

43. Whereas this Project would support investments that would significantly increase access to higher quality education for poor and indigenous communities, at the same time the closure and consolidation of community schools present important social risks. Primarily, schools are often the principal and central infrastructure in smaller communities and hold symbolic value for community organization and governance. Concurrently, during the pilot social assessment and consultation processes, concerns were raised by parents and communities around sending their children outside of the community where they feel they may lose control of, and access to, their children. Another concern is the assurance of safe and reliable transport. Further hesitations have been raised around the teachers as known community figures who could be closely monitored by parents and community leaders in local schools. In terms of gender, social assessments identified security around transport and school spaces (mixing with older boys for example) as the primary gender issues that should inform new hub school and transportation system design. In the case of indigenous communities, there are concerns that sending children away to consolidated schools or hubs would foment cultural assimilation and they could lose the close cultural ties to their communities.

[1] At least quarterly missions in the first two years.

44. In light of the above risks, the Project has triggered OP/BP 4.01 and OP/BP 4.10 and in compliance with these policies, the Borrower has prepared and the Bank has approved a social management chapter for the Environmental and Social Management Framework (ESMF) and an Indigenous Peoples Planning Framework (IPPF). These Frameworks establish a robust social assessment and social management process both for Indigenous Peoples as well as for other communities where school closures could potentially take place. The Frameworks document the risks, impacts and opportunities as well as the procedures to be followed for social assessment, consultation and the preparation of social management plans (SMP) or Indigenous Peoples Plans (IPP) where school closings would take place. The methodologies and procedures of the Frameworks have been established and validated based on pilot social assessments and consultation processes carried out with three new hub schools that could potentially be financed through the Project. Broad community support was attained and documented for the three pilot school hubs after a three-phase consultation process and an agreement of a set of measures that MINEDUC would adopt to address community concerns. These measures and the community support are documented in the respective SMPs and IPP. Greater detail on the results of the pilot social assessments and consultation processes is provided in Annex 3. ESMF and IPPF were completed and disclosed on August 12, 2015, in both the Bank's Infoshop and MINEDUC's websites.

45. The pilot social assessments and consultation processes have also helped identify key gaps and needs for institutional strengthening at the Ministry's district and national levels. The three pilot social management plans (two SMPs and one IPP) were completed and disclosed on August 12, 2015, both in the Bank's Infoshop and MINEDUC's websites.

46. Since the land acquisition may be necessary for some hub schools, OP/BP 4.12 has been triggered and a Resettlement Policy Framework (RPF) was prepared and disclosed on August 12, 2015, in both the Bank's Infoshop and MINEDUC's websites. It is estimated that land acquisition would be minimal as: (i) the majority of schools hubs are located in lands already under MINEDUC's or municipal proprietorship and (ii) in the case of expansion and rehabilitation of existing schools, these are already operating in MINEDUC's properties.

F. Environment (including Safeguards)

47. The Project does not foresee significant or irreversible environmental impacts and risks that could jeopardize the natural environment in its direct and indirect area. Civil works during construction of new schools and renovating existing schools should only generate typical focalized, reversible, and manageable impacts. As the official list for all schools and exact location of Project schools to be constructed and renovated are not known, an Environmental and Social Management Framework (ESMF) was prepared and disclosed on August 12, 2015, both in the Bank and MINEDUC's websites. Schools would be located in already populated urban and rural areas in two Costal region provinces (Los Ríos and Guayas) and one Andean province (Bolivar).

48. During Project preparation, environmental and social screening was conducted according to the Bank's Operational Policy 4.01. The Project is classified as Category B and the following environmental safeguard policies apply: Environmental Assessment (OP/BP 4.01) and Physical Cultural Resources (OP/BP 4.11). This last policy was triggered as some schools to be built would require minor excavations in Andean areas of the Bolivar Province where unexpected finds could occur. The ESMF includes the relevant national procedures in the case of chance-finds.

49. Ecuador has a well-established national system for environmental impact assessment and management in school construction and renovation projects. This system, including principles and procedures, is described in detail in the Environmental and Social Management Framework (ESMF) formulated by the Client and describes institutional arrangements for environmental supervision. For a given school, SECOB would prepare or outsource the preparation of environmental forms (EF) and an environmental management plan (EMP) – covering construction and operation stages – to a private consulting firm. Both instruments are prepared on the basis of engineering and soil studies. SECOB has an Environmental Team of four professionals (environmental engineers and geographers) that reviews and makes comments to the EFs and EMPs. SECOB then sends these EFs and EMPs to the Ministry of Environment (MAE) through the MAE´s Unified System on Environmental Information portal (SUIA). MAE issues an Environmental License upon approval of EFs and EMPs, which is then sent to the Ministry of Education via Internet. Environmental supervision during construction and operation phases would be undertaken by SECOB.

G. World Bank Grievance Redress

50. Communities and individuals may submit complaints to existing project-level grievance redress mechanisms or the Bank's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the Bank's corporate Grievance Redress Service (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

Annex 1: Results Framework and Monitoring

ECUADOR: Supporting Education Reform in Targeted Circuits Project (P152096)

Results Framework

Project Development Objectives

PDO Statement

The Project Development Objective is to increase enrollment in early education and improve the persistence rate in lower secondary education and upper secondary education in the targeted circuits.

These results are at	Project Level

Project Development Objective Indicators

Indicator Name	Baseline (2014)	Cumulative Target Values				
		2016	2017	2018	2019	2020
PDO Indicator 1: Enrollment in early education in the targeted circuits. (of which % girls)	8923 (of which 50% girls)	9369	9650	10084	10589	11224
PDO Indicator 2: Persistence rate from lower through upper secondary education.	Total: 60% Boys: 59% Girls: 61%	Total: 61.5% Boys: 60.5%	Total: 63% Boys: 62% Girls: 64%	Total: 65% Boys: 64% Girls: 66%	Total: 67.5% Boys: 67.5% Girls: 67.5%	Total: 70% Boys: 70% Girls: 70%

Indicator Name	Baseline (2014)	Cumulative Target Values				
		2016	2017	2018	2019	2020
(of which % girls)		Girls: 62.5%				

Intermediate Results Indicators

Component 1. Improving School Services in the targeted circuits						
IRI 1: Percentage of students from the targeted circuits attending targeted public schools that receive infrastructure, furniture, and equipment and transportation (when applicable) to school in compliance with MINEDUC's standards. (Percentage)	0%	0%	20%	30%	35%	45%
IRI 2: Percentage of students of *bachillerato* that have access to Physics and Chemistry laboratories in the targeted circuits. (Percentage)	28%	28%	40%	50%	60%	70%
IRI 3: Number of schools with less than 200 students enrolled in the targeted circuits. (Number)	217	217	205	190	180	168

Indicator Name	Baseline (2014)	Cumulative Target Values				
		2016	2017	2018	2019	2020
IRI 4: Percentage of teachers of the targeted circuits that have received standards based in-service training. (Percentage)	18%	25%	45%	50%	60%	60%
IRI 5: Number of teachers; and principals and school management staff (principals, vice-principals and inspectors) of the targeted circuits that have completed graduate-level studies in selected subjects. (Number)	Teachers: 76 Principals and School Management Staff: 0	76 0	76 0	200 30	350 60	650 90
IRI 6: Percentage of teachers in public schools from the targeted circuits that use effectively the "*Comunidad Educativa en Línea.*" (Percentage)	0%	20%	60%	70%	80%	90%
IRI 7: Enrollment rate of school-aged children with disabilities, based on the identification "*Registro Social*" in the targeted districts. (Percentage)	36%	38%	40%	42%	45%	50%
IRI 8: Survey on beneficiary communities' satisfaction in the targeted circuits regarding: (i) the process of social management and (ii) the results of the implemented new school "hubs." (Text)			Survey Conducted and Reports Published		Survey Conducted and Reports Published	

Indicator Name	Baseline (2014)	Cumulative Target Values				
		2016	2017	2018	2019	2020
Component 2. Strengthening Planning, Management and Evaluation Capacity at MINEDUC						
IRI 9: Inclusion of the necessary data related to school infrastructure in the system "Institutional and School Management System." (Percentage)	0%	0%	50%	75%	90%	90%
IRI 10: Implementation of Analytical Model (to measure impacts on quality, equity and coverage) complete within the targeted circuits.	No	Baseline Developed	Developed and in Use	In Use Reports on results on outcomes produced	In Use (Reports – results on outcomes produced /Lessons Learned)	In Use (Reports – Lessons Learned)
IRI 11: Number of Project Direct Beneficiaries: Total number of students from early education through upper secondary. (Number) (Percentage female)	144287 51%	147894 51%	151592 50%	158413 50%	165542 50%	172991 50%

Indicator Description

Project Development Objective Indicators

Indicator Name	Description (indicator definition etc.)	Frequency	Data Source / Methodology	Responsibility for Data Collection
PDO Indicator 1: enrollment for early education (*Inicial II*) in the targeted circuits.	Total Number of students attending early education (*Inicial II*) in the targeted circuits for all schools (Total number of students in all "regular" schools: public, private,*"fideicomisionadas"* and municipal). Percentage of girls will be monitored.	Annual	Administrative Register / CGP-DNAIE	CGP
PDO Indicator 2: Persistence rate from lower through upper secondary education.	Number of students promoted from 3rd year of upper secondary in each year divided by the number of students in the 8th grade in lower secondary in 2014 (15619). Percentage of girls will be monitored. Note: a calculation based on cohorts cannot be done until 2018, since consistent data at circuit level is only available beginning 2012. At Project Mid-Term a calculation based on cohorts will be done, as follows: Number of students promoted from 3rd year of upper secondary in year t, divided by the number of students in the 8th grade in lower secondary in year t-5. In all cases "total number of students" includes students attending fiscal, private, *"fideicomisionadas"* and municipal. The "total" just excludes literacy program ("*Educación Popular Permanente*"). Percentage of girls will be monitored.	Annual	Administrative Register / CGP-DNAIE	CGP

Intermediate Results Indicators				
Indicator Name	**Description (indicator definition etc.)**	**Frequency**	**Data Source / Methodology**	**Responsibility for Data Collection**
IRI 1: Percentage of students from the targeted circuits attending targeted schools that receive infrastructure, furniture, and equipment, transportation to school in compliance with MINEDUC's standards. (Percentage)	Number of students from the targeted circuits attending targeted public schools that receive infrastructure, furniture, equipment, transportation (when applicable) that comply with MINEDUC's standards, divided by the total number of students in the targeted circuits attending public schools (students in all cases refers just to public -fiscal-schools).	Semi-Annual.	CGP-DNAIE	GUEM
IRI 2: Percentage of students of upper secondary education (*bachillerato)* that have access to Physics and Chemistry laboratories in the targeted circuits. (Percentage)	Number of students of upper secondary education (*bachillerato)* attending public schools that have access to laboratories in Physics and Chemistry in the targeted circuits, divided by the total number of students of *bachillerato* attending public schools in the targeted circuits (students in all cases refers to public – fiscal-schools).	Semi-Annual.	CGP-DNAIE	GUEM
IRI 3: Number of schools with less than 200 students enrolled. (Number)	Number of public schools in the targeted circuits with less than 200 students enrolled (includes all levels from early education to *bachillerato*)	Semi-Annual.	CGP-DNAIE	GUEM
IRI 4: Percentage of teachers of the targeted circuits that	Number of teachers in fiscal schools of the targeted circuits that have received standards based in-service training	Annual.	CGP-SDP	GUEM

have received standards based in-service training. (Percentage)	divided by the total number of teachers in fiscal schools in the targeted circuits.			
IRI 5: Number of teachers and number of principals and school management staff,) of the targeted circuits that have completed graduate-level studies in selected subjects. (Number)	Number of teachers of the targeted circuits that have completed master-level studies in selected subjects in accredited institutions Number of school principals, vice-principals and inspectors that have completed graduate-level studies in school management/administration in accredited institutions.	Annual.	DNAIE/ Zone 5 Information Systems	GUEM
IRI 6: Percentage of teachers in public schools from the targeted circuits that use effectively the "*Comunidad Educativa en Línea*." (Percentage)	Number of teachers in public schools from the targeted circuits that use effectively the "*Comunidad Educativa en Línea*," divided by the total number of teachers in public schools Effective use means teachers that use CEL for exams grades and attendance records.	Semi-Annual Reports	*Coordinación Nacional de Gestión Estratégica* (CNGE) in coordination with Zones/ Districts	GUEM
IRI 7: Enrollment rate of school-aged children with disabilities, based on the identification by the Manuela Espejo's census in targeted districts. (Percentage)	Number of children with disabilities enrolled in school divided by the total number of children with disabilities in school age, based on the identification by the "*Registro Social*" in targeted Districts. For this indicator the targeted districts are those where the 23 circuits belong, as described in Endnote iii.	Annual	DNESI	GUEM
IRI 8: Survey on beneficiary communities' satisfaction in	Two surveys will be conducted (during 2017 and 2019) which will ask beneficiary communities (parents) their	Twice	SAE	GUEM

the regarding: (i) the process of social management and (ii) the results of the implemented new school "hubs."	level of satisfaction about: (i) the process of social management and consultation; (ii) quality of services, transportation and parents' participation in the context of the school "hubs."	(2017 and 2019)		
IRI 9: Inclusion of the necessary data related to school infrastructure in the system "Institutional and School Management System." Percentage	New information system module for managing school facilities information are implemented and in use. To measure "use" of the system, the percentage of inclusion of the necessary data related to school infrastructure in the system "Institutional and School Management System."	Annual	CNGE	GUEM
IRI 10: Implementation of Analytical Model (to measure impacts on quality, equity, coverage and efficient use of resources) completed and in use.	Development of an analytical model to measure the direct and indirect effects of the consolidation of schools on student's outcomes (dropout/graduation, learning assessments, equity and efficiency gains) and potential spillover effects on neighboring schools. Results Reports are produced from the second year of impacts on four main outcomes: quality (measured by tests Ser Estudiante); coverage and graduation; equity, gaps between consolidated and non-consolidated similar school communities and efficiency in the allocation of resources.	Annual	INEVAL / SDP / CGP	GUEM
IRI 11: Number of Project Direct Beneficiaries: Total number of students from early education through upper secondary. (Number)(Percentage female)	Total number of students in all education cycles (from early education through upper secondary) in the targeted circuits. The indicator will report total number of students and gender composition.	Annual	CGP / Administrative Register / DNAIE	GUEM

Annex 2: Detailed Project Description

ECUADOR: Supporting Education Reform in Targeted Circuits Project

A. Project Policy Background

1. Over the last five years, the GoE transformed the education system through multiple institutional changes: the Ecuadorian Constitution of 2008, the Fundamental Law of Intercultural Education of 2011 (*Ley Orgánica de Educación Intercultural,* LOEI), the Ten-year Education Sector Plan 2006-2015 (*Plan Decenal de Educación,* PDE), and the National Development Plan 2013-2017 ("*Plan del Buen Vivir*"). The four key policies of the reform include, among others: (i) the reorganization of the supply of education opportunities, through the concentration of all pre-tertiary academic levels in "hubs", including improvements in infrastructure and equipment; (ii) the implementation of a national system of evaluation that includes student, teacher, and institutional performance assessments; and (iii) the development of a new system of professional teacher and principals enhancement ; (iv) a new management model, including the development of a new management information system.

2. In 2012, the GoE launched the Educational Opportunity Reorganization Model (*Modelo de Reordenamiento de la Oferta Educativa,* MROE) or "Millennium School" initiative (*Unidades Educativas del Milenio,* UEM), an ambitious program based on determining "hub" schools that absorb or consolidate existing institutions from preschool to upper secondary (grades 11, 12, and 13). The long-term objective of the GoE is to reduce the current 18,400 institutions to about 5,000 "hubs" or integrated schools.

3. The GoE enacted the following teachers reforms to the education system: (i) high standards for admission into the elite group of nationally-recognized teachers (*Magisterio Nacional*); (ii) better teacher remunerations, partially linked to evaluations; (iii) the development of a better teaching career path from a teacher's initial training through continued training and master-level education programs, (iv) an improved standards based training system that builds on the use of new pedagogical and didactic models of discipline and the use of Information and Communications Technologies (ICTs). In order to improve pre-service training, the National Education University (*Universidad Nacional de Educación*), which follows the standards of excellence of the Finnish system, has been created.[2]

4. The GoE has also developed a solid career path for school principals and school management staff. First, the candidates for school principals must pass a selection process to be considered "eligible", which involves two phases: (i) taking a propaedeutic course, specifically designed for candidates; (ii) the approval of psychometric and specific knowledge exams. Thereafter, candidates must provide evidence of prior experience and pre and in-service training, in which context a master level degree is a requirement. Finally there is a competitive process, based on

[2] Researchers identified a "tight coupling" between the Ministry of Education and the institutions were teachers are educated as a factor in the educational success of countries as different as Singapore and Cuba (Carnoy, 2007, cited in "Bruns, Barbara, and Javier Luque, Great Teachers: How to raise student learning in Latin America and the Caribbean, Washington DC: World Bank Group, 2015).

merit. During 2014, MINEDUC has carried out the *Quiero Ser Directivo* 1, from which 132 aspirants to principals were selected. During 2015, MINEDUC is taking *Quiero Ser Directivo* 2 (with 296 eligible candidates) and in 2016 the third process will be finished (there are 760 eligible candidates who already passed the exams and therefore are eligible).

5. The reform program also has a strong emphasis on improving monitoring and evaluation systems through the creation of the National Institute of Education Assessment (*Instituto Nacional de Evaluación Educativa*, INEVAL) as an autonomous office within MINEDUC charged to lead the unbiased collection and analysis of data based on national assessments for students, teachers, and educational institutions. Student evaluation begins with the "*Ser Estudiante*" assessment, which evaluates skills and learning standards in 4th, 7th and 10th grades, culminating in the "*Prueba Ser Bachiller*," which evaluates each student's level of subject mastery in 13th grade. INEVAL works alongside MINEDUC to administer and assess both the "*Quiero Ser Maestro*" and "*Ser Maestro*" exams for teachers. INEVAL is currently in the process of creating a set of indicators (Index) to measure and evaluate results on an institutional level (by school).

6. MINEDUC information and management processes continue to lack integration and can aptly be characterized as unreliable data repositories that house information on institutions, teachers, and students. MINEDUC is currently in the process of developing and determining the structure of a new system-wide approach that includes compartmentalized, yet connected, sub-systems of information. As a first step, to promote school based management by teachers and principals the Ministry has developed an "Online Learning Community" (*Comunidad Educativa en Línea*, CEL) portal where educational management is streamlined through the access and use of system-wide services available to all educational community members.

7. In order to promote greater inclusion within the system, select "integrated schools" (at least one per the 140 districts) would absorb students with disabilities in accordance with the Ecuadorian Constitution of 2008, Inclusive Education Project for People with Disabilities, and Manuela Espejo Program. The design of new and renovated schools is based on an evaluation of a sample of schools to ensure accessibility. Teachers and students throughout the system would receive sensitivity training and the GoE is in the process of developing kits and educational material that would be distributed to every eligible student.

Component 1. Improving school services in targeted circuits (Bank: US$174.5 million).

8. The objective of this component is to improve the perceived quality of education services by students and families, which would lead to increases in access in early child schooling, and enrollment and graduation in basic and upper secondary education, while fostering a more efficient allocation of existing resources both physical (e.g, infrastructure facilities, computer labs) and in human resources. The four key policies to improve the quality of education services to be financed by the component are: (i) the reorganization of school supply, by consolidation of schools into "hubs", upgrading the infrastructure and facilities; (ii) in-service and master level training of teachers and master level training for principals; (iii) the implementation of CEL at school level and; (iv) the enhancement of special education and programs for children with disabilities.

Subcomponent 1.1 – Infrastructure, Equipment and Furniture for Schools Hubs (Bank: US$159.5 million).

9. This sub-component would support the implementation of "integrated schools" model in the targeted circuits. It finances the activities to reorganize the distribution of educational opportunities as well as the improvement and expansion of public education sector infrastructure in the Targeted circuits. As main results, it is expected that about 5 percent of the students belonging to the Targeted circuits would benefit from the new high quality facilities, which would foster retention and graduation. Moreover, efficiency gains would result from the reorganization of the school supply into "hubs", through the reduction of small schools and better utilization of physical resources (labs) and human resources.

10. The sub-component would support the intervention in around 32 hubs, fully providing them with the standards for the consolidated schools "hubs" model. There would be two types of interventions: (i) the renovation and expansion ("*Repotenciaciones*") of exiting schools, converting them into "hubs"; and (ii) the construction of new school hubs. Moreover, about 3 schools for special education would be refurbished to adapt them to children with special needs. All the hubs would be selected based on the methodology set up by MINEDUC for the consolidation of existing schools into the "integrated schools" model ("*Nuevos Lineamientos para el Reordenamiento de la Oferta Educativa"*). For each "hub school" a "micro-planning" proposal would be developed, which would include: an analysis of demand and existing supply on the "geographical axis" (deficit in the level of coverage), thresholds for distance and travel time to school hub, as well as the current state of infrastructure.

11. For transportation, each specific "hub" arrangement would follow the criteria established in the MINEDUC's guidelines ("*Modelamiento de Transporte Escolar en función del Ordenamiento de la Oferta Educativa*"), in which framework it would be provided: (i) 50 percent subsidized public transportation in urban areas (when ceiling of distance/time of travelling applies) and; (ii) free transportation to the "hub" from the previous school location in rural areas. Both the methodology for "micro-planning" and transportation arrangements are part of the POM. The Project would conduct three annual Transportation Reviews to verify compliance with the arrangements for school transportation for each school hub built under the Project. These reviews would include: (i) in site verification of operation of transportation arrangements (i.e. verification of bus stops, transportation time, safety conditions; verification of contract compliance in those cases where the service is subcontracted); and (ii) conducting a survey, based on a representative sample, to parents about their satisfaction with the provision of the transportation (time travel, safety, impact on the studies and learning). The Transportation Reviews would produce a report with findings, conclusions and recommendations, which would serve to take remedial actions and improve transport services, as needed.

12. The actual sites and final list of school hubs to be supported by the Project would be determined during implementation, included and agreed in the framework of each Annual Implementation Plans.[3] Each "hub" intervention would follow a defined protocol, establishing for each step the responsible unit at MINEDUC and clearances by the Bank on: (i) consolidation proposal ("micro-planning" and transportation arrangements); (ii) social management plans (SMP) or indigenous

[3] The Annual Implementation Plans for the first year (2015/2016) will be agreed upon effectiveness.

plans (whichever applies) in accordance with the ESMF and the IPPF; (iii) land property and resettlement arrangement (if applicable) in accordance with RPF; (iv) infrastructure technical design and specifications of civil works, including environmental management plans and environmental "License"; (v) procurement; (vi) supervision. Steps (i), (ii) and (iii) would be the responsibility of MINEDUC, through CGP, while SECOB would be in charge of steps (iv), (v) and (vi). These procedures are described in detail in the POM.

13. Characterization of the standards for the hubs. There are two basic types of interventions: (i) the construction of new hubs (UEMs), which can be of two different sizes: "major UEMs" with a capacity for 2,280 students in two shifts and "minor UEMs" with a capacity of 1,140 students in two shifts; (ii) the expansion and reconstruction of existing facilities (known as "*Repotenciaciones"*), with capacity for up to 5,000 in two shifts.[4] In all cases, school hubs would encompass complete MINEDUC standards for integrated schools, including: infrastructure facilities to accommodate students throughout the "full education cycle" encompassing early education through upper secondary (*bachillerato*); physics and chemistry labs, language classrooms with ICT equipment, school cafeteria, a sports field, facilities for school faculty and teachers, and, free transportation to school from the previous school location. A detailed description of the technical features of the standards is included in the POM.

14. The Project would finance: pre-investment studies, civil works, construction supervision, purchase of furniture and equipment, as well as provide for the development of monitoring tools for Project implementation. A rough estimate of the costs and the activities to be financed include the following elements:

i. *Pre-investment studies for prioritized projects (estimated US$4,600,000).* Refers to the completion of technical evaluations and final design that serve as a prerequisite for procurement and implementation of the Project's infrastructure activities. MINEDUC carried out some of the necessary studies for the schools through individual consultants or consultancy firms, the remaining studies would be procured and contracted by SECOB.

ii. *Civil works (estimated US$127,000,000).* Demolition, reparation, adjustments, physical reorganization, and construction. The construction would follow the standards of integrated school and for environment, social, physical resources and resettlement management (when correspond), according to the respective framework, based on MINEDUC and the Bank's safeguards regulations. Relevant aspects that require adjustment from the standard building model are related to topography of school grounds, inclusion aspects in building designs, as well as safe and sustainable construction criteria. Civil works would be procured and contracted by SECOB.

[4] Renovations refer to the improvement, expansion, and/or replacement of existing school infrastructure, wherein at least 20 percent of the school's existing infrastructure is usable. Construction under school renovations include, but are not limited to demolition, preliminary works, expansion, partial or complete substitution of infrastructure, adjustments made to repurpose existing areas, renovation of deteriorated infrastructure, complementary works, and environmental mitigation measures. The objective is to ensure the renovated school maintains the same conditions and physical standards as those in the newly constructed Millennium Schools (UEMs).

iii. *Administration, Supervision and Financing of works (US$6,780,000).* Individual consultancies and/or consulting firms would carry out contract administration, supervision, and project audits.

iv. *Furniture and Equipment (estimated US$21,495,000).* Purchase and delivery of furniture and required equipment in line with standards of integrated school. In some cases, MINEDUC has partially renovated the furniture within prioritized schools, and funds would be provided for any remaining needs.

v. *Information and Monitoring System for Civil Works Management (US$310,000).* The contracting of consultants, software and hardware required by the National Infrastructure Directorate (*Dirección Nacional de Infraestructura*, DNI) to develop a new system to improve capacity within MINEDUC to better manage and monitor construction implementation.

Sub-component 1.2 Strengthening Professional Development for Teachers (US$8.5 million).

15. This sub-component would support the professional development of teachers and school principals and school management staff in the targeted circuits through: (i) the financing of in-service training for teachers at all levels in the targeted circuits (around 2,700 in total). The 330-hour training is based on both content and pedagogy, and will be provided by selected accredited higher education institutions. The training would be developed taking into account teachers and students' assessments and the provision of said training would be prioritized to the weakest performers; (ii) the financing of technical or specialized graduate's degree studies for around 600 teachers, focused in the following areas: mathematics and physics, inclusive and special education studies, and bilingual and intercultural education; (iii) the financing of specialized master's degree studies in school management for close to 90 school principals and school management staff.

16. In-service teacher training. The in service teacher training follows a rigorous assessment to determine teacher weaknesses, which proved to be especially severe in the areas of knowledge related to specific disciplines. The program is designed to include 330 hours focused on subject matter specialization and pedagogy, with some hours dedicated to Information and ICT training. The program contains classroom and online instruction and is led by accredited universities that received either an A or B in the accreditation grading scale. The selection of teachers that would be required to attend the continuing education program would be based on the reasoning and subject-matter test results from the Ser Maestro examination. The priority subject matter areas would include those identified as the weakest throughout the 23 targeted circuits and nationwide. Furthermore, each teacher would be required to have a degree in a given discipline and training would be carried out in the subject area where the teacher dedicates most of his/her time. All continuing professional development courses would include mentorships (accompaniment or monitoring of each student teacher in his or her professional placement by a university tutor). Where this activity is not able to be performed, whether in-person, through a mixed modality or virtually, the student teachers should submit coursework electronically to receive timely feedback from their assigned mentors. All participating teachers receive a kit with a personal computer and modem (provided by MINEDUC) in order to carry out the online portion of the course to ensure evey teacher has access to a computer and the internet. The sub-component would finance the full cost of training for around 2,700 teachers (through agreements with individual universities). The

unit cost of in-service training, including materials, is estimated at $800. Moreover, this sub-component may include a technical assistance to be provided by the Bank to pilot classroom observations on teacher practices.

17. Graduate-level Programs for Teachers (4th level). Within the design of the professionalization of the teaching career path, there is a policy that encourages selected teachers to obtain a master's degree, which allows them moving up in the scale. The sub-component would support around 690 scholarships for eligible teachers within the Targeted circuits. Select accredited international universities would administer the master's degrees and other postgraduate programs through signed agreements with the Ministry of Education. The programs would be delivered virtually, with occasional visits from faculty for in-class instruction in Ecuador. The unit cost is estimated in around $6,000, though varies depending the university. For the selection of teachers, MINEDUC would give priority to upper secondary teachers (specifically those who teach math or sciences), as well as Special Education and Bilingual Education teachers among those teachers eligible to participate in master's level and subject-matter specialization training. Additionally, teachers interested in studying school management and leadership may also benefit from the proposed program as long as they are not currently school principals. The selection process would first name those teachers who specialize in the abovementioned subjects. The process would also prioritize those teachers who received a superior score in both the reasoning and mathematical skills evaluation (*Ser Profesional*) and subject-matter knowledge in the *Ser Maestro* exam.

18. Graduate-level Program for School Principals (4^{th} level). Within the framework of the career to be school directive, one of the requirements to be a school principal is to have a four level education (graduate level) credential. In this context, MINEDUC has a program of international graduate level studies with selected accredited university level institutions. This sub-component would finance the full cost of graduate degree for about 90 school principals and school management staff in the targeted circuits (estimated unit cost in around US$4,500, though varying depending the institution). The selection process would target all principals and school management staff belonging to the school hubs (including rector, vice-rector, and school inspector). There is a current agreement with University of Chile but there would be also a possible option that Ecuador's National Education University (*Universidad Nacional de Educación*, UNAE) in collaboration with an accredited international institution, would develop a one year specialization training program, focused on the development of abilities necessary to form educational leaders, taking into account skills needed to manage large schools as the school hubs.

<u>Sub-Component 1.3 Implementing the Academic Management System at School Level- CEL - (US$5.5 million)</u>.

19. This sub-component would finance the full implementation of CEL in the targeted circuits, including the provision of personal computers, internet connectivity, and training to all teachers.

20. The "Academic Management System at School Level" is the public face of MINEDUC´s information systems, known internally as "Online Education Community" (CEL). Through this platform, the users (authorities, school principals, teachers, students, and parents) can register for the principal activities related to their respective school (e.g. student support) and consult information (e.g. student´s grades). School principals are key users of the system and are endowed

with a number of responsibilities. For example, they: (i) register the users within their school and assign roles (e.g. teachers); (ii) design the school curiculum; (iii) assign students and parents/guardians. Teachers are required to use the platform to keep track of all the information that used to be collected on paper (grades, attendance record), and are equipped with tools to publish content that supports their lessons and learning (homework, blogs, etc.).

21. The use of the CEL requires an internet connection (or at least a connection to MINEDUC´s private network) so users may update and consult the information contained therein. MINEDUC expects to install WiFi zones on the grounds (in libraries and computer labs) with links to the MINEDUC´s private cloud (with the intention that the majority of these connections be through fiber optic cables). MINEDUC would manage security-related concerns, access control, content control and filters, application control, as well as oversee data use and collection.

22. MINEDUC plans to train all teachers in the basic skills and use of computers and the CEL. To date, MINEDUC has trained more than 50,000 teachers in an intermediate class called TIC-1 (40 hours of training in computer use).

23. The sub-component would finance, for all teachers and principals in the targeted circuits: (i) a kit which includes a laptop, a device to access a mobile internet connection (with a monthly capacity of 1000 MB for three years), wireless mouse, security lock, and backpack. MINEDUC estimates that each kit would cost close to US$900 (the actual cost would be US$869); (ii) a 40 hour training in the use of the CEL, to be provided by MINEDUC's staff.

Sub-Component 1.4. Supporting Students with disabilities and Special Education (US$ 1 million).

24. This sub-component would be led by the National Directorate of Special and Inclusive Education (*Dirección Nacional de Educación Especial e Inclusiva,* DSEI), and would support: (i) the provision of technical, didactic, and disability-specific materials within the targeted districts; (ii) teacher training focused on educational needs for students with disabilities to support each student´s individual development plan; (iii) implementation of awareness-raising campaigns to the community to promote the enrollment of children with disabilities. The infrastructure interventions would use the study carried out by SETEDIS to design interventions to overcome physical barriers, including the renovation of three special education schools located in Cayambe, Vinces and Quito, within the Project's targeted districts. The infrastructure intervention would take into account specific actions to guarantee transport services for enrolled children with disabilities and would be carried out under sub-component 1.1.

25. The provision of technical didactic materials is important to guarantee access to quality education for children with special educational needs. The Project expects to provide ludic/didactic and technological materials for all regular educational facilities in the targeted districts. It is expected that, through the use of these materials, all the children attending regular schools could increase their creative capacities, improve their relationships with children with disabilities, while encouraging collaborative practices and other essential values. These materials would also help the teachers improve the learning environment in their classrooms. The materials to be distributed would be printed, digital, and audiovisual, and would have ludic, informative, and communicational characteristics.

26. Considering that these materials are part of the national policy, the Project would contribute to distribution within the targeted districts: 369 high schools, 51 middle schools and 24 schools specialized in Information and Communications Technology, with specific curricula developed for each level within the targeted districts. Distribution would take place only once during Project implementation. Replacement and material upgrades would be covered by the regular budget starting in 2017.

27. Teacher training in areas that focus pedagogy on educational needs would be managed by the Undersecretariat for Professional Development (SDP) that, within the Project structure, has a specific plan for those teachers working in this subject. Among the training modules, it is necessary to include specific contents related to educational classroom aids for children with disabilities and the use of educational materials produced by the Project (and explained above). Additionally, the Project would include a training process for personnel to provide psychological support to students and their families in the screening and early warning areas, as well as to support teachers in regular classes. Project activities to be financed are: (i) Technical Assistance for the design of personnel training in psychological support to students and their families in 35 schools. Design for these modules would be coordinated with the SDP in order to include them within the training plans in the Project's targeted circuits , to be financed with resources allocated for activity 1.2; and, (ii) the carrying out at least one annual course for all teaches in the school "hubs" and all staff of the 3 special schools funded by the Project who are enrolled in the master's program on special education. These activities would be executed during 5 years of the Project timeline. Ninety percent of teachers within the Project area are expected to receive at least one continuing education course (virtual) over the life of the Project with entrance and exit examinations and certification.

28. A team within DNESI is working to strengthen national educational institutions through awareness-raising campaigns to overcome the physical and attitudinal barriers highlighted in the results provided by CONADIS. DNESI is working to improve service coverage based on the national regulations. The current proposal consists in periodical visits of local promoters that include meetings with each school district where they try to increase awareness and improve advisory services within the community using ludic and communicational methods. This operational process would take place in the Project's targeted districts. The details of final proposal would be included as part of the POM.

Component 2. Strengthening Planning, Management and Evaluation Capacity at MINEDUC (Bank: US$3 million).

Sub-Component 2.1. Management and Information Systems (Bank: US$1.5 million).

30. Until recently, MINEDUC information system was unable to produce consistent, accurate or up-to-date information. In this framework, MINEDUC decided to develop and implement a new model of design, and information management, which requires substantive transformations within the Ministry's current organizational culture and its concept of ICT systems. As a result of the findings[5], MINEDUC created a new conceptual model that encompasses the ICT systems. A more traditional approach would focus on the different activities or services that each unit within

[5] During 2013, MINEDUC carried out an analysis of its ICT systems.

MINEDUC should provide (and the corresponding ICT systems for each service), lend the current system to be described as using a government-centered approach. The new model would use a "student-centered" or "citizen-centered" focus. The basic concept is to concentrate the education system on its beneficiaries (citizens) and their progress through the system, where they fulfill different roles and receive different services throughout their lives.

31. This new model does not conceive information as falling into specific niches or isolated silos, but rather as a complete cycle that requires integration among its various functions and consistency over time. Were this model brought to fruition, MINEDUC would have management tools that would allow not only to analyze snapshots of the education system for a given moment in time, but also analyze and relate specific trends over time. Such a system would allow, for example: to analyze the current learning achievements of upper secondary students related to past results in elementary and lower secondary; learn about and project student migration patterns and of the population as a whole throughout Ecuador's territory and educational contexts; create public policies that mitigate school desertion based on the proven history of student attendance.

32. Then, MINEDUC would move towards a "merged" information management database. CNGE's vision is to transition the current state of systems and reintegrated data repositories into what is known as a "merged – or federated- information management database." Within this database, users are able to consult and update information transparently as if it were the only information system (although in reality it is comprised of multiple integrated systems). Therefore, MINEDUC plans on installing new systems that would satisfy critical needs of the education sector and retire the legacy systems. The new model includes a set of core macro-processes (Students, Teachers, Institutions (infrastructure) and School Management) on top of which added value components can be gradually incorporated.

33. In this context, the subcomponent would finance four new developments consistent with MINEDUC's Information Management development and modernization strategy and needed to complete and add value to the system: (i) Institutional and School Management System: development of an Information System platform that would allow MINEDUC to control and monitor Education Sector infrastructure concerns, specifically related to individual schools; (ii) Business Intelligence: development of a database and warehouse for information consultation tools for analysis by MINEDUC's authorities and staff. This platform would provide consistent and reliable data to support decision making within MINEDUC and throughout the Ecuadorian Government; (iii) Supply Management: development of an Information System platform that allows for planning and distribution of school supplies (books, uniforms, school desks) on a national scale; (iv) Project Management: MINEDUC has begun development on an information systems tool to support control, monitoring and evaluation of all management-related education projects on a national scale.

<u>Sub-component 2.2. Management, Monitoring and Specific Studies / Impact Evaluation (Bank: U$S2 million).</u>

34. This sub-component would support: (i) the financing of the Project Implementation Team at MINEDUC (to be fully financed by counterpart funds); (ii) specific studies/impact evaluation and a quasi-experimental evaluation of the impact of the in-service training program for upper

secondary teachers on student learning; and the development of an analytical model to measure the direct and indirect effects of the consolidation of schools on students outcomes (dropout, learning assessments) and potential spillover effects on neighboring schools. This second activity would be led by INEVAL.

35. The Project would support a study to evaluate the impact of teacher training on student outcomes and teacher practices. The design of the evaluation would be based on a quasi-experimental approach that exploits a discontinuity in the assignment of a 330-hour in-service teacher training program. Based on the results of the 2014 teacher evaluation "*Ser Maestro*," teachers who scored below 750 points were required to attend the in-service training, while those who scored above 750 were allowed to attend the training on a voluntary basis. During the school year 2014-2015 14,000 teachers took part in the training, 9,000 of whom have already completed it. While the team did not have the chance to analyze the data yet, the assignment rule is likely to have generated a discrete discontinuity in the probability of attending the training. For the impact evaluation, the attention would focus on all the teachers who would teach 7th grade in the school year 2015-2016, given all 7th grade students would take a universal standardized test in the spring 2016. Among the teachers who would teach 7th grade in 2015-2016, some have scored below 750 in the 2014 "*Ser Maestro*" evaluation, and complied with the teacher training obligation. Among those who scored above 750, only a small percentage is likely to have attended the training. The team would use a Fuzzy Regression Discontinuity design to compare the test score results of students whose teachers scored immediately below 750, and those whose teachers scored immediately above 750 in order to identify the Intention to Treat Effect of the teacher training on student learning. Upon availability of information on the teacher training attendance and completion, the evaluation would also be able to identify the Local Average Treatment on the Treated Effect (LATE), the impact on students whose teachers completed the in-service training. The analysis of the impact on test scores would rely entirely on administrative data. Upon availability of financial resources, teachers whose evaluation score fell in the proximity of 750 – as defined by the Optimal Bandwidth (Imbens and Kalyanaraman 2012) – would be surveyed in order to assess whether the teacher training led to a change in their pedagogical practices. By measuring both student outcomes and pedagogical practices, the evaluation would be able to shed light on the role of teacher behavior in the education production function.

36. Moreover, the sub-component would support the development of an Analytical Model that INEVAL is currently building in coordination with MINEDUC, to conduct a comprehensive evaluation on the impact of the school consolidation on four main outcomes: (i) coverage, graduation; (ii) quality of learning; (iii) equity implications, and (iv) efficiency in the allocation of resources. The model would try to understand the general equilibrium implications of the school consolidation process. Within the districts where the UEMs are located, the effects on schools that are not part of the network are theoretically ambiguous. In fact, the presence of an UEM might generate positive spillovers, if for instance teachers and school principals from non-participatory schools "learn" from their peers who work in the UEMs, or if the presence of high quality competitors induces them to increase their effort. On the other hand, if parents with stronger preferences for school quality move to areas covered by UEMs, the average quality of students attending to non-participatory schools might decline. There might be different types of externalities and, due the relatively small number of consolidation processes that have been implemented so far, the importance of these spillovers is not well understood yet. Within a district,

the effect of the consolidation process is the combination of the "direct" effect on the schools that took part in the consolidation, and the "indirect effect" on those that did not. Understanding how a district, and not just the UEM itself, is crucial not only to assess the cost effectiveness and the long term sustainability of the consolidation process, but also to measure the potential impact on inequality. Therefore, INEVAL and MINEDUC are conscious of the importance of assessing the impact of the consolidation at district, rather than simply at school level.

37. The attention would fall on four different set of outcomes: (i) cost-effectiveness and efficiency, (ii) learning outcomes, (iii) coverage, including parent/teacher/student satisfaction, (iii) inequality within a given district. The strategy would resemble a difference in difference model. Nine districts, within 3 Zones (2, 5, and 9), would be targeted by the Project. Among the 140 districts in the country, a "control group" of districts without UEMs based on observable characteristics in order to mimic the districts targeted by the program. In order to measure the overall impact of the consolidation, a difference in difference approach would be used: outcomes in treatment and control districts would be measured during the implementation and the difference between these two groups would be compared with the pre-program difference. The baseline is under construction. School characteristics and student learning have been assessed in June 2015 through the school census and standardized tests. Teacher competencies would be measured in 2015 through the "*Ser Maestro*" evaluation. Nevertheless, there are still significant gaps that need to be filled: for instance measures of cost-effectiveness that can be applied both to participatory and non-participatory schools still have to be defined and measured.

Annex 3: Implementation Arrangements

ECUADOR: Supporting Education Reform in Targeted Circuits Project

Project Institutional and Implementation Arrangements

1. Institutional arrangements have been designed to promote mechanisms that facilitate implementation, effective accountability, sufficient technical supervision, and adequate monitoring and evaluation. At the same time, institutional arrangements aim at leveraging existing structures within the Government and making Project implementation more dynamic. While implementation arrangements require a certain degree of complexity, the Project would include a general coordinating unit and an Operations Manual (POM) detailing Project implementation arrangements.

2. MINEDUC would be the designated responsible agency for Project implementation. As part of the Under-secretariat for School Administration (*Subsecretaría de Administración Escolar*, SAE), which is part of the Vice-Ministry of Education Management (*Viceministerio de Gestión Educativa*, VGE), the Millennium Schools Management Unit (*Gerencia de las Unidades Educativas del Milenio*, GUEM) would be responsible for the Project's fiduciary management (except for sub-component 1.1) and monitoring and evaluation, and would be supported by three main areas: (i) Financial Management; (ii) Procurement; and (iii) Monitoring and Evaluation, each one including a designated member for Project activities. The coordinator of Monitoring and Evaluation would be the interlocutor with the Bank. Key personnel for Project's management at MINEDUC would be in place before Project's effectiveness, specifically: procurement, financial management, monitoring and evaluation, and social management specialists. A social management specialist would be appointed to work on all social safeguards related issues from the National Coordination of Planning *(Coordinación General de Planificacion,* CGP*)*.

3. For management of subcomponent 1.1, a specific arrangement would be made to delegate fiduciary and execution management of civil works to a public executing agency*: Servicio de Contratación de Obras* (SECOB). A subsidiary agreement would be signed between MINEDUC and SECOB to establish duties and responsibilities for both parties, including procurement, financial management, accounting, payments, and civil works supervision. Key personnel for Project's management at SECOB would be in place before Project's effectiveness, specifically: a coordinator, procurement, and financial management specialists. SECOB would receive ad-hoc general coordination, procurement and financial management support from specialists as needed in order to ensure the timely implementation of Project activities.

4. The local authorities of MINEDUC's administrative Zones 2, 5 and 9, through their respective support units (planning, infrastructure, pedagogic, etc.), would have supervision responsibilities in all components/subcomponents, according to their respective mandate in the LOEI.

5. In terms of specific technical responsibilities, GUEM would articulate with the respective technical units, including each of the Zones, based on attributions established in the LOEI and with SECOB regarding sub-component 1.1. Moreover, two civil works technical specialists at GUEM

would follow up on implementation of sub-component 1.1. The following units would be responsible for each sub-component as follows:

Sub-Component	Responsible Technical Unit
1.1.	The Under-secretariat for School Administration (SAE) would be responsible for oversight, specifically in the development and implementation of a "*Information and Monitoring System for Civil Works Management"* "" The CGP would be responsible for the elaboration of consolidation proposals ("micro-planning"), including transportation arrangements. GUEM would be responsible for: (i) the review and approval of technical designs, implementation plans, and environmental management and social plans related to the construction of new schools (new UEMs); and (ii) the purchase of furniture and equipment for all schools. The Zones would be responsible, through their delegates for: (i) carrying out the "second level" supervision of design and implementation of Project works. SECOB would be responsible for: (i) hiring consultants to design technical specifications for civil works, carry out topographic studies and obtain environmental licenses for both new schools and "*Repotenciaciones*"; (ii) carrying out the procurement processes required for civil works; (iii) hiring of supervisors ("*Fiscalizadores*"); (iv) hiring of "contract administrator."
1.2.	"Undersecretariat for Professional Development" (SDP)
1.3.	"Bureau of Strategic Management" (CNGE)
1.4.	"Directorate for Special and Inclusive Education" (DNESI)
2.1.	"Bureau of Strategic Management" (CNGE)
2.2.	"Bureau of Strategic Management" (CNGE) for sub-component 1.1 and GUEM and "INEVAL" for sub-component 2.2.

Financial Management and Disbursements Arrangements

6. A Financial Management Assessment (FMA) was carried out to evaluate the adequacy of the financial management arrangements planned by MINEDUC in coordination with SECOB (Sub-component 1.1) for the implementation of the Supporting Education Reform in Targeted circuits Project.

7. In accordance with institutional arrangements, MINEDUC would be responsible for the implementation of the Project through GUEM. For management of Subcomponent 1.1, SECOB has been delegated as co-implementing entity and responsible for the technical and fiduciary arrangements. Within these arrangements, FM arrangements of the Project would be implemented by MINEDUC and SECOB UDAFs[6] with the support of financial management professionals fully dedicated to the Project.

8. MINEDUC and SECOB have gained experience implementing projects financed by CAF and IDB establishing process and procedures to implement and monitor civil infrastructure activities. MINEDUC's and SECOB's organizational structures are exposed to potential changes, turnover of high level staff; thus for Project implementation purposes, reinforcement of their respective

[6] Unidades de Administración Financiera

organizational structure, with fully dedicated technical and administrative experienced staff has been considered essential. The design of the Project activities involves participation of SECOB as co-implementing entity, demanding close operational coordination to ensure suitable project implementation and maintain adequate financial management arrangements. On the basis of the above mentioned, the FM risk during preparation is considered Substantial but once mitigation actions are implemented, the risk would be downgraded to Moderate.

9. On the basis of the review performed, actions taken by MINEDUC and SECOB, the FM team concludes that the proposed financial management arrangements are acceptable to the Bank. The following are the mitigation measures we propose:

a. *By Effectiveness:* (i) subsidiary agreement signed before project implementation begins; and (ii) operational manual is adopted by MINEDUC.
b. *Dated covenants*: (i) FM staff at MINEDUC and SECOB (fully dedicated to the Project) hired not later than 2 months after effectiveness; (iii) submit audit TORs for Bank's no objection 4 months after effectiveness; (iii) audit firm appointed for the first 3 years of Project implementation.

Summary of Financial Management Arrangements

10. The relevant features of the Project include: (i) consolidation of the overall FM reporting activities of the Project for Component 1, handled by MINEDUC in coordination with SECOB; (ii) use of the Single Treasury Account (CCU); (iii) close coordination of implementing agencies on the technical aspects; budgetary spaces and timely reporting on the use of funds; and (d) external financial audit covering the entire Project.

11. **Organization and Staffing**. For Project purposes, the UDAF of MINEDUC would be responsible for managing operational FM aspects under the Project with the support of a financial management specialist and fiduciary analyst located at the GUEM, both hired full time, under TORs agreed with the Bank, and on board not later than 2 months after effectiveness. The FM Specialist at MINEDUC would be financed with loan proceeds and the Fiduciary Analyst is expected to be hired with local counterpart funds. Their main responsibilities would consist of: (i) preparation of annual project budget; (ii) carrying out of preliminary review of supporting documentation *(ex- ante control)* before payments*;* (iii) review of SECOB's forecasts and financial information on Subcomponent 1.1 execution; (iv) preparation of consolidated project financial information including project financial statements and disbursement applications on the basis of e-Sigef and auxiliary information; and (v) maintaining of adequate files of the Project.

12. SECOB's[7] UDAF is familiarized with process and procedures implemented under CAF and IDB projects.Project approach would be to rely on UDAF's existing installed capacity, but it is necessary to have fully dedicated staff to implement Subcomponent 1.1 and ensure timely and suitable processing of project transactions within SECOB to prepare financial information to MINEDUC. An FM Specialist would be hired within a deadline of 2 months after effectiveness, with local counterpart funds and TORs agreed with the Bank.

[7] The *Servicio de Contratación de Obras* (SECOB).

13. **Programming and Budgeting**. MINEDUC and SECOB would follow local procedures regulated by COPLAFIP,[8] Ministry of Finance; and own UDAFs[9] regulations for the programming, formulation and execution of annual budgets. Decree 149 of April 2015 which prioritizes public investment would also apply.

14. GUEM[10] in coordination with SECOB project team would prepare Project's budget and incorporate it into MINEDUC institutional budget and procurement plan. MINEDUC's approved annual budget (including the Project) would be sent to the Ministry of Finance. Timely recording of approved budget for the Project, including commitments, accruals, payments and transfers of budgetary spaces[11] to SECOB would be carried through e-Sigef (consist of a decrease or debit of MINEDUC's allocated budget in one or several budgetary items).

15. SECOB would prepare on annual basis planning execution of activities to be carried out under subcomponent 1.1 and would coordinate the need of annual budgetary space with MINEDUC. SECOB would receive a transfer of annual budgetary space from MINEDUC through e-Sigef (consist of an increase or credit of SECOB's initial allocated budget in one or several budgetary items). During the Project implementation, additional budgetary spaces might be necessary and coordinated with MINEDUC. Timely recording of approved budget allocation by MINEDUC, commitments, accruals, payments and reporting would be carried out through e-Sigef. SECOB would be able to produce monthly budgetary report on the activities under Subcomponent 1.1.

16. The budgetary programmatic structure of e-Sigef allows identification of project transactions by type of expenditure, financing source and main activity and would be able to produce specific project budgetary report (*Cédula Presupuestaria*) by MINEDUC and SECOB. UDAF of MINEDUC would request MoF to have access to SECOB execution related to project activities under the option of *consulta*. MINEDUC has prepared a matrix with planned programmatic budget structure to be used by MINEDUC and SECOB to record and monitor Project activities.

17. **Internal Control.** MINEDUC and SECOB are subject to local internal control framework regulated by the *Contraloría General del Estado*. Under such requirement and based on the experience of other international financed projects, both entities have established specific internal processes and procedures. For Project purposes, those processes have been enhanced with the intention to have adequate monitoring of studies and civil works under the responsibility of SECOB – both in physical and financial terms, including: (i) specific roles and responsibilities, as well as processes and procedures have been agreed; (ii) the e-Sigef would be able to provide Project financial information; (iii) MINEDUC and SECOB's organizational structure - technical and administrative teams - would be strengthened; (iv) SECOB would designate contract administrators and a technical specialist (in field) to supervise overall civil work progress, approve external supervision report *(reporte del fiscalizador)* to process payments under civil work contracts and ensure adequate supporting documentation; (v) a subsidiary agreement between

[8] Código Orgánico de las Finanzas Públicas.
[9] Financial and Administrative Units of the public entities of the Government.
[10] Millennium Schools Management Unit.
[11] Transfer of budgetary space means a decrease or debit of one entity's amount allocated in the budget (of one or several budget items), and increase or credit of one entity's budget in one or several budget items.

MINEDUC and SECOB would be signed. Detailed process and procedures are being reflected in the Operational Manual.

18. **Accounting and Information System.** The regulatory FM framework in Ecuador for central government entities consists of: (i) COPLAFIP issued by MoF; and (ii) Accounting Technical Norms issued by the MoF, including governmental accounting policies, accounting standards and chart of accounts applicable for the public sector, including the use of the accrual accounting basis, the chart of accounts for public sector and the use of the Governmental Financial Management Information System e-Sigef [12] mandatory for entities under the General Budget of the State[13].

19. Under the Project MINEDUC and SECOB would use country information system e-Sigef which can identify specific transactions by component, type of expenditure and financing source. The e-Sigef also produces additional auxiliary information by payments and cash advances delivered under contracts. This information would be complemented by Excel (such as list of contracts and status of payments). Similarly SECOB would record project transactions related to Subcomponent 1.1 on the e-Sigef to provide detailed information on studies and/or civil work activities, including the use of auxiliary records in Excel spread sheets as required.

20. **Financial reporting.** MINEDUC would be responsible for preparing project consolidated financial statements in coordination with SECOB. The core content and frequency of the reports include:

a. *Financial reporting at SECOB level:* These reports would be used by MINEDUC for monitoring purposes and consolidation of project financial information. The Bank has requested that on at least on a quarterly basis and no later than 15 calendar days after the end of each month, SECOB submits the following information to document budgetary space and expenditures under Subcomponent 1.1 including: (i) statement of sources and uses of funds; (ii) forecasts vs execution by main type of expenditures; and (iii) report on the status of civil works; and (iv) budgetary report (*Cédula Presupuestaria*) on the activities under SECOB's responsibility.

b. *Financial reporting at MINEDUC level: Project-Interim financial reports (IFRs)* would be used for monitoring purposes and disbursement purposes. IFRs would include loan proceeds and local counterpart funds and would be prepared in U.S dollars and submitted to the Bank on a semi-annual basis, not later than 45 calendar days after the end of each calendar semester. IFRs would include: (i) a statement of sources (funds disbursed by the Bank) and uses of funds (expenditures paid and documented by SECOB); (ii) statement of cumulative investments; (iii) six-month forecast broken down by disbursement category; (iv) budgetary report; (v) designated account reconciliation; and (vi) explanatory notes to the financial statements. Annual financial statements for the Project would include (i), (ii) and (vi).

[12] Sistema de Gestión Financiera del Estado.
[13] Presupuesto General del Estado (PGE).

Audit Arrangements

21. **Internal Audit**. MINEDUC and SECOB's internal audit unit reviews compliance of operations and procedures with the Ministry of Finance Law and internal manuals. The Internal Auditor submits internal audit reports to the Ministry of Finance, CGE, MINEDUC and SECOB. Internal auditors may include Project activities in their annual work plan and would provide and or facilitate any additional information requested by external auditors.

22**. External Audit.** Under the existing arrangements for Bank-financed projects in Ecuador, the *Contraloría General del Estado* (CGE)[14] is responsible for the selection and appointment of an independent private auditor acceptable to the Bank. MINEDUC, as the Project implementing entity would be responsible for preparing audit terms of reference for the Bank's no objection. External financial audits would be performed for the entire Project and would be conducted by an independent audit firm acceptable to the Bank. The audit would be carried out in accordance with International Standards on Auditing (ISAs) issued by the International Federation of Accountants (IFAC) and the audit would include visits to MINEDUC and SECOB. Audit costs would be financed out of loan proceeds. Audit requirements would include the following:

Audit Report	**Due date**
Project financial statements	June 30
Management Letter	June 30

Funds Flow and Disbursement Arrangements – MINEDUC

23. **Funds Flow.** MoF[15] in coordination with MINEDUC would open the Designated Account (DA) in the Central Bank of Ecuador[16] to receive loan proceeds under the Project. In accordance with local regulations, funds deposited in the DA would be immediately withdrawn to the Treasury Single Account (CCU)[17], where loan proceeds would be identified by project; financier-WB (*Organismo*); and loan number (*Correlativo*). Local counterpart financing from MINEDUC general account would be also available at CCU to finance Value Added Taxes and administrative fee to be paid to SECOB. Loan proceeds and local counterpart funding can be withdrawn from CCU at any time and on a periodic basis against payment requests. Funds flow arrangements would have centralized management from MINEDUC and SECOB.

24. MINEDUC and SECOB would request MoF to process payments under the Project. Payments would be processed by MoF through the Interbank Payment System (SPI) of the BCE which allows for electronic cash transfers to deposit on beneficiaries' private bank accounts. Payments with jointly financing would comprise two vouchers (one for the cost and one for the VAT). Supporting documentation (original records) would remain at MINEDUC for all the Project activities, except for activities under subcomponent 1.1 in which case, original supporting documentation would remain at SECOB and copies would be submitted to MINEDUC.

[14] MOU signed between *Contraloría General* and WB, establishes CGE appoints independent and acceptable audit firms to audit WB financed projects.
[15] *Subsecretaría de Financiamiento Público.*
[16] In accordance with local regulations an exclusive bank account called "CX" is opened in the Central Bank by MoF to receive international financing.
[17] CCU- *Cuenta Corriente Única* where loan proceeds are identified by project, *Organismo* and *Correlativo.*

25. **Disbursement of funds from Bank to MINEDUC**. As in other projects, the Bank would disburse loan proceeds using the disbursement methods of advance, reimbursement and direct payment. Under the advance method, a segregated Designated Account (DA) in US Dollars would be opened and maintained by MoF in the BCE. Funds deposited into the DA as advances, would follow Bank's disbursement policies and procedures - as described in the Disbursement Letter. Funds deposited in the DA would be immediately withdrawn to the CCU where loan proceeds would be identified by Bank (*Organismo*); and loan number (*Correlativo*) and payments would be carried out by MINEDUC and SECOB through SPI. Preparation of withdrawal applications would be made by the FM Specialist of GUEM. The ceiling of the DA would be based on semiannual forecasts and expenditures documented in the project IFRs. The IFR report would be used for disbursement purposes and would include the reports mentioned under financial reporting. Supporting documentation and an IFR report form would be part of the Disbursement Letter.

26. **Disbursement of funds from MINEDUC to SECOB**. On an annual basis, MINEDUC would transfer budgetary space by financing source to SECOB based on their annual forecasts submitted to MINEDUC. The budgetary space would enable SECOB to carry out expenses under Subcomponent 1.1 activities. On a quarterly basis, SECOB would report and document execution of budgetary space by financing source.

Table of Loan Proceeds (expressed in US$)		
Category	**Amount of the Loan Allocated (expressed in US$)**	**% Expenditures to be financed (exclusive of taxes)**
1. Goods, works, consultant's services, and Training for Subcomponent 1.1 under SECOB	146,500,000	100%
2. Goods, consultants' services, Operating Costs and Training under Component 1 (excluding activities under subcomponent 1.1 managed by SECOB) and Component 2.	31,500,000	100%
TOTAL AMOUNT	178,000,000	

Procurement

27. Procurement activities would be carried out by MINEDUC through GUEM - and SECOB's STC. As part of Project preparation, an assessment of the procurement capacity of the implementing agencies was carried out in October 2014, February, May and August 2015 where the team agreed to ensure that GUEM and SECOB's STC would have adequate: (i) organizational structures, (ii) facilities and support capacity, (iii) qualifications and experienced procurement staff, (iv) record-keeping and filing systems, (v) procurement planning and monitoring/control systems used, and (vi) capacity to meet the Bank's procurement contract reporting requirements.

28. For the procurement activities, GUEM - and SECOB's STC would be staffed with a dedicated procurement specialist, and that procurement specialist in SECOB's STC would be supported by

GUEM´s technical and administrative staff. Procurement risks are related to the procurement capacity of MINEDUC and SECOB's STC, as the technical and fiduciary teams do not have adequate knowledge of Bank procurement procedures or contracting and, therefore, the institutional procurement capacity is considered weak. Based on the information available at the time of the assessment, the preliminary procurement risk is deemed High, the risk would be upgraded to substantial based on GUEM and SECOB's STC performance during implementation.

29. Additional risks include: (i) contractors winning at significantly lower prices than engineer's estimates; (ii) timely supply of materials for the civil works; and (iii) inadequate management of large contracts due to the lack of proper experience within SECOB's STC. Mitigating measures include: (a) Frequent monitoring (at least monthly for each contract) on quality assurance and physical progress, based on the annual monitoring plan; (b) GUEM - and SECOB's STC, with the support of the Bank, would verify all justifications for any variation in price before executing the works; and c) gearing up in the GUEM - through the contract Managers to acquire proper contract management skills to face a large quantity of contracts.

30. The Bank and MINEDUC agreed to the suggested corrective measures: (i) an POM including, inter alia, procurement and contracting procedures, would be adopted as a condition of effectiveness of the Loan Agreement; (ii) additional procurement provisions relating to Project Implementation have been incorporated in the Loan Agreement; and (iii) the Bank's work in Ecuador includes a systematic training program on procurement for existing and new lending operations, and close monitoring by the Bank[18], particularly, during the first two years of Project implementation.

31. Procurement for the proposed Project would be carried out in accordance with the Bank's "Guidelines: Procurement under IBRD Loans, IDA Credits and Grants by World Bank Borrowers", and "Guidelines: Selection and Employment of Consultants under IBRD Loans, IDA Credits and Grants by World Bank Borrowers", both dated January 2011 and July 2014, and the provisions stipulated in the LA. For each contract to be financed by the loan, the different procurement methods or consultant selection methods, estimated costs, prior review requirements, and timeframe, are agreed between MINEDUC and the Bank in the Procurement Plan (PP). The PP would be updated semi-annually or as required to reflect the actual Project implementation needs and improvements in institutional capacity.

32. **Procurement of Works**. Works procured under this Project may include the construction and remodeling of "Millennium Schools" and other related civil works infrastructure, etc. International Competitive Bidding (ICB) packages would be required. Also packages amounting to under US$8,000,000 in the aggregate may be procured using National Competitive Bidding (NCB) processes. Shopping procedures may be used for contracts of up to US$200,000 (only in emergency cases). Procurement of works for NCB or Shopping methods would be based on bidding documents satisfactory to the Bank. The procurement of works would not start until the "*Microplanificación* of each UEMs" and social or indigenous people management plans have been cleared.

[18] Recommended quarterly procurement missions in the first two years.

33. **Procurement of Goods**. Goods procured under this Project would include, inter alia: furniture, equipment for the schools, laboratories and computers, items deemed necessary to carry out Project activities, and goods (equipment, furniture, materials, etc.) purchased for the implementation of each component. Procurement of goods would be done using the Bank's standard bidding documents (SBD) for all international competitive bidding (ICB), and bidding documents satisfactory to the Bank for national competitive bidding (NCB) or Shopping methods.

34. All procurement notices shall be advertised on the Project's website, MINEDUC and SECOB's websites, and at least one local newspaper of wide national circulation. ICB notices and contract award information shall be advertised in the United Nations Development Business online (UNDB online), in accordance with the provisions of paragraph 2.60 of the Procurement Guidelines.

35. **Selection of Consultants**. Consulting firm services may be contracted for technical design studies, supervision, audits and evaluations. The procurement of consulting firms would be carried out using Bank standard Request for Proposals (RFP) documents. International firms should have the opportunity to participate in all RFPs above US$200,000. Shortlists of consultants for services estimated to cost less than US$200,000 equivalent per contract may be composed entirely of national consultants (firms registered or incorporated in the country) in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines. Consulting firms would be selected following Quality and Cost-based Selection (QCBS) for all contracts in the estimated amount of more than US$200,000.

36. **Selection of Individual Consultant Services**. Individual consultant services would be contracted mostly for project management and for technical advice, mainly in the substantive matters of the Project, but also for design, supervision and technical assistance. The terms of reference (ToRs), job descriptions, minimum qualifications, terms of employment, selection procedures and the extent of the Bank review of these procedures to contract and documents shall be described in the POM and the contract shall be included in the Procurement Plan.

37. **A Project website, a MINEDUC's and SECOB's website, and a national newspaper** shall be used to advertise expressions of interest as the basis for developing short lists of consulting firms and individual consultants, and to publish information on awarded contracts in accordance with the provisions of paragraph 2.31 of the Consultants' Guidelines and as mandated by local legislation. Contracts expected to cost more than US$200,000 shall be advertised in UNDB online.

38. **Training**. Training would include: expenditures (other than those for consultants' services) incurred by the Borrower to finance logistics for workshops, meetings and seminars, reasonable transportation costs and per diem of trainees and trainers (if applicable), and training registration fees. Transfers may be used for the payment of registration fees or University fees for teachers training (up to a ceiling amount to be established annually in the "*Plan Operativo Anual*"), as well as training facilities and equipment rental. Procurement would be done using NCB and shopping procedures as discussed below.

39. **Operating Costs**. The Project would finance incremental operational costs of implementing institutions and the operational costs, including salaries, travel costs and subsistence for missions of project staff (excluding civil servants); establishment and operation of the monitoring and

supervision, technical and financial audits; newspaper advertisements; operation and maintenance of project offices, including utilities and telecommunication; acquisition, operation and maintenance of office and field equipment, needed for project activities. These operating costs would be administered in accordance with the Bank's Procurement Guidelines, as appropriate. Procurement also would be carried out using the Bank's SBD or National SBD agreed with the Bank.

40. **Operations Manual (POM)**. The POM would include all procedures, rules, and standards for the implementation of all aspects of the Project including, but not limited to: institutional arrangements; operation of the Project coordination team; project planning, monitoring & evaluation; social and environmental management, reporting, communication, human resources; procurement; administrative and financial management; and procedures for amending the POM.

41. **Procurement Plan (PP)**. A procurement plan covering the first 18 months of Project implementation has been agreed at negotiations. The PP activities would consider the special nature of the Project, updating the PP once each school is ready to receive procurement-based activities. It would also be available in the Project's database and in the Bank's external website. The PP would be updated semi-annually or as required to reflect the actual Project implementation needs and improvements in institutional capacity. The PP shall set forth those contracts which shall be subject to the Bank's Prior Review. All other contracts shall be subject to post review by the Bank, except for those contracts terminated the implementing agency for which the Borrower shall seek the Bank's no objection prior to the proposed termination.

42. **Frequency of Procurement Implementation Support**. In addition to prior review and implementation support missions carried out by the Bank, the capacity assessment has recommended quarterly missions in the first two years and semi-annual missions thereafter, including field visits to analyze contract implementation and monitoring, and post reviews of procurement actions. Contracts subject to post review would be reviewed by the Bank and, based on the findings of these reviews and the proposed ratings, the Bank may determine the revision of the prior review requirements.

Thresholds for procurement methods and prior review are as follows:

Expenditure Category	**Contract Value (Threshold) (US$ thousands)**	**Procurement Method**	**Bank Prior Review**
1. Works	> 8,000	ICB	All
	200 – 8,000	NCB	First two each year, and all above US$5.0 million
	< 200	Shopping (Price Comparison) (only in case of emergency)	First two each year
	Regardless of value	DC	All
	> 500	ICB	All
	100 – 500	NCB	First two each year
	< 100	Shopping	First two each year

Expenditure Category	Contract Value (Threshold) (US$ thousands)	Procurement Method	Bank Prior Review
	Regardless of value	DC	All
3. Consultant Services	> 200	QCBS	All
	< 200	QCBS, QBS, CQ, FBS, LCS (as per Procurement Plan)	All ToRs Selection Process reviewed twice yearly (Ex Post)
	Regardless of value	SSS	All
4. Individual Consultants	> 100	IC	All
	< 100	IC	All TOR. Selection Process reviewed twice yearly (Ex Post). All contracts awarded under SSS, and key personnel
	Regardless of value	SSS	All

Social Safeguards

43. Whereas this Project introduces important opportunities to improve access and quality of public education, the school consolidation model, which requires the closure of community schools, also brings with it a range of potential social risks and impacts. These risks and impacts can lead to social conflict if adequate processes are not adopted to ensure meaningful consultation and participation of the education community involved in each school closure and hub school consolidation, together with the effective adoption of measures to mitigate parent's concerns around transportation, safety, cultural identity, and the quality of services provided within the new hub school environment. An Indigenous Peoples Planning Framework (IPPF) and Social Management Framework were prepared and disclosed on August 12, 2015, both in the Bank's and MINEDUC websites. A Resettlement Policy Framework (RPF) was also prepared for eventual cases that require land acquisition (described below) and was disclosed on August 12, 2015 both in the Bank's and MINEDUC websites.

44. This Project would support hub schools in urban, peri-urban and rural areas with diverse types of student populations, ranging from non-indigenous youth who live in high-risk urban contexts to Indigenous youth that come from remote rural areas with deep ties to their communities, schools, and culture. In order to manage this range of social contexts, during Project preparation three pilot UEMs were selected for consultation and social assessment processes. Two of the pilots were in urban and peri-urban areas, including a new hub school located in the peri-urban city where the equator is geographically located. The third pilot, Surupucyu, is located 20 minutes outside the city of Guaranda, in a rural setting, and has been nominated to be one of the country's fourteen emblematic Intercultural Bilingual UEMs, or "Guardian of the Language" school. The five school communities to be consolidated in the case of Surupucyu are all Indigenous. These pilots were critical to inform the preparation of the social management chapter of the ESMF as well as the Indigenous Peoples Planning Framework (IPPF). They helped reveal a set of common fears and impacts that could result from school consolidation in diverse settings while shedding light on the key steps, processes, and institutional actors necessary to effectively respond to these issues. The

pilots also helped MINEDUC identify areas where institutional strengthening, improved socialization tools, and additional actions or flexibility may be necessary to design hub schools that effectively address many of the concerns and priorities of the beneficiary communities. The three pilots social management plans (two SMPs and one IPPs) were completed and disclosed prior to appraisal, on August 12, 2015, both in Bank's Infoshop and MINEDUC's websites.

45. The methodology and a summary of the results of the consultation are described in detail in the Social Assessment for each pilot that would be published on InfoShop and MINEDUC's website. The key issues that were raised during consultations were different among Indigenous rural communities and peri-urban or urban non-indigenous communities. In peri-urban and urban areas the concerns lied primarily in ensuring that the hub school would ensure conditions of safety and security for children to access school and within the school environment. In these cases it was noted that in many cases parents are minimally involved in the education of their children and that drugs, alcohol, gangs and violence are very much part of the children's realities. Some of the primary areas of concern and requests included: (i) assurances that the hub school provides adequate security both at the school facilities and in key transportation routes to access the school (pedestrian and bus), (ii) that the hub school provides psychological and extracurricular support for children at risk or with learning disabilities, and (iii) that the hub school implements measures to ensure that smaller children would not be exposed to risk of harm or abuse from older students (particularly in the case of girls), i. e, classrooms in early education are separated from the rest. In the rural setting, Indigenous communities were primarily concerned with the new distances children would have to travel to access school as well as the loss of cultural identity and connection to their communities. In these cases parents were very involved in their children's education and the school environment - inclusive of the provision of healthy meals and mobilization of a range of health services, and community activities within the schools.

46. In regards to Social Management, the General Planning Coordination Unit (CGP) that reports to the SAE would manage and supervise the implementation of the IPPF and Social Management chapter of the ESMF. A social management specialist would be appointed for the Project under CGP. This unit would coordinate and ensure that each hub school carries out a stakeholder mapping, social assessment and consultation process with the educational communities of schools that would be closed or from which students would be transferred to the hub school. A social management plan or Indigenous Peoples Plan would then be prepared based on the assessment and consultation processes carried out for the hub school, within which the social management measures adopted would be described, including a budget, timeline and responsible parties for their implementation. In the case of indigenous communities, the Bank would only finance hub schools that can demonstrate that the Indigenous Peoples Plans hold the broad community support for the closure and consolidation process. The social assessment and consultation processes would be directly organized and managed by the District staff with the support and supervision of the CGP and the social management specialist, and in the case of indigenous schools, with the support as well of the Subsecretary for Intercultural Bilingual Education (SEIB). District staff would undergo training to build their understanding, ownership and capacity to implement the IPPF and ESMF.

47. The participatory processes outlined in the ESMF and the IPPF are fully in line with the LOEI's articles on citizen participation including Article 2 (paragraph O) where it commits to

citizen participation in the organization, governance, functioning, decision making, planning, management and accountability regarding the issues inherent to the educational environment and its institutions and establishments. The Article also commits the Government to promote and strengthen citizen capacity for effective participation; as well as in Article 6 (paragraph N) where it commits to guaranteeing the active participation of students, families and teachers in educational processes.

48. The DNI, in collaboration with MINEDUC's Legal Department, would be charged with land acquisition and resettlement procedures. This unit has experience in land acquisition and transfer for UEM development. However, it is important to note that the majority of hub schools that have already been built to date have utilized lands owned by MINEDUC or other public entities such as municipalities. During Project preparation, the Bank provided training to the relevant MINEDUC staff on the scope, principles, impacts covered, and requirements of the Bank's Involuntary Resettlement Policy. Land acquisition and resettlement are foreseen to be minimal under the Project as the vast majority of the proposed hub school sites (both new and expansion of existing infrastructure) are located on land already owned and under use by MINEDUC.

Environment

49. The Project does not foresee significant or irreversible environmental impacts and risks that could jeopardize the natural environment in its direct and indirect area. Civil works during construction of new schools and renovating existing schools should only generate typical focalized, reversible, and manageable impacts. As the official list for all schools and exact location of Project schools to be constructed and renovated are not known, an Environmental and Social Management Framework (ESMF) was prepared and disclosed on August 12, 2015, both in the Bank and MINEDUC's websites. Schools would be located in already populated urban and rural areas in two Costal region provinces (Los Ríos and Guayas) and one Andean province (Bolivar).

50. During Project preparation, an environmental and social screening was conducted according to the Bank's Operational Policy 4.01. The Project is classified as Category B and the following environmental safeguard policies apply: Environmental Assessment (OP/BP 4.01) and Physical Cultural Resources (OP/BP 4.11). This last policy was triggered as some schools to be built would require minor excavations in Andean areas of the Bolivar Province where unexpected finds could occur. The ESMF includes the relevant national procedures in the case of chance-finds.

51. Ecuador has a well-established national system for environmental impact assessment and management in school construction and renovation projects. This system, including principles and procedures, is described in detail in the Environmental and Social Management Framework (ESMF) formulated by the Client and describes institutional arrangements for environmental supervision. For a given school, SECOB would prepare or outsource the preparation of environmental forms (EF) and an environmental management plan (EMP) – covering construction and operation stages – to a private consulting firm. Both instruments are prepared on the basis of engineering and soil studies. SECOB has an Environmental Team of four professionals (environmental engineers and geographers) that reviews and makes comments to the EFs and EMPs. SECOB then sends these EFs and EMPs to the Ministry of Environment (MAE) through the MAE´s Unified System on Environmental Information portal (SUIA). MAE issues an

Environmental License upon approval of EFs and EMPs, which is then sent to the Ministry of Education via Internet. Environmental supervision during construction and operation phases would be undertaken by SECOB.

Monitoring & Evaluation

52. Progress towards achieving the PDO and intermediate indicators would be monitored by GUEM, wherein it would be responsible for collecting and compiling the data on all indicators presented in Annex 1. GUEM would work closely with the General Planning Unit (*Coordinación General de Planificación*, CGP), through the National Directorate of Analysis of Education Information (DNAIE), who would be the main source for providing administrative data to GUEM. GUEM would send Biannual Progress Reports to the Bank, including progress towards targets in the Result Framework. INEVAL would be responsible for the analysis of the direct and indirect effects of the consolidation of schools on student outcomes and potential spillover effects on neighboring schools.

53. **Technical Audit - Verification of Transportation arrangements.** The Project would conduct an annual technical audit on verification of compliance with the arrangements for school transportation for each school hub built under the Project, which in turn are based on the criteria and methodology set forth in the MINEDUC's guidelines *"Modelamiento del Transporte Escolar en Función del Reordenamiento de la Oferta Educativa."* These audits would be carried out in three occasions, one in 2017, 2018 and 2019. The scope and actions to be held within the framework of these audits consist of: (i) in site verification of operation of transportation arrangements: when public transportation applies it would verify bus stops, transportation time, safety conditions; in rural areas or semi-rural areas, the provision through contracting of transportation service enterprises would verify existence of a contract and the fulfilment thereof; (ii) conducting of a survey, based on a representative sample, to parents about their satisfaction with the provision of the transportation (time travel, safety, impact on the studies and learning). The firm or institution that would carry out the audit would produce a report with findings, conclusions and recommendations, which may serve as lessons to MINEDUC to eventually improve the provision of school transport service.

Annex 4: Implementation Support Plan

ECUADOR: Supporting Education Reform in Targeted Circuits Project

Strategy and Approach for Implementation Support

1. This Implementation Support Plan (ISP) has been developed on the basis of the specificities of the Project and its risk profile. It aims at making implementation support to MINEDUC both flexible and efficient.

2. The strategy for implementation support in this Project places strong emphasis on close support and good communication between the Bank, and GUEM's Coordination Unit.

Implementation Support Plan

3. The Bank would provide strong implementation support to the Project's Component as well as guidance regarding technical, fiduciary, social, and environmental issues. Formal implementation support and field visits would be carried out semi-annually, and would focus on:

a. **Technical inputs.** The Bank would count on the inputs from three international experts on: (i) infrastructure; (ii) teachers policies; and (iii) education information management system (EMIS), whose support would focus on the follow up of activities under Component 1 and 2.
b. **Fiduciary requirements and inputs.** Training would be provided by the Bank's FM specialist during Project implementation, as needed. This would allow building FM capacity in GUEM, particularly regarding Bank procedures. Supervision of FM arrangements would be carried out semi-annually as part of the Project supervision plan and support would be provided on a timely basis to respond to Project needs. Procurement supervision would be carried out annually, or as required.
c. **Safeguards.** The Bank's social development and environmental specialists would ensure that training is provided to relevant counterpart staff. On the social side, supervision would focus on the implementation of the agreed: (i) ESMF in compliance with OP/BP 4.01and (ii) Social Management and IPP to ensure compliance with safeguard policy on Indigenous Peoples (OP/BP 4.10).
d. **Country Relations.** The Team Leader would coordinate within the Bank to ensure Project implementation is consistent with Bank requirements, as specified in the legal documents. As stated above, constant channels for information exchange would be maintained with senior officials, taking advantage of trust and communication capacity.

Table A4.1 - Main Focus in Terms of Support to Implementation

Time	*Focus*	*Skills Needed*	*Resource Estimate*	*Partner Role*
First 12 months	Monitoring of implementation progress and results	-Team Leader -Education Economist	US$86,000	N/A
	Follow up and Supervision of Civil Works	-School Infrastructure Specialist		
	Supervision of Social Management Plans and Indigenous Peoples Plan	-Social Development Specialist		
	Supervision of Environmental Management Plans	-Environment Specialist		
	Supervision and training in fiduciary matters	-Financial Management Specialist -Financial Sector Specialist; -Procurement Specialist		
12-60 months	Monitoring of compliance with fiduciary guidelines	-Financial Management Specialist -Financial Sector Specialist -Procurement Specialist	US$86,000/year	N/A
	Follow up and Supervision of Civil Works	-School Infrastructure Specialist		
	Monitoring of compliance with Safeguards Policies and instruments	-Social Development Specialist -Environment Specialist		
	Monitoring of implementation progress and results	-Team Leader -Education-Economist		
	Supervision of Teachers and EMIS	-Teachers Policy Specialist -EMIS Specialist		

Table A4.2 – Bank Staff Skills Mix Required for the Project's Implementation Support

Skills Needed	*Number of Staff Weeks*	*Number of Trips*
Team Leader	15 SW annually	Twice a year
Education Economist	2 SW annually	Twice a year
Financial Management Specialist	2 SW annually	Twice a year
School Infrastructure Specialist	10 SW annually	Five a year the first two years, then twice a year
Procurement Specialist	8 SW annually	Four a year
Social Development Specialist	4 SW annually	Twice a year
Environment Specialist	4 SW annually	Twice a year
Teachers Policy Specialist	3 SW annually	Once a year
EMIS Specialist	2 SW annually	Once a year

Annex 5: Economic Analysis

ECUADOR: Supporting Education Reform in Targeted Circuits Project

Introduction

1. This annex presents the economic and financial analysis for the Project "Supporting Education Reform in Targeted circuits" that falls under the Education Sector reforms currently being carried out by Ecuador's Ministry of Education. The Project looks to support the Ecuadorian Government's efforts to improve the quality and coverage in early education, lower secondary, and upper secondary education levels, according to the National Development Plan for Well-Being's (*Plan Nacional del Buen Vivir del Estado Ecuatoriano,* 2013-2017) medium and long-term strategic objectives. The Project would support the integrity of national education policy within a targeted group of 22 circuits that belong to Zones 2, 5, and 9 that have been designated priority areas by the Ecuadorian Government.

2. The Project's economic and financial analysis includes three dimensions. On one hand, the model makes use of a conventional cost-benefit analysis, which measures the benefits of the program as the additional earnings alongside the additional costs. This first area of analysis considers the economic costs and benefits associated with a greater number of graduates from lower and upper secondary education. According to this focus, the investment in education increases an individual's productivity and, as a result, his or her future earnings. An estimation of the Project's economic benefits would be calculated as follows: (i) the difference between future incomes for those students in the targeted circuits who would not have graduated without the Project and (ii) the productivity gains for the entire labor force as result of the fact that students graduating from schools in targeted circuits would be on average better trained than the workers currently employed.

3. Secondly, the economic analysis estimates a portion of efficiency gains resulting from the MINEDUC's school consolidation strategy. The new school construction, renovation, and expansion activities according to the standards for Millennium Schools (*Unidades Educativas del Milenio*, UEMs) in the targeted circuits would require the consolidation of teachers, students, and principals in the UEMs and, as a result, would lead to efficiency gains related to average class size, quantity of students per UEM or quantity of students per laboratory. This analysis would provide a lower bound estimate of the efficiency gains, since it would only capture the more efficient usage of laboratories at the upper secondary education levels. The calculations of other efficiency gains are not possible due to complexity and/or lack of information. Finally, the economic analysis includes a brief fiscal sustainability study related to the Project, wherein it considers the impact of related investments in MINEDUC's overall budget.

4. The economic analysis is based on data from the Master Archive of Educational Institutions (*Archivo Maestro de Instituciones Educativas*), a database administered by MINEDUC's planning unit, and graduation rate projections developed by a multidisciplinary technical team in the same unit. It is important to note that Ecuador is currently experiencing a process of demographic transformation, under which the base of the population pyramid is shrinking and, as a result, the number of students in EGB would stabilize and then begin to slowly decrease. Nevertheless, given

the high dropout rates, especially in the final years of lower and upper secondary education, there exists a sufficient margin within which attendance and number of graduates can increase as the reforms to improve quality are carried out in the targeted circuits.

Education Quality, Productivity, and Economic Growth

5. The macroeconomic growth accounting and analysis based in the Mincer Model regarding the benefits of schooling in the labor markets have demonstrated that education is a key factor in economic growth and investment in education results in positive returns. The evidence demonstrates that more and better education can lead to an increase in human capital, which translates to an increase in productivity and resulting improved economic growth. More productive individuals receive higher salaries and a more productive society results in greater economic growth in the long-term. Lower and upper secondary education play a central role in improving abilities and skills among young people who are about to enter the workforce. The microeconomic analyses show that salaries depend on the level of schooling achieved and achievement results.
6. On the other hand, evidence indicates that the returns on investment in education are higher in lower middle-income countries than those who have achieved a higher income level. Recent studies on Ecuador and other Latin American Countries (e.g. El Salvador) present a rate of return between 8 and 10 percent of the average salary per additional year of formal education.
7. Additionally, a population with more years of schooling can generate important public benefits and positive externalities. The increased payment in taxes resulting from greater incomes throughout the workforce is an example of one of the most quantifiable results of this phenomenon. Other externalities are more difficult to calculate. Nevertheless, there is an extensive literature regarding the measurement of benefits resulting from education in terms of lower crime and violence rates, as well as better health outcomes; specifically, better educated women that allow for lower teenage pregnancy probability, lower rates of high-risk pregnancies, and lower infant mortality rates.

Projects Costs

8. This Project supports the following principal objectives for MINEDUC's Education Reform:

- Improve coverage with quality and equity in the 22 targeted circuits through the implementation of strategic education policy interventions, including the reorganization of educational opportunities and improvement in the infrastructure and educational equipment within the system; teacher training; implementation of the Online Educational Community (CEL); and the incorporation of inclusive practices to serve the needs of students with disabilities and/or learning disabilities.
- Strengthening MINEDUC's Planning, Management, and Evaluation capacities through the development and integration of an Information Management System, the financing of a Project Implementation Unit (PIU) (to be financed through counterpart funds), and through Impact Evaluation and other specific studies carried out by INEVAL to evaluate the impact of Project interventions.

The following table presents a summary of Project costs:

Table A5.1. Additional costs of the Supporting Education Reform in targeted circuits Project (in US$ millions)

Component	Project Total Cost	IBRD o IDA Financing	% financing
Component 1. Improving School Services in the Targeted circuits	**196,8**	**174,5**	**89**
1.1. Infrastructure, Equipment, Furniture and Transportation for school hubs	181,0	159,5	88
1.2. Professional Development for Teachers and Principals	8,5	8,5	100
1.3 Academic Management System at School Level (CEL)	6,2	5,5	89
1.4. Services for Students with disabilities and Special Education	1,1	1,0	89
Component 2. Strengthening Planning, Management and Evaluation Capacity at MINEDUC	**4,2**	**3,5**	**85**
2.1. Management and Information Systems	1,7	1,5	89
2.2. Management, Monitoring and Specific Studies/Impact Evaluation	2,5	2,0	80
TOTAL	**201,0**	**178,0**	**88**

Project Benefits

9. Project benefit estimates were calculated using the expected impact of graduation from upper secondary in the future incomes of student beneficiaries. The analysis estimates the number of students that would benefit from Project activities and, specifically, those students who are expected to graduate from upper secondary that would not have achieved that level without the Project.

10. The Gross Attendance Rate for lower secondary (EGB) is considered high (106.4 percent in EGB and 86.4 percent in upper secondary) related to the Net Attendance rate for the same level (96.1 percent in EGB and 56.8 percent in upper secondary). In this case, the Net Attendance Rate measures the total number of enrolled students, only considering those in the corresponding age range per grade level in relation to the total population in that age range; therefore, it is possible to improve and increase the number of enrolled students in upper secondary and achieve a greater number of graduates through Project interventions.

Table A5.2: Gross Attendance Rate, 2011-2012 (Final) by grade level

Grade Level	Age Group	Total Students	Population 2012	Gross Attendance Rate
Early Education	3-4 years	155,726	677,625	23.0%
Lower Secondary	12-14 years	3,450,735	3,242,504	106.4%
Upper Secondary	15-17 years	757,518	898,054	86.4%

Table A5.3: Net Attendance Rate (Final) by grade level

Grade Level	Age Group	Total Students	Population 2012	Net Attendance Rate
Early Education	3-4 years	134,800	677,625	19.9%
Lower Secondary	12-14 years	3,117,344	3,242,504	96.1%
Upper Secondary	15-17 years	509,665	898,054	56.8%

Source: MINEDUC

11. Under a conservative model, an estimated 11,600 students in lower secondary and 8,400 upper secondary students that would have dropped out of school in the 22 targeted circuits would remain in school as a result of ten years of successful Project implementation.

12. Table A5.4 includes attendance rate estimates (final) for the last three years of lower secondary and the three total years of upper secondary education over a ten-year period. Figure A5.1 showcases the expected changes in tenth grade (final year of lower secondary) and third year of lower secondary attendance rates with and without the Project during the next 10 years. Table A5.5 includes the projected number of students who would finish lower secondary and upper secondary without the Project. In the scenario without the Project, the calculations assume a 2 percent annual increase in the attendance rate.

Table A5.4: Quantity of students who would benefit from Project implementation

Years since Project Implemetation	Final Attendance Rate with the Project						Growth Rate with the Project					
	Lower Secondary (EGB)			Upper Secondary (*Bachillerato*)			Lower Secondary (EGB)			Upper Secondary (*Bachillerato*)		
	8th	9th	10th	1st	2nd	3rd	8th	9th	10th	1st	2nd	3rd
2012-2103	15.632	14.162	12.225	12.047	10.922	9.205						
2013-2014	16.354	14.953	14.052	12.775	10.934	9.975	4,6	5,6	14,9	6,0	0,1	8,4
Year 1	16.763	15.327	14.403	13.094	11.207	10.224	2,5	2,5	2,5	2,5	2,5	2,5
Year 2	17.182	15.710	14.763	13.422	11.488	10.480	2,5	2,5	2,5	2,5	2,5	2,5
Year 3	17.611	16.103	15.132	13.757	11.775	10.742	2,5	2,5	2,5	2,5	2,5	2,5
Year 4	18.316	16.747	15.813	14.376	12.305	11.225	4,0	4,0	4,5	4,5	4,5	4,5
Year 5	19.049	17.417	16.525	15.023	12.858	11.731	4,0	4,0	4,5	4,5	4,5	4,5
Year 6	19.811	18.113	17.269	15.699	13.437	12.258	4,0	4,0	4,5	4,5	4,5	4,5

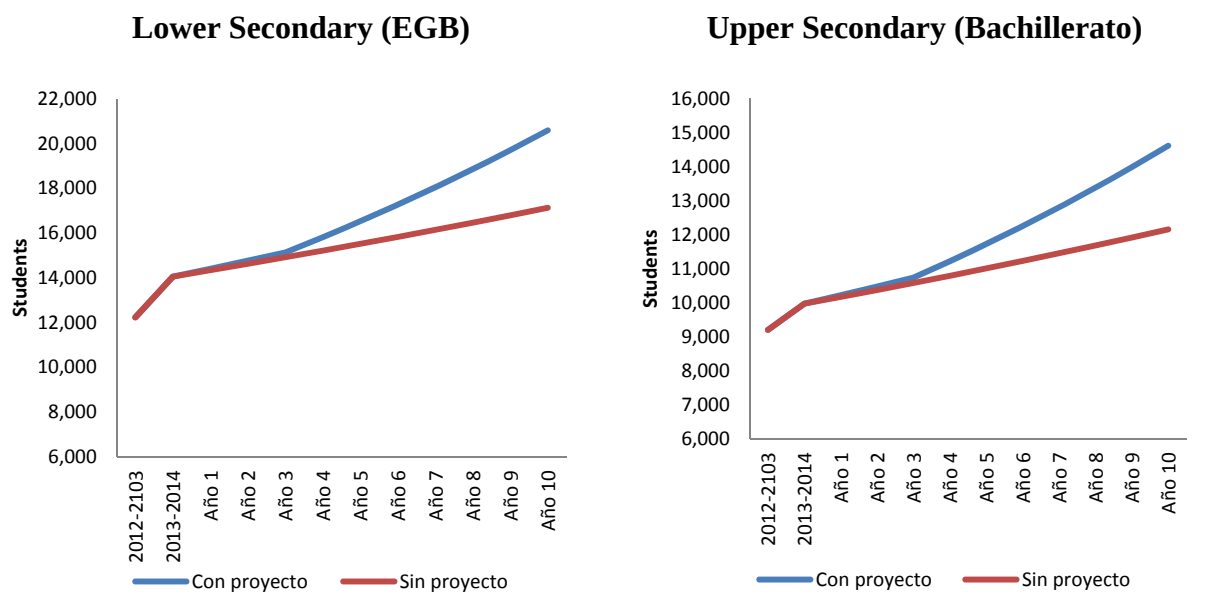
Year 7	20.603	18.838	18.046	16.406	14.042	12.810	4,0	4,0	4,5	4,5	4,5	4,5
Year 8	21.427	19.591	18.858	17.144	14.673	13.386	4,0	4,0	4,5	4,5	4,5	4,5
Year 9	22.284	20.375	19.706	17.916	15.334	13.989	4,0	4,0	4,5	4,5	4,5	4,5
Year 10	23.175	21.190	20.593	18.722	16.024	14.618	4,0	4,0	4,5	4,5	4,5	4,5

Table A5.5: Quantity of Graduates per Grade Level

Years since Project Implementation	**New Graduates**					
	Lower Secondary (EGB)			Upper Secondary (*Bachillerato*)		
	8th	**9th**	**10th**	**1st**	**2nd**	**3rd**
Year 1	82	75	70	64	55	50
Year 2	167	153	144	131	112	102
Year 3	256	235	220	200	171	156
Year 4	614	561	603	548	469	428
Year 5	992	907	1.010	919	786	717
Year 6	1.393	1.274	1.444	1.313	1.123	1.025
Year 7	1.817	1.662	1.904	1.731	1.482	1.352
Year 8	2.266	2.072	2.394	2.176	1.863	1.699
Year 9	2.740	2.505	2.913	2.648	2.267	2.068
Year 10	3.240	2.962	3.464	3.149	2.695	2.459

Source: Own Calculations

Figure A5.1: Expected Graduation Rates

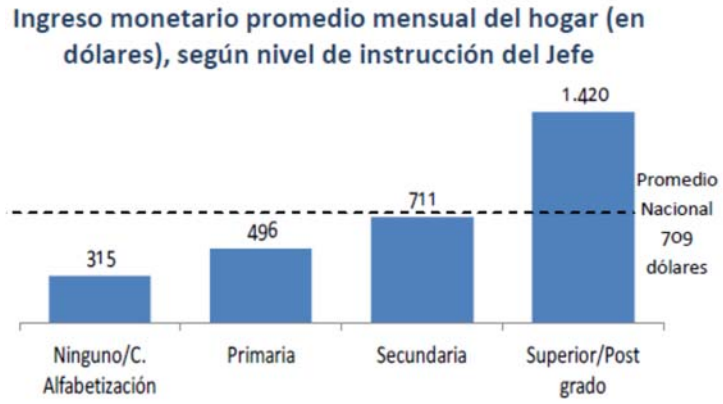


Source: Own Calculations

13. The analysis expects that the gains from Project activities would lead to lower dropout and repetition rates, leading to an increase in graduation rates, especially in upper secondary education. At the same time, this increase in graduates would have access to improve working environments

and conditions. According to household surveys carried out in Ecuador, the salary differential regarding years of schooling completed comes to approximately 43 percent between those who graduated from upper secondary and those who finished lower secondary or below.

Figure A5.2: Income Differential by Grade Level Completed



Source: National Household and Income Survey of Ecuador (Encuesta Nacional de Ingresos y Hogares de Ecuador)

14. The analysis assumes the principal economic benefit resulting from the Project activities would be the present value in the difference between future earnings for those students who graduate from upper secondary, taking into account their future possibilities in the workforce that are a direct result of their education. The analysis adds additional earnings that result from greater productivity associated with the improved quality of the Education System, wherein the productivity gains are null in the first few years and gradually increase over time as the share of better trained graduates over the total number of high school graduates in targeted districts increases. A ten percent increase in the share of better qualified graduates is assumed to lead to a 2 percent increase in productivity.

15. It is important to highlight that the Project analysis is based on the benefits that can be reasonably estimated; however, other benefits from the Project activities exist that are much harder to quantify. The following are examples of those potential benefits:

a) Use of public resources (through greater efficiency in education expenditures by student, but also through indirect future benefits in Public Health, such as more educated citizens that can better prevent the spread of diseases);
b) Violence prevention and prevention of juvenile delinquency (the extension of the school day should act as an important factor to dissuade young people from joining youth gangs or illicit groups, thereby indirectly helping to make affected communities safer);
c) Higher levels of achievement in education and greater access to upper secondary, would directly impact the rate of teenage pregnancy and, as a result, reduce the infant mortality rate and maternal mortality rate resulting from abortions, operations, and suicide.

Results of the Cost-Benefit Analysis of the Project

16. Based on the effectiveness hypothesis and Project's expected impact, the Net Present Value is expected to be US$268.5million with an Internal Rate of Return of 11.2 percent if the present value of the benefits are discounted at a rate of 5 percent during the first ten years of the Project. Table A5.6 presents a summary of the present value benefits and Project costs for the first 10 years.

Table A5.6: Updated Net Value based on Project's Baseline Scenario (US$, Discount Rate 5%)

	Present Value of benefits by new income differential for upper secondary graduates	Present Value benefits for greater productivity as a result of improved quality of education	Present Value Total Benefits	Present Value Total Costs	Net Present Value
Year 1	1,164,919	0	1,164,919	20,000,000	-18,835,081
Year 2	2,291,507	0	2,291,507	38,095,238	-35,803,731
Year 3	3,380,716	15,416,246	18,796,962	63,492,063	-44,695,101
Year 4	8,899,529	20,457,113	29,356,643	25,915,128	3,441,515
Year 5	14,343,249	25,449,623	39,792,872	14,808,645	24,984,228
Year 6	19,713,443	30,394,121	50,107,564	3,604,220	46,503,344
Year 7	25,011,648	35,290,952	60,302,600	3,432,591	56,870,009
Year 8	30,239,373	40,140,457	70,379,830	3,269,134	67,110,696
Year 9	35,398,101	44,942,976	80,341,077	3,113,461	77,227,616
Year 10	40,489,286	49,698,846	90,188,133	2,965,201	87,222,932
Total	**180,931,773**	**261,790,334**	**442,722,107**	**178,695,681**	**264,026,426**
Net Present Value					**264,026,426**
IRR					**11.2**
Cost-Benefit Index					**2.5**

Efficiency Analysis

17. The Project is expected to contribute to greater efficiency within the Ecuadorian Education System through reducing dropout and repetition rates in the targeted circuits. In order to achieve those objectives, the Project would finance the construction and renovation of 32 schools as well as support training for teachers within the targeted circuits. The construction and renovation of the schools to follow the Millennium Schools requirements would also result in improvements in the allocation of public resources in the Education Sector. Specifically, the construction and renovation of "hub" schools with a capacity of over 1,500 students from early education, lower secondary, and upper secondary education would allow for the consolidation of a considerable quantity of smaller schools that currently serve few students and register low levels of internal and external efficiency.

18. Table A5.7 exhibits a projection of the quantity of schools that could be consolidated through the construction and renovation of UEMs. According to the education statistics from MINEDUC's Planning Unit in the targeted circuits, there are 421 schools serving less than 300 students each (average of 88 students per school) that could be reassigned to the new UEMs or remodeled UEMs. This change would allow for a reduction in at least half of the units and improve the allocation of MINEDUC's resources.

19. In terms of school laboratories, school consolidations would allow for better utilization of infrastructure and equipment in order to serve 70 percent of upper secondary students. The rates of laboratory use would also significantly improve. Without the Project, MINEDUC would need 179 labs to serve 70 percent of students in the 22 circuits, given a ratio of students per lab of 109 whereas with the Project MINEDUC would only need 121 laboratories with a ratio of students per lab of 179. This would result in important savings due to efficiency gains in resource utilization related to laboratory infrastructure and equipment.

Table A5.7: Estimate of efficiency gains in the targeted circuits

Concept	Current State	With Project interventions
Schools	591	170
Total Students	185.115	185.115
Upper Secondary Students	34.595	34.595
Students per School	59	204
Chemistry and Physics Labs	89	121
Students with Access to Labs (%)	28.0	70.0
Students per Lab	109	200
Labs needed to Serve 70% of Total Student Population	179	121

Source: Own calculations

Sustainability and Fiscal Impact of the Project

20. In order to analyze the Project's fiscal sustainability, this analysis estimates the impact of the flow of Project funds on MINEDUC's overall budget during the period of Project implementation.

21. The model utilizes a budget projection without Project implementation, estimated from the accrued expenditure as reported by the Ministry of Finance. Under this scenario, the analysis expects MINEDUC's budget to increase proportionally with Ecuador's GDP, which is expected to increase by 3 percent annually. According to this hypothesis, MINEDUC's budget would remain constant, increasing 3.1 percent alongside the GDP. The second piece of the analysis incorporates the estimated $175 million in Project costs that MINEDUC would cover based on the current Project disbursement timeline.

22. As shown by the following table, the economic impact of the Project in MINEDUC's budget is insignificant, increasing by 5 percent in the Project's first year and decreasing to 3.4 percent in the final year of Project implementation.

23. Another indicator of Project sustainability is MINEDUC's rate of expenditure. The change in expenditure vis-a-vis Ecuador's GDP is minimal.

Table A5.8. Expected MINEDUC Budget with and without the Project

	2012	2013	2014	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5
A) MINEDUC Budget without the Project (Reference scenario)									
In millions US$	2.674	3.225	3.191	3.200	3.296	3.395	3.497	3.602	3.710
Annual % variation		20,6	-1,1	0,3	3,0	3,0	3,0	3,0	3,0
As % of GDP	3,1	3,4	3,2	3,2	3,2	3,2	3,2	3,2	3,2
B) MINEDUC Budget with the Project									
In millions US$				3.200	3.326	3.435	3.547	3.642	3.728
Annual % variation					3,9	3,3	3,3	2,7	2,4
As a % of GDP				3,2	3,2	3,2	3,2	3,2	3,2

Sustainability and Fiscal Impact of the Millennium Schools Program

24. The Millennium Schools (*Unidades Educativas del Milenio*, UEM) are an integral part of the Ecuadorian Government's (GoE) efforts to improve the quality of public education. The GoE aims to reduce the existing deficit in quality education infrastructure through implementing a comprehensive infrastructure model. The Millennium Schools Program incorporates pedagogical resources, subject-designated classrooms, modern equipment and technology in school libraries, laboratories, technical training centers, sports fields and courts, and arts facilities. The GoE's objective is to build 900 new UEMs and renovate 4,600 schools (*repotenciaciones*) according to the standards of the UEMs.

25. The different sustainability and impact scenarios related to the Millennium Schools Program implementation are included in Table A5.9. The exercise assumes a cost of $6.3 million per UEM (including infrastructure maintenance and depreciation), with recurring costs at $400,000 per UEM under the new model.

26. According to the hypotheses, the Program's does not pose a significant impact on GDP. Rather, it does greatly impact MINEDUC's budget. According to scenario 4, which includes the construction of 80 UEMs per year during the next 10 years, the Program would require 19 percent of MINEDUC's overall budget.

Table A5.9: Sustainability and fiscal impact analysis for the Millennium Schools Program

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
In millions $US											
Scenario 1	20 UEMs per year	135	143	151	158	166	174	182	190	197	205
Scenario 2	40 UEMs per year	270	286	301	317	332	348	364	379	395	410
Scenario 3	60 UEMs per year	405	428	452	475	499	522	545	569	592	616
Scenario 4	80 UEMs per year	540	571	602	634	665	696	727	758	790	821
% of GDP											
Scenario 1	20 UEMs per year	0,13	0,13	0,14	0,14	0,14	0,14	0,15	0,15	0,15	0,15
Scenario 2	40 UEMs per year	0,26	0,27	0,27	0,28	0,28	0,29	0,29	0,30	0,30	0,30
Scenario 3	60 UEMs per year	0,39	0,40	0,41	0,42	0,43	0,43	0,44	0,44	0,45	0,45
Scenario 4	80 UEMs per year	0,52	0,53	0,54	0,56	0,57	0,58	0,58	0,59	0,60	0,60
% of MINEDUC's Budget											
Scenario 1	20 UEMs per year	4,1	4,2	4,3	4,4	4,5	4,6	4,6	4,7	4,7	4,8
Scenario 2	40 UEMs per year	8,2	8,4	8,6	8,8	9,0	9,1	9,2	9,4	9,5	9,5
Scenario 3	60 UEMs per year	12,3	12,6	12,9	13,2	13,4	13,7	13,9	14,0	14,2	14,3
Scenario 4	80 UEMs per year	16,4	16,8	17,2	17,6	17,9	18,2	18,5	18,7	18,9	19,1
Hypotheses											
Ecuador GDP	in millions	104,235	107,362	110,583	113,901	117,318	120,837	124,462	128,196	132,042	136,003
MINEDUC's Budget	in millions	3,296	3,395	3,497	3,602	3,710	3,821	3,936	4,054	4,175	4,301

Endnotes

[i] Sources: National Institute of Statistics of Ecuador (INEC) and Ministry of Finance.
[ii] Third Regional Comparative and Explanatory Study (UNESCO, 2013)
[iii] Second Regional Comparative and Explanatory Study (UNESCO, 2006)
[iv] Survey Ministerio de Educación (2013).
[v] The list of 23 circuits is included in the OM. Any change in circuits during implementation would need to be agreed between the GoE and the Bank.
[vi] The selected circuits belongs to the four following provinces: (i) Province of Los Rios: District/Canton of Mocache-Quevedo; District/Canton of Babahoyo-Montalvo District/Canton of Valencia and District/Canton of Ventanas; (ii) Province of Bolivar: District/Canton of Guaranda; (iii) Province of Guayas: District/Canton of Milagro, and District/Canton of Santa Lucia (Guayas Pronvince); (iv) Province of Pichincha: District/Canton of Valencia and District/Canton of Moncayo.
[vii] One of the targeted circuits belong Quito DM2's canton, which has the one the lowest poverty rate (29 percent). However, the specific targeted circuit, is a peri-urban area which include high proportion of poor and displace population.
[viii] The *Necesidades Básicas Insatisfechas* (NBI) poverty headcount is the share of the population deprived of essential assets to wellbeing including decent housing, enrollment in education, and income dependency.
[ix] For this sub-component the targeted Districts are those where the 23 circuits belong, as mentioned above.
[x] Elías, Rodolfo, and Magdalena Rivarola, "Insumos Escolares Básicos en Paraguay: Identificando el tamaño del déficit y las causas del problema," (Asunción: Banco Mundial Paraguay, 2014), 20-24- Hanushek, "Spending on Schools," *A Premier on American Education*, (Stanford: Hoover Institution Press, 2001) and De Hoyos y García 2012 and "*Infraestructura Escolar y Aprendizajes en la Educación Básica Latinoamericana: Un análisis a partir del SERCE*" (IDB, 2011). Glewwe et. al. (2013) shows that, in developing countries, basic infrastructure inputs result in significant gains in education outcomes.
[xi] Evidence from the Netherlands and the United States shows that positive effects on student achievement depend on the size of merged schools. Netherlands: "School supply and student achievement: Evidence from a school consolidation reform, Monique de Haan, Edwin Leuven, Hessel Oosterbeek. USA: - Pennsylvania for K-8 "Comparing Achievement between K-8 & Middle Schools: A Large Scale Empirical Study," Vaughan Byrnes & Allen Ruby Center for Social Organization of Schools Johns Hopkins University). In both cases, the integrated schools did not include upper secondary. Evidence from Ukraine (Coupe et al. (2011)) shows that school optimization that led to the closure of small schools, had no negative impact on learning outcomes. Coupe Tom, Anna Olefir and Juan Diego Alonso (2011). "Is Optimization An Opportunity? An Assessment of the Impact of Class Size and School Size on the Performance of Ukrainian Secondary Schools." HD Unit ECA World Bank Document.