

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

URUGUAY

SUPPORT PROGRAM FOR THE CONSOLIDATION AND EXPANSION OF PLAN CEIBAL

(UR-L1058)

LOAN PROPOSAL

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ELECTRONIC LINKS
REQUIRED
1. Safeguard policy filter report and safeguard screening form http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=2249834
2. Annual work plan (AWP) (Plan of activities for the first disbursement and first 18 months of implementation) http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=2229460
3. Monitoring and evaluation arrangements http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=2224679
4. Complete Procurement Plan http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=2229984
OPTIONAL
1. Execution plan http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=2229409
2. Annual education statistics http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=2230317
3. Uruguay in PISA 2006 http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=2230318
4. Proposal for implementation of the CEIBAL Study and Research Center (CEI) http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=2248089
5. Educational platform strategy and design http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=2248086
6. Education and technology indicators in Uruguay http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=2248082

ABBREVIATIONS

ANEP	Administración Nacional de Educación Pública [National Public Education Administration]
CEI	Centro de Estudios e Investigación [Study and Research Center]
CEIBAL	Conectividad Educativa de Informática Básica para el Aprendizaje en Línea [Basic Educational Connectivity for Online Learning]
ICT	Information and communications technologies
LATU	Laboratorio Tecnológico de Uruguay [Technological Laboratory of Uruguay]
MEC	Ministry of Education and Culture
MEF	Ministry of Economy and Finance
OECD	Organization for Economic Cooperation and Development
OR	Operating Regulations
PC	Portable computer
PCU	Project coordination unit
PISA	Program for International Student Assessment
SERCE	Segundo Estudio Regional Comparativo y Explicativo [Second Regional Comparative and Explanatory Study]

PROJECT SUMMARY

URUGUAY SUPPORT PROGRAM FOR THE CONSOLIDATION AND EXPANSION OF PLAN CEIBAL (UR-L1058)

Financial Terms and Conditions				
Borrower: Eastern Republic of Uruguay Executing agency: Ministry of Economy and Finance (MEF)			Amortization period:	25 years
			Grace period:	3.5 years
			Disbursement period:	3.5 years
Source	Amount (US\$)	%	Interest rate:	LIBOR
IDB (Ordinary Capital)	6 million	70.6%	Inspection and supervision fee:	*
Local	2.5 million	29.4%	Credit fee:	*
Total	8.5 million	100.0%	Currency:	U.S. dollars from the Single Currency Facility
Project at a Glance				
<p>Program objective: The program's general objective is to support the consolidation of Plan CEIBAL at the primary level and its expansion into secondary education, as well as to build its institutional capacity to contribute to better primary educational and learning outcomes for students in the Uruguayan school system. Specifically, actions will be undertaken to: (i) consolidate the plan's educational development through the implementation of training programs, systems, and support platforms for teachers and schools; (ii) support institutional development and capacity to evaluate the progress and potential impacts of Plan CEIBAL and implement adjustments resulting from this evaluation; and (iii) disseminate and promote initiatives that expand the plan's social impact</p> <p>Special contractual conditions: Conditions precedent to the first disbursement: Entry into effect of: (i) the subexecution agreement (see paragraph 3.3); and (ii) the program Operating Regulations (OR) (see paragraph 3.7).</p> <p>Exceptions to Bank policies: None.</p> <p>Project consistent with country strategy: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> </p> <p>Project qualifies as: SEQ <input checked="" type="checkbox"/> PTI <input type="checkbox"/> Sector <input type="checkbox"/> Geographic <input type="checkbox"/> Headcount <input type="checkbox"/> </p>				

* The credit fee and inspection and supervision fee will be established periodically by the Board of Executive Directors as part of its review of the Bank's lending charges, in accordance with the applicable provisions of the Bank's policy on lending rate methodology for Ordinary Capital loans. In no case will the credit fee exceed 0.75% or the inspection and supervision fee exceed, in a given six-month period, the amount that would result from applying 1% to the loan amount divided by the number of six-month periods included in the original disbursement period.

I. DESCRIPTION AND RESULTS MONITORING

A. Background, problems addressed, rationale

- 1.1 **Background.** In April 2007, the Uruguayan government began execution of the Plan “Conectividad Educativa de Informática Básica para el Aprendizaje en Línea” [Basic Educational Connectivity for Online Learning] (Plan CEIBAL) providing, free of charge, one computer to each child and teacher in public primary education. In late 2008, CEIBAL was extended to private primary education and the secondary school level of public education. Plan CEIBAL is a pioneer in the universal implementation of the “one-to-one” model and is aligned with the objectives of the Bank’s country strategy with Uruguay¹ by proposing to generate greater learning opportunities for children and young people. The program will support the plan’s educational consolidation through support for initiatives that will improve practices in the schools so as to impact student learning, as well as build the capacity to monitor and evaluate the plan.

Table I-1
Uruguayan Education System

Level	Age	Modalities
Early childhood	3 to 5 years	
Primary school	6 to 11 years	
Middle school	12 to 14 years	Basic secondary level 7th, 8th, and 9th grade in rural schools Basic education in technology Basic education in agriculture
High school	15 to 17 years	Upper secondary level High school diploma in technology Secondary-level vocational training Technical courses
Higher education	18 years or older	Nonuniversity tertiary education (technical courses, vocational diplomas, advanced education in technology) University education Teacher training
Postgraduate		Master’s degrees and doctorates

- 1.2 **The education system.** Uruguay has a predominately urban population (93.8%) of 3.3 million, 46.7% of whom are under 29 years of age. Its social and income distribution indicators are among the highest in the region. The education system is made up of six levels: early childhood (3-5 years); primary (6-11 years); middle school (12-14 years); high school (15-17 years); higher education (18 years or older); and postgraduate, with 14 years of education required, beginning at age

¹ IDB Country Strategy with Uruguay 2005-2009 (document GN-2398-2) and Technical Note on the Education Sector, version in preparation for the IDB Country Strategy with Uruguay 2010-2014. Education Division. IDB.

four² (see Table I-1). Public education is the main responsibility of three institutions:³ (i) the Ministry of Education and Culture (MEC), as coordinator of education policy; and (ii) two autonomous agencies, the National Public Education Administration (ANEP), responsible for developing and implementing education policies in early childhood, primary, and secondary education; and Universidad de la República, responsible for university higher education. These three institutions comprise the Coordinating Commission on Public Education, a consultative body.

- 1.3 ANEP has a governing body, the Consejo Directivo Central [Central Executive Council] (CODICEN), which directs management of the educational levels, organized into four Decentralized Education Councils: Early Childhood and Primary (CIEP), Middle School (CEMB), High School (CEMS), and Technical/Vocational (CETP). With the enactment of the General Education Act, teacher training falls under the jurisdiction of the Instituto Universitario de Educación.
- 1.4 Uruguay has achieved universal coverage in primary education and nearly universal access for five-year-olds (95.5%), while making significant progress among four-year-olds (81%) and three-year olds (53.7%). Ninety-five percent of young people ages 12 to 14 and 78.5% of those 15 to 17 attend school. In recent years, educational funding has increased, approaching a target of 4.5% of gross domestic product (GDP) by the end of 2009. Increased investment in education was supplemented with equity policies expressed in programs targeting the poorest sectors, where the obstacles to learning are greatest, and there is lower attendance and higher dropout rates. The 2003 and 2006 Program for International Student Assessment (PISA) and the 2006 Second Regional Comparative and Explanatory Study (SERCE) assessments reveal the country's strong regional position, but relatively weak showing among countries in the Organization for Economic Cooperation and Development (OECD), even those with similar income levels. Despite the improvements, young Uruguayans, particularly those living in the poorest areas, do not have adequate graduation rates, or the knowledge and skills they need to compete in a globalized world.
- 1.5 **Challenges in education.**⁴ Uruguay faces two strategic challenges: (i) to increase the internal efficiency of its school system in terms of enrollment and reduction of repetition and dropout rates, especially in the lower income sectors; and (ii) to improve educational quality, by contributing to higher levels of learning, knowledge, and skills for performance in the areas required by today's society.
- 1.6 In terms of internal efficiency, despite recent improvements, repetition is high (6.2%) at the primary level, particularly in first grade (13.8%); 86% of that figure is due to academic achievement, and the rest to absenteeism (2008). Repetition

² General Education Act, Law 18,437 of 12 December 2008.

³ Technical Note on the Education Sector, 2010-2014: Annex I. National education system.

⁴ See Technical Note on the Education Sector 2010-2014 (version in preparation).

- translates into lower educational achievement, which explains the differential between the gross (110.7%) and net (95.2%) enrollment rates at this level (2007). Only 55% of children complete primary school in the expected time, while almost 31% do so with a lag of one year, and 14% with a lag of two or more years (2007).⁵
- 1.7 In secondary education, the dropout rate compounds the repetition problem. In 2007, repetition in the first four years was 23.5%. Repetition and the low educational achievement amassed in primary education, coupled with the household socioeconomic circumstances, the opportunity cost for young people of attending secondary or technical school, and students' perception of insufficient value-added in their education ultimately lead them to drop out. As a result, almost a quarter of young people ages 15 to 17 do not attend school, which makes it hard to achieve universal coverage at the high school level. The education system's low retention capacity means that in 2007 just 51.3% of young people between 15 and 17 completed middle school, and only 26.5% between 18 and 20 completed high school.
- 1.8 In terms of educational quality, the most recent international SERCE test (primary level) ranked Uruguay second in the region in mathematics and science, and third in reading. The SERCE report (2006) indicates the effect of the socioeconomic context on the results. One relevant observation in the region, also seen in Uruguay, is the impact of variables associated with the school on the reduction of learning disparities arising from social inequalities. In particular, the impact of the school environment on academic performance stands out among these factors, as does, to a lesser extent, the sufficient availability of school resources.
- 1.9 Uruguay also participated in PISA 2003 and 2006, earning the top ranking in mathematics, and second place in reading and science, among the participating countries of the region, but faring far worse among OECD countries. Uruguay is one of the countries with the highest deviation in grades on the test, confirming the high level of inequality in learning.⁶
- 1.10 Although the socioeconomic environment has an impact on performance, there are also causes directly attributable to the educational system, particularly the management of the schools and the classroom teaching and learning processes. The need for an educational model⁷ relevant to the context proposed by Plan CEIBAL, considering the individual particularities of the school population and its potential, represents one of the difficulties facing the Uruguayan school system. The need for more specific, updated information on students and their performance hinders the

⁵ 2007 annual statistics from the Ministry of Education and Culture, and "Elementos para analizar la evolución reciente de la matrícula en educación secundaria" [Factors for analysis of the recent change in secondary education enrollment]. ANEP, 2007. Montevideo, Uruguay.

⁶ Between 42% (science) and 46% (reading and mathematics) of the students are at level 1 or below, which means that they lack the basic skills to perform in today's society. These figures rise to more than 70% for students attending schools in a very unfavorable sociocultural context.

⁷ On the pedagogical model, see Fullan, Michael. *Breakthrough*, Corwin Press (2006).

work of teachers and families, slowing the development of new practices that take advantage of technology in the classroom and home, since they also lack appropriate digital content to explicitly support the improvement of learning, as well as stakeholder motivation. The potential for information and communication technologies (ICTs) to drive substantial change is an opportunity to improve the internal efficiency of school systems, and to change practices in order to improve learning outcomes.

- 1.11 Before the start of Plan CEIBAL, 43% of primary schools did not have computer equipment, another 43% had between one and four computers, and just 14% had five or more. There were also substantive differences in the availability of a personal computer (PC) depending on the sociocultural context of the schools: 78 students per PC in very unfavorable contexts and 37 students per PC in very favorable contexts. Even in this case, the time a student could access the PC was only three hours per month. On top of that, 36% of the PCs were more than six years old, and 30% did not work. In terms of connectivity, 74% had none, and only 17% had good service.
- 1.12 **Plan CEIBAL.** Out of this context arose the Plan CEIBAL initiative, with the following stated pedagogical objectives: (i) to contribute to improving educational quality through the integration of technology in the classroom, the school, and the family; (ii) to promote equal opportunities for all primary school students by providing each student and teacher with a portable computer; (iii) to develop a collaborative culture along four lines: child-child; child-teacher; teacher-teacher, and child-family-school; and (iv) to promote literacy and the critical nature of electronic technology in the pedagogical community, while adhering to ethical principles.⁸
- 1.13 Plan CEIBAL's implementation strategy has been characterized by: (i) strong political leadership (Office of the President of the Republic) and technical leadership (Technological Laboratory of Uruguay (LATU)); (ii) participatory decision-making, through the Plan CEIBAL Policy Commission, which includes representatives of various entities in the technology, education, and social sectors; and (iii) operational management which, in its initial phase, prioritized development of the plan's technological dimension (connectivity, laptops, services).
- 1.14 Plan CEIBAL provided children and teachers at all primary schools with 380,000 XO computers (laptops from the One Laptop Per Child (OLPC) Foundation), specially designed for children. These laptops have an outer case that protects them from water and dust, and they are light and easy to carry. The computer's observed battery life is one to two hours. They have no hard drive, increasing their durability, and store information only in flash memory. The operating system and applications used are open source and free of charge. Applications include an Internet browser, a word processor, an email and chat service, and an audio and video player.

⁸ Plan CEIBAL. Pedagogy project. September 2007.

- 1.15 The computers connect wirelessly to each other and to the Internet. Plan CEIBAL has installed a server at each school (approximately 2,300 in all) and provides the infrastructure necessary for network connectivity. The connection only allows about 40 computers to connect to the network simultaneously. The children take the laptops home every day and must recharge the battery there. To the extent that connectivity exists where the children live, they and their families or other members of the household can use the computers to connect to the Internet. Moreover, some public squares in the Uruguayan provinces have free Wi-Fi connections. The plan has also been supported by a program financed by the Multilateral Investment Fund (MIF) (operation ATN/ME-11077-UR), to build a market of technology-based service providers to develop Spanish-language digital educational content and technical support services associated with the deployment of a network of universal access to telecommunications, content, and services.
- 1.16 **Challenges for Plan CEIBAL.** Plan CEIBAL faces the challenge of generating impacts both in education and in the social sector.
- 1.17 In education, Plan CEIBAL is an opportunity to address the challenges of an education that reflects the individuality of each student, with specific information about their circumstances and performance, offering quality educational resources and collaborative spaces and strengthening professional training for teachers, who until now have lacked sufficiently systematic, ongoing, and in-depth training processes for the incorporation of ICT into their educational practices.
- 1.18 Although there is certain nonsystematic evidence of the possible positive impacts of Plan CEIBAL on the motivation of students and families and its effects on enrollment, attendance, and graduation rates, no exhaustive experimental evaluations of Plan CEIBAL have been done yet to gain a better understanding of its implementation processes, results, and impacts. International experience in evaluating the use of ICT in education shows that they have had a positive but moderate impact on learning outcomes.⁹ More evident is the change they produce in the short term on student and faculty attitudes and expectations. One major challenge in this context is the systematic introduction of pedagogical innovations to meet the educational objectives set by Plan CEIBAL.
- 1.19 In terms of social impacts, it is believed that Plan CEIBAL could promote a more integrated and participatory culture, especially for the most excluded families, through the potential use, outside the sphere of education, by families in their civic and/or work life. Identifying, evaluating, and disseminating these potential impacts also represents a challenge for the plan.
- 1.20 **The program's strategy.** Given the context described above and the challenges facing Plan CEIBAL, the Uruguayan government has made a priority of developing a support program for its consolidation at the primary level and its expansion into secondary education, with special attention to capacity-building for monitoring and

⁹ E-learning Nordic (2006), SITES (2006), ImpaCT2 (2002), OECD PISA (2003-2006).

evaluation, along with initiatives that contribute to strengthening new educational practices in Uruguayan schools, to ensure the educational and social impact proposed by the program. The program will support actions in both areas (educational and social), with emphasis on the educational impacts.

B. Objectives, components, and cost

- 1.21 The program's general objective is to support the consolidation of Plan CEIBAL at the primary level and its expansion into secondary education, as well as to build its institutional capacity to contribute to better primary educational and learning outcomes for students in the Uruguayan school system. Specifically, actions will be undertaken to: (i) consolidate the plan's educational development through the implementation of training programs, systems, and support platforms for teachers and schools; (ii) support institutional development and capacity to evaluate the progress and potential impacts of Plan CEIBAL and implement adjustments resulting from this evaluation; and (iii) disseminate and promote initiatives that expand the plan's social impact.

**1. Component 1. Educational consolidation of Plan CEIBAL
(US\$4.6 million)**

- 1.22 This component's general objective is to support the development of new educational practices among students and teachers, so that they can strengthen the educational use of the currently available computer equipment and connectivity, borrow didactic-pedagogical models relating to ICT, and support the development of more and better learning.
- 1.23 This component's specific objectives are: (i) to facilitate the production of, and access to, pertinent educational resources (content), in order to help teachers in the classroom; (ii) to develop integrated systems and platforms that strengthen the information available on the education system and student learning; and (iii) to promote methods of ongoing in-service training, in order to strengthen instructors' professional development and keep their knowledge up to date.
- 1.24 This component has three subcomponents, each of which will be conducted in three phases: (i) design (year 1); (ii) development and prepilot (year 1 and year 2); and (iii) pilot and evaluation (year 3). The pilot will address a broad sample of educational institutions and will measure the impact of the proposed systems at three levels: fourth and sixth grades at the primary level, and the second year of middle school. As a result, by the end of the program execution period, there will be systems proposed that can be expanded to the national level.
- 1.25 **Subcomponent 1.1. Content development.** Within the framework of this subcomponent, the program will finance: (i) technical assistance for the development of technical and pedagogical standards for content development, and for the design of a system to certify that all content offered in the schools is pertinent to the curriculum and compatible with the technical conditions present in the schools, including publication; (ii) resources for procurement and/or technical

assistance to develop a technology platform enabling and promoting the creation and distribution of digital content of at least two types: teaching and learning objects,¹⁰ and classroom projects.¹¹ The platform will encourage collaborative work by students with the teacher so that the digital content can be created, adapted, used, and published by content developers or users; and (iii) procurement, adaptation, and development of digital content meeting the proposed pedagogical and technical standards.

- 1.26 **Subcomponent 1.2. Evaluation and information.** Within the framework of this subcomponent, the program will finance: (i) resources for procurement and/or technical assistance to develop a technology platform for record-keeping, management, and educational information that involves an application distributed over school servers for the recording of key educational information (enrollment, attendance, grades, etc.) and an aggregate record at the national level to generate information on the system and the schools. This system will include, among other activities, the development of institutional sites for primary, secondary, and technical schools through enhanced communication processes, reporting, and involvement by parents and the local community; and (ii) resources for the procurement and/or development of a technology platform for online evaluation to assess learning and obtain up-to-date, easy-to-access information on educational achievement by students and classes; (iii) creation of a bank of assessment activities aimed at supporting and monitoring the teachers' work in the classroom; (iv) procurement or development of assessment instruments to measure learning nationally and subnationally; and (v) technical assistance and training workshops on the use of the systems, aimed at administrators and inspectors.
- 1.27 **Subcomponent 1.3. Ongoing in-service training.** Within the framework of this subcomponent, the program will finance: (i) design of the strategy and training content aimed at training instructors to adopt the systems and digital resources developed within the context of this program; (ii) resources for procurement and/or technical assistance for the development of a technology platform providing continuity to the training effort, multiplying its outreach to teachers, and deepening the collaborative training experience among peers; and (iii) training of the teachers, administrators, and inspectors who will monitor the experiences in the field and the training sessions.

¹⁰ This refers to "any digital resource that can be reused to support learning" (Wiley, David, "Connecting learning objects to instructional design theory: A definition, a metaphor, and a taxonomy." The Instructional Use of Learning Objects: Online Version. 2000. <http://reusability.org/read/chapters/wiley.doc>, accessed in March 2007 in English) which contained "that embedded digital information reflecting general data, learning objectives (for whom it is targeted) and the content as such" (Dr. Lázaro Salomón Dibut Toledo, Universidad de Oviedo (Spain) and Universidad de las Californias, Baja California, Mexico).

¹¹ Defined as a methodology for the development of classroom activities focused on learning content and acquiring skills through activities undertaken relatively autonomously by students around specific objectives.

2. Component 2. Institutional development, studies, and research (US\$2.4 million)

- 1.28 This component's objective is to generate information and knowledge about the conduct of Plan CEIBAL and its educational and social impact, in order to support decision-making and policy development to improve its results. Its specific objectives are the development of: (i) institutional and technical capacity for the monitoring and evaluation of Plan CEIBAL; and (ii) an initial research agenda.
- 1.29 **Subcomponent 2.1. Plan CEIBAL Study and Research Center (CEI).** Within the framework of this subcomponent, the program will finance implementation of the CEI, which will conduct interdisciplinary research and development aimed at promoting Plan CEIBAL through the performance of four functions: (i) promoting and developing research aimed at maximizing the potential of computers for students and the community; (ii) conducting and evaluating pilot projects to determine the effects of the application of innovations, and making them available to the Uruguayan education system; (iii) monitoring the core indicators for Plan CEIBAL implementation; and (iv) leading the evaluations of Plan CEIBAL, based on a midterm evaluation plan.
- 1.30 Within the framework of this subcomponent, the program will finance the design of the institutional framework and the implementation of the CEI, while supporting, among other things, the identification of its specific objectives and functions, the regulatory framework and its structure, organization, and medium- and long-term research and financing policies and strategies.
- 1.31 **Subcomponent 2.2. Initial research agenda.** Within the framework of this subcomponent, the program will finance: (i) development of a system of indicators for Plan CEIBAL, including coordination of the initial survey of indicators, setting of the baseline (2009-2010), and preparation of a monitoring plan; and (ii) resources for research projects, selected based on their relevance to current plan requirements to address challenges emerging as a result of plan implementation. Some of these projects are expected to result in publications in specialized scientific journals that accept work by foreign researchers. A preliminary proposal identified the following projects: (i) developments in hardware or software for inclusion of the disabled; (ii) new technological environments for education (architecture and furniture), including a pilot project at four primary and secondary schools; (iii) selection of hardware and software for secondary education, including a pilot project at two schools; (iv) mass management of "one to one" projects with low-cost equipment; (v) connectivity and energy use; (vi) social and student networks; and (vii) a study of the impact of the expansion of the CEIBAL network on the community's cultural and social capital through the addition of other nodes (call centers, libraries, public squares, etc.).

**3. Component 3. Plan CEIBAL social impact initiative fund
(US\$0.4 million)**

- 1.32 This component's objective is to identify and highlight experiences that strengthen the community and social dimension of Plan CEIBAL.
- 1.33 **Subcomponent 3.1. Social impact initiative fund.** Within the framework of this subcomponent, the program will finance: (i) studies to highlight initiatives and create a repository of side initiatives generated by Plan CEIBAL (knowledge base); (ii) resources for the creation of a grant fund for new social and economic initiatives based on Plan CEIBAL; (iii) publication of social initiatives undertaken in the Plan CEIBAL context that help increase its social impact, and their dissemination through the CEIBAL portal and at an annual event (exhibition or seminar); and (iv) a study evaluating the social impact of Plan CEIBAL.

C. Key results indicators

- 1.34 The program's key results indicators are: (i) improvement of teachers' and students' practices; (ii) percentage of research studies on Plan CEIBAL having an impact of educational policies; and (iii) number of CEI research projects published in international scientific journals. In terms of program impact, the main indicator will be improvement in student learning and outcomes attributable to the program. Although this impact will not be measured within the framework of this program (due to its short duration), it will define and finance the applicable baselines.

II. FINANCING STRUCTURE AND RISKS

A. Program cost and financing

- 2.1 The estimated total amount of the program is US\$8.5 million, of which US\$6 million will be financed by the Bank, and US\$2.5 million will be the local counterpart contribution (see Table II-1).

**Table II-1: Program Cost and Financing
(US\$000)**

Description	IDB	LOCAL	TOTAL
Component 1. Educational consolidation of Plan CEIBAL	3,318	1,295	4,613
1.1 Content development	967	233	1,200
1.2 Evaluation and information	1,191	239	1,430
1.3 Ongoing in-service training and new practices	1,160	823	1,983
Component 2. Institutional development, studies, and research	1,670	771	2,441
2.1 Plan CEIBAL Study and Research Center (CEI)	735	249	984
2.2 Initial research agenda	935	522	1,457
Component 3. Plan CEIBAL social impact initiative fund	210	190	400
3.1 Social impact initiative fund	210	190	400
Administration, audit, and evaluation	802	244	1,046
Administration, supervision, and coordination	272	244	516
Evaluation	480	-	480
External audit	50	-	50
TOTAL	6,000	2,500	8,500

B. Financing instruments

- 2.2 The program will be financed with an investment loan, executed over three years, in accordance with the following disbursement schedule:

**Table II-2
Tentative Disbursement Schedule
(US\$000)**

Source	Year 1	Year 2	Year 3	Total
IDB	600	3,000	2,400	6,000
Local	1,700	500	300	2,500
Total	2,300	3,500	2,700	8,500

C. Environmental and social safeguard risks

- 2.3 As a project aimed at improving educational quality within the framework of incorporating ICT into classrooms and the home, which does not involve physical works of any kind, this operation will have no adverse environmental or social impacts. This operation is classified as category “C,” in accordance with the Environment and Safeguards Compliance Policy (Operational Policy OP-703).

D. Fiduciary risks

- 2.4 Within the framework of an integrated management system, the program’s institutional analysis and the identified risk factors associated with its execution have been used to develop a risk mitigation matrix. The level of risk identified for the program is “low.” Considering that the program’s investment is focused on consulting services and low-cost goods, and that Plan CEIBAL has prior experience executing an operation with the Multilateral Investment Fund (MIF), ex post review has been recommended for program procurements and disbursements, under the

terms of the Procurement Plan and Operating Regulations, and upon prior specific initial training of the staff assigned to the program execution unit, such that Bank procurement and disbursement standards are satisfactorily met with no associated risks.

E. Other risks

- 2.5 **Sustainability and the educational model.** The program poses a long-term risk in the event that its contribution to achieving better educational outcomes for children in Uruguay cannot be demonstrated. To mitigate this risk, the program includes both an impact evaluation and institutional strengthening to facilitate the ongoing monitoring and evaluation of the plan. Furthermore, the mass introduction of ICTs into the school system assumes that this will drive major changes in practices among teachers, schools, and students—at least those allowing such investments to translate into better outcomes. This will mean avoiding the risk that the investments will be assimilated by the school system while allowing past practices to continue, only now using ICTs. For this reason, the program proposes an educational model distinct from the previous model, to recognize and develop the potential of each student, to provide better information on them and their achievement, to provide content and strategies associated with each context, and consequently, to develop strategies for the ongoing training of teachers on the new practices.
- 2.6 **Technology.** Uruguay has an extensive network of telecommunications services access infrastructure. Fifty percent of the population connects regularly to the Internet, according to data from the National Statistics Institute. The country ranks first in Latin America in terms of density of Internet users and in the number of servers per inhabitant. In this framework the plan aims to expand the network, bringing wireless access to the entire country and to the sectors that still lack access. Nevertheless, there is a risk of technological downgrading, improper maintenance, or differing needs according to the educational level (e.g. the operating system to be used on the computers). To mitigate this risk, Plan CEIBAL proposes to deepen technological research so as to guarantee the outcomes of this new phase in connectivity and equipment, as well as to develop services that ensure a proper level of equipment maintenance and support for the schools in this area.

III. IMPLEMENTATION AND ACTION PLAN

A. Execution arrangements

- 3.1 **Borrower and executing agency.** The borrower will be the Eastern Republic of Uruguay. The executing agency will be the Ministry of Economy and Finance (MEF), acting through the Technology Laboratory of Uruguay (LATU), in its capacity as subexecuting agency of the program.
- 3.2 **LATU.** The Technology Laboratory of Uruguay is a nongovernmental corporation organized and operating under public law, administered by a board comprising one representative of the executive branch (Ministry of Industry, Energy, and Mines),

- acting as chair, and one representative each from the Board of Industry of Uruguay and the Central Bank of Uruguay, as members. Its purpose is to promote the country's sustainable development and international integration through innovation and the transfer of value solutions in analytical, technological, management, and evaluation services. Within the framework of Plan CEIBAL, LATU is responsible for equipment solicitations, design and implementation of logistics for delivering computers, and the mechanisms for their repair and/or replacement.
- 3.3 **Subexecution agreement.** The MEF will enter into a subexecution agreement with LATU, transferring operational responsibility for the project. **The entry into effect of the agreement will be a condition precedent to the first disbursement.**
- 3.4 **Plan CEIBAL Policy Commission.** This body is responsible for strategic leadership and policy decision-making related to Plan CEIBAL, as well as interagency coordination and necessary consensus-building. Its members are representatives of ANEP, MEC, LATU, the National Agency for Research and Innovation (ANII), the Agency for the Development of e-Governance and an Information- and Knowledge-based Society (AGESIC), and the National Telecommunications Administration (ANTEL). The Plan CEIBAL Policy Commission will identify the key personnel for program execution.
- 3.5 **Project coordination unit (PCU).** LATU will serve as a PCU for operational execution of the program, for financial and procurement issues, and for monitoring and evaluation of the outcomes of program activities. The PCU will comprise the executing unit for MIF technical-cooperation operation ATN/ME-11077, bolstering its staffing and physical resources, which will ensure prior experience in executing projects with the Bank. The PCU will report to the Plan CEIBAL Policy Commission, through LATU. Communications with the Bank on operational or technical issues will go through the subexecuting agency, which will obtain required clearances from other levels of authorization, given the nature of the activity (Plan CEIBAL Policy Commission, MEF, ANEP).
- 3.6 **Coordination with ANEP.** Considering the central role of ANEP in program development, it has been agreed to appoint a coordinator for each of its subsystems (primary, secondary, and technical), to act as program liaisons, providing the relevant coordination and synergy between the PCU and ANEP on both technical and operational issues. Their functions will be described in the program Operating Regulations. ANEP, through its involvement in the Plan CEIBAL Policy Commission, will ensure internal coordination for program development, particularly on crosscutting actions relating to subsystems.
- 3.7 **Operating Regulations (OR).** The program's OR will include: (i) the program's organizational structure; (ii) technical and operational arrangements for execution; (iii) the system for programming, monitoring, and evaluation of outcomes; and (iv) financial, audit, and procurement procedures. **The approval and entry into effect of the OR will be a special condition precedent to the first disbursement.**

B. Procurement

- 3.8 Goods and services will be procured, and consultants will be contracted, in accordance with Bank policies (documents GN-2349-7 and GN-2350-7, as updated). The program does envisage financing of any works. International competitive bidding (ICB) procedures will apply when the cost of goods and nonconsulting services is US\$250,000 or more. National competitive bidding (NCB) procedures will apply when the cost of goods and nonconsulting services is greater than US\$50,000 and less than US\$250,000. Shopping (S) procedures will apply when the cost of goods and nonconsulting services is less than US\$50,000. For consulting services, the shortlist of consulting firms may comprise solely national consultants when the cost is US\$200,000 or less. Loan resources may be used to partially finance ANEP technical staff who have the required profile, training, and experience, in order to ensure their full-time dedication to the program. Procurement may be reviewed on an ex post basis under the terms established in the OR and the Procurement Plan (see Procurement Plan for further details).

C. Revolving fund and audit

- 3.9 **Revolving fund.** A revolving fund will be established for 5% of the loan amount.
- 3.10 **External audit.** Through the MEF, the borrower will deliver annually to the Bank, within 120 days after the close of each fiscal year, the program's annual financial statements, audited by an independent audit firm. For such purposes, the PCU will keep records of project expenses in accordance with the chart of accounts approved by the Bank, and will provide evidence that it has introduced accounting control, administrative, and financial systems for integrated program management to the Bank's satisfaction.

D. Summary of arrangements for monitoring results

- 3.11 A monitoring and evaluation plan using the output and outcome indicators reflected in the results framework has been agreed upon. This framework describes the strategy and measurement instruments for each outcome, as well as the amount of financing. With respect to measuring impact, although the exposure period is short (about one year), progress is expected on setting baselines and conducting quasiexperimental evaluations that allow measurement of the main expected impacts: (i) educational outcomes of students (repetition, graduation, time in school); and (ii) learning levels (mathematics, language, science).

CONFIDENTIAL

SUPPORT PROGRAM FOR THE CONSOLIDATION AND EXPANSION OF PLAN CEIBAL (UR-L1058)

RESULTS FRAMEWORK

Program objective:	The program's general objective is to support the consolidation of Plan CEIBAL at the primary level and its expansion into secondary education, as well as to build its institutional capacity to contribute to better primary educational and learning outcomes for students in the Uruguayan school system. Specifically, actions will be undertaken to: (i) consolidate the plan's educational development through the implementation of training programs, systems, and support platforms for teachers and schools; (ii) support institutional development and capacity to evaluate the progress and potential impacts of Plan CEIBAL and implement adjustments resulting from this evaluation; and (iii) disseminate and promote initiatives that expand the plan's social impact.
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Purposes	Base	Final target	Observations
To support improvements in student learning.			The baseline and initial measurements are part of the program.

	Base	Year 1	Year 2	Year 3	Final target	Observations
Component 1. Educational consolidation of CEIBAL						
Outputs						
1.1 Standards for content		2			2 standards developed and published ¹	
1.2 Standards certification system			1		1 system developed for certification of standards	Requires 1.1
1.3 Technology platform for digital content (portal)			1		1 platform developed and in operation (portal)	Requires 1.1
1.4 Procurement and development of digital content			400	200	600 ² items of digital content available (for both types of standards)	Requires 1.1 and 1.3
1.5 Technology platform for records, management, and educational information			1		1 information platform developed and in operation	
1.6 Development of institutional sites				100	100 sites developed in as many schools	Requires 1.5
1.7 Technology platform for online evaluation			1		1 platform developed and in operation	Requires 1.5

¹ Standard 1: Teaching and learning objects; and Standard 2: Classroom projects.

² 120 developed, 180 procured, and 300 developed by users (contest).

	Base	Year 1	Year 2	Year 3	Final target	Observations
1.8 Bank of classroom evaluation activities			108		108 activities published ³	Requires 1.5
1.9 Assessment instruments for measuring learning at the national level			27	27	54 tests ⁴	Requires 1.5
1.10 Ongoing training platform			1		1 platform developed and in operation	Requires 1.3 and 1.5
1.11 Teachers, administrators, and inspectors trained at pilot schools.			1200/250/200	0/0/200	1,200 teachers, 250 administrators, and 400 inspectors trained	Requires 1.10
Outcomes						
Change in educational practices				50%/50%	50% of teachers display a high or advanced level of use of program strategies and resources. 50% of students display a high or advanced level of use of program strategies and resources.	
Component 2. Institutional development, studies, and research						
Outputs						
2.1 Principal team of investigators		4	3		7 people contracted	
2.2 International board		1	1	1	3 meetings held	Requires 2.1
2.3 Technical and administrative staff		4	3		7 people contracted	
2.4 CEI development strategy		1			1 strategy developed	Requires 2.2
2.5 Regulatory framework		1			1 regulatory framework developed	
2.6 Physical space and equipment		1			1 physical space equipped	
2.7 Annual report on Plan CEIBAL implementation and progress indicators		1	1	1	3 reports	Requires 2.9
2.8 Pilot projects			2	1	3 pilot projects completed	
2.9 Data survey operations		1	1	1	3 databases	Requires 2.4
2.10 Studies			3	4	7 studies conducted ⁵	Requires 2.9
2.11 Institutional websites		1			1 website published	
2.12 International seminars			1	1	2 seminars held	
Outcomes						
Number of research projects by CEI published internationally				2	Two research projects by CEI published internationally	

³ 12 evaluation activities for three key subject areas (language, mathematics, and science), for the three grades (fourth and sixth grades in primary school, and the second year of middle school) are included in the pilot program.

⁴ Tests for three grades, in three subject areas, with three forms for each test with two applications. Total: 54 tests.

⁵ Studies are based on data collected in the survey operations.

	Base	Year 1	Year 2	Year 3	Final target	Observations
Percentage of studies on Plan CEIBAL having influence on educational policies				50%	At least 50% of the studies conducted influence educational policies	
Component 3. Plan CEIBAL social impact initiative fund						
Outputs						
3.1 Study highlighting existing initiatives		1			1 study on highlighted initiatives is developed.	
3.2 Initiatives financed by a grant fund		7	10	10	27 initiatives are financed. ⁶	
3.3 Annual dissemination events			1	1	Two annual dissemination events are held.	Requires 3.1 and 3.2
3.4 Plan CEIBAL social impact evaluation study				1	One evaluation study conducted.	Requires 3.1 and 3.2
Program impacts						
Improvement in student learning attributable to changes in classroom practices (by teachers and students)				1	Statistically significant progress in learning outcomes of students participating in the pilot program	

⁶ Average US\$10,000 each.

**SUPPORT PROGRAM FOR THE CONSOLIDATION AND EXPANSION OF PLAN CEIBAL
(UR-L1058)**

SUMMARY PROCUREMENT PLAN

Ref. no.	Category and description of procurement contract	Estimated cost of procurement (US\$000)	Procurement method ¹	Review (ex ante or ex post)	Source of financing and percentage		Prequalification (Yes/No)	Estimated dates		Status (pending, in process, awarded, cancelled)	Comments
					IDB %	Local/ other %		Publication of specific procurement notice	Completion of contract		
1	GOODS										
1.1.c	Procurement of digital content	260,000	ICB	Ex ante	100.0	0.0		Semester II 2011	Semester II 2011	Pending	
2.2.b	Pilot project on primary and secondary education	400,000	ICB	Ex ante	10.8	89.3		Semester II 2011	Semester I 2012	Pending	
2	CONSULTING FIRMS										
1.1.a	Development of technical and pedagogical standards for the development of digital content	50,000	FBS/ LCS/CQS/ QCBS	Ex post	100.0	0.0		Semester I 2010	Semester II 2010	Pending	
1.1.b	Development or procurement of a technology platform for distribution of digital content	170,000	FBS/ LCS/CQS/ QCBS (1)	Ex ante	100.0	0.0	Yes	Semester II 2010	Semester II 2011	Pending	
1.2.a	Development or procurement of a technology platform for record-keeping, management, and educational information	170,000	FBS/ LCS/CQS/ QCBS (1)	Ex ante	100.0	0.0	Yes	Semester II 2010	Semester I 2011	Pending	
1.2.b	Development or procurement of a technology platform for online evaluation	170,000	FBS/ LCS/CQS/ QCBS (1)	Ex ante	100.0	0.0	Yes	Semester II 2011	Semester II 2011	Pending	

¹ **Goods and works:** ICB: International competitive bidding; LIB: limited international bidding; NCB: national competitive bidding; PC: price comparison; DC: direct contracting; FA: force account; PSA: Procurement through specialized agencies; PAs: Procurement agents; IA: Inspection agents; PLFI: Procurement in loans to financial intermediaries; BOO/BOT/BOOT: Build, own, operate/build, operate, transfer/build, own, operate, transfer; BPB: Performance-based procurement; PLGB: Procurement under loans guaranteed by the Bank; PCP: Community participation procurement. **Consulting firms:** QCBS: Quality- and cost-based selection; QBS: Quality-based selection; FBS: Selection under a fixed budget; LCS: Least-cost selection; CQS: Selection based on the consultants' qualifications; SSS: Single-source selection. **Individual consultants:** NICQ: Selection based on comparison of national individual consultant qualifications; IICQ: Selection based on comparison of international individual consultant qualifications; CQ: Comparison of qualifications.

Ref. no.	Category and description of procurement contract	Estimated cost of procurement (US\$000)	Procurement method ¹	Review (ex ante or ex post)	Source of financing and percentage		Prequalification (Yes/No)	Estimated dates		Status (pending, in process, awarded, cancelled)	Comments
					IDB %	Local/ other %		Publication of specific procurement notice	Completion of contract		
1.2.b	Evaluation of bank of activities	432,000	FBS/ LCS/CQS/ QCBS (1)	Ex ante	100.0	0.0	Yes	Semester I 2011	Semester II 2011	Pending	
1.3.a	Development or procurement of a technology platform for virtual continuous in-service training	170,000	FBS/ LCS/CQS/ QCBS (1)	Ex ante	100.0	0.0		Semester I 2011	Semester II 2011	Pending	
2.2.a	Development of the system of indicators, baselines, and proposal for monitoring Plan CEIBAL	50,000	FBS/ LCS/CQS/ QCBS	Ex post	100.0	0.0		Semester II 2010	Semester I 2011	Pending	
2.2.b	Development and evaluation research: new technological environments for education	100,000	FBS/ LCS/CQS/ QCBS	Ex ante	75.0	25.0		Semester II 2010	Semester I 2011	Pending	
2.2.c	Development and evaluation research: software and equipment for secondary education	30,000	FBS/ LCS/CQS/ QCBS	Ex ante	100.0	0.0		Semester II 2010	Semester I 2011	Pending	
2.2.d	Development and evaluation research	145,000	FBS/ LCS/CQS/ QCBS	Ex ante	82.8	17.2		Semester II 2011	Semester I 2012	Pending	
2.2.e	Development, evaluation, and research (10 studies)	100,000	FBS/ LCS/CQS/ QCBS	Ex post	90.9	9.1		Semester I 2011	Semester II 2012	Pending	
2.2.g	Development and approval of strategy	30,000	FBS/ LCS/CQS/ QCBS	Ex post	100.0	0.0		Semester II 2011	Semester II 2012	Pending	
3.1.a	Application of CEIBAL social impact initiative fund	270,000	FBS/ LCS/CQS/ QCBS	Ex post	50.0	50.0		Semester II 2010	Semester II 2012	Pending	A set of initiatives is financed
3.1.a	Evaluation study on Plan CEIBAL's social impact	50,000	FBS/ LCS/CQS/ QCBS	Ex ante	50.0	50.0		Semester I 2012	Semester II 2012	Pending	

Ref. no.	Category and description of procurement contract	Estimated cost of procurement (US\$000)	Procurement method ¹	Review (ex ante or ex post)	Source of financing and percentage		Prequalification (Yes/No)	Estimated dates		Status (pending, in process, awarded, cancelled)	Comments
					IDB %	Local/ other %		Publication of specific procurement notice	Completion of contract		
adm	External evaluation	480,000	FBS/ LCS/CQS/ QCBS	Ex ante	100.0	0.0	Yes	Semester I 2012	Semester II 2012	Pending	FC or research centers or universities
adm	External audit	50,000	FBS/ LCS/CQS/ QCBS	Ex ante	100.0	0.0		Semester II 2010	Semester II 2012	Pending	
1.1.a	Development of technical and pedagogical standards for the development of digital content	50,000	FBS/ LCS/CQS/ QCBS	Ex post	100.0	0.0		Semester I 2010	Semester II 2010	Pending	
1.1.b	Development or procurement of a technology platform for distribution of digital content	170,000	FBS/ LCS/CQS/ QCBS (1)	Ex ante	100.0	0.0	Yes	Semester II 2010	Semester II 2011	Pending	
3	CONSULTING PROJECTS FOR INDIVIDUAL CONSULTANTS										
1.1.a	Design of the digital content certification system process and its subsequent evaluation	65,000	CQ	Ex post	70.0	30.0		Semester I 2011	Semester II 2011	Pending	A group of consultants
1.1.b	Design and implementation of a help desk for the creation, use, and adaptation of content	70,000	CQ	Ex post	70.0	30.0		Semester I 2011	Semester II 2011	Pending	One or more consultants
1.1.c	Development of digital content	250,000	SSS/CQ	Ex post	70.0	30.0		Semester I 2011	Semester II 2011	Pending	A group of consultants
1.2.a	Implementation in primary, secondary, and technical schools	150,000	CQ	Ex post	50.0	50.0		Semester II 2011	Semester II 2012	Pending	A group of consultants
1.2.b	Development, application, and analysis of learning assessment instruments	508,400	CQ	Ex post	67.7	32.3		Semester II 2011	Semester I 2012	Pending	A group of consultants
1.3.a	Development of strategy and content for continuous in-service training	297,000	SSS/CQ	Ex post	80.8	19.2		Semester I 2010	Semester II 2010	Pending	A group of consultants
2.1.a	Operation of international consultative council	100,000	CQ	Ex post	70.0	30.0		Semester I 2010	Semester II 2012	Pending	A group of consultants

Ref. no.	Category and description of procurement contract	Estimated cost of procurement (US\$000)	Procurement method ¹	Review (ex ante or ex post)	Source of financing and percentage		Prequalification (Yes/No)	Estimated dates		Status (pending, in process, awarded, cancelled)	Comments
					IDB %	Local/ other %		Publication of specific procurement notice	Completion of contract		
2.1.a	Initial CEI technical team	744,000	CQ	Ex post	67.7	32.3		Semester I 2010	Semester II 2012	Pending	A group of consultants
2.2.a	Operations for information survey	360,000	CQ	Ex ante	95.8	4.2		Semester II 2010	Semester I 2011	Pending	A group of consultants
2.2.d	Pilot project in secondary education	115,000	CQ	Ex ante	78.3	21.7		Semester II 2011	Semester I 2012	Pending	A group of consultants
2.2.g	Institutional website	20,000	CQ	Ex ante	0.0	100.0		Semester II 2010	Semester II 2010	Pending	A group of consultants
3.1.a	Studies highlighting existing initiatives and creation of the repository	50,000	CQ	Ex post	70.0	30.0		Semester I 2010	Semester II 2010	Pending	A group of consultants
adm	Project Coordination Unit	443,600	CQ	Ex ante	75.2	24.8		Semester I 2010	Semester II 2012	Pending	A team of 4 consultants is expected
adm	Primary and secondary education coordinators	72,000	CQ	Ex ante	0.0	100.0		Semester I 2010	Semester II 2012	Pending	A team of 3 coordinators with ANEP is expected
1.1.a	Design of the digital content certification system process and its subsequent evaluation	65,000	CQ	Ex post	70.0	30.0		Semester I 2011	Semester II 2011	Pending	A group of consultants
4	NONCONSULTING SERVICES										
1.1.a	Dissemination of digital content certification system and standards	35,000	SSS/PC	Ex post	50.0	50.0		Semester II 2011	Semester II 2012	Pending	Includes printing of materials and holding of dissemination events, among others
1.1.c	Open contest for users to develop digital content	300,000	PC	Ex post	50.0	50.0		Semester II 2010	Semester II 2011	Pending	Includes various expenses related to workshops (printing, services, equipment rental, transportation, etc.) and compensation for content development

Ref. no.	Category and description of procurement contract	Estimated cost of procurement (US\$000)	Procurement method ¹	Review (ex ante or ex post)	Source of financing and percentage		Prequalification (Yes/No)	Estimated dates		Status (pending, in process, awarded, cancelled)	Comments
					IDB %	Local/ other %		Publication of specific procurement notice	Completion of contract		
1.3.a	Implementation of initial training courses	766,000	DC/PC	Ex post	0.0	100.0		Semester I 2010	Semester II 2010	Pending	Course organization, instruction, and logistics
1.3.a	Implementation of training courses for change of practices	750,000	SSS/PC	Ex ante	100.0	0.0		Semester I 2011	Semester I 2012	Pending	Includes various expenses related to workshops (printing, services, equipment rental, transportation, etc.) and compensation for content development
2.1.a	Operating expenses	140,000	SSS/PC	Ex post	97.2	2.9		Semester I 2010	Semester II 2012	Pending	Includes various expenses related to the operation of the CEI
2.2.g	International seminars	60,000	SSS/PC	Ex post	50.0	50.0		Semester II 2011	Semester I 2012	Pending	Includes various expenses related to the organization and development of seminars and workshops (materials, services, equipment rental)