Document of
The World Bank

Report No: 68066-CR

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED LOAN

IN THE AMOUNT OF US$200 MILLION

TO THE

REPUBLIC OF COSTA RICA

FOR A

HIGHER EDUCATION IMPROVEMENT PROJECT

AUGUST 24, 2012

Human Development Department
Central America Country Management Unit
Latin America and the Caribbean Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective April 16, 2012)

Currency Unit	=	Costa Rican Colón (CRC)
CRC504.6	=	US$1
US$0.002	=	CRC1

FISCAL YEAR
January 1 – December 31

ABBREVIATIONS AND ACRONYMS

AIP	Annual Investment Plan
AMI	Institutional Improvement Agreement (*Acuerdo de Mejora Institucional*)
CE	Liaison Commission (*Comisión de Enlace*)
CGR	Comptroller General of Costa Rica (*Contraloría General de la República*)
CONARE	National Council of Rectors (*Consejo Nacional de Rectores*)
CONESUP	National Council of Private University Higher Education (*Consejo Nacional de Enseñanza Superior Universitaria Privada*)
CPS	Country Partnership Strategy
CQS	Consultant's Qualification Selection
CSE	Monitoring and Evaluation Committee (*Comité de Seguimiento y Evaluación*)
CTG	Government's Technical Commission (*Comisión Técnica del Gobierno*)
DA	Designated Account
ESMF	Environmental and Social Management Framework
EMP	Environmental Management Plan
ES	Environmental Supervisor
EU	Environmental Unit
FBS	Fixed Budget Selection
FEES	Special Fund for the Financing of Public Higher Education (*Fondo Especial para el Financiamiento de la Educación Superior Estatal*)
FM	Financial Management
FMA	Financial Management Assessment
GoCR	Government of Costa Rica
HEI	Higher Education Institution
IBRD	International Bank for Reconstruction and Development
IC	Individual Consultants
ICB	International Competitive Bidding
IDA	International Development Association
IESUEs	Public University Higher Education Institutions (*Instituciones de Educación Superior Universitaria Estatal*)
IFR	Interim Financial Report
IPP	Indigenous Peoples Plan
IPPF	Indigenous Peoples Planning Framework
IRR	Internal Rate of Return
ITCR	Costa Rica Institute of Technology (*Instituto Tecnológico de Costa Rica*)
LCS	Least Cost Selection

M&E	Monitoring and Evaluation
MEP	Ministry of Public Education (*Ministerio de Educación Pública*)
MH	Ministry of Finance (*Ministerio de Hacienda*)
MICIT	Ministry of Science and Technology (*Ministerio de Ciencia y Tecnología*)
MIDEPLAN	Ministry of National Planning and Political Economy (*Ministerio de Planificación Nacional y Política Económica*)
NCB	National Competitive Bidding
OLaP	Labor Market Observatory (*Observatorio Laboral de Profesiones*)
OM	Operational Manual
OPES	Office for Higher Education Planning (*Oficina de Planificación de la Educación Superior*)
PAC	Procurement and Contracting Plan (*Plan de Adquisiciones y Contrataciones*)
PDO	Project Development Objective
PLANES	National Public University Higher Education Plan (*Plan Nacional de la Educación Superior Universitaria Estatal*)
PMI	Institutional Improvement Plan (*Plan de Mejoramiento Institucional*)
PNCTI	National Science, Technology and Innovation Plan (*Plan Nacional de Ciencia, Tecnología e Innovación*)
PND	National Development Plan (*Plan Nacional de Desarrollo*)
QCBS	Quality and Cost Based Selection
R&D	Research and Development
SBD	Standard Bidding Documents
SCA	Socio-Cultural Assessment
SETENA	National Environmental Technical Secretariat (*Secretaría Técnica Nacional Ambiental*)
SINAES	National System for the Accreditation of Higher Education (*Sistema Nacional de Acreditación de la Educación Superior*)
SOE	Statement of Expenditures
SS	Single Source selection
UCP	Project Coordinating Unit (*Unidad coordinadora de Proyecto*)
UCPI	Institutional Project Coordinating Unit (*Unidad Coordinadora de Proyecto Institucional*)
UCR	University of Costa Rica (*Universidad de Costa Rica*)
UNA	National University (*Universidad Nacional*)
UNED	National University for Distance Learning (*Universidad Estatal a Distancia*)

Regional Vice President:	Hasan A. Tuluy
Country Director:	Carlos Felipe Jaramillo
Sector Director:	Keith Hansen
Sector Manager:	Reema Nayar
Task Team Leader:	Marcelo Becerra

REPUBLIC OF COSTA RICA
Higher Education Improvement Project

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PAD DATA SHEET

Republic of Costa Rica

Higher Education Improvement Project

PROJECT APPRAISAL DOCUMENT

Latin America and the Caribbean Region

LCSHE

Basic Information			
Date:	August 24, 2012	Sectors:	Tertiary Education (100%)
Country Director:	Carlos Felipe Jaramillo	Themes:	Education for the knowledge economy (100%)
Sector Manager/Director:	Reema Nayar / Keith Hansen	EA Category:	B
Project ID:	P123146		
Lending Instrument:	Specific Investment Loan		
Team Leader(s):	Marcelo Becerra		
Does the project include any CDD component? NO			
Joint IFC: NO			

Borrower: Republic of Costa Rica			
Responsible Agency: Ministry of Public Education			
Contact:	Leonardo Garnier	Title:	Minister of Public Education
Telephone No.:	506 – 2256 – 8863	Email:	leonardo.garnier.rimolo@mep.go.cr

Project Implementation Period:	Start Date: 01/01/2013	End Date:	06/30/2017
Expected Effectiveness Date:	01/01/2013		
Expected Closing Date:	12/31/2017		

Project Financing Data(US$M)		
[X] Loan	[ ] Grant	[ ] Other
[ ] Credit	[ ] Guarantee	

For Loans/Credits/Others			
Total Project Cost :	US$249,110,000	Total Bank Financing :	US$200,000,000
Total Cofinancing :	US$49,110,000	Financing Gap :	

Financing Source	Amount(US$M)
BORROWER/RECIPIENT	
IBRD	200.00
IDA: New	
IDA: Recommitted	
Others (Universities, CONARE, SINAES)	49.11
Financing Gap	
Total	249.11

Expected Disbursements (in USD Million)

Fiscal Year	2013	2014	2015	2016	2017	2018
Annual	5	35	50	60	30	20
Cumulative	5	40	90	150	180	200

Project Development Objective(s)

The objectives of the Project are to improve access and quality, to increase investments in innovation and scientific and technological development, as well as to upgrade institutional management, all in Costa Rica's public higher education system.

Components

Component Name	Cost (USD Millions)
Component 1. Institutional Improvement Agreements	200.00
Component 2. Strengthening institutional capacity for quality enhancement	0.00

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 [ ]
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
Effectiveness Conditions, Article V, Section 5.01 (a)	No	Effectiveness	Once

Description of Covenant

The AMIs have been executed on behalf of the Borrower and each of the Participating Universities.

Name	Recurrent	Due Date	Frequency
Effectiveness Conditions,Article V, Section 5.01 (b)	No	Effectiveness	Once

Description of Covenant

The CONARE Agreement has been executed on behalf of the Borrower and CONARE.

Name	Recurrent	Due Date	Frequency
Effectiveness Conditions,Article V, Section 5.01 (c)	No	Effectiveness	Once

Description of Covenant

The SINAES Agreement has been executed on behalf of the Borrower and SINAES.

Name	Recurrent	Due Date	Frequency
Additional Legal Matters, Article V, Section 5.02	No	Effectiveness	Once

Description of Covenant

The AMIs have been duly authorized or ratified by the Borrower and the respective Participating University, and are legally binding upon the Borrower and the respective Participating University in accordance with the terms of the

respective AMI.

Name	Recurrent	Due Date	Frequency
Implementation Arrangements, Schedule 2, Section I.A.1	Yes	N/A	Annual

Description of Covenant

For purposes of the carrying out of the Project, the Liaison Commission ("CE") shall be operated and maintained during the execution of the Project by the Borrower and the Participating Universities.

Name	Recurrent	Due Date	Frequency
Implementation Arrangements, Schedule 2, Section I.A.3	Yes	N/A	Annual

Description of Covenant

A Project Coordinating Unit ("UCP") shall be created and thereafter operated and maintained during the execution of the Project within CONARE.

Name	Recurrent	Due Date	Frequency
Implementation Arrangements, Schedule 2, Section I.A.5	Yes	10 months after effectiveness	Annual

Description of Covenant

No later than 10 months after effectiveness, a Monitoring and Evaluation Committee ("CSE") shall be established and thereafter maintained by the Borrower and the Participating Universities through the CE, during the execution of the Project, for the purposes of providing an external and impartial evaluation of the Project.

Name	Recurrent	Due Date	Frequency
Implementation Arrangements, Schedule 2, Section I.A.7	Yes	N/A	Annual

Description of Covenant

The Borrower, through the Ministry of Public Education, shall enter into a "CONARE Agreement" with CONARE, for the purposes of the carrying out of the Project, under terms and conditions acceptable to the Bank and included in the Operational Manual (OM).

Name	Recurrent	Due Date	Frequency
Implementation Arrangements, Schedule 2, Section I.A.9	Yes	N/A	Annual

Description of Covenant

The Borrower, through the Ministry of Public Education, shall enter into a "SINAES Agreement" with SINAES, for the purposes of the carrying out of Part II.1 of the Project, under terms and conditions acceptable to the Bank and included in the OM.

Name	Recurrent	Due Date	Frequency
Institutional Improvement Agreements (AMI), Schedule 2,	Yes	N/A	Annual

Section I. D.1			
Description of Covenant The Borrower, through the Ministry of Public Education, shall enter into an Institutional Improvement Agreement ("AMI") with each of the Participating Universities, for the purposes of the carrying out of Part I of the Project, under terms and conditions acceptable to the Bank and included in the OM.			
Name	**Recurrent**	**Due Date**	**Frequency**
Environmental Safeguard, Schedule 2, Section I.E.1	Yes	N/A	Annual
Description of Covenant Part I of the Project shall be carried out in accordance with the Environmental and Social Management Framework. The Participating Universities shall prepare and furnish to the Bank any needed Environmental Management Plan acceptable to the Bank and, immediately thereafter, implement it in accordance with its terms, and in a manner acceptable to the Bank.			
Name	**Recurrent**	**Due Date**	**Frequency**
Indigenous Peoples Safeguard, Schedule 2, Section I.E.2 (a)	Yes	N/A	Annual
Description of Covenant Part I of the Project shall be carried out in accordance with the Indigenous Peoples Planning Framework (IPPF) setting forth procedures for preparation of the Multiannual Indigenous Peoples Plan.			
Name	**Recurrent**	**Due Date**	**Frequency**
Indigenous Peoples Safeguard, Schedule 2, Section I.E.2 (b)	Yes	November 30, 2013	Once
Description of Covenant No later than November 30, 2013, an indigenous peoples plan shall be prepared and furnished to the Bank, adopted by all the Participating Universities and acceptable to the Bank (Multiannual Indigenous Peoples Plan), which plan shall be consistent with the provisions of the Indigenous Peoples Planning Framework. Immediately thereafter, the Multiannual Indigenous Peoples Plan shall be implemented in accordance with its terms, and in a manner acceptable to the Bank.			
Name	**Recurrent**	**Due Date**	**Frequency**
Indigenous Peoples Safeguard, Schedule 2, Section I.E.2 (c)	Yes	November 30, 2013	Once
Description of Covenant No Subproject involving Indigenous Peoples shall be carried out prior to the adoption of the Multiannual Indigenous Peoples Plan.			
Name	**Recurrent**	**Due Date**	**Frequency**
Indigenous Peoples Safeguard, Schedule 2, Section I.E.3 (a)	Yes	N/A	Annual

Description of Covenant

Without limitation to the provisions of paragraph B above, in the case that, after the Multiannual Indigenous Peoples Plan has been adopted, new Subprojects are approved or amended in a manner that could affect Indigenous Peoples, prior to the carrying out of any said Subproject, the Multiannual Indigenous Peoples Plan shall be amended, in accordance with the provisions of the Indigenous Peoples Planning Framework, and in a manner acceptable to the Bank, to incorporate any additional required measure to address the needs of the Indigenous Peoples.

Name	Recurrent	Due Date	Frequency
Indigenous Peoples Safeguard, Schedule 2, Section I.E.3 (b)	Yes	N/A	Annual

Description of Covenant

Immediately thereafter, the Multiannual Indigenous Peoples Plan shall be implemented, as amended, in accordance with its terms, and in a manner acceptable to the Bank.

Name	Recurrent	Due Date	Frequency
Resettlement, Schedule 2, Section I.E.4	Yes	N/A	Annual

Description of Covenant

The Borrower and the Participating Universities shall ensure that no resettlement occurs under the Project, including Subprojects.

Team Composition		
Bank Staff		
Name	**Title**	**Specialization**
Marcelo Becerra	Team Leader	Senior Economist
Alejandro Caballero	Senior Education Specialist	Science and Technology
Robert Hawkins	Senior Operations Officer	Science and Technology
Janet Entwistle	Senior Operations Officer	Operations
Anna Musakova	Education Sector Liaison	Operations
Guillermo Toral	Junior Professional Associate	Operations
Jimena Garrote	Senior Counsel	Lawyer
Dianna Pizarro	Social Development Specialist	Social Safeguards
Ruth Tiffer Sotomayor	Senior Environmental Specialist	Environmental Safeguards
Tomás Socias	Senior Procurement Specialist	Procurement
Antonio Leonardo Blasco	Senior Financial Management Specialist	Financial Management
Fabienne Mroczka	Senior Financial Management Specialist	Financial Management
Patricia de La Fuente Hoyes	Sr. Finance Officer	Disbursements
Maria Virginia Hormazabal	Finance Analyst	Disbursements
Name	**Title**	**City**
William Experton	Consultant	Washington
Luciano Galán	Consultant	Madrid
Javier Curcio	Consultant	Buenos Aires
Luis Enrique Gutiérrez Izquierdo	Consultant	Managua
Marco Zambrano	Consultant	San Jose

Locations					
Country	**First Administrative Division**	**Location**	**Planned**	**Actual**	**Comments**
Costa Rica					

I. STRATEGIC CONTEXT

A. Country Context

1. **Costa Rica is one of the strongest performers in Latin America.** Due in large part to its political stability, strong institutions, and open export-driven economy, the country has been successful in attracting high technology firms and developing a sustainable tourism sector. This has contributed to a diversified economy, and robust economic growth. Costa Rica also stands out for its environmental policies and determined mission to achieve carbon neutrality by 2021. Inequality increased somewhat in the second half of the 2000s, but poverty and inequality remain well below most Latin America and the Caribbean (LAC) countries, and social indicators are above regional standards. Investment in research and development, however, is only around 0.53 percent of GDP[1]. To promote innovation and research, a key Government focus is to stimulate the development of Public University Higher Education Institutions (IESUEs, *Instituciones de educación superior universitaria estatal*).

B. Sectoral and Institutional Context

2. **Costa Rica's higher education system is composed of five public universities: four established universities *(Universidad de Costa Rica – UCR, Universidad Nacional – UNA, Instituto Tecnológico de Costa Rica – ITCR, and Universidad Estatal a Distancia – UNED),* which account for 47 percent of total enrollment; a relatively new public university *(Universidad Técnica Nacional);* and approximately 50 self-financed private universities.** In addition, there are 60 other higher education non-university institutions. The excessive proliferation of private universities raised concerns at the national level about the qualifications of graduates, and led to the creation in 1999 of the National System for the Accreditation of Higher Education (SINAES, Sistema Nacional de Acreditación de la Educación Superior)[2]. Today a total of 64 programs from 18 universities, including the 4 public universities in the National Council of Rectors (CONARE, Consejo Nacional de Rectores), are accredited by SINAES.

3. **Despite a relatively high gross enrolment rate of over 43 percent in universities (both public and private)[3], the growth of enrolment during the last few years is due mostly to private universities.** Public universities impose access quotas due to limitations in their physical infrastructure and human resources. The limited growth of public universities has constrained access to tertiary education, in particular for the poorest students. This gross enrolment rate corresponds to 50.7 percent in the private university sector (41 universities reported information) and 49.3 percent in the public university sector (5 universities). However, data from the Ministry of Public Education[4] show that a large share of students do not finish

[1] Ministry of Science, Innovation and Technology. 2011. National Consultation on Indicators.
[2] SINAES was created in 1999 through an agreement among IESUEs. In 2002, Law 8256 formally gave instrumental legal authority to SINAES, which became the accreditation agency of Costa Rican higher education whose accreditation decisions have official value.
[3] Ministry of Public Education, National Council of Rectors, and Union of Private University Rectors, *Informe Final sobre la captura de información estadística de la matricula de la Educación Superior en Costa Rica*, First school cycle 2011, San Jose, Costa Rica. Gross enrolment rate: relationship between university enrolment and the total population in the 18-22 year old bracket.
[4] Data from MEP, Department of Analysis and Statistics.

secondary education. The retention rate[5] for those students in 2011 was close to 40 percent. In order to address this issue, the Government of Costa Rica (GoCR) has several programs to encourage graduation in secondary education. Among these, the scholarships program "*Avancemos*" is particularly salient and covers almost half of enrolment. At the public university level, scholarships for students, in the form of financial aid or tuition waivers, reached 42 percent of public university students. Universities and the GoCR will continue efforts to increase access and to improve the scholarships system.

4. **The right to education[6] is entrenched in citizen thought and practice, both of which shape Costa Rican higher education**. The national priorities for growth require graduates in the areas of engineering, basic sciences (math, physics, chemistry, biology and geology), natural resources, food and agriculture science, arts, education, and health sciences[7]. The main limitations are in basic sciences and engineering, which produce less than 20 percent of public university graduates and less than 10 percent of private university graduates. Only 16.7 percent of the supply of university programs focuses on basic sciences, engineering, and computing. The percentage of faculty members with postgraduate education is relatively low and laboratories and equipment are often out-dated. In addition, the level of advanced human capital for research continues to be low, with a rate of 0.78 full-time-equivalent researchers per thousand in the active population. As expressed by the Third *Estado de la Educación* (2011), IESUEs, "with 70 specialized centers and above 1,300 researchers […] represent the largest share of the scant investment in research and development done in the country, around 0.4 percent of GDP, which supports productive growth and productivity". This shows the importance of strengthening investment both in the training of human capital and in infrastructure and updated equipment that foster research and extension.

5. **Traditionally, the financing and institutional structure of the public higher education system have led to an extensive accountability system, but not to the establishment of comprehensive agreements between Government and universities to strengthen the existing results-based management and to improve access, coverage, quality and innovation.** There are several coordination mechanisms for public institutions: (i) the National Council of Rectors (CONARE, *Consejo Nacional de Rectores*), which comprises four public universities, namely University of Costa Rica (UCR, *Universidad de Costa Rica*), National University (UNA, *Universidad Nacional*), Costa Rica Institute of Technology (ITCR, *Instituto Tecnológico de Costa Rica*) and National Distance Learning University (UNED, *Universidad Estatal a Distancia*); (ii) a Liaison Commission composed of the Rectors of these four universities, and the Ministers of Public Education, Science and Technology, National Planning and Political Economy, and Finance, which negotiates and approves financing for the four CONARE public universities through agreements signed every five years under a constitutionally-prescribed Special Fund for the Financing of Public Higher Education[8] (FEES, *Fondo Especial para el Financiamiento de la Educación Superior Estatal*); and (iii) SINAES. In

[5] The retention rate is the relationship between the enrolment of any given year (*i*) and the enrolment of the first year of the cohort that started t-(i-1) years ago. If this variable needs to be applied to the third cycle and diversified education the seventh year enrolment can be used as reference.

[6] Education is a right established at the national (Political Constitution of Costa Rica) and at the international level (CREES 2008; CMES 2009).

[7] These are the subjects that the Government and the universities have identified as currently requiring special attention for the country's development

[8] Article 85 of the Costa Rican Constitution.

addition to public funding received through the FEES, each university generates its own revenues through the provision of services. Despite promising efforts, Costa Rica still lacks a consolidated information system on higher education.

6. As for private universities, there are two main entities: (i) the National Council of Private University Higher Education (CONESUP, *Consejo Nacional de Enseñanza Superior Universitaria Privada*), whose main mission is to regulate the functioning of private higher education institutions; and (ii) the Union of Private University Rectors (UNIRE, *Unidad de Rectores de Universidades Privadas*), which includes most universities in the private sector.

7. **A Financing Agreement 2011-2015 is expected to contribute to strengthening the existing results-based management of the public higher education system, favor a better use of resources, and produce improvements in access, coverage, quality and innovation.** The commitment between the GoCR and universities contained in the Financing Agreement includes two elements: (i) the FEES and (ii) additional financing of US$200 million for long-term financing in priority areas[9]. FEES financing, which covers most of the operating costs and investments of universities, has normally been distributed among the four CONARE public universities on the basis of historical trends and agreements between the four institutions[10]. In this context, the 2011-2015 Financing Agreement introduced several novel elements. The additional financing will be distributed equally between the four CONARE public universities, essentially in order to respond to the historical delay in investments in infrastructure, equipment, and human resources training, as well as to consolidate a common effort in the development of science and technology and other priority areas. The US$200 million will be allocated to specific investment subprojects, designed by universities and agreed with the Government. Crucially, these additional resources will be granted to improve universities' performance and specific, agreed upon results. These results will be brought about by a combination of the additional investments, improved management, performance orientation and accountability of universities in the use of these funds, in the framework of universities' autonomy to develop and implement their own plans.

8. **Rationale for Bank involvement.** The Project responds to a demand from the GoCR to assist in the development of higher education, particularly by promoting investment in the priority areas of the four CONARE universities in the framework of the FEES. Multilateral Development Banks such as the Inter-American Development Bank and the Central American Bank for Economic Integration have had a long tradition of supporting the Costa Rican higher education sector through loans to specific institutions. The proposed operation would be the first multilateral loan supporting the strengthening of the public higher education system through the coordinated participation of the four CONARE universities, and the first Bank-supported project for higher education in Costa Rica. In providing this support, the Bank has considered its own previous studies on education and employment, as well as its wide experience in the improvement of higher education systems in other Latin American countries and other regions.

C. Higher Level Objectives to which the Project Contributes

9. The Project's higher level objective is to build and strengthen human capital by fostering knowledge and incorporating science, technology and innovation into public universities' priority areas, in order to contribute to the construction of a more competitive, prosperous,

[9] Since this additional financing is exceptional, it does not change the current distribution of FEES.
[10] Current FEES distribution between universities: UCR 57.79%; UNA 23.40%; ITCR 11.30%; UNED 7.51%.

inclusive, and sustainable Costa Rica. This higher level objective is closely linked to the country's own development planning and with the Country Partnership Strategy (CPS).

10. **Relationship to Costa Rica's general and sectoral development plans**. The Project corresponds to the Development Plan of each university, the National Public Higher Education Plan 2011 – 2015 (PLANES, *Plan Nacional de la Educación Superior Universitaria Estatal*), and to the Republic of Costa Rica's own development planning, as expressed in three key documents: the National Development Plan 2011-2014 (PND, *Plan Nacional de Desarrollo*); the National Science, Technology and Innovation Plan 2011-2014 (PNCTI, *Plan Nacional de Ciencia, Tecnología e Innovación*); and the Country Vision, elaborated jointly by universities and Government in April 2011. The PLANES 2011 – 2015 establishes, for the four CONARE public universities, a series of priorities based on five strategic areas, namely (i) relevance and impact, (ii) access and equity[11], (iii) learning, (iv) science and technology, and (v) management. By supporting PLANES' strategic areas, the Project would contribute to the development not only of the four most prominent universities but also of science and technology. It would also contribute to the overall economic and human development of the country. The PND 2011 – 2014 presents a cross-cutting strategy for advancing the country's development. The Plan identifies five areas of action, including Costa Rica's aspiration to become "a more competitive nation that is better integrated into global dynamics, with development being led by innovation, science and technology" and to increase equality and solidarity. The PNCTI 2011 - 2014 has as one of its four strategic areas "to strengthen the formation and updating of high-level human resources, as well as its development in basic sciences and engineering". The Country Vision establishes a common strategy for higher education's contribution to human capital and scientific and technological development.

11. **Relationship to the CPS.** The proposed Project is part of the World Bank Group's Country Partnership Strategy (CPS) for 2012-15 (Report No. 60980-CR), discussed by the Board of Executive Directors on July 14, 2011. The CPS is focused on three clusters which are closely aligned with the Government's investment program and reflect areas of sustained Bank engagement: (i) developing competitiveness; (ii) improving efficiency and quality in the social sectors; and (iii) supporting the environment and disaster risk management.

II. PROJECT DEVELOPMENT OBJECTIVES

A. PDO

12. The objectives of the Project are to improve access and quality, to increase investments in innovation and scientific and technological development, as well as to upgrade institutional management, all in Costa Rica's public higher education system.

Project Beneficiaries

13. The main Project beneficiaries would be: (i) students enrolled and aspiring to attend the four CONARE universities; (ii) students who graduate from accredited programs; (iii) higher education institutions (HEIs) that benefit from increased program quality, improved managerial and planning capacity, and/or a larger number of accredited programs; and (iv) firms, institutions and society in general, which would benefit from a higher number of graduates with sought-after skills in needed subject areas.

[11] The Access and Equity strategic line of PLANES provides for the widening of scholarships and dormitories systems.

14. Taking into account that the four participating universities had in 2010 an enrolment of over 88,000 undergraduate and about 5,000 graduate students, and that SINAES has set itself the goal to accredit 25 programs per year, the total number of beneficiary students is estimated to be 102,000 students on average per year, including about 70,000 women[12]. Unfortunately, reliable data about enrolment in the private sector is not available, but CONARE estimates it to be around 84,000 students[13]. Therefore, the Project is expected to benefit about 55 percent of the total university student population in Costa Rica.

PDO Level Results Indicators

15. Progress toward the PDO would be assessed through the following indicators:

(a) **Improve access:** Total number of regular, on-site students enrolled in the four universities participating in the Project.

(b) **Improve quality:** Total number of officially accredited programs in the four universities participating in the Project.

(c) **Increase investments in innovation and scientific and technological development:** Resources invested in research and development (R&D) in the four universities participating in the Project.

(d) **Upgrade institutional management:** Yearly publication of the self-evaluation of the "Annual Operational Plan" on the websites of the four universities participating in the Project.

III. PROJECT DESCRIPTION

A. Project Components

16. The Project would achieve its development objective through the implementation of the following two components. Annex 2 contains a more detailed Project description, and Annex 7 an indicative list of subprojects planned under Component 1.

17. **Component 1. Institutional Improvement Agreements** *(Total: US$231.8 million; Bank: US$200 million; Universities: US$31.8 million).* Carrying out of PMIs by the corresponding participating university, through the provision of grants to finance activities under subprojects, including those to: (i) expand infrastructure for teaching, learning and research; (ii) upgrade faculty qualifications and foster evaluation and accreditation of academic programs; and (iii) strengthen the existing culture of strategic long-term planning, and measurement, target setting, accountability, and monitoring and evaluation.

18. The objective of this Component would be: (i) to help public universities increase access by investing in infrastructure for teaching, learning and research; (ii) to increase the quality of higher education by, among others, upgrading faculty qualifications and fostering evaluation and accreditation; (iii) to increase relevance in higher education by focusing resources on priority subjects that are key to the country's development; and (iv) to strengthen public universities' management capacity and accountability, by strengthening a culture: (a) of strategic long-term planning, including the formulation of an institutional mission, vision and strategy; and (b) of measurement, target setting, accountability, monitoring and evaluation that could lead to further performance-based financing innovations.

[12] Estimated from data on the share of university diplomas obtained by female students, which in 2009 was 62.9% (CONARE, 2011. *Tercer informe estado de la educación*, p. 192).
[13] *Ibid*., p. 187.

19. To this end, Component 1 would finance strategic investments in infrastructure and equipment, human capital, and the improvement of management and information systems for a more efficient administration of existing and new physical and human resources.

20. The key instrument for implementing Component 1 is the Institutional Improvement Agreement (AMI, *Acuerdo de Mejoramiento Institucional*) covering a period of five years – the first of its kind in Costa Rica – which would be signed between the Government and each of the four CONARE public universities for implementing the initiatives. Each AMI would include the commitments for both parties (the corresponding university and the Government, represented by the Ministry of Public Education (MEP, *Ministerio de Educacion Publica*)) covering the use of loan funds and would attach an Institutional Improvement Plan (PMI, *Plan de Mejoramiento Institucional*) that would present the institution's university-wide and subproject-specific strategic objectives as well as the specific investments to be made during the Project's 5-year implementation period. Each PMI would be financed with US$50 million in Bank financing plus between US$5.8 and US$9.5 million in counterpart funds (established by each university), and present a set of indicators, annual targets and budgets. All four PMIs would be organized around four strategic axes common to the participating universities, which match, on a one-to-one basis, the four major components of the PDO and thus with the four PDO-level indicators:

(a) Increasing access and retention (*access*).
(b) Improving the quality and relevance of programs and human resources (*quality*).
(c) Strengthening scientific and technological development as well as innovation (*innovation and scientific and technological development*).
(d) Improving institutional management and accountability (*institutional management*).

21. Thus, while Component 1 would finance specific investments in agreed subprojects, these resources would leverage results at the level of each university through the PMI, through which the university undertakes to deliver specific results based on agreed university-wide and subproject-specific indicators and targets.

22. The budget for each PMI would be further detailed in Annual Investment Plans (AIPs) to be approved by the Bank and the Liaison Commission. Eligible expenditures would be: (i) goods (e.g. laboratory and computer equipment, furniture); (iii) infrastructure (e.g. new buildings, dormitories, and laboratories); (iv) staff scholarships and internships (e.g. programs for increasing faculty qualifications); (iv) visiting professorships and other faculty and student mobility programs; and (v) technical assistance (for instance, for program improvement).

23. Component 1 has four Subcomponents, one for each of the participating public universities. Each Subcomponent includes a set of subprojects that, following the institution's mission and comparative advantage, strive to achieve improvements in the four areas indicated by the PDO and the strategic axes. Subprojects are referred to in the PMIs as "initiatives" (*iniciativas*). Subprojects are referred to as indicative since the AMIs are pending signature by the Rector of the corresponding university and the Minister of Public Education, and are subject to change after AMI signature with agreement of all signatories and approval by the Liaison Commission.

(a) ***Subcomponent 1.1: University of Costa Rica*** *(estimated total cost: US$59.5 million; Bank: US$50 million).*
(b) ***Subcomponent 1.2: National University for Distance Learning*** *(estimated total cost: US$55.8 million; Bank: US$50 million).*

(c) ***Subcomponent 1.3: Costa Rica Institute of Technology*** *(estimated total cost: US$58 million; Bank: US$50 million).*

(d) ***Subcomponent 1.4: National University*** *(estimated total cost: US$58.5 million; Bank: US$50 million).*

24. **Component 2. Strengthening institutional capacity for quality enhancement** (*Total: US$17.31 million; Bank: US$0 million; SINAES and CONARE: US$17.31 million*). The objective of this Component would be to promote the development of strategic activities with a *system-wide scope* in order to support the objectives of Component 1. By strengthening some key elements of the higher education system, this Component would play an important role in achieving the PDO. Component 2 includes the following three Subcomponents:

(a) ***Subcomponent 2.1: Strengthening the National System for the Accreditation of Higher Education (SINAES)*** *(estimated total cost: US$14 million, to be financed by SINAES)***.** Strengthening of SINAES through the provision of support for the implementation of SINAES' Institutional Strategic Plan, including, *inter alia*: (i) the carrying out of an external evaluation and accreditation of academic programs and institutions; (ii) the provision of training to SINAES staff on evaluation and accreditation processes; and (iii) the carrying out of a assessment of the current status of accreditation and quality of higher education institutions. The main goal of this Subcomponent is to consolidate Costa Rica's higher education quality assurance system. Activities under this Subcomponent would include increasing the membership of universities and the accreditation of university and non-university programs of higher education, together with training activities, research in the field of accreditation and quality, and strengthening a culture of quality.

(b) ***Subcomponent 2.2: Developing the Labor Market Observatory and the public higher education information system*** *(estimated total cost: US$1.2 million, to be financed by CONARE-OPES).* Strengthening and consolidation of CONARE's sector-wide information system and of OPES' labor observatory. This Subcomponent would support the development and consolidation of a labor market observatory (OLaP, *Observatorio Laboral de Profesiones*) and a common information system for the four CONARE universities (SIESUE, *Sistema de Información de la Educación Superior Universitaria Estatal de Costa Rica*). On the basis of the important role that information plays in the promotion of higher education quality, this Subcomponent would finance activities such as data collection and processing, the publication of studies, and the development of university information systems.

(c) ***Subcomponent 2.3: Support to the Project's coordination, supervision and evaluation*** *(estimated total cost: US$2.11 million, to be financed by the Government, SINAES and CONARE)***.** Provision of support for Project coordination, monitoring and evaluation. The main goal of this Subcomponent is to support the institutional arrangements needed for Project execution. This includes the Project Coordinating Unit (UCP), the Government's Technical Commission (CTG), the Monitoring and Evaluation Committee (CSE) and the Project's external audit.

B. Project Financing

Lending Instrument

25. The proposed Project would be financed by a Specific Investment Loan (SIL).

Project Cost and Financing

26. Total Project financing requirements are estimated at US$249.11 million. The Project would be financed as follows: US$200 million (80.28 percent) would be financed through a loan from the Bank, the remaining US$49.11 million would be co-financed by CONARE, SINAES and the four participating universities. Annex 2 presents details on the financing of the Project.

Table 1: Project Cost and Financing

Project Components	Project Cost (US$ Million)	IBRD Financing (US$ Million)	% Financing
1. Institutional Improvement Agreements	231.80	200.00	86.28
2. Strengthening institutional capacity for quality enhancement	17.31	0.00	0.00
Total Project Costs	249.11	200.00	80.28

C. Lessons Learned and Reflected in the Project Design

27. Even though the Project has been conceived fundamentally on the basis of country strategies and agreements mentioned in paragraphs 8 and 10, its design has benefited from Bank contributions resulting from its international experience in the field of higher education.

28. Component 1 has been designed to ensure that universities' PMIs are rooted in a robust strategic vision that is both sensitive to the needs of the institution and to the priorities of national development planning. Moreover, experience from other countries shows that not only additional resources but also institutional aspects such as results-based management are key for the development of a successful higher education system. Similarly, the design of Component 2 has also benefited from the Bank's international experience, particularly regarding accreditation and information systems.

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

29. 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 public university system, incorporating demands from the Government and universities, and making Project implementation more dynamic. While implementation arrangements require a certain degree of complexity, the Project would count on a general coordinating unit and an Operational Manual (OM) detailing Project implementation arrangements. Further details and an organizational chart can be found in Annex 3.

30. The MEP would be the responsible agency. The Minister of Public Education would sign each of the AMIs and the subsidiary agreements with CONARE-OPES and SINAES, on behalf of the GoCR.

31. The Liaison Commission (CE, *Comisión de Enlace*) would be the main coordination body regarding overall Project implementation. The CE is comprised of the Rectors of the four

CONARE public universities and four Ministers: Public Education, Science and Technology, National Planning and Economic Policy, and Finance. With regards to Component 1, the CE would make, by consensus of its members, major decisions about the Project (including the approval of the PMIs, which include the subprojects –once throughout the 5-year period—, and of AIPs) and review the Project Reports. The CE would play an important role in ensuring coordination between universities and the Government during Project implementation, as well as oversight, accountability and long-term sustainability. With regards to Component 2, the CE would be responsible to ensure oversight of its implementation and the fulfillment of its objectives.

32. The Government's Technical Commission (CTG, *Comisión Técnica del Gobierno*) would provide technical advice to the Government, in the framework of the CE. In particular, it would provide advice on an *ad hoc* basis to the Government regarding Project implementation and monitoring and evaluation (M&E). The CTG would review that the PMIs, their subprojects and the corresponding AIP are linked to the PND 2010 – 2014, as well as any potential modifications to the OM. The CTG would also review potential changes to the OM. The CTG is composed of staff from MEP, the Ministry of Science and Technology (MICIT, *Ministerio de Ciencia y Tecnología*), the Ministry of National Planning and Economic Policy (MIDEPLAN, *Ministerio de Planificación Nacional y Política Económica*) and the Ministry of Finance (MH, *Ministerio de Hacienda*), and coordinated by MICIT.

33. Overall Project coordination and monitoring would be managed by the Project Coordinating Unit (UCP, *Unidad de Coordinación del Proyecto*), which would be the Bank's main interlocutor during Project implementation in all aspects regarding M&E. The CE mandated CONARE to create the UCP. CONARE will designate a Project Coordinator and a small support team. The UCP's responsibility to coordinate M&E would include: (i) consolidating Project Reports for both components for the CE and the Bank; (ii) supporting the Bank's supervision missions; (iii) working as a focal point that collects and integrates information from implementing agencies (implementation, financial management, procurement and contracting plans, and Safeguard Policies); (iv) work as a link between implementing agencies and the Liaison Commission; (v) work as facilitator with implementing units in the eventual case of difficulties in implementation; and (vi) supporting the activities of the Monitoring and Evaluation Committee (CSE, *Comité de Seguimiento y Evaluación*).

34. Component 1 would have four Institutional Project coordinating units[14] (UCPIs, *Unidades Coordinadoras de Proyecto Institucional*), namely one for each of the four participating universities. These units will be responsible for the implementation of activities, maintaining a direct relation to the Bank. To promote accountability and strengthen existing management capacity, already-existing and well-functioning structures in six areas within each university would be used for Project implementation: (i) financial management, disbursements and accounting; (ii) procurement and contracting; (iii) infrastructure; (iv) planning, monitoring and evaluation; (v) management of issues related to environmental Safeguard Policies; and (vi) management of issues related to Indigenous Peoples Safeguard Policy. As a result, each university would appoint an overall Coordinator and a specialist responsible for each of the six

[14] Implementing agencies for Component 1 (the four participating universities) are referred to as "Institutional Project Coordinating Units". Those for Component 2 (SINAES and CONARE-OPES) are simply referred to as implementing agencies. The use of the expression "implementing agencies" throughout the PAD refers, unless otherwise stated, to all six units.

areas. The four universities would implement their PMIs with autonomy and in coordination with the UCP on supervision, monitoring and accountability. This would allow the Project to leverage existing capacity for implementation, ensuring Project monitoring and evaluation mechanisms.

35. Component 2 would have various implementing agencies: for Subcomponent 2.1, SINAES; and for Subcomponent 2.2, CONARE through its Office for Higher Education Planning (OPES, *Oficina de Planificación de la Educación Superior*). SINAES and CONARE-OPES would provide to the UCP the required technical information for monitoring the Project. Subcomponent 2.3 would be under the responsibility of the UCP.

B. Results Monitoring and Evaluation

36. The UCP would be the main responsible unit for M&E, and would report M&E information directly to the CE and the Bank. Implementing agencies would be responsible for gathering, processing, and analyzing data on the progress of indicators in the framework of their respective subsidiary agreement. This would be carried out through significant existing M&E capacities that have been identified at the six implementing agencies. Implementing agencies would provide to the UCP an M&E report twice a year including PDO-level indicators and intermediate results indicators. The UCP would elaborate an M&E report ("Project Report") twice a year (for the periods ending on December 31st and June 30th), on the basis of reports from implementing agencies, and submit it to the CE and the Bank, before March 1 and September 1 each year. Project Reports previous to the mid-term and final reviews of the Project would be particularly exhaustive and prospective. These would be sent to the Bank in advance of its mid-term and final review missions. See Annex 1 for the Project's results matrix and Annex 3 for an explanation of the Project's results chain.

37. The CE would establish a Monitoring and Evaluation Committee (CSE), financed through Subcomponent 2.3, which would provide an external and impartial assessment of Project implementation. The CSE would perform an evaluation of the Project at the end of year 1, at mid-term (36 months after effectiveness) and at the end. This assessment would be qualitative and have a prospective focus, with special attention being paid to (i) the country vision agreed upon by the Liaison Commission for the Project, (ii) PMIs and (iii) their subprojects, and taking into account the last Project Report available. The CSE would be composed of a team of specialists of recognized authority, who would represent a not-for-profit, international network or organization integrated by higher education institutions (preferably from Costa Rica, Latin America and Europe) and flexible enough to incorporate academics from those institutions as required by the Project's monitoring and evaluation process. The CSE would consult with key actors (those implied in the implementation of the Project) as well as with other stakeholders (students and employers, among others) for the production of its evaluation reports. The CSE's evaluation would be sent to the CE and to the Bank.

38. The Bank team would work closely with the UCP and the six implementing agencies to evaluate Project implementation progress during regular implementation support missions, using the collected data and comparing it against the agreed targets. Furthermore, the Bank would perform a mid-term evaluation on the basis of which, following implementation criteria established in the OM, the Bank may proceed to the partial cancellation of financing.

C. Sustainability

39. The Project is meant to strengthen Costa Rica's higher education system by implementing improvements in access, quality, R&D and management. Sustainability of the

Project would ultimately be codetermined by the appropriate working of institutional arrangements, adequate implementation, and increased flow of information in the field of higher education. Especially important is the continuation of a culture of performance, evaluation and accountability in the public university system, which has been strengthened by the process of Project preparation and is expected to grow during implementation. Another relevant factor for sustainability would be the consensus among educational stakeholders and policy makers that efforts must be made to improve the quality of higher education, both at the institutional level and system-wide for the public sector (e.g. through information systems and quality assurance).

40. The strong institutional and technical capacities of the four participating universities, SINAES and OPES enhance Project sustainability. Staff shortages have been identified at one university (in its procurement unit) and at SINAES. SINAES and the corresponding university have already planned to allocate resources to respond to these needs, which would help to build additional sustainable capacities.

41. In general, Costa Rica shows results of long-term commitment to the improvement of its public higher education system, as illustrated by the existence of a clear legal framework, the consolidation of a system of public university funding, and the link of higher education planning to the five-year development plans. The Project is expected to both shape and be shaped by this environment, thus maximizing its sustainability in the mid- and long-term.

V. KEY RISKS AND MITIGATION MEASURES

A. Risk Ratings Summary Table

Table 2: Risk Rating Summary

Stakeholder Risk	Substantial
Implementing Agency Risk	
- Capacity	Low
- Governance	Moderate
Project Risk	
- Design	Moderate
- Social and Environmental	Moderate
- Program and Donor	N/A
- Delivery Monitoring and Sustainability	Moderate
Overall Implementation Risk	Moderate

B. Overall Risk Rating Explanation

42. The overall risk rating of the Project is considered to be moderate. There is, however, a substantial risk that stakeholders in the university community oppose the Project on the basis of the perception of supposed “conditionalities” and a possible threat to the autonomy of universities. This risk is being mitigated by: (i) keeping a continuous channel of communication between the Bank, Government members of the Liaison Commission (the Ministers of MEP, MICIT, MH, MIDEPLAN), and the Rectors of the four universities participating in the Project (represented by CONARE and also members of the Liaison Commission) to quickly overcome

any potential misunderstanding or disagreement; (ii) securing a high level of commitment to the Project among universities' technical teams and among the departments and other university bodies involved in the PMIs; and (iii) ensuring that during implementation the Monitoring and Evaluation Committee would carry out extensive consultations with students, private sector, professional associations and other stakeholders and provide an impartial assessment of Project implementation at the end of the first year, after 36 months, and at the end of the Project.

VI. APPRAISAL SUMMARY

A. Economic and Financial Analyses

43. **Cost-Benefit Analysis.** The analysis considers first the impact of the increase of enrolment in higher education. By using the current structure of salaries in Costa Rica by years of education, the expected present value of the change in total lifetime income per individual due to the higher education attainment is US$83,103[15]. Once all the new entrants are considered (the target is 18,953), the aggregate change in lifetime income is equal to US$1.44 billion. The analysis considers secondly the impact of increasing enrolment in the priority areas, with an expected increase of 9,222 students by the end of the Project. Assuming that students that change careers to prioritized ones earn the average salary of an engineer/health related professional (US$1,320) rather than the average salary of individuals working on social sciences (US$1,151), the expected change in lifetime earnings will be US$31,925. Once all the new individuals enrolled in the priority areas is considered, the aggregate change in lifetime income is equal to US$263 million. Regarding the increase of quality brought about by the Project, its impact is estimated at US$484 million (assuming a conservative impact of 5 percent on wages, and that quality improvements affect students progressively, reaching 15 percent per year). Finally, investments in R&D are expected to lead to positive externalities. Their impact can be conservatively estimated at US$65 million. Total private benefits of the Project related to changes in lifetime earnings of individuals are expected to be US$2.24 billion.

44. Project costs will be US$249.11 million (including resources from the Bank and universities). Moreover, a higher enrollment will require additional current expenditure by the universities not covered by Project activities: assuming a unit cost per student of US$7,600, the new current costs for universities will be US$464 million. Finally, total Project costs should be adjusted for infrastructure use (total infrastructure investment is US$116 million, with an expected duration of 20 years). Total Project costs would thus be about US$631 million.

45. Given the structure of benefits and costs presented, the Project has an expected internal rate of return (IRR) of 13 percent. This number should be considered a lower bound given that: (i) it considers the impact of the Project only during the duration of the Project, and (ii) it does not include possible externalities as a result of Project implementation due to the higher number of university graduates and higher resources invested in R&D. Annex 6 analyzes the changes in the IRR when some of these assumptions are relaxed.

B. Technical

46. The Project design responds to the need to address a delay in investment (including, but not limited to, investments in infrastructure) in public universities, which has become an obstacle for improvements in access. The Project does so by (i) providing financial resources; (ii) facilitating the expertise and support necessary to make investments effective; and (iii)

[15] Discounted at 5 percent. The estimates assume 13 payments during a year from ages 18 to 65.

catalyzing, throughout the strengthening of a culture of evaluation, managerial decisions and other actions that would codetermine improvements in access, quality, and relevance of higher education. To address investment delays in a timely, comprehensive manner, while at the same time supporting improvements in the whole higher education system, the Project incorporates both the Government's and the universities' needs as well as the international experience in the field.

C. Financial Management

47. Each university's financial management (FM) capacities were assessed in September 2011. The Bank concluded that universities have sufficient institutional capacity and human resources for adequate financial management. Universities' financial directorates would be responsible for the FM of the funds to be executed within the Project, including budget[16], funds flow, register, financial reports and financial control. Universities have already assigned qualified and experienced staff to the Project.

48. Concerning Component 1, FM arrangements have been designed in collaboration with the universities' financial teams in order to ensure compliance with Bank regulations. The Project would be executed through the Government's digital Treasury system. Each university would be responsible for managing and implementing all aspects of FM, as well as for ensuring accountability towards the Bank, guided by the Manual for Accounting by Expenditure Object (*Manual de Cuentas por Objeto del Gasto*) used in the public sector. Finally, financial reporting from universities to the Bank would use a single, unified reporting model, which has already been defined and would include: (i) six-monthly, unaudited mid-term financial reports; and (ii) yearly, audited financial statements. The FM capacity assessment (FMA) has identified Project-specific actions in order to enable adequate implementation capacity and mitigate fiduciary risks.

D. Procurement

49. Procurement for the proposed Project would be carried out in accordance with the Bank's Guidelines: Procurement of Goods, Works and Non-Consulting Services under IBRD Loans and IDA Credits and Grants, dated January 2011; and Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits and Grants, dated January 2011. An assessment of the universities' capacity to implement procurement actions for the Project was conducted in September 2011. The Bank concluded that universities have robust capacities in the area of procurement, a clear internal organization, and staff with experience in planning, management and monitoring procurement processes. However, it was confirmed that universities do not have previous experience with Bank projects, and that one of the four universities does not have enough staff to be able to cope with Project-related procurement processes together with those currently active. The overall procurement risk assessment for the Project is considered moderate. The Procurement risks identified are: (a) the challenge of managing a considerable number of procurement processes under the Project with the current procurement staff; and (b) knowledge of Bank's Guidelines. The mitigation measures that have been agreed are: (i) a detailed Project OM, including organizational procedures with the universities and the UCP; (ii) hiring procurement specialists with prior experience of procurement; (iii) close monitoring and supervision by the Bank; and (iv) the use of the Procurement Plan Execution System (SEPA,

[16] In the case of the UCR it would be the Office for University Planning (OPLAU, *Oficina de Planificación Universitaria*).

Sistema de Ejecución de Planes de Adquisiciones) for Procurement Plans and Project management.

E. Social (including Safeguards)

50. The overall social impact of the Project at the general level is positive. Students, both current and aspiring, would benefit from: (i) more access by increasing each university's enrollment capacity, classrooms, dormitories and other related infrastructure, (ii) enhanced income potential through improving quality and the matching of course offerings to labor market demand and the country's development priorities, and (iii) improved decision making in degree choice, diversification of academic supply and higher education opportunities through increased availability of higher-quality information (e.g. accreditation decisions, employability and salaries of graduates, etc.). The universities' faculties would benefit from improved facilities, new opportunities to build professional skills, carry out research, participate in exchange programs, and the expansion of accredited programs. University administrative staff would benefit from improvements in administrative and information management. Public and private sector employers, especially those requiring skilled labor in the areas of engineering, basic sciences (math, physics, chemistry, biology and geology), natural resources, food and agriculture science, arts, education, and health sciences would benefit from a more qualified labor force.

51. Costa Rica's higher education field is complex and includes numerous stakeholders. These include not only rectors and policy makers, but also all those participating in university life (particularly important are university councils and students) and employers. The Bank, CONARE and the Government have taken into account inputs from these stakeholders in Project design that have been voiced by several means and at different moments for reviewing Project design details. An example is the meeting of the Extended CONARE, which is composed of rectors, representatives of university councils and student federations of the four participating universities. The international conference entitled "Engineering and Applied Sciences in Central America: How to Develop the Next Generation of Innovators", held in February 2012 in San Jose and coordinated by MICIT also provided a venue for exchange and continued discussion among stakeholders. PMIs would be disseminated to the university communities, including university authorities, faculty, and students. To ensure that the voices of stakeholders are heard during implementation, the CSE would be responsible for collecting and reporting stakeholder views on the Project to the CE and the Bank. This may be done by organizing focus groups, particularly with representative samples of students and employers.

52. Indigenous Peoples will specifically benefit from this Project through a Five-Year and Inter-University Indigenous Peoples Plan (IPP). The Bank's Indigenous Peoples Policy (OP/BP 4.10) has been triggered given the Project's overall objective to improve access and quality of higher education in Costa Rica, as well as due to the specific objectives, activities and indicators enshrined in each University's Institutional Improvement Plan (PMI). The application of this Policy through its requirements, procedures and operational instruments, will help to ensure that Costa Rica's Indigenous peoples have the opportunity to participate in Project benefits and that these are delivered in culturally appropriate ways.

53. A Socio-Cultural Assessment (SCA) and an Indigenous Peoples Planning Framework (IPPF) have been prepared by CONARE given the Project's support for multiple subprojects that will be executed by the participating Universities through their respective annual investment plans. In the process of carrying out the SCA to inform the IPPF's content and procedures, some Indigenous stakeholders requested that instead of multiple IPPs, the Project develop one Five-

Year and Inter-University IPP to coherently and systematically improve access, permanence and relevance of higher education for Indigenous students.

54. In February, the draft SCA was distributed to each of the Indigenous territories where workshops had been conducted during December and January. On February 24, 2012, the results of the SCA and key inputs for the IPPF were presented for discussion and analysis at a national workshop with Indigenous representatives, national Indigenous organizations, and university stakeholders. The inputs from this workshop, especially those related to the proposed protocol for consultation, served as the key inputs for the IPPF.

55. The IPPF comprises a summary of the Project's relevant legal framework and barriers to access identified in the SCA. It also proposes a range of actions that each university could adopt by either scaling up existing initiatives, adapting current practices or systems, or introducing new measures to improve Indigenous peoples' access and success in higher education. The IPPF describes the Project's procedures and institutional arrangements to prepare, consult, implement and monitor the IPP. The final IPPF was disclosed on March 12, 2012, on the websites of CONARE and the participating universities and on the Bank's website.

56. The IPP, with its respective activities, indicators, budget and timeline will be prepared per the procedures of the IPPF. The IPP will be inclusive of all Project activities related to Indigenous peoples, including initiatives recommended by the SCA, or measures necessary to enhance benefits or prevent or mitigate adverse impacts from the PMIs' subprojects.

57. The subprojects initially identified for support under the Project have been screened and, in principle, do not have direct effects on Indigenous Peoples. Given this, the Project should be able to start implementation, once declared effective, without any delay, even if the IPP has not been concluded.

58. In case there are changes in the subprojects initially identified or that new subprojects are presented, their potential impacts on Indigenous peoples will be assessed. When a potential impact is identified, the subproject will be consulted and designed in agreement with the procedures of the IPPF and incorporated into the IPP and the corresponding Annual Implementation Plans (AIPs). No subproject with potential direct effects on Indigenous peoples, be they positive or negatives, will be implemented before the adoption of the IPP by the corresponding participant university. [17]

59. Subprojects approved subsequent to adoption of the IPP, with potential for positive or negative effects on Indigenous Peoples, will be consulted and designed in accordance with the IPPF's procedures and incorporated within the Project's IPP and respective Annual Investment Plans (AIP).

60. In agreement with the IPPF's procedures and its proposed consultation protocol, it is estimated that the preparation, consultation, and approval of the IPP will take approximately one year, and should be completed before 14 months after the Project is approved and ratified. Once the IPP is concluded its activities will be incorporated into the 2013 and subsequent AIPs. A

[17] Direct effects include any investments with Indigenous peoples identified as target beneficiaries or affected parties or subprojects where the project area includes Indigenous peoples with the four characteristics outlined in OP/BP 4.10 (Indigenous Peoples), to varying degrees: (i) collective attachment to land or territory and that area's respective natural resources, (ii) self-identification as Indigenous and recognition of that identity by others, (iii) Indigenous language, and (iv) customary cultural, economic, social or political institutions.

dated covenant will be included in each AMI establishing the deadline for the adoption of the IPP and the obligation of incorporating the IPP activities into the POA.

F. Environment (including Safeguards)

61. The Environmental Assessment Policy (OP/BP 4.01), the Natural Habitats Policy (OP/BP 4.04) and Physical Cultural Resources (OP/BP 4.11) are triggered and an Environmental and Social Management Framework (ESMF) and Environmental Management Plans have been prepared to prevent and mitigate potential impacts from the Project's investments. The ESMF and individual EMPs for the construction sites with designs at an advanced stage were disclosed on the websites of the Bank and CONARE on March 9, 2012, and are also on the websites of the universities. Based on the information provided by each university of the proposed subprojects (civil works), it expected that most impacts would be of low to moderate magnitude and these can be prevented and mitigated by proper implementation of environmental management plans and on site supervision. The main environmental and social impacts[18] would be those common in construction works such as noise, waste, dust, soil erosion, water effluents, sedimentation, air emissions, affectation of public access roads, conflicts with the campus life, etc. For the purpose of the Bank's environmental risk rating, the Project is therefore classified as Category B. It has been agreed that no subproject that is considered as a Category A under the Bank definition[19] would be eligible for Project financing.

62. The environmental regulatory framework for the Project would consist of: (i) Costa Rica's regulations governing environmental management, health and safety, construction development, municipal regulations and other applicable regulations; (ii) universities' environmental management regulations or strategies; and (iii) the Project's Environmental and Social Manual, where the ESMF and other safeguards instruments that are part of the OM are included. The Project's ESMF would incorporate existing national procedures established by the Costa Rican legal environmental framework, environmental procedures of SETENA, and the Bank's environmental safeguards requirements. The ESMF includes: (i) eligibility criteria and assessment datasheets to exclude any subprojects with potential adverse impacts on natural habitats, physical cultural resources; (ii) supervision and monitoring procedures; (iii) a communication and consultation action plan; (iv) mitigation measures; (v) grievance mechanisms, etc. All subprojects will be required to develop a site-specific Environmental Management Plan (EMP) which will include specific mitigation and prevention measures to reduced impacts.

63. All initiatives requiring the involuntary taking of land resulting in the impacts covered under the Involuntary Resettlement Policy (OP/BP 4.12) would be screened out and not eligible for support under this Project. The eligibility criteria to exclude these subprojects are included in the ESMF. The infrastructure investments currently foreseen would be constructed, in their majority, within lands for which the universities are the legal proprietors and current users.

[18] All universities have declared that none of processes for the acquisition of land in which they plan to develop infrastructure works is related to processes of involuntary resettlement.

[19] This definition is contained in OP/BP 4.01 Environmental Assessment, which is publicly available online: http://go.worldbank.org/IHKARNN1S0.

Annex 1: Results Framework and Monitoring

COSTA RICA: Higher Education Improvement Project
Results Framework

Project Development Objective (PDO): The objectives of the Project are to improve access and quality, to increase investments in innovation and scientific and technological development, as well as to upgrade institutional management, all in Costa Rica's public higher education system.

Indicator	Core	Unit of Measure	Baseline	Cumulative Target Values[20]					Frequency	Data Source/ Methodology	Responsibility for Data Collection	Description (indicator definition etc.)
				2013	2014	2015	2016	2017				
PDO-LEVEL RESULTS INDICATORS												
Improve Access. **Indicator One:** Total number of regular, on-site students enrolled in the four universities participating in the Project.	☐	#	Total under-graduate 88,017 Total post-graduate 6,885	Total under-graduate 91,209 Total post-graduate 7,139	Total under-graduate 93,654 Total post-graduate 7,256	Total under-graduate 96,330 Total post-graduate 7,342	Total under-graduate 99,405 Total post-graduate 7,449	Total under-graduate 102,814 Total post-graduate 7,524	Annual	Universities' registry office	Universities' planning offices and consolidation by the Project Coordination Unit (UCP).	Calculated by counting the number of on-site, regular students (both undergraduate and graduate) in the four participating universities. A regular student is an individual person enrolled in at least one subject, counting each individual once regardless of how many degrees they enroll. The targets for this indicator are not cumulative. Targets for each of the four universities will

[20] Cumulative values are those that are added from one year to the next. All target values are cumulative unless otherwise stated under the "Description" column.

Indicator	Core	Unit of Measure	Baseline	Cumulative Target Values[20]					Frequency	Data Source/ Methodology	Responsibility for Data Collection	Description (indicator definition etc.)
				2013	2014	2015	2016	2017				
												be monitored through the PMIs.
***Improve quality*.** **Indicator Two:** Total number of officially accredited programs in the four universities participating in the Project.	☐	#	47	56	64	71	78	85	Annual	Universities' Vicerrectory of Teaching / Academic Vicerrectory	Universities' planning units and consolidation by the Project Coordination Unit (UCP).	Includes only undergraduate academic degree programs. In order for a program to obtain an accreditation decision, a self-evaluation has to be fulfilled, a formal application for accreditation has to be filed, and an external evaluation has to take place. For accreditations to remain valid the program must fulfill the corresponding requirements (e.g. submitting annual reports). Targets for each of the four universities will be monitored through the PMIs.
Increase investments in innovation and scientific and technological development. **Indicator Three:** Resources	☐	#	31,451	35,857	83,364	145,006	190,969	235,618	Annual	Universities' Vicerrectory or Directorate of Research	Universities' Vicerrectory or Directorate of Research and	Measured in millions of current Costa Rican Colones,

Indicator	Core	Unit of Measure	Baseline	Cumulative Target Values[20]					Frequency	Data Source/ Methodology	Responsibility for Data Collection	Description (indicator definition etc.)
				2013	2014	2015	2016	2017				
invested in research and development (R&D) in the four universities participating in the Project											consolidation by the Project Coordination Unit (UCP).	in total of the four participating universities, following the the methodology defined by MICIT for the National Consultation of Indicators of Science and Technology. Calculations are made on the basis of the Frascati Manual. Targets for each of the four universities will be monitored through the PMIs.
Upgrade institutional management. **Indicator Four:** Yearly publication of the self-evaluation of the "Annual Operational Plan" on the websites of the four universities participating in the Project.	☐	Yes / No	No	Yes	Yes	Yes	Yes	Yes	Annual	Universities' planning offices.	Universities' planning offices and consolidation by the Project Coordination Unit (UCP).	Publication once a year on the website of each of the four universities of the results of the self-evaluation of the "Operational Annual Plan", corresponding to all the university's activity, including indicators, the targets that had been

Indicator	Core	Unit of Measure	Baseline	Cumulative Target Values[20]					Frequency	Data Source/ Methodology	Responsibility for Data Collection	Description (indicator definition etc.)
				2013	2014	2015	2016	2017				
												established, the targets that were reached, and justification for any eventual mismatch.
INTERMEDIATE RESULTS												
Component 1: Institutional Improvement Agreements												
Increase enrolment. **Intermediate Result indicator Five:** Total number of first-year students enrolled in under-graduate degrees in the four universities participating in the Project.	☐	#	UCR 6,305 UNED 10,632 ITCR 1,432 UNA 3,074 Total 21,433	UCR 6,768 UNED 11,006 ITCR 1,570 UNA 3,194 Total 22,538	UCR 6,968 UNED 11,436 ITCR 1,617 UNA 3,314 Total 23,335	UCR 7,286 UNED 11,923 ITCR 1,666 UNA 3,494 Total 24,369	UCR 7,648 UNED 12,517 ITCR 1,800 UNA 3,674 Total 25,579	UCR 7,900 UNED 13,193 ITCR 1,970 UNA 3,854 Total 26,797	Annual	Universities' registry offices.	Universities' planning offices and consolidation by the Project Coordination Unit (UCP).	Calculated by counting the number of regular, on-site, first-year students in the four participating universities. A regular student is an individual person enrolled in at least one subject, counting each individual once regardless of how many degrees they enroll in. Targets for this indicator are not cumulative.
Increase enrolment in priority areas. **Intermediate Result indicator Six:** Total number of students enrolled in priority areas in the four universities participating in	☐	#	**Undergr.** UCR 19,992 UNED 13,491 ITCR	**Undergr.** UCR 20,230 UNED 13,741 ITCR	**Undergr.** UCR 21,400 UNED 13,991 ITCR	**Undergr.** UCR 22,500 UNED 14,385 ITCR	**Undergr.** UCR 23,750 UNED 14,904 ITCR	**Undergr.** UCR 24,900 UNED 15,569 ITCR	Annual	Universities' registry offices	Universities' planning offices and consolidation by the Project Coordination	Includes enrolment in (i) undergraduate and (ii) graduate programs, in each of the

Indicator	Core	Unit of Measure	Baseline	Cumulative Target Values[20]					Frequency	Data Source/ Methodology	Responsibility for Data Collection	Description (indicator definition etc.)
				2013	2014	2015	2016	2017				
the Project.			6,074 UNA 8,713 **Postgrad.** UCR 2,315 UNED 423 ITCR 701 UNA 625 Total 4,064	6,280 UNA 8,931 Total 49,812 **Postgrad.** UCR 2,343 UNED 428 ITCR 722 UNA 627 Total 4,120	6,567 UNA 9,154 Total 51,112 **Postgrad.** UCR 2,310 UNED 433 ITCR 744 UNA 629 Total 4,116	6,696 UNA 9,383 Total 52,964 **Postgrad.** UCR 2,325 UNED 438 ITCR 766 UNA 631 Total 4,160	6,912 UNA 9,618 Total 55,184 **Postgrad.** UCR 2,344 UNED 443 ITCR 789 UNA 633 Total 4,209	7,165 UNA 9,858 Total 57,492 **Postgrad.** UCR 2,325 UNED 448 ITCR 813 UNA 635 Total 4,221			Unit (UCP).	priority areas: engineering, basic sciences (math, physics, chemistry, biology and geology), natural resources, agriculture and food sciences, arts, education, and health sciences. The targets for this indicator are not cumulative.
Increase full-time equivalents faculty menbers. **Intermediate Result indicator Seven:** Total number of full-time equivalent faculty members who hold (i) a masters degree and (ii) a doctoral degree in the four universities participating in the Project.	☐	#	**Masters** UCR 815 UNED 247 ITCR 330 UNA 534 Total 1,926 **PhD** UCR 356 UNED 54	**Masters** UCR 951 UNED 261 ITCR 335 UNA 522 Total 2,069 **PhD** UCR 381 UNED 56	**Masters** UCR 991 UNED 261 ITCR 340 UNA 502 Total 2,094 **PhD** UCR 391 UNED 60	**Masters** UCR 1031 UNED 271 ITCR 345 UNA 476 Total 2,123 **PhD** UCR 400 UNED 64	**Masters** UCR 1071 UNED 275 ITCR 350 UNA 457 Total 2,153 **PhD** UCR 412 UNED 67	**Masters** UCR 1111 UNED 279 ITCR 355 UNA 454 Total 2,199 **PhD** UCR 422 UNED 69	Annual	Universities' human resources offices (UNED, ITCR, UNA) and Vicerrectory for Teaching (UCR).	Universities' planning offices and consolidation by the Project Coordination Unit (UCP).	Number of hours faculty members who hold a masters or a doctoral degree work divided by the total number of hours that an academic on a full-time schedule works. The targets for this indicator are not cumulative.

Indicator	Core	Unit of Measure	Baseline	Cumulative Target Values[20]					Frequency	Data Source/ Methodology	Responsibility for Data Collection	Description (indicator definition etc.)
				2013	2014	2015	2016	2017				
			ITCR 50 UNA 131 Total 591	ITCR 52 UNA 147 Total 636	ITCR 54 UNA 170 Total 675	ITCR 56 UNA 196 Total 716	ITCR 73 UNA 215 Total 767	ITCR 85 UNA 218 Total 794				
Increase full-time equivalents in research. **Intermediate Result indicator Eight:** Full-time equivalent faculty members who undertake research activities in the four universities participating in the Project.	☐	#	UCR 286. UNED 16. ITCR 40 UNA 239 Total 581	UCR 312. UNED 17 ITCR 40 UNA 241 Total 611	UCR 322 UNED 19. ITCR 40 UNA 245 Total 627	UCR 332 UNED 19. ITCR 40 UNA 249 Total 641	UCR 343. UNED 22 ITCR 48 UNA 254 Total 668	UCR 353UNED 25 ITCR 53 UNA 260 Total 692	Annual	Universities' Vicerrectories / Directorate of Research	Universities' planning offices and consolidation by the Project Coordination Unit (UCP).	Number of hours spent in research by faculty members divided by the total number of hours that an academic on a full-time schedule works. The targets for this indicator are not cumulative.
Grant scholarships to staff. **Intermediate Result indicator Nine:** Staff who receive a scholarship to do postgraduate studies abroad from the four universities participating in the Project.	☐	#	UCR 0 UNED 0 ITCR 0 UNA 0 Total 0	UCR 42 UNED 24 ITCR 15 UNA 13 Total 94	UCR 52 UNED 45 ITCR 25 UNA 28 Total 150	UCR 58 UNED 53 ITCR 25 UNA 30 Total 166	UCR 58 UNED 53 ITCR 25 UNA 30 Total 166	UCR 58 UNED 53 ITCR 25 UNA 30 Total 166	Annual	Universities' Office for International Affairs and External Cooperation (UCR), Institutional Scholarships Commission (UNED), Scholarships Office (ITCR), Scholarships Board (UNA).	Universities' planning offices and consolidation by the Project Coordination Unit (UCP).	Scholarships to staff members from the universities for doing postgraduate studies abroad.
Increase indexed published articles. ***Intermediate Result indicator***	☐	#	UCR 301 UNED	UCR 319 UNED	UCR 325 UNED	UCR 332 UNED	UCR 358 UNED	UCR 365 UNED	Annual	Universities' Vicerrectories / Directorate	Universities' planning offices and	Includes articles published by faculty in

Indicator	Core	Unit of Measure	Baseline	Cumulative Target Values[20]					Frequency	Data Source/ Methodology	Responsibility for Data Collection	Description (indicator definition etc.)
				2013	2014	2015	2016	2017				
Ten: Number of published articles in indexed journals.			50 ITCR 20 UNA 253 Total 624	55 ITCR 22 UNA 257 Total 653	55 ITCR 24 UNA 261 Total 665	59 ITCR 26 UNA 265 Total 682	63 ITCR 41 UNA 282 Total 744	67 ITCR 51 UNA 306 Total 789		of Research.	consolidation by the Project Coordination Unit (UCP).	journals that are indexed in Scopus, Latindex and SCI. Targets for this indicator are not cumulative.
Increase the number of graduates. **Intermediate Result indicator Eleven:** Number of graduates from the four universities participating in the Project.	☐	#	UCR 4,765 UNED 2,026 ITCR 1,039 UNA 2,534 Total 10,364	UCR 5,071 UNED 2,036 ITCR 1,070 UNA 2,610 Total 10,787	UCR 5,177 UNED 2,087 ITCR 1,102 UNA 2,689 Total 11,055	UCR 5,285 UNED 2,171 ITCR 1,135 UNA 2,769 Total 11,360	UCR 5,395 UNED 2,279 ITCR 1,169 UNA 2,852 Total 11,695	UCR 5,509 UNED 2,404 ITCR 1,204 UNA 2,938 Total 12,055	Annual	Universities' registry offices	Universities' planning offices and consolidation by the Project Coordination Unit (UCP).	Graduates are students who obtain a diploma. Target values for this indicator are not cumulative.
Increase management capacity. **Intermediate Result indicator Twelve:** Yearly publication on the web of the results of the Institutional Improvement Plan.	☐	Yes / No	N/A	UCR Yes UNED Yes ITCR Yes UNA Yes	UCR Yes UNED Yes ITCR Yes UNA Yes	UCR Yes UNED Yes ITCR Yes UNA Yes	UCR Yes UNED Yes ITCR Yes UNA Yes	UCR Yes UNED Yes ITCR Yes UNA Yes	Annual	Universities' planning units.	Universities' planning offices and consolidation by the Project Coordination Unit (UCP).	Publication once a year on the website of each of the four universities (so that access to the information on the website is as easy as possible) of the yearly Project Report of the Institutional Improvement Plan (PMI), including indicators, the targets that had been established, the targets that were reached, and

Indicator	Core	Unit of Measure	Baseline	Cumulative Target Values[20]					Frequency	Data Source/ Methodology	Responsibility for Data Collection	Description (indicator definition etc.)
				2013	2014	2015	2016	2017				
												justification for any eventual mismatch.
Invest in innovation and scientific and technological development. **Intermediate Result indicator Thirteen**: Percentage of budget allocated to infrastructure and equipment in the four universities participating in the Project.	☐	%	UCR 6.91 UNED 8.3 ITCR 10 UNA 5.7 Total 30.91	UCR 4.78 UNED 21.6 ITCR 10 UNA 10.3 Total 46.68	UCR 9.74 UNED 30.4 ITCR 32 UNA 14.4 Total 86.54	UCR 9.97 UNED 24.2 ITCR 32 UNA 14.9 Total 81.07	UCR 7.45 UNED 14.2 ITCR 14 UNA 7.8 Total 43.45	UCR 4.55 UNED 9.7 ITCR 10 UNA 5.9 Total 30.15	Annual	Office of Financial Management (UCR), Executive Vicerrectory (UNED), Management Vicerrectory (ITCR), Financial Management Program (UNA).	Universities' planning units and consolidation by the Project Coordination Unit (UCP).	Budget in investment and equipment divided by total budget of the institution.
Increase the number of direct Project beneficiaries **Intermediate Result indicator Fourteen:** Direct Project beneficiaries (number), of which female (percentage)	☒	#, %	Total 0 Women N/A	94,902	98,348	100,910	103,645	106,854	Annual	Universities' registry offices	Project Coordination unit, on the basis of Project Reports from the six implementing agencies (universities, SINAES, OPES)	Calculated by counting the number of regular, on-site students (both undergraduate and graduate) in the four participating universities. A regular student is an individual person enrolled in at least one subject, counting each individual once regardless of how many degrees they enroll. The percentage of female

Indicator	Core	Unit of Measure	Baseline	Cumulative Target Values[20]					Frequency	Data Source/ Methodology	Responsibility for Data Collection	Description (indicator definition etc.)
				2013	2014	2015	2016	2017				
												beneficiaries will be reported annually. The targets for this indicator are not cumulative.
Component 2: Strengthening institutional capacity for quality enhancement												
Increase the number of programs in the process of accreditation. **Intermediate Result indicator Fifteen:** Total number of programs that undergo external evaluation.	☐	#	**Under-graduate** 64 **Graduate** 0	**Under-graduate** 80 **Graduate** 20	**Under-graduate** 97 **Graduate** 40	**Under-graduate** 106 **Graduate** 60	**Under-grad.** 137 **Grad.** 80	**Under-graduate** 160 **Graduate** 100	Annual	SINAES	SINAES and consolidation by the Project Coordination Unit (UCP).	Number of both undergraduate and postgraduate university programs that have been subjected to evaluation by SINAES in the process toward accreditation. A prerequisite for undergoing external evaluation is that the program has been self-evaluated.
Increase the number of professionals trained in evaluation processes. **Intermediate Result indicator Sixteen:** Number of professionals trained to carry out self-evaluation on behalf of HEIs' and external evaluation on behalf of SINAES.	☐	#	100	250	400	550	700	850	Annual	SINAES Experts Database	SINAES and consolidation by the Project Coordination Unit (UCP).	Number of external experts for accreditation who are trained and incorporated in SINAES' Experts Database.

Indicator	Core	Unit of Measure	Baseline	Cumulative Target Values[20]					Frequency	Data Source/ Methodology	Responsibility for Data Collection	Description (indicator definition etc.)
				2013	2014	2015	2016	2017				
Monitoring graduates' insertion into the labor market. **Intermediate Result indicator Seventeen:** Comparable studies for monitoring graduates' insertion in the labor market carried out using representative samples by OLaP.	☐	Text	Terms of reference for the 2 studies approved by OLaP		First study is finalized	Results of the first study are disseminated	Second study is finalized	Results of the second study are disseminated	Annual (except for year 1)	OLaP (CONARE)	OLaP (CONARE) and consolidation by the Project Coordination Unit (UCP).	Execution of 2 studies following the Terms of Reference approved, and dissemination of their results.
Strengthening SIESUE. **Intermediate Result indicator Eighteen:** Progress in the consolidation of the Information System of the Public University Higher Education.	☐	Text	Some parts of SIESUE are conceptualized	Standardi-zation of concepts and process for information collection and analysis	Definition of a system of indicators for the monitor-ring of variables	Collect-ion, organization and consoli-dation of data from the 4 univer-sities	Dissemin-ation of information to the univer-sity commu-nity and to society at large.	Dissemin-ation of data to the university community and to society at large.	Annual	Four universities participating in the Project / CONARE-OPES	CONARE-OPES and consolidation by the Project Coordination Unit (UCP).	Strengthening of the Information System of the Public University Higher Education (SIESUE).

Annex 2: Detailed Project Description

COSTA RICA: Higher Education Improvement Project

1. **Component 1. Institutional Improvement Agreements** *(Total: US$231.8 million; Bank: US$200 million; Universities: US$31.8 million).* Carrying out of PMIs by the corresponding participating university, through the provision of grants to finance activities under subprojects, including those to: (i) expand infrastructure for teaching, learning and research; (ii) upgrade faculty qualifications and foster evaluation and accreditation of academic programs; and (iii) strengthen the existing culture of strategic long-term planning, and measurement, target setting, accountability, and monitoring and evaluation.

2. The objective of this Component would be: (i) to help public universities increase access by investing in infrastructure for teaching, learning and research; (ii) to increase the quality of higher education by, among others, upgrading faculty qualifications and fostering evaluation and accreditation; (iii) to increase relevance in higher education by focusing resources on priority subjects that are key to the country's development; and (iv) to strengthen public universities' management capacity and accountability, by strengthening a culture: (a) of strategic long-term planning, including the formulation of an institutional mission, vision and strategy; and (b) of measurement, target setting, accountability, monitoring and evaluation that could lead to further performance-based financing innovations.

3. To this end, Component 1 would finance strategic investments in infrastructure and equipment, human capital, and the improvement of management and information systems for a more efficient administration of existing and new physical and human resources.

4. The key instrument for implementing Component 1 is the Institutional Improvement Agreement (AMI, *Acuerdo de Mejoramiento Institucional*) covering a period of five years – the first of its kind in Costa Rica – which would be signed between the Government and each of the four CONARE public universities for implementing the initiatives. Each AMI would include the commitments for both parties (the corresponding university and the Government, represented by MEP) covering the use of loan funds and would attach an Institutional Improvement Plan (PMI, *Plan de Mejoramiento Institucional*) that would present the institution's university-wide and subproject-specific strategic objectives as well as the specific investments to be made during the Project's 5-year implementation period. Each PMI would be financed with US$50 million in Bank financing plus between US$5.8 and US$9.5 million in counterpart funds (established by each university), and present a set of indicators, annual targets and budgets. All four PMIs would be organized around four strategic axes common to the participating universities, which match, on a one-to-one basis, the four major components of the PDO and thus with the four PDO-level indicators:

(a) Increasing access and retention (*access*).
(b) Improving the quality and relevance of programs and human resources (*quality*).
(c) Strengthening scientific and technological development as well as innovation (*innovation and scientific and technological development*).
(d) Improving institutional management and accountability (*institutional management*).

5. Thus, while Component 1 would finance specific investments in agreed subprojects, these resources would leverage results at the level of each university through the PMI, through

which the university undertakes to deliver specific results based on agreed university-wide and subproject-specific indicators and targets.

6. The budget for each PMI would be further detailed in Annual Investment Plans (AIPs) to be approved by the Bank and the Liaison Commission. Eligible expenditures would be: (i) goods (e.g. laboratory and computer equipment, furniture); (iii) infrastructure (e.g. new buildings, dormitories, and laboratories); (iv) staff scholarships and internships (e.g. programs for increasing faculty qualifications); (iv) visiting professorships and other faculty and student mobility programs; and (v) technical assistance (for instance, for program improvement).

7. Component 1 has four Subcomponents, one for each of the participating public universities. Each Subcomponent includes a set of subprojects that, following the institution's mission and comparative advantage, strive to achieve improvements in the four areas indicated by the PDO and the strategic axes. Subprojects are referred to in the PMIs as "initiatives" (iniciativas). Subprojects are referred to as indicative since the AMIs are pending signature by the Rector of the corresponding university and the Minister of Public Education, and are subject to change after AMI signature with agreement of all signatories and approval by the Liaison Commission.

(a) ***Subcomponent 1.1: University of Costa Rica*** *(estimated total cost: US$59.5 million; Bank: US$50 million).* The University of Costa Rica (UCR, *Universidad of Costa Rica*), created in 1940, is the oldest and largest university in the country. The UCR's PMI aims to increase access and retention of students, with a 21 percent increase in undergraduate students over the Project's lifespan; boosting the development of Costa Rica's regions, emphasizing the quality and relevance of education (with a planned 50 percent increase in the number of accredited programs), and boosting the development of infrastructure in order to strengthen scientific and technological development. The subprojects under UCR's PMI include: (i) increasing access and coverage in engineering (electric, computer science and technology, multimedia, civil, industrial, chemical and naval engineering) in its 5 regional campuses as well as biology in the Rodrigo Facio campus; (ii) strengthening research and technological innovation in its centers of human movement sciences, hydraulics and mechatronics, materials science and engineering, environmental sciences, pharmaceutics, atomic, nuclear and molecular sciences' applications to health, neurosciences, energy efficiency, and the creation of a research network integrating basic sciences, food sciences and health sciences; (iii) increasing infrastructure and improving quality in the programs of musical arts, food technology and health; and (iv) strengthening information systems for decision making.

(b) ***Subcomponent 1.2: National University for Distance Learning*** *(estimated total cost: US$55.8 million; Bank: US$50 million).* The National University for Distance Learning (UNED, *Universidad Estatal a Distancia*), created in 1977, uses distance learning methodologies in order to make higher education available to a wider sector of the Costa Rican society. The main objective of UNED's PMI is to increase the regional coverage of distance-learning university education, leading to a 12 percent increase in undergraduate students over the life of the Project; to foster quality in the offered programs (with a planned 225 percent increase in the number of accredited programs); as well as to strengthen its model

of distance education, which includes providing more digital learning resources over the Internet, and diversifying its academic offer in priority disciplines. UNED's PMI includes the following activities: (i) renewing equipment of the university centers network that supports students with labs, Academic Resources Centers, multimedia rooms, and with the construction of two Regional Change Management Centers, as well as delivering multimedia equipment to students in vulnerable socioeconomic situations so they can access online learning more easily; (ii) opening and developing programs in industrial, telecommunications, and water and sanitation engineering; (iii) training professors and administrative staff in academic, pedagogical, technological and management areas; (iv) strengthening research and the production of audiovisual and online learning material; and (v) improving the information system for supporting decision making processes and institutional management.

(c) ***Subcomponent 1.3: Costa Rica Institute of Technology*** *(estimated total cost: US$58 million; Bank: US$50 million).* The Costa Rica Institute of Technology (ITCR, *Instituto Tecnológico de Costa Rica*), created in 1971, focuses mostly on engineering programs. ITCR's PMI has as its main objectives to increase student access (with a planned 14.5 percent planned raise in enrolment over the life of the Project), improve quality of the learning process (leading to a 42 percent increase in the number of accredited programs) and develop technological innovation in engineering programs. The PMI includes the following activities: (i) increasing student access by constructing new buildings for the academic units, dormitories and meal service facilities for students, classrooms and labs in several campuses and improving libraries and multimedia rooms; (ii) accrediting and reaccrediting existing programs and developing research and improving postgraduate programs; (iii) having professors trained at doctoral level in engineering programs that are priority for the country's development; and (iv) implementing a new management and information system for both students and academics.

(d) ***Subcomponent 1.4: National University*** *(estimated total cost: US$58.5 million; Bank: US$50 million).* The National University (UNA, *Universidad Nacional*), created in 1973, is characterized by an especially diverse academic supply and a widespread presence across the country. The objective of UNA's PMI is to increase enrolment by 16 percent over the life of the Project, with an emphasis on humanistic education of students and the development of entrepreneurial skills, as well as on the improvement of the quality of programs through the modernization of their contents and the development of research and postgraduate teaching in priority areas (leading to a planned 118 percent increase in the number of accredited programs). In order to reach these objectives, UNA's PMI considers the following activities: (i) increasing access by building dormitories and teaching infrastructure and by creating new engineering programs (bioprocesses, water resources, logistics) and increasing supply in lifelong learning and non-formal education; (ii) improving programs in the areas of artistic education, human movement sciences, and health; (iii) strengthening research in education and pedagogical innovation, in climate change and development (creating an observatory) and in medical physics (opening a masters program with a research lab); and (iv) developing a system of relevance and quality that involves planning,

management and information, evaluation of quality in teaching and research, and monitoring of academic and administrative staff training and performance.

8. Annex 7 includes an indicative list of the subprojects falling under each of the PMIs, detailing who they impact on the four strategic orientations and thus on the PDO. Additionally, the PMIs of all four participating universities give further details on the overall strategy of each institution, the rationale and specificities of each subproject, monitoring and evaluation, and financing.

9. **Component 2. Strengthening institutional capacity for quality enhancement** *(Total: US$17.31 million; Bank: US$0 million; SINAES and CONARE: US$17.31 million).* The objective of this Component would be to promote the development of strategic activities with a system-wide scope in order to support the objectives of Component 1. By strengthening some key elements of the higher education system, this Component would play an important role in achieving the PDO. Component 2 includes the following three Subcomponents:

(a) ***Subcomponent 2.1: Strengthening the National System for the Accreditation of Higher Education (SINAES)*** *(estimated total cost: US$14 million, to be financed by SINAES)***.** Strengthening of SINAES through the provision of support for the implementation of SINAES' Institutional Strategic Plan, including, *inter alia*: (i) the carrying out of an external evaluation and accreditation of academic programs and institutions; (ii) the provision of training to SINAES staff on evaluation and accreditation processes; and (iii) the carrying out of a assessment of the current status of accreditation and quality of higher education institutions. SINAES is the entity of the Republic of Costa Rica that officially identifies the university degrees and programs that comply with its quality requirements, pursuant to the second paragraph of the first article in Law 8256. Therefore, the universities express their purpose to foster the incorporation of degrees into SINAES' accreditation processes, which would contribute to the reaching of targets it assumes within the Project. The main goal of this Subcomponent is to consolidate Costa Rica's higher education quality assurance system. This Subcomponent is fully financed with SINAES' own budget, which has recently increased through a new law that establishes its budget as an increasing proportion of FEES' total annual amount[21], hence making possible significant improvements in the fields of evaluation and accreditation. SINAES has developed a 2012 – 2017 strategy for consolidating its system for quality assurance in higher education, which includes actions in the following four areas:

(i) Accreditation activities: (1) increasing the number of universities that are members of SINAES from 18 in 2011 to 44 in 2016; (ii) accrediting 96 new programs in the period 2012-2016 (as a result, the number of graduates from accredited programs would have a 10 percent annual increase); (iii) accrediting 100 postgraduate programs in the period 2012-2016; (iv) accrediting 20 programs in the higher education non-university

[21] The 2010 Act for Strengthening SINAES guarantees that the agency receive a Government contribution assigned gradually and calculated as equivalent to 0.30% of the FEES in 2012, 0.35% in 2013, 0.45% in 2014, and 0.50% thereafter.

programs; and (v) developing specific evaluation criteria for accreditation in the areas of medicine, pharmacy, nursery, computer science, and law.

(ii) Training: (1) training in accreditation-oriented evaluation; and (2) training 150 external experts per year.

(iii) Research: study of the quality of higher education in Costa Rica.

(iv) Institutional strengthening: (i) updating the strategic plan for the period 2012 – 2017; (ii) developing SINAES' information system; and (iii) training SINAES staff.

(v) Culture of quality. Dissemination and promotion to several higher education stakeholders, training of trainers and information to students, with the goal of informing at least 20,000 students per year.

(b) ***Subcomponent 2.2: Developing the Labor Market Observatory and the public higher education information system*** *(estimated total cost: US$1.2 million, to be financed by CONARE-OPES).* Strengthening and consolidation of CONARE's sector-wide information system and of OPES' labor observatory. This Subcomponent would support the development and consolidation of a labor market observatory (OLaP, Observatorio Laboral de Profesiones) and a common information system for the four CONARE universities (SIESUE, Sistema de Información de la Educación Superior Universitaria Estatal de Costa Rica). On the basis of the important role that information plays in the promotion of higher education quality, this Subcomponent would finance activities such as data collection and processing, the publication of studies, and the development of university information systems:

(i) Labor Market Observatory (OLaP). The main objective is to consolidate the OLaP as the main source of high-quality, relevant information on the labor market for higher education graduates. This would be done through a series of activities in three areas: (i) production of two reliable, comparative studies on the insertion of graduates into the labor market, using representative samples; (ii) production of studies about professionals' training needs, through methods such as focus groups and/or interviews to graduate employers; and (iii) the diffusion of OLaP and its products.

(ii) Information system for Costa Rica's public university higher education system (SIESUE, *Sistema de Información de la Educación Superior Universitaria Estatal de Costa Rica*). Subcomponent 2.2 would also address the lack of harmonization between the institutional information systems of the four established universities. The main objective is to build, develop and maintain an information system that provides reliable and relevant information that facilitates decision-making processes of the four CONARE universities. Specifically, the strategic planning of SIESUE aims at: (i) conceptualizing an information system for the public university higher education system; (ii) homologating concepts and processes for data collection and data analysis; (iii) defining and building a system of

indicators for monitoring variables across time; (iv) collecting, organizing and consolidating data corresponding to the four universities while guaranteeing reliability and validity; and (v) providing and divulgating information about these four universities to the university community and to society at large. These activities would allow to better take advantage of the efforts taken by individual institutions (through Component 1 and other university actions), and to facilitate decision-making processes with a system-wide perspective.

(c) ***Subcomponent 2.3: Support to the Project's coordination, supervision and evaluation*** *(estimated total cost: US$2.11 million, to be financed by the Government, SINAES and CONARE)***.** Provision of support for Project coordination, monitoring and evaluation. The main goal of this Subcomponent is to support the institutional arrangements needed for Project execution. This includes the Project Coordinating Unit (UCP), the Government's Technical Commission (CTG) the Monitoring and Evaluation Committee (CSE) and the Project's external audit. The estimated costs of Subcomponent 2.3 are distributed as follows: (i) costs of the UCP, to be financed by CONARE: US$0.5 millions; (ii) costs of the CTG, to be financed by the GoCR: US$0.96 millions; (iii) costs of the Monitoring and Evaluation Committee, to be covered by CONARE: US$0.35 million; and (iv) costs of the external audit, to be financed by CONARE: US$0.30 million.

Annex 3: Implementation Arrangements

COSTA RICA: Higher Education Improvement Project

Project Institutional and Implementation Arrangements

10. 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 public university system, incorporating demands from the Government and universities, and making Project implementation more dynamic. While implementation arrangements require a certain degree of complexity, the Project would count on a general coordinating unit and an Operational Manual (OM) detailing Project implementation arrangements.

11. The MEP would be the responsible agency. The MEP would sign each of the AMIs and the subsidiary agreements with CONARE-OPES and SINAES, on behalf of the GoCR.

12. The Liaison Commission (CE, *Comisión de Enlace*) would be the main coordination body regarding overall Project implementation. The CE is comprised of the Rectors of the four CONARE public universities and four Ministers: Public Education, Science and Technology, National Planning and Economic Policy, and Finance. With regards to Component 1, the CE would make, by consensus of its members, major decisions about the Project (including the approval of the PMIs, which include the subprojects –once throughout the 5-year period—, and of AIPs) and review the Project Reports. The CE would play an important role in ensuring coordination between universities and the Government during Project implementation, as well as oversight, accountability and long-term sustainability. With regards to Component 2, the CE would be responsible to ensure oversight of its implementation and the fulfillment of its objectives.

13. The Government's Technical Commission (CTG, *Comisión Técnica del Gobierno*) would provide technical advice to the Government, in the framework of the CE. In particular, it would provide advice on an *ad hoc* basis to the Government regarding Project implementation and monitoring and evaluation (M&E). The CTG would review that the PMIs, their subprojects and the corresponding AIP are linked to the PND 2010 – 2014, as well as any potential modifications to the OM. The CTG would also review potential changes to the OM. The CTG is composed of staff from MEP, the Ministry of Science and Technology (MICIT, *Ministerio de Ciencia y Tecnología*), the Ministry of National Planning and Economic Policy (MIDEPLAN, *Ministerio de Planificación Nacional y Política Económica*) and the Ministry of Finance (MH, *Ministerio de Hacienda*), and coordinated by MICIT.

14. Overall Project coordination and monitoring would be managed by the Project Coordinating Unit (UCP, *Unidad de Coordinación del Proyecto*), which would be the Bank's main interlocutor during Project implementation in all aspects regarding M&E. The CE mandated CONARE to create the UCP. CONARE will designate a Project Coordinator and a small support team. The UCP's responsibility to coordinate M&E would include: (i) consolidating Project Reports for both components for the CE and the Bank; (ii) supporting the Bank's supervision missions; (iii) working as a focal point that collects and integrates information from implementing agencies (implementation, financial management, procurement

and contracting plans, and Safeguard Policies); (iv) work as a link between implementing agencies and the Liaison Commission; (v) work as facilitator with implementing units in the eventual case of difficulties in implementation; and (vi) supporting the activities of the Monitoring and Evaluation Committee (CSE, *Comité de Seguimiento y Evaluación*).

15. Component 1 would have four Institutional Project coordinating units[22] (UCPIs, *Unidades Coordinadoras de Proyecto Institucional*), namely one for each of the four participating universities. These units will be responsible for the implementation of activities, maintaining a direct relation to the Bank. To promote accountability and strengthen existing management capacity, already-existing and well-functioning structures in six areas within each university would be used for Project implementation: (i) financial management, disbursements and accounting; (ii) procurement and contracting; (iii) infrastructure; (iv) planning, monitoring and evaluation; (v) management of issues related to environmental Safeguard Policies; and (vi) management of issues related to Indigenous Peoples Safeguard Policy. As a result, each university would appoint an overall Coordinator and a specialist responsible for each of the six areas. The four universities would implement their PMIs with autonomy and in coordination with the UCP on supervision, monitoring and accountability. This would allow the Project to leverage existing capacity for implementation, ensuring Project monitoring and evaluation mechanisms.

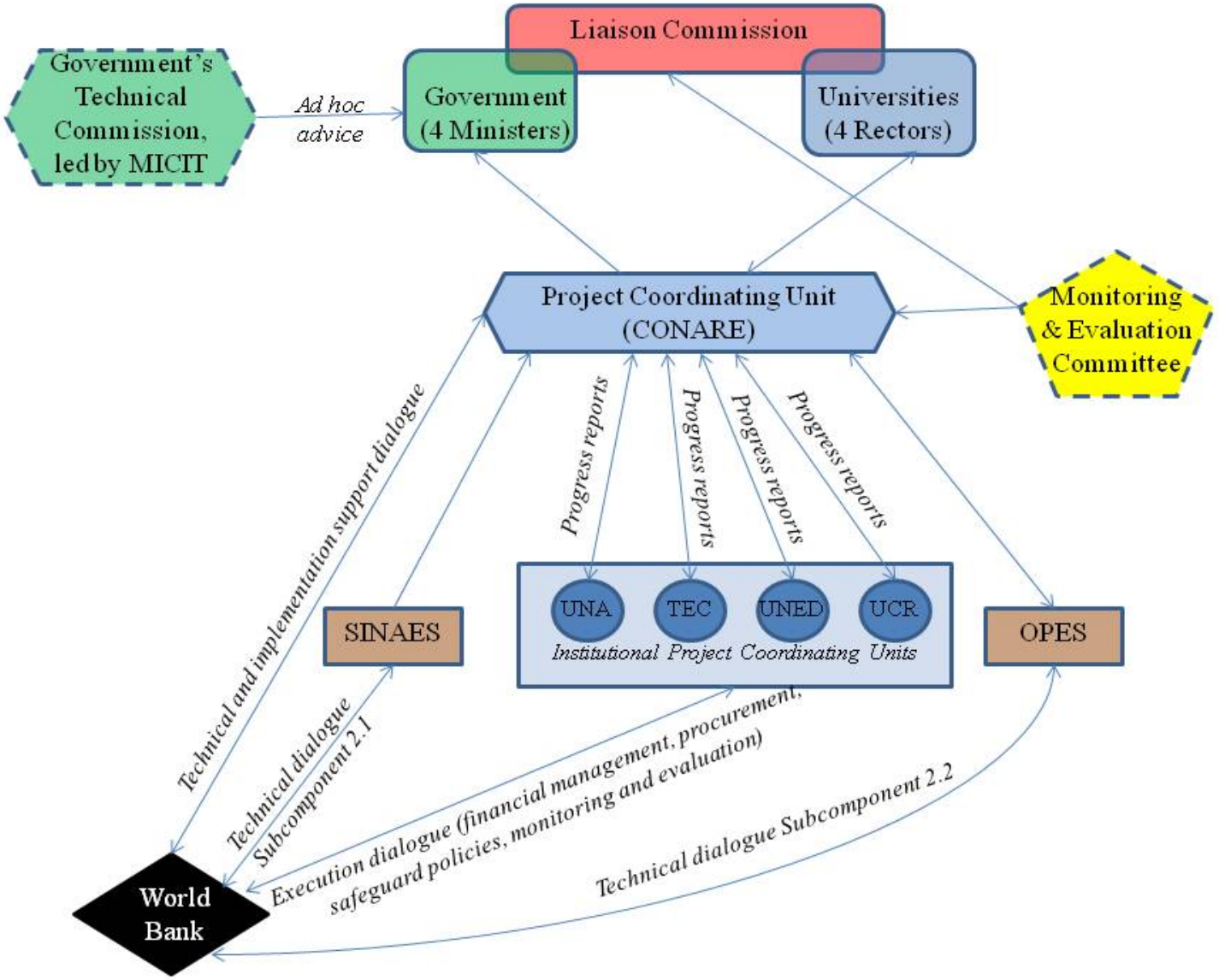
16. The key instrument for implementing Component 1 is the Institutional Improvement Agreement (AMI, *Acuerdo de Mejoramiento Institucional*) covering a period of five years – the first of its kind – which would be signed between the Government and each of the four established public universities for the utilization of incremental funding from the Project. Each AMI would include the conditions and obligations for both parties (the corresponding university and the Government, represented by MEP) covering the use of incremental funds and would attach an Institutional Improvement Plan (PMI, Plan de *Mejoramiento Institucional*) that would present the institution's university-wide and subproject-specific strategic objectives as well as the specific investments to be made during the Project's 5-year implementation period.

17. Component 2 would have various implementing agencies: for Subcomponent 2.1, SINAES; and for Subcomponent 2.2, CONARE through its Office for Higher Education Planning (OPES, *Oficina de Planificación de la Educación Superior*). SINAES and CONARE-OPES would provide to the UCP the required technical information for monitoring the Project. Subcomponent 2.3 would be under the responsibility of the UCP.

18. A Monitoring and Evaluation Committee (CSE, *Comité de Seguimiento y Evaluación*) formed by experts would provide an external and impartial assessment of Project implementation, particularly regarding Component 1.

[22] Implementing agencies for Component 1 (the four participating universities) are referred to as "Institutional Project Coordinating Units". Those for Component 2 (SINAES and CONARE-OPES) are simply referred to as implementing agencies. The use of the expression "implementing agencies" throughout the PAD refers, unless otherwise stated, to all six units.

Figure 1 – Project organizational chart



19. Figure 1 represents the Project's institutional arrangements. The following paragraphs succinctly define each of the bodies involved in Project implementation and detail their main responsibilities. Furthermore, the Project's OM would include detailed descriptions of institutional arrangements, the activity flow, financial management, accounting, and audit, as well as standards and templates to ensure that project implementation complies with standard Bank practice and is as professional and transparent as possible.

(a) Liaison Commission (CE). The Liaison Commission (CE), in which both the GoCR and universities are represented, would be in charge of decision making for Component 1 and to ensure the adequate implementation of Component 2. The CE would take all its decisions by consensus of its parties.

(i) *Composition*. The CE would have eight members: (i) four on the side of the Government: the Minister of Public Education, the Minister of Science and Technology, the Minister of National Planning and Economic Policy, and the Minister of Finance; and (ii) four on the side of the universities: the Rector of the Universidad de Costa Rica (UCR), the Rector of the Universidad Estatal a Distancia (UNED), the Rector of the Universidad

Nacional (UNA), and the Rector of the Instituto Tecnológico de Costa Rica (ITCR).

(ii) *Responsibilities*. Regarding Component 1, the CE would be responsible for: (i) approving universities' Institutional Improvement Plans (PMIs) at one instance; (ii) approving universities' Annual Investment Plans (AIPs), in the framework of the approved PMIs; (iii) agreeing on eventual modifications to the programming and/or financing of subprojects included in the PMIs; and (iv) analyzing monitoring and evaluation reports. Regarding Component 2, the CE would be responsible for ensuring the adequate implementation of this Component and the achievement of the proposed objectives.

(b) Project Coordinating Unit (UCP). The Project would have a UCP, appointed by the CE, as a focal point that collects and consolidates information and serves as the main link between the Project's six implementing units, the CE and the Bank. CE designated CONARE as the UCP.

(i) *Composition.* The UCP would consist of a Project Coordinator, who would be supported by a small support team for support in technical matters.

(ii) *Responsibilities.* The UCP would be responsible for the coordination of the Project's general oversight. As such, the UCP would (i) coordinate everything related to the information required about the PMIs, subprojects and AIPs, ensuring consistence with the OM; (ii) coordinate with SINAES and OPES the information of activities corresponding to Component 2; (iii) consolidate the Project Reports from each of the implementing agencies into a single Project Report; (iv) report regularly on Project implementation to the CE through M&E reports and to the Bank through Project Reports; (v) coordinate the preparation of the Bank's implementation support missions; (vi) coordinate the preparation and

eventual changes to the OM); and (viii) monitoring compliance of Project implementation with the Bank's Safeguards Policies.

(c) Government's Technical Commission (CTG). The CTG would be in charge of advising the CE's Ministers on the preparation, implementation, monitoring and evaluation of both Project components.

(i) *Composition*. The CTG would be formed by staff from MEP, MICIT, MIDEPLAN and MH appointed by the respective Ministers. It would be led by a Technical Coordinator.

(ii) *Responsibilities*. Regarding Component 1, the CTG would be responsible for (i) making recommendations to the Ministers who sit in the CE about the viability of AIPs, as proposed by universities; (ii) making recommendations to the Ministers who sit in the CE about eventual modifications of subprojects and changes to AIPs and to the OM; and (iii) analyzing the reports from the CSE and the Project Report provided by the UCP, and making recommendations about them to the Ministers who sit in the CE.

(d) Universities. Each university would have an Institutional Project Coordinating Unit (UCPI) for the implementation of the corresponding Subcomponent of Component 1. Universities would support the implementation of Component 2 as needed.

(i) *Composition*. Each university's team for the implementation of the corresponding Subcomponent would be formed with existing technical teams in order to avoid duplication and to ensure sustainability. At a minimum, each university's team would count on a Coordinator and with six additional areas: (i) financial management, disbursements and accounting; (ii) procurement and contracting; (iii) infrastructure; (iv) planning, monitoring and evaluation; (v) environmental management; and (vi) indigenous peoples issues management.

(ii) *Responsibilities*. Universities' UCPIs would be responsible for: (i) representing the university as a technical interlocutor before the UCP regarding *inter alia* subprojects, AIPs, and monitoring reports; (ii) managing the implementation of PMIs' subprojects that are deemed ready for implementation, including financial, accounts, treasury, disbursement, procurement and contracting management; (iii) preparing the AIP and the Procurement and Acquisitions Plan (PAC, *Plan de Adquisiciones y Contratación*) corresponding to the AMI; (iv) act as an interlocutor before the Bank regarding the implementation of PMIs and subprojects, particularly including requests for no objection and monitoring reports; (v) monitoring subproject-specific and PMI indicators; (vi) coordinating with each subproject's manager; (vii) managing compliance with the ESMF and IPPF; and (viii) managing any other actions required for the adequate implementation of the Project.

(e) SINAES. SINAES is the implementing agency for Subcomponent 2.1.

(i) *Composition.* SINAES has a National Accreditation Council (*Consejo Nacional de Acreditación*) which is composed of eight members, including its President, and acts as the organization's board. To implement its decisions and the organization's Strategic Plan, SINAES counts on a team of 13 professionals.

(ii) *Responsibilities.* SINAES would be responsible for: (i) implementing Subcomponent 2.1, including its accreditation, training, research, and institutional activities; and (ii) reporting to the Bank and the Liaison Commission about progress made in the area of accreditation and higher education quality.

(f) CONARE-OPES. OPES, which is based at CONARE, is the implementing agency for Subcomponent 2.2.

(i) *Responsibilities*. CONARE-OPES would be responsible for the implementation of Subcomponents 2.2, which would involve: (i) ensuring the adequate progress of OLaP towards its established goals; and (ii) coordinating the efforts of CONARE's universities for the harmonization of managerial information systems.

(g) Monitoring and Evaluation Committee (CSE). The CSE would be an *ad hoc* mechanism for the monitoring and evaluation of the Project, with a special but not exclusive focus on the PMIs of Component 1.

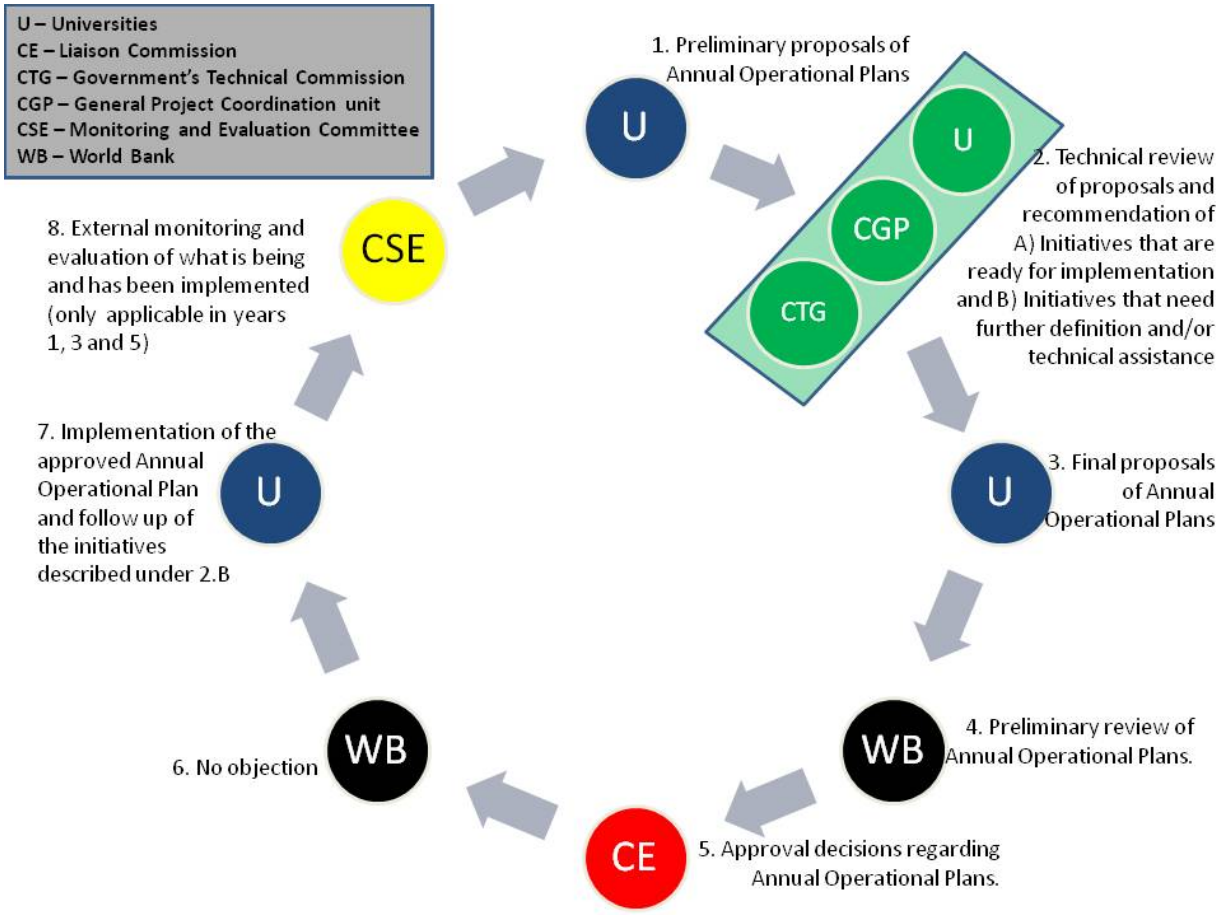
(i) *Composition*. The CSE would be composed of a group of specialists of recognized authority from both Costa Rica and abroad. They would represent a not-for-profit, international network or organization integrated by higher education institutions (preferably from Costa Rica, Latin America and Europe) and flexible enough to incorporate academics from those institutions as required by the Project's monitoring and evaluation process.

(ii) *Responsibilities*. The CSE would be responsible for: (i) undertaking monitoring evaluations of each university's AMI; (ii) undertaking assessments of the Project at the end of the first, third, and fifth year of implementation; (ii); (iii) undertaking the Project's mid-term evaluation; (iv) incorporating stakeholders' views through focus groups or a similar methodology; and (v) reporting evaluations results to the CE and the Bank through an annual progress report in years 1, 3 and 5 of the Project that includes recommendations for improvement.

20. **Approval of Institutional Improvement Plans (PMIs) and Institutional Improvement Agreements (AMIs).** PMIs would be approved by the CE. Additionally, each university and the Minister of Public Education would sign an AMI, which would include the corresponding PMI as an annex. The signing of the AMIs may occur before Congress approval of the Loan Agreement and therefore before Project effectiveness. In that case, the AMIs would include a clause specifying that they would only become effective with Project effectiveness.

21. **Annual investment cycle.** Project implementation would follow an annual investment cycle that ensures adequate review of subprojects and Annual Investment Plans (AIPs), as represented in Figure 2. This process would have the following phases:

Figure 2 – Diagram of the annual investment cycle



(a) First, each university would present its proposal of subprojects that are ready for implementation and of the AIP corresponding to its PMI. The AIP would include activities corresponding to subprojects that are ready for implementation, and preparation activities (e.g. technical assistance, evaluations, architectural analyses, environmental management and supervision, etc.) aimed at completing the design of other subprojects. All subprojects would be screened out of potential environmental and social impacts following procedures described in the Project's Environmental and Social Management Framework to ensure environmental and social sustainability.

(b) Secondly, these proposals would go through a process of technical review by the UCP, which would facilitate dialogue and exchange between the universities and the Government's Technical Commission. The objective of this phase is not to take decisions about AIP proposals (which correspond to the Liaison Commission) but to ensure that implemented subprojects are as technically sound as possible. To this end, the CTG may be supported by technical assistance from

external experts, which might eventually be financed by the Bank through non-reimbursable technical cooperation. After this process, the CTG would advice the Ministers sitting in the CE, whereas the universities would advice the Rectors.

(c) Next, and taking into account the technical review done in phase (b), each university presents its final proposal of subprojects that are ready for implementation and its AIP corresponding to its PMI. These proposals would also include a PAC with details on the organization of the procurement process.

(d) The CE analyzes the subprojects and AIPs submitted by universities for its consideration. Since the Bank has to provide the no objection to the CE's decisions, universities' final proposals would be sent to the Bank for a preliminary review previous to the CE's meeting. Subprojects would be considered ready for implementation if: (i) they have an advanced status in technical design; (ii) they are ready for immediate implementation (e.g. readiness of land for buildings, technical specifications for equipment, etc.); (iii) they present a detailed description of costs and financing, including the sustainability of recurring costs beyond the duration of the Project; and (iv) these comply with the eligibility and environmental criteria of the Environmental and Social Management Framework.

(e) Once the CE has approved the subprojects and investment plans, universities go ahead with implementation.

(f) The CSE would perform its monitoring and evaluation responsibilities also regarding PMIs and their subprojects. This would allow for maintaining an overall perspective on the implementation of Component 1, and to include the views of international experts and national stakeholders (such as students and employers).

Financial Management, Disbursements and Procurement

Financial Management

22. As part of Project preparation the Team performed a Financial Management Assessment (FMA) to evaluate adequacy of financial management (FM) arrangements under the Project, in accordance with OP/BP 10.02 Financial Management. The approach to Project implementation is to use existing capacity as much as possible avoiding incremental cost and relying in existing institutional capacity to manage operational FM aspects.

23. The different nature of the two Components has been taken into consideration for Financial Management (FM) implementation arrangements. After considering different models, their benefits and fiduciary risk and implementation implications, a model has been selected where both Components would have independent implementation arrangements to facilitate execution, avoid unnecessary bottlenecks and delays, facilitate accountability and minimize fiduciary risk.

24. In Component 1, FM aspects of the component would be implemented by each of the four participating universities through its existing operational capacity assigning the universities' permanent staff to Project FM functions under the existing administrative organizational structure. The only previous relevant experience in implementation of multilateral financing is from one Inter-American Development Bank financed project executed in the 1980's (543/SF-CR), but HEIs staff involved in that operation are still in place and IESUEs have operational capacity to manage amounts as established in the Project. This Component would implement

US$231.8 million, of which US$200 million are Bank financing, US$50 million for each university.

25. In Component 2, the estimated cost is US$17.31 million financing by counterpart funds that would be implemented using the corresponding institutional systems (budgeting, accounting, internal control, funds flow, and financial reporting) to finance activities under this component. Execution under this component would be reported from the corresponding budgetary system and included in the Project financial statements. Implementing agencies for this Component are SINAES and CONARE-OPES.

Table 3 – Project cost and financing

Project Components	**Project cost (US$ Million)**	**IBRD Financing (US$ Million)**	**% Financing**
1. Component 1. Institutional Improvement Agreements	231.80	200	86.28
2. Component 2. Strengthening institutional capacity for quality enhancement	17.31	0	0
Total Project Costs	249.11	200	80.28

26. Implementing agencies would act autonomously in FM matters (budgeting, flow of funds, financial reporting and internal control) but coordinate among them in Component 1 and with the UCP for overall Project operative coordination. Each UCPI would be responsible for procurement and financial management and would be in charge of FM tasks for their respective Subcomponent. The relevant features of the Project would be:

(a) Consolidation of the overall FM reporting activities of the project for Component 1 that would be handled by the UCP, which would consolidate the information and prepare the reports required by the Bank;

(b) Use of the Single Account of the Digital Treasury, in US$;

(c) Implementing agencies would coordinate on the technical aspects and would provide them with the required information for reporting to the Bank in a timely manner; and

(d) An external financial Audit would be performed for the entire project.

27. The FM capacity assessment (FMA) has identified Project-specific actions in order to enable adequate implementation capacity and mitigate fiduciary risks.

28. Project’s Operational Manual . Financial management aspects of the Project are reflected in the FM section of the OM.

Organizational Arrangements and Staffing

29. For Component 1, the approach to Project implementation would be to use existing capacity in IESUEs to manage operational FM aspects; each university would have staff from its administrative units with adequate skills assigned to the Project. All of them would act as implementing units for the Project.

30. IESUEs have already made provisional allocations of qualified and experienced staff to the Project, which proves the availability of that capacity and their commitment to implementation. Each university would be responsible for managing and implementing all aspects of financial management, as well as for ensuring accountability towards the Bank. On the other hand, it has been established that the accounts plan to be used is the Manual for Accounting by Expenditure Object (*Manual de Cuentas por Objeto del Gasto*) used in the public sector. Finally, financial reporting from universities to the Bank would use a standardized, unified model of report, which has already been defined and would include: (i) six-monthly, unaudited mid-term financial reports; and (ii) yearly, audited financial statements.

31. Each university would be in charge of the FM aspects for the activities under their execution under their respective subcomponent as designed. These would basically include: (i) budget formulation and monitoring; (ii) cash flow management (including processing payments and submitting loan withdrawal applications to the Bank); (iii) maintenance of accounting records, including the maintenance of an inventory of fixed assets for the project and (iv) administration of underlying information systems.

32. For Component 1, the OM would establish the liaison mechanisms among the universities to consolidate the information regarding: (i) preparation of in-year and year-end financial reports, and (ii) arranging for the execution of the external audit for the Project for the component.

33. Universities would act autonomously in Financial Management (FM) matters (budgeting, flow of funds, financial reporting and internal control) but coordinate among them in Component 1 and with the UCP for overall financial consolidation and coordination.

34. The detailed implementation arrangements for Component 1 are described below.

Budget Planning

35. For the implementation of the Project, each university would prepare an Annual Investment Plan (AIP), including the budget, following institutional procedures. On the basis of the approved budget, each university would adjust the AIP and procurement plan as needed, which would be reviewed by the Bank.

Accounting and Financial Reporting

36. ***Accounting Policies and Procedures.*** Universities would maintain adequate records using the cash basis of accounting according to international public sector accounting standards The FM regulatory framework for the Project would consist of: (i) Costa Rica' laws governing budget management (ii) IESUEs' operating norms; and (iii) the Project's OM.

37. The FM section of the OM makes specific reference to: (i) the internal controls appropriate for the Project; (ii) the formats of Project financial reports, and (iii) auditing arrangements. Additional financial management aspects of the Project not included in the existing normative and procedures in each university are included in the FM section of the MO, which makes reference to other complementary regulations.

38. *Information Systems.* Under Component 1, the Project would utilize IESUEs' systems for budgeting, budget execution, treasury and financial reporting. However, the existing systems are not expected to produce the financial reports under the required formats and some complementary work would be necessary.

39. *Treasury System.* Universities would apply the Single Treasury Account ("Cuenta Única del Estado") through the Digital Treasury system.

40. ***Financial Reports.*** On a semester basis, the UCP would consolidate and submit to the Bank an unaudited interim financial report (IFR) (each university will be responsible for preparing its part and submitting to UCP), containing at least: (i) a statement of sources and uses of funds and cash balances (with expenditures classified by initiative); (ii) a statement of budget execution per initiative (with expenditures classified by the major budgetary accounts); and (iii) a report about the Project's physical progress. The interim reports would be submitted not later than 45 days after the end of each semester. In this case, the IFRs are not expected to be utilized for disbursement purposes.

41. On an *annual* basis, universities would prepare Project financial statements including cumulative figures for each fiscal year of the financial statements cited in the previous paragraph that would be consolidated by UCP. The financial statements would also include explanatory notes in accordance with the International Accounting Norms that would be submitted audited to the Bank.

42. The supporting documentation of the semester and annual financial statements would be maintained in each implementing agency's premises, and made easily accessible to Bank supervision missions and to external auditors and would be kept as long as established in the OM.

Flow of Funds

43. ***Bank Disbursement Methods.*** Considering the results of the assessments, the following disbursement methods may be used by the UCPIs to withdraw funds from the loan: (a) reimbursement, (b) advance, and (c) direct payment.

44. ***Bank Designated Account.*** For this Project, "Cuenta Única del Estado" would apply through the use of the Digital Treasury system for expenditures under Component 1, whereby each IESUE will have its sub account in US$. Funds deposited into the Designated Accounts (DAs) as advances, would follow Bank's disbursement policies and procedures, as described in the Disbursement Letter and Disbursement Guidelines.

45. ***Procedure for the implementation of the loan.*** This procedure is described in detail in the OM, which establishes that:

(a) The Bank will advance resources in US$ into the Government's General Fund. With the notice of disbursement to the National Treasury by the Central Bank, the budget execution of the transfer to the Treasury's Single Account. The Treasury will keep separated accounts for each university.

(b) Universities will use the *Tesoro Digital* system to directly make payments to their suppliers and other beneficiaries through the website facilitated by the National Treasury.

46. The ceiling for advances to be made into DA for Component 1 would be US$3,000,000 per university, which is estimated to be sufficient for Project execution for a period of 4 months.

The reporting period to document eligible expenditures paid out of the DA is expected to be on a quarterly basis.

47. Supporting documentation for justifying Project expenditures under advances and reimbursement methods would be records evidencing eligible expenditures (e.g. copies of receipts or invoices) for payments for consultant services against contracts valued at US$75,000 or more for firms, and US$50,000 or more for individuals; for payments for scholarships and training costing U$S25,000 or more for payments for goods against contracts valued at US$100,000 or more. For all other expenditures below these thresholds, supporting documentation for justifying project expenditures would be Statements of Expenditures (SOEs).

48. All consolidated SOEs documentation would be maintained for post-review and audit purposes for at least one year after the final withdrawal from the loan account

49. Direct Payments supporting documentation would consist of records (e.g. copies of receipts, supplier/ contractors invoices, etc.). The minimum value for applications for direct payments and reimbursements would be US$500,000. The disbursement deadline date would be four months after the closing date specified in the Loan Agreement.

Audit Arrangements

50. *Internal Audit.* In the course of its regular internal audit activities vis-à-vis the institutional budget, internal auditors of universities may include Project activities in their annual work plans. If such audits occur, universities would provide the Bank with copies of internal audit reports covering Project activities and financial transactions.

51. *External Audit.* The annual Project financial statements prepared by the universities, would be audited by an independent firm in accordance with terms of reference (ToRs), both acceptable to the Bank. The audit opinion covering Project financial statements would contain a reference to the eligibility of expenditures. These reports would be submitted to the Bank not later than six months after each year's December 31st. According to the Bank Policy 10.02 (Financial Management), audited financial statements would be public and that requirement would be established in the Loan Agreement23.

52. The Procurement Plan dated May 30, 2012 establishes the process to hire external auditors for the first external audit within three months after Loan Effectiveness. The audit engagement is expected to cover the expected life period of the Project. The University of Costa Rica will be responsible for contracting, with CONARE funds, the external financial audit.

53. ***Disbursement Schedule*** is as follows:

[23] OP 10.02 Financial Management: "For operations for which the invitation to negotiate is issued on or after July 1, 2010, the Bank requires that the Borrower disclose the audited financial statements in a manner acceptable to the Bank; following the Bank's formal receipt of these statements from the borrower, the Bank makes them available to the public in accordance with The World Bank Policy on Access to Information."

Table 4 – Disbursement Schedule

Category	Amount of the Loan Allocated (expressed in USD)	Percentage of Expenditures to be financed (inclusive of Taxes)
(1) Goods, works, Non-consulting services, Consultants' services, Scholarships and Training required under Subprojects for Participating Universities:		100%
(a) UCR	50,000,000	
(b) UNED	50,000,000	
(c) ITCR	50,000,000	
(d) UNA	50,000,000	
TOTAL AMOUNT	200,000,000	

FM Supervision Plan

54. An FM Specialist would perform a supervision mission prior to effectiveness to verify the implementation of the unit at UCP and the FM system. After effectiveness, the FM Specialist would perform FM supervision of the Project as part of the implementation support plan. Additionally, the FMS would review the annual audit reports, the financial sections of the semester IFRs, and should perform at least one formal supervision mission during the first 6 months of project's execution, and at least one supervision mission annually afterwards. The assigned FMS would review the supervision plan periodically and might, in agreement with the parties, adjust it as needed.

Procurement

55. Procurement for the proposed Project would be carried out in accordance with the Bank's Guidelines: Procurement of Goods, Works and Non-Consulting Services under IBRD Loans and IDA Credits and Grants, dated January 2011; and Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits and Grants, dated January 2011; and the provisions stipulated in the Loan Agreement. The general description of various items under different expenditure categories is described below. For each contract to be financed by the Loan, the different procurement methods or consultant selection methods, the need for prequalification, estimated costs, prior review requirements, and time frame are agreed between the Borrower and the Bank in the Procurement Plan. The Procurement Plan would be updated at least annually or as required to reflect the actual Project implementation needs and improvements in institutional capacity.

56. **Procurement of Works:** Works procured under this Project would include, inter alia, technology rooms, computer laboratories, science laboratories, computer rooms, student dormitories, extensions, construction of buildings and remodeling of existing spaces (cafeterias, teacher's lounges, specialized classrooms, kitchens, labs, water supply, etc). International Competitive Bidding (ICB) processes would be followed for all contracts estimated to cost US$3,000,000 or above. Packages amounting to under US$3,000,000 may be procured using National Competitive Bidding (NCB) processes. Shopping procedures may be used for contracts

amounting up to US$250,000. Procurement of works would be done using the Bank's standard bidding documents (SBD) for all international competitive bidding (ICB) procurement. For national competitive bidding (NCB) or Shopping (S) methods, documents agreed with or satisfactory to the Bank would be used.

57. **Procurement of Goods:** Goods procured under this Project would include, *inter alia*, lab equipment, furniture, and equipment to improve teaching/learning techniques, work libraries, computers, and multimedia equipment. International Competitive Bidding (ICB) processes would be followed for all contracts estimated to cost US$250,000 or above. Packages amounting to under US$250,000 in the aggregate may be procured using National Competitive Bidding (NCB) processes. Shopping procedures may be used for contracts amounting up to US$25,000. The Bank's SBD would be used for all ICB, and National SBD acceptable to and as agreed with the Bank for all NCB. Procurement of goods using Shopping method would use request for quotations documents acceptable to and agreed with the Bank.

58. **Procurement of Non-Consultant Services:** Non-Consulting Services procured under this Project would include, *inter alia*, trainings, communication services, and reproductions. To the extent possible, services would be grouped in packages above US$150,000 that would be procured through ICB procedures. Contracts for services estimated to cost below US$150,000 but more than US$10,000 would be procured following NCB procedures with national SBDs acceptable to and agreed with the Bank. Contracts for services estimated to cost less than US$10,000 would follow Shopping procedures.

59. **Selection of Consultants:** Contracts for employment of firms would include, *inter alia*, services for different types of studies such as redesigns of schools, environmental impact assessments, training program, effectiveness and implementation of new models, development of new programs, strategies, as well as work supervision, surveys, Project monitoring and evaluation, and financial audits. Selection methods for consultants would include: QCBS (Quality and Cost Based Selection), QBS (Quality Based Selection), CQS (Selection based on the Consultant's Qualification), LCS (Least Cost Selection), FBS (Fixed Budget Selection) and SS (Single Source Selection). Contracts for employment of individuals would include, among others, hiring of trainers, as well as technical, procurement, financial management and administrative staff, and technical services provided by individuals for, inter alia, data collection, studies, strategies, work supervision, environmental and social supervision, and surveys. Selection procedures of individuals for these services would be indicated in the OM. Short lists of consultants for services estimated to cost less than US$200,000 equivalent per contract may be composed entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines. Methods to be used for Selection of Consultants are described below (Thresholds for Procurement Methods and Prior Review).

60. **Operational Costs:** The Project would finance Operational Costs consisting of expenses incurred by the Borrower and the benefiting institutions for the implementation, management, coordination and supervision of the Project, including, *inter alia*, operation and maintenance of office equipment, maintenance and repair of vehicles, transportation, rental of offices, utilities, nondurable and/or consumable office materials.

Assessment of the agency's capacity to implement procurement

61. An assessment of universities' capacity to implement procurement actions for the Project was conducted in September 2011. The Bank met with representatives of the four established public universities that act as implementing agencies. Extensive exchanges of information were

done during the mission regarding all aspects of institutional capacity, such as (i) legal procurement framework, (ii) institutional organization, (iii) procurement cycle, (iv) bidding documents, (v) Reception / Opening / clarification of bids, (vi) assessment, (vii) procurement, (viii) performance of the contract, (ix) planning of procurement processes and (x) functions and their respective procurement controls.

62. Based on the information provided, the capacity assessment concluded that universities have robust capacities in the area of procurement, a clear internal organization, and staff with experience in planning, management and monitoring procurement processes. However, it was confirmed that universities do not have previous experience with IBRD projects, and that one of the four universities does not have enough staff to be able to cope with Project-related procurement processes as well as those currently active. On the basis of this assessment it is considered that the four universities have a *moderate risk*. A calendar of risk mitigation activities in the area of procurement has been designed. Mitigation activities include employing additional staff for the university that would otherwise face a human resources shortage, and a series of regular capacity building activities in the areas of procurement and supervision.

Risk Assessment

63. The overall procurement risk assessment for the Project is considered moderate. The Procurement risks identified as a result of the mission are: (a) the challenge of managing a considerable number of procurement processes under the Project with the current procurement staff; and (b) knowledge of Bank's Guidelines. The mitigation measures that have been agreed are: (i) a detailed Project OM, including organizational procedures with the universities and the UCP; (ii) hiring procurement specialists with prior experience of procurement; (iii) close monitoring and supervision by the Bank; and (iv) the use of the Procurement Plan Execution System (SEPA, *Sistema de Ejecución de Planes de Adquisiciones*) for Procurement Plans and Project management.

64. The procurement capacity of the UCPIs would be reassessed once a year after the start of the Project in order to determine whether the procurement risk rating should be modified.

Action Plan

65. The issues/risks for Project implementation concerning the procurement component have been identified and the time frame to mitigate these risks proposed as follows:

Table 5 – Procurement Action Plan

Action	Time Frame
Two Procurement Staff should be hired to support the *Universidad Estatal a Distancia*	First quarter after effectiveness of the Project
Procurement Staff should receive procurement training	Once a year; and The first training should take place during the first quarter after effectiveness of the Project
Monitoring and Supervision	Once a year an ex post review and supervision should be carried out.

Procurement Arrangements

66. The procurement plan for the first eighteen months of Project implementation dated May 30, 2012 provides the basis for the procurement methods that apply to the Project. The procurement plan is available in the Project database and on the Bank's external website. In agreement with the Bank, the procurement plan would be updated annually or as required to reflect actual project implementation needs and improvements and institutional capacity. In addition to the prior review supervision to be carried out by the Bank, based on the capacity assessment of the implementing agencies annual post reviews should be carried out.

Environmental and Social (including safeguards)

Table 9 – Safeguard Policies Triggered by the Project

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 Waters OP/BP 7.50		X
Projects in Disputed Areas OP/BP 7.60		X

Environment

67. Project description: the Project has two project Components which includes activities such as: Component 1: (i) civil works to increase teaching, research, in-campus accommodations and learning opportunities in the main and regional campuses nationwide of the four universities, (ii) purchase of scientific equipment for new labs, (iii) strengthening of research in technology, neuroscience, climate change, urban ecosystems, environmental chemistry, biotechnology, nanobiotechnology, ecotoxicology, etc., (iv) training for staff and professors, among others; Component 2: (i) development of a public higher education information system, (ii) accreditation of programs, training activities, (iii) research in the field of accreditation and quality, among others.

68. Environmental Category and potential impacts: Expected subprojects ("iniciativas") investments by the Project under Component 1 include: (i) construction of basic science laboratories (biology, chemistry, physics, etc) as well high technology labs and research centers for hydraulics, mechatronics, food technology, human movement sciences, industrial hygiene, ionizing and non-ionizing radiation, among other infrastructure (see Annex 7 for more details).

69. Based on the information provided by each university of the proposed subprojects (civil works), it is expected that most impacts would be of low to moderate magnitude and these can be prevented and mitigated by proper implementation of environmental management plans and on

site supervision. For the purposed of the Bank's environmental risk rating, the Project is therefore classified as Category B. It has been agreed that no subproject that is considered as a Category A under the Bank definition would be eligible for Project financing.

70. The main environmental and social impacts would be those common in construction works such as noise, waste, dust, soil erosion, water effluents, sedimentation, air emissions, affectation of public access roads, conflicts with the campus life, etc.

71. **Borrower's Institutional Capacity for Safeguard Policies:** As part of Project preparation the Bank organized several meeting with representatives of the four public universities to discuss current environmental management, possible institutional arrangement for safeguards and identify potential risks associated with the proposed works. Also, several field visits to the proposed Project sites were undertaken.

72. A preliminary evaluation was carried out of each university's capacity to carryout infrastructure investments. In regards to environmental management, it was found that: (i) each university's department charged with infrastructure development is familiar and has experience assessing and mitigating environmental impacts related to civil works following the requirement and procedures of the Environmental National Technical Secretariat (SETENA, *Secretaría Técnica Nacional Ambiental)*; (ii) for supervision of the works, the university hires short-term environmental consultants (*"regentes ambientales"*), but they are not permanent staff; (iii) most universities have environmental programs, policies or strategies that indicate a strong interest and commitment to environmental management; (iv) for Project implementation it would be necessary to provide support to university with additional full time environmental staff to cope with the number of Project activities and future environmental requirements and supervision.

73. **Environmental Safeguards instruments:** Universities are tasked with the preparation of the Project's safeguards instruments. A preliminary screening of all proposed civil works by the four universities prior to appraisal was carried out to determine their level of preparation and potential environmental and social impact. Two types of subprojects (civil works) have been identified in the four universities: (i) subprojects with advanced designs and elected site (about 6) and (ii) subprojects with basic layout "proposals" (about 60).

(a) Subprojects with only basic layouts: In the case of infrastructure investments with designs to be finalized after Appraisal, an Environmental and Social Management Framework (ESMF) was prepared to screen out subprojects according to eligibility criteria, guide site selection, assessment of construction related environmental and social impacts, and development of specific environmental management plans. The ESMF was disclosed on the websites of the Bank and CONARE on March 9, 2012, and is also on the websites of the universities. The ESMF includes appropriate protocols for assessment, monitoring and supervision, training, and standards for environmental management, health and safety, management of waste, dangerous or hazardous materials, which may be generated during construction and operation (laboratories) of works. The ESMF includes eligibility criteria to exclude any subprojects with potential adverse impacts on natural habitats, physical cultural resources and that all civil works contracts should include appropriate provisions for addressing chance-finds during construction. All subprojects will be required to develop a site-specific Environmental Management Plan (EMP) which would include specific mitigation and prevention measures to reduce environmental and social impacts. Mitigation

measures as well as the requisite for the contractor to have an environmental specialist will be included in the construction's bidding documents and it would be required for the contractor to comply with these measures. The Project's ESMF would bridge any gaps between Bank safeguards requirements and national standards.

(b) Subprojects with advanced design plans. In case where specific designs had been prepared and sites had been selected, an Environmental Assessment (EA) and Environmental Management Plan (EMP) were prepared and disclosed on the websites of the Bank and CONARE on March 9, 2012, and are also on the websites of the universities. The EMPs must include include specific mitigation and prevention measures to reduced impacts, taking into account the environmental and social characteristics of the specific site, the country environmental legislation and the safeguards policies. The content of EMPs is defined in the ESMF. The mitigation measures and the requisite for a person in charge of environmental issues will be included in the construction bidding documents and contractor would be required to comply with these. In the potential case where an Environmental License has previously been approved by the National Environmental Technical Secretariat (SETENA, *Secretaría Técnica Nacional Ambiental*), the Bank team would review the existing EA and EMP to ensure that it fully complies with Bank safeguard requirements.

74. Consultation, dissemination and participation. Prior to appraisal several information and consultation activities related to the draft ESMF were conducted in each university with the participation of students, faculty, administrative staff, representatives of student federations, regional campuses and direct beneficiaries of future works. In each university, an environmental representative of the university was in charge of explaining the Project and the ESMF, where its scope, goals, works, possible impacts, mitigation measures and supervision protocols were explained. Later, a Q&A session was opened, where doubts and questions regarding the Project were answered and recorded in order to improve the design of the ESMF and conclude it.

75. Country environmental regulations. The GoCR has extensive environmental and health regulations including environmental impact evaluation, water quality standards for drinking water and contamination, health and safety, seismic security construction norms, waste management guidelines, lists of protected flora and fauna species, among others. The National Environmental Authority is SETENA, which is responsible for assessing the potential environmental impacts of any kind of infrastructure developments and issuing the environmental permits (*Viabilidad Ambiental*).

76. The Environmental regulatory framework for the Project would consist of: (i) Costa Rica's regulations governing environmental management, health and safety, construction development, municipal regulations and other applicable regulations; (ii) universities' environmental management regulations or strategies if these exist; (iii) the Project's Environmental and Social Manual where the ESMF and other safeguards instruments are also part. The Project's ESMF would incorporate existing national procedures established by the Costa Rican legal environmental framework, environmental procedures of SETENA, and the Bank's environmental safeguards requirements. The ESMF contains subproject eligibility criteria, supervision procedures, a communication action plan, mechanisms for the processing of complaints, protocols for consultations, etc.

77. Environmental safeguards risks. The overall environmental and social risk assessment for the Project is considered moderate. The main Environmental and social risks identified during preparation of the project are: (a) the challenge of managing and supervising a large number of constructions works in different regions in the country, with the current environmental staff, and (b) little knowledge of Bank's Safeguards Policies, (c) potential claims from stakeholders due to some project activities. The mitigation measures that have been agreed are: (i) a Project Environmental and Social Manual which would include the ESMF, institutional arrangements, a grievance mechanism, a communication and consultation plan, safeguard coordination procedures within the Universities and the UCP; (ii) hiring (or allocation of university staff) of full time environmental specialists ("supervisores y responsables ambientales") with experience in environmental impact and management to each implementing agencies; (iii) capacity building activities in the areas of environmental management and safeguards; and (iv) supervision support by the Bank.

78. Implementation. It has been agreed that each university would prepare an annual investment plan (AIP) for Project execution and budget approval, thus in each AIP the cost of environmental supervision and EMP plans would be included in these budgets. The AMIs would include a clause that specifically outlines the responsibilities regarding the ESMF, IPPF, and the incorporation of their activities into the AIP.

79. Institutional arrangement for safeguards. The UCP would be charged with the monitoring and supervision of compliance with environmental safeguards requirements at a macro level for the four universities. The UCP would prepare comprehensive safeguards annual reports from all implementing agencies of the Project to the Bank.

80. During preparation it was confirmed that universities do not have previous experience with Bank projects, and that universities mainly relay in short-term environmental consultants (*"regentes ambientales"*) who perform sporadic visits to the constructions sites. To reduce risks, each university would have a full-time environmental specialist (ES) who would be responsible of the overall environmental and social management and supervision of the project interventions (*iniciativas, subproyectos*), reporting to SETENA and capacity building activities (especially in the regional campuses). The ES would also coordinate implementation of the communication plan and appropriate consultation processes described in the EMF and for the respective EMPs for infrastructure works. The EMP plans should be prepared and implemented in accordance with the procedures and arrangements established in the ESMF.

81. The Safeguards section of the Project's OM would make specific reference to: (i) the ESMF and safeguards procedures for the environmental management the project; (ii) the formats of project environmental reports; and (iii) the institutional arrangements for the Project's environmental and social management.

82. The AMIs would include a clause establishing the UCPI's obligation to comply with the Project Environmental and social manual and the ESMF. At the AIP agreed for Project execution and budget approval, the cost of environmental supervision and EMP plans must be included.

83. Supervision and monitoring. The person in charge of Environmental Management would be responsible for the overall environmental assessment and mitigation quality control, monitoring and supervision of subprojects in the different campuses of each university. Their responsibilities include among others: application of the ESMF, application of screening, evaluation and supervision tools described in the ESMF, EMP preparation and supervision, communication and consultation processes, field visits and support to the regional campuses,

safeguards coordination among the different UCPIs and university departments and campuses, etc. External short term consultant ("regentes ambientales") would be contracted on an as needed basis to support supervision at each university.

84. **Environmental Safeguards Supervision Plan:** The Bank would perform a supervision mission prior to effectiveness to verify the designation of a person in charge of Environmental Management in each of the universities and the understanding of the ESMF. After effectiveness a workshop would be carried out with the universities' Environmental areas staff to ensure that they are familiar with the ESMF's procedures and safeguards.

85. Also, the Bank would review the annual and semester environmental safeguards reports. The Bank would also review any update of the ESMF as necessary during implementation and proposed adjustments as needed. The Bank would carry out a detailed Environmental safeguards review after the second year to ensure that the arrangements are functioning well and there is appropriate safeguards management in the project. The Bank would carry out safeguards supervision missions at least annually.

86. All subprojects with their environmental evaluation and screening datasheets and EMP would be sent to the Bank for "No Objection" in order to check environmental and social characteristics.

87. **Environmental Safeguards reporting:** Safeguards reporting from universities to the Bank would use a model defined in the OM and would include: (i) six-monthly and a mid-term safeguards reports which would be prepared by the environmental supervisor of each implementing agency, and (ii) a compressive annual reports from all four universities which would be coordinated and prepared by the UCP.

88. The Environmental Management area at each university would maintain up-to-date and digital records (environmental evaluations screening tools, EIA, EMP, environmental permits, water monitoring reports, supervision and grievance reports, etc) of the environmental and social management of all subprojects (or *"inicitivas"*) implemented by the University. This supporting documentation would be maintained at each UCPI at each university and would be accessible to Bank supervision missions and to external auditors.

Social

Indigenous Peoples (OP/BP 4.10)

89. **Justification for Policy Triggering:** This Bank safeguards policy has been triggered because the Project aims to increase access, relevance and quality of higher education in Costa Rica and Costa Rica's Indigenous peoples could potentially benefit if proactive and culturally appropriate strategies are adopted to ensure their inclusion. The themes of improved access, quality and relevance of higher education for all Costa Ricans are enshrined through the specific objectives, activities and indicators of each university's Institutional Improvement Plan (PMI).

90. According to the 2000 census, in Costa Rica there are approximately 70,000 people from eight Indigenous ethnic groups that live primarily in and around 24 autonomous indigenous territories. Whereas very few Indigenous peoples actually attend and complete university education in Costa Rica (currently an estimated 150-300 Indigenous students are attending Costa Rican public and private universities), their aspiration to have this opportunity and to participate in shaping a long-term vision for improved access and relevance of higher education has been expressed through numerous forums including: CONARE's Interuniversity Sub-commission for Coordination with Indigenous Peoples; their participation in existing university initiatives; and

now most recently in the socio-cultural assessment prepared for this Project. The Government, the four participating universities and the Bank are actively engaged with these peoples in formulating approaches to improve their access to and the cultural relevance of primary, secondary and tertiary education.

91. **Selected Safeguards Instruments, Consultation and Disclosure:** Given that the issues related to access, relevance and permanence for Indigenous students require very specific and culturally appropriate strategies, a Socio-Cultural Assessment (SCA) was carried out during preparation to systematically identify and assess existing barriers to access and factors contributing to desertion for Indigenous students, and Indigenous peoples' proposals and vision for higher education. Based on this analysis, and building on the universities current awareness-raising initiatives with Indigenous peoples, the SCA provides specific recommendations for University specific and Inter-University measures to overcome these barriers.

92. The approach to develop a common SCA and IPPF during project preparation with a subsequent Five-Year and Inter-University IPP to be prepared during implementation, was deemed the most effective utilization of instruments under OP/BP 4.10 (Indigenous Peoples) because: (i) the Project will support a range of subprojects that will be included in Annual Operational Plans that need to be managed through a Framework, (ii) it makes sense to carry-out a common SCA during implementation to maximize resources and economies of scale and to design the most effective scope, procedures and type of activities to overcome access barriers and to inform the design of the Framework, (iii) the Framework provides an instrument to guide the universities' commitment with Indigenous peoples to ensure that such occurs in ways that are acceptable for all parties, and (iv) per the recommendation of the Indigenous stakeholders and the preference of the universities, it was decided that one coherent Five-Year and Inter-University Indigenous Peoples Plan (IPP) (instead of multiple Plans) would be prepared during implementation, based on the procedures agreed upon in the IPPF.

93. **SCA Methodology:** CONARE commissioned a team of social scientists and a legal expert to carry out the SCA and prepare the IPPF. The SCA was developed based on inputs from: (i) 15 participatory workshops in Indigenous communities; (ii) interviews with university officials, Indigenous university students, and national and local Indigenous organizations; (iii) a desk-review and analysis of existing admission, scholarship, and other outreach programs and initiatives pertinent for Indigenous peoples in each university; (iv) an analysis of the pertinent legal framework for Indigenous peoples and higher education; and (v) existing work and past experience that CONARE's Subcommission on Indigenous peoples has produced. The participatory workshops were carried out with representatives from the eight ethnicities and 19 of the 24 territories. A total of 582 Indigenous stakeholders participated, including local representatives, traditional leaders, parents, students, teachers, among others. Each workshop followed a structured methodology where the Project and the Bank's safeguard requirements were presented, and participants worked in subgroups to answer a set of questions related to their vision for higher education, their experience related to barriers to access, and recommendations to overcome these barriers. At the completion of each workshop, the workshop participants elected one representative to provide ongoing follow-up with the CONARE team and the Project (discussed below in Institutional Arrangements).

94. **SCA Key Findings:** For Indigenous peoples this Project's primary safeguards issue is the potential for their implicit exclusion from project benefits if the Universities do not adopt a proactive and culturally appropriate strategy for their inclusion. This exclusion would result from providing support to a system where existing barriers significantly limit Indigenous peoples'

capacity to participate in higher education. The SCA identified the following predominant barriers to access: (a) geographical distance of Indigenous territories to University centers; (b) economic and technological limitations, including the opportunity cost of secondary and higher education for Indigenous families and lack of access to computers and the internet to complete admission forms, etc.; (c) lack of delivery of key, actionable and timely information in manners that can be easily understood by Indigenous families regarding admission requirements, key dates, economic and social assistance opportunities, among other; (d) fears and cultural perceptions related to the loss of cultural ties and identity, and discrimination that could result from leaving their communities to participate in urban University life; and finally, (e) poor quality secondary education- limiting Indigenous students interest and capacity to successfully complete secondary school and perform in the entrance exams and University programs. For Indigenous students that have successfully entered Universities, challenges to successfully complete programs are primarily related to: (a) their inability to maintain the financial costs related to housing, food and transportation, and (ii) the cultural shock and isolation experienced within the urban University setting.

95. The draft SCA was physically delivered to each Indigenous territory where participatory workshops had been carried out so that the communities could see how their comments and feedback had been taken into account. The results of the SCA and key elements of the IPPF were presented for discussion and analysis at a national workshop with Indigenous representatives, national Indigenous organizations, and university stakeholders on February 24, 2012.

96. **IPPF.** Based on the SCA and on the feedback provided by Indigenous stakeholders and organizations at the National Workshop on February, 24th 2012, an IPPF was prepared for this Project. The IPPF will serve as the Project's primary operational tool, with procedures and institutional arrangements to guide the preparation, consultation, monitoring and evaluation of the Project's IPP. The IPPF includes a summary of the Project's relevant legal framework and barriers to access identified in the SCA. It also proposes a range of actions that each university could adopt in the IPP through the scaling up of existing initiatives, adapting current practices or systems, or introducing new measures to improve Indigenous peoples' access and success in higher education. The IPPF includes a consultation protocol for the IPP that is designed in line with the feedback provided by Indigenous stakeholders to ensure culturally appropriate and free, prior and informed consultation of the IPP. Specific measures are included to define and verify the broad community support for the IPP. The final IPPF was disclosed on March 12, 2012, on CONARE's website and on the Bank's website.

97. **Five-Year and Inter-University IPP**: The IPP will encompass the activities, budget, and responsibilities for implementing: (a) the SCA recommendations adopted by the universities and others to be identified during the IPP preparation and consultation process, (b) PMI subproject activities with potential benefits for Indigenous students, and (c) measures to mitigate potential adverse impacts from PMI subprojects, in such cases that these impacts are identified. The IPP will include university specific as well as interuniversity activities, enhancing coordination on common challenges but also allowing for flexibility and relevance on specific actions for each university. Each university's Representative charged with preparing and implementing the IPP will review their respective university's PMI subprojects for potential benefits and adverse impacts on Indigenous peoples.

98. No subprojects with potential direct effects on Indigenous peoples[24], either positive or negative, will be implemented prior to completion of the IPP. The subprojects initially identified for support under the Project have been screened and do not have, in principle, any direct effects on Indigenous Peoples. Given this, the Project should be able to start implementation, once declared effective, without any delay, even if the IPP has not been concluded.

99. In case there are changes in the subprojects initially identified or that new subprojects are presented, their potential impacts on Indigenous peoples will be assessed. When a potential impact is identified, the subproject will be consulted and designed in agreement with the procedures of the IPPF and incorporated into the IPP and the corresponding Annual Implementation Plans (AIPs). No subproject with potential direct effects on Indigenous peoples, be they positive or negatives, will be implemented before the adoption of the IPP by the corresponding participant university. [25]

100. In agreement with the IPPF's procedures and its proposed consultation protocol, it is estimated that the preparation, consultation, and approval of the IPP will take approximately one year, and should be completed before 14 months after the approval and endorsement of the Project. Once the IPP is concluded its activities will be incorporated into the 2013 and subsequent AIPs. A dated covenant will be included in each AMI establishing the deadline for the adoption of the IPP and the obligation of incorporating the IPP activities into the POA.

101. **Institutional Arrangements, Capacity and Implementation Support:** The SCA has identified existing programs and offices within each university that include experienced professionals and a relevant mandate to take on the preparation and implementation of the IPP. The University Indigenous Peoples Coordinator will report to the University Project Coordinator. The UCP will be charged with overseeing that the IPP is prepared in accordance with the IPPF and will report any issues to the Bank.

102. At the same time, an Indigenous Peoples Liaison Commission will be established for the Project with a representative from each Territory and a representative from the four Indigenous organizations currently working on education issues in the Country. The procedures for selecting the members of this Commission and their roles are outlined in the proposed protocol for consultation, included within the IPPF. A working group with the four universities' Indigenous Peoples Coordinators, the representatives of the Indigenous organizations that participate in the Indigenous Peoples Liaison Commission will develop the draft IPP prior to disseminating it for consultation within the Territories. This working group will revise, if deemed necessary, the proposed protocol for consultation, and adopt is as seen necessary. The Indigenous Peoples Liaison Commission will serve as the Project's direct communication channel to and from the Indigenous communities for the Project. The Indigenous community liaisons will be key in

[24] Direct effects include any investments with Indigenous peoples identified as target beneficiaries or affected parties or subprojects where the project area includes Indigenous peoples with the four characteristics outlined in OP 4.10 (to varying degrees): (i) collective attachment to land or territory and that area's respective natural resources, (ii) self-identification as Indigenous and recognition of that identity by others, (iii) Indigenous language, and (iv) customary cultural, economic, social or political institutions.

[25] Direct effects include any investments with Indigenous peoples identified as target beneficiaries or affected parties or subprojects where the project area includes Indigenous peoples with the four characteristics outlined in OP 4.10 (to varying degrees): (i) collective attachment to land or territory and that area's respective natural resources, (ii) self-identification as Indigenous and recognition of that identity by others, (iii) Indigenous language, and (iv) customary cultural, economic, social or political institutions.

defining and facilitating adequate consultation and participation methodologies for the preparation, implementation and monitoring of the IPP.

103. The Bank will provide the no-objection to the IPP and to each year's IPP activities included within the Annual Investment Plans, in tandem with the annual investment cycle and other Bank no-objections described within the Project's Institutional arrangements. The Bank team's social specialist has been working directly with the CONARE team tasked with the preparation of the socio-cultural assessment and the IPPF and with the universities' technical commissions to ensure their familiarity with the objectives and requirements of the Bank's OP 4.10 (Indigenous Peoples). This has included participating with university representatives and CONARE in a workshop to develop the TORs for the socio-cultural assessment, participation as an observer in a community workshop, participation with the CONARE SCA team in the preparation of the SCA proposal Matrix and the proposal for the Consultation Protocol, participation in the Feb. 24th workshop, and ongoing review and provision of comments on preliminary products and engagement with Indigenous leaders.

104. CONARE's Interuniveristy Subcommission for Coordination with Indigenous Peoples has a wide array of experience coordinating interuniversity initiatives to improve the access and relevance of higher education for Indigenous Peoples. Currently this Subcomission holds an annual dialogue with Indigenous authorities from throughout the country. Each participating university also has numerous ongoing initiatives to improve access, research, and other activities with Indigenous peoples. The SCA provides a list and basic analysis of these initiatives for each university.

Involuntary Resettlement (OP 4.12)

105. All subprojects requiring the involuntary taking of land resulting in the impacts covered under the Involuntary Resettlement Policy (OP/BP 4.12) will be screened out and not eligible for support under this Project. The screening criteria to exclude these subprojects will be included in the Environmental and Social Management Framework (ESMF). The infrastructure investments currently foreseen should occur, in their majority, within lands for which the universities are the legal proprietors and current users.

Monitoring & Evaluation

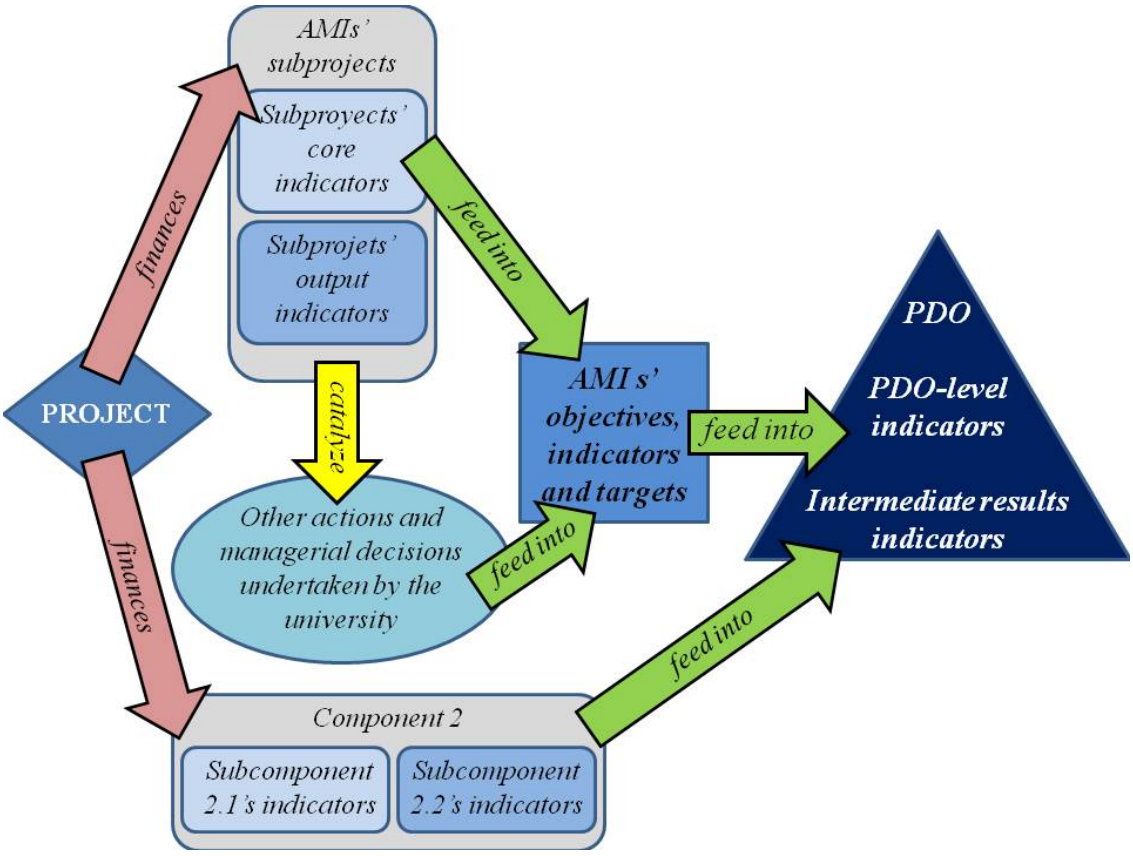
106. The UCP would be the main responsible for monitoring and evaluation (M&E), and would report directly to the Liaison Commission and the Bank. Regarding Component 1, the universities would be responsible for gathering, processing, and analyzing data on the progress of indicators in the framework of their respective PMI. This would be carried out through significant existing M&E capacities that have been identified at the four participating universities. Universities would provide to the UCP a Project Report twice a year, no later than every January 31 and July 31 during Project implementation. Regarding Component 2, CONARE/OPES and SINAES would be responsible for sending their corresponding Project Reports twice a year to the UCP, every January 31 and July 31. The UCP would coordinate the elaboration and consolidation of implementing agencies' Project Reports, and submit to the CE and the Bank a consolidated "Project Report" twice a year, before March 1 and September 1 every year. Progress toward all PMI indicators, including the Project's PDO-level and intermediate results indicators, would be publicly disclosed through annual Project Reports. Project Reports previous to the mid-term and final reviews of the Project would be particularly exhaustive and prospective. These would be sent to the Bank in advance of its mid-term and final review missions.

107. The Bank team would work closely with the UCP and the six implementing agencies to evaluate Project implementation progress during regular implementation support missions using the collected data and comparing it against the agreed targets. Furthermore, the Bank would perform a mid-term evaluation on the basis of which, following implementation criteria established in the OM, the Bank may proceed to the partial cancelling of financing.

108. The CE would establish a Monitoring and Evaluation Committee (CSE), financed through Subcomponent 2.3, which would provide an external and impartial assessment of Project implementation. The CSE would perform an evaluation of the Project at the end of year 1, at mid-term (36 months after effectiveness) and at the end. This assessment would be qualitative and have a prospective focus, with special attention being paid to (i) the country vision approved by the Liaison Commission for the Project, (ii) PMIs and (iii) their subprojects, and taking into account the last Project Report available. The CSE would be composed of a team of specialists of recognized authority, who would represent a not-for-profit, international network or organization integrated by higher education institutions (preferably from Costa Rica, Latin America and Europe) and flexible enough to incorporate academics from those institutions as required by the Project's monitoring and evaluation process. This organization should have at least 10 years of experience in processes of strategic analysis and systematic thought about the development of higher education and its implications at several levels, including coverage and social impact of higher education and optimization of academic management. The monitoring and evaluation process would be organized in the framework of a consolidated program of service provision that guarantees responsiveness in the framework of the Project, during the 3 contracted evaluations, distributed over a period of 4.5 years. The CSE would consult with key actors (those implied in the implementation of the Project) as well as with other stakeholders (students and employers, among others) for the production of its evaluation reports. The CSE's evaluation would be sent to the CE and to the Bank.

109. Advancement towards the PDO and intermediate results indicators would be measured annually and results publicly disclosed. Figure 3 illustrates the rationale of the results chain.

Figure 3 – Rationale of the Project's results chain



(a) The Project's Result Matrix (see Annex 1) details a set of four PDO-level indicators as well as a series of intermediate results indicators. These indicators are included in the PMIs and measure results at the university-wide level.

(b) PMIs also include a set of subproject-specific indicators that would allow universities and the Bank to track progress of outputs and outcomes at the "micro" level. Subproject-specific indicators would include both "core" indicators (such as enrolment in a specific program) and output indicators like the number of square meters built. "Core indicators" are those of a certain subproject that directly feed into the university-wide indicators. All subproject-specific results would allow each university, together with other *soft* actions and managerial decisions, to progress towards the university-wide indicators, thus feeding into the Project's intermediate results and PDO-level objectives.

110. The Bank team would work closely with the Project Coordinating Unit, as well as with the UCPIs, to evaluate Project implementation progress during regular supervision missions using the collected data and comparing it against the agreed targets. More qualitative assessments would be ensured by the inputs of the CSE and from Bank visits to participating universities. This process of monitoring and evaluation would be useful not only for monitoring progress towards the PDO and results indicators, but also for feeding the decision-making process on AIPs at the CE. Furthermore, the Bank would perform a mid-term evaluation on the basis of which, following implementation criteria established in the OM, the Bank may proceed to the partial cancelling of financing.

Annex 4: Operational Risk Assessment Framework (ORAF)

COSTA RICA: Higher Education Improvement Project

Stage: Board

<table>
<tr><td colspan="5">Project Stakeholder Risks</td></tr>
<tr><td rowspan="3">Description:
There is a risk that stakeholders in the university community oppose the Project due to perceived “conditionalities” and a possible threat to the autonomy of universities.</td><td>Rating:</td><td colspan="3">Substantial</td></tr>
<tr><td colspan="4">Risk Management:
This risk has been mitigated by: (i) keeping a continuous channel of communication between the Bank, the Liaison Commission: Government members (MICIT, MEP, MH, MIDEPLAN), and the Rectors of the four universities participating in the Project (represented by CONARE) to quickly overcome any potential misunderstanding or disagreement; (ii) securing a high level of commitment to the Project among universities’ technical teams and among the departments and other university bodies involved in the PMIs; and (iii) ensuring that during implementation the Monitoring and Evaluation Committee would carry out extensive consultations with students, the private sector, professional associations and other stakeholders and provide an impartial assessment of Project implementation at the end of the first year, after 36 months, and at the end of the Project.</td></tr>
<tr><td>Resp: Liaison Commission members / universities’ technical commissions / Monitoring and Evaluation Committee</td><td>Stage: Preparation and Implementation</td><td>Due Date :
December 31, 2017</td><td>Status: in progress</td></tr>
</table>

<table>
<tr><td rowspan="2">There is a risk that some stakeholders oppose some of the proposed Project activities, and/or oppose the use of Loan funds for system-wide investments.</td><td colspan="4">Risk Management:
During preparation, the Bank and the Government sponsored a series of consultations with all key stakeholders. During implementation, the Monitoring and Evaluation Committee would continue consultations with students, the private sector, professional associations and other stakeholders. In addition, the Project design incorporates the use of counterpart funds, rather than loan funds, to finance the system-wide activities in Component 2.</td></tr>
<tr><td>Resp: Bank / Government / Monitoring and Evaluation Committee / university councils</td><td>Stage: Preparation and Implementation</td><td>Due Date:
December 31, 2017</td><td>Status: in progress</td></tr>
<tr><td colspan="5">Implementing Agency Risks (including fiduciary)</td></tr>
<tr><td>Capacity</td><td>Rating:</td><td colspan="3">Low</td></tr>
<tr><td rowspan="2">Description :
There is a risk that insufficient fiduciary or technical capacity jeopardizes Project implementation.</td><td colspan="4">Risk Management :
Two additional procurement staff will be hired by the Universidad Estatal a Distancia. SINAES is bolstering its capacity through hiring additional staff in line with its expected increased workload and budget under the Project. Project arrangements build on existing structures in the MH and in universities, and are expected to help maintain and build further capacity. Training is planned on Bank procedures. Component 2 provides financing for some Project Management expenses through CONARE. In addition, while technical capacity is strong across the Government and the universities, the Bank is seeking an Institutional Development Fund (IDF) grant to provide technical assistance to the Government’s Technical Commission.</td></tr>
<tr><td>Resp:
Universities, SINAES, Project coordination, CONARE, MH, Bank</td><td>Stage: Preparation and Implementation</td><td>Due Date :
December 31, 2017</td><td>Status: in progress</td></tr>
<tr><td>Governance</td><td>Rating:</td><td colspan="3">Moderate</td></tr>
</table>

<table>
<tr><td rowspan="2">Description:
There is a risk of inadequate strategic oversight to the Project.</td><td colspan="4">Risk Management:
The governance structure has been strengthened to provide strategic oversight to the Project, including a Project Coordinating Unit and an external Monitoring and Evaluation Committee, which report to the Liaison Commission. A Government Technical Commission, coordinated by MICIT, advises the Ministers that sit on the Liaison Commission.</td></tr>
<tr><td>Resp: Members of the Liaison Commission</td><td>Stage:
Implementation</td><td>Due Date :
December 31, 2017</td><td>Status: in progress</td></tr>
<tr><td rowspan="2">There is a risk that the agreed-upon institutional arrangements make implementation unwieldy and slow due to an unmanageable flow of communication stemming from six implementing agencies (the four universities, SINAES and CONARE-OPES).</td><td colspan="4">Risk Management:
Four mitigation measures have been taken: (i) a governance structure has been designed to provide strategic coordination of monitoring, consisting of a Project Coordination team, which would report to the Liaison Commission; (ii) the Operational Manual would include clear reporting arrangements between the implementing agencies, the UCP and the Bank; (iii) the AMIs, the CONARE Agreement and the SINAES Agreement, as subsidiary agreements between each of the implementing agencies and MEP, would include reporting arrangements that clarify the UCP’s role in Project coordination and monitoring; and (iv) the Bank would consider hiring a staff member located in Costa Rica to provide on-the-ground implementation support for this and other Bank financed projects in Costa Rica.</td></tr>
<tr><td>Resp:
Bank/MEP/other members of the Liaison Commission / implementing agencies / Project Coordinating Unit</td><td>Stage: Preparation and Implementation</td><td>Due Date :
December 31, 2017</td><td>Status: in progress</td></tr>
<tr><td colspan="5">Project Risks</td></tr>
<tr><td>Design</td><td>Rating:</td><td colspan="3">Moderate</td></tr>
<tr><td>Description :
There is a risk that the introduction of the AMIs becomes complex and lengthy.</td><td colspan="4">Risk Management :
Based on the lessons of international experience, the design of the Institutional Improvement Agreements (AMIs) is simple, realistic and measurable with arrangements specified in the contractual part of the AMIs and to be supplemented in the Project’s Operational Manual. Execution of the subsidiary agreements (only</td></tr>
</table>

	once) will be effectiveness conditions. AMIs would become effective upon effectiveness of the Project.			
	Resp: Bank / MEP / Liaison Commission / Universities	**Stage:** Preparation	**Due Date :** Effectiveness	**Status:** in progress
Social & Environmental	**Rating:**	**Moderate**		
Description : There is a risk that the civil works proposed under the Project would be detrimental to the environment.	**Risk Management :** An environmental assessment and Environmental and Social Management Framework has been prepared that establishes clear actions to mitigate environmental impacts. EMPs are being prepared for each construction site. The ESMF and EMPs for known sites were disclosed on the websites of the Bank and CONARE on March 9, 2012, and are also on the websites of the universities			
There is a risk that civil works in the framework of the Project lead to involuntary resettlement.	The majority of infrastructure investments would be constructed on existing university campuses lands and thus would not require land acquisition. In cases where land need to be acquired, the Project, through the ESMF's screening criteria, would ensure that all acquisitions are done so in a voluntary manner.			
There is a risk that the Project´s benefits will not reach Indigenous peoples due to existing economic, cultural, geographic and administrative barriers that limit their capacity to access and complete higher education.	A Socio-cultural Assessment (SCA) and Indigenous Peoples Planning Framework (IPPF) have been prepared and disclosed on the websites of the Bank and CONARE on March 12, 2012, and are also on the websites of the universities. The IPPF will guide the development of a Five-Year Indigenous Peoples Plan (IPP) with both University and Inter-University activities - clearly outlining procedures and requirements for the preparation, consultation, implementation and monitoring and evaluation of the Five-Year IPP. These procedures have been developed with ample participation of Indigenous leaders and representatives. The IPPF proposes specific strategies, based on the findings and recommendations of the SCA that each University can adopt to overcome existing barriers, on the basis of each university's possibilities. A mechanism has been established allowing representatives from Indigenous communities to have an ongoing communication channel with CONARE and the Project Coordinator through an Indigenous liaison committee.			
There is a risk that the Universities do not quickly take on the work related to preparing, consulting and	The Universities' Technical Commission has been closely involved in the SCA and drafting of the IPPF and has committed to a timeline for the Multiannual IPP			

<table>
<tr><td rowspan="2">approving the IPP.</td><td colspan="4">preparation. This timeline is also reinforced through a dated covenant in the Institutional Improvement Agreements (AMIs) and in the Loan Agreement.</td></tr>
<tr><td>Resp: Bank</td><td>Stage: Preparation and Implementation</td><td>Due Date: December 31, 2017</td><td>Status: in progress</td></tr>
<tr><td>Delivery Monitoring & Sustainability</td><td>Rating:</td><td colspan="3">Moderate</td></tr>
<tr><td rowspan="2">Description:
There is a risk that Project implementation would be delayed if there is a delay in Congressional approval.</td><td colspan="4">Risk Management:
The Project builds in sufficient time between Board approval and effectiveness, drawing on the Bank’s experience with Congressional approval in Costa Rica. Moreover, the members of the Liaison Commission (with support from the Bank) plan to have multiple consultations with various stakeholders, including Congress-people, to ensure that the objectives of the Project are clearly understood. The OM and Terms of Reference for contracts are being prepared by the universities prior to the date of expected effectiveness so that bidding processes could be launched quickly upon effectiveness.</td></tr>
<tr><td>Resp: Costa Rica’s Legislature / Bank / Liaison Commission / university technical commissions</td><td>Stage: Implementation</td><td>Due Date : Effectiveness, expected by January 1, 2013</td><td>Status: in progress</td></tr>
<tr><td rowspan="2">There is a risk that the implementation of quality assurance activities, such as program accreditation to be financed under the Project, might not be prioritized by the four public universities.</td><td colspan="4">Risk Management:
The risk is being mitigated by providing specific incentives through the Project , including support to universities to finance program external evaluation and implementation of improvements plans that might be needed for accreditation.</td></tr>
<tr><td>Resp: Government/ Universities</td><td>Stage: Preparation and Implementation</td><td>Due Date : December 31, 2017</td><td>Status: in progress</td></tr>
<tr><td colspan="5">Implementation Risk Rating: Moderate</td></tr>
<tr><td colspan="5">Mitigation measures have been put in place during preparation and would be maintained during implementation.</td></tr>
</table>

Annex 5: Implementation Support Plan

COSTA RICA: Higher Education Improvement Project

Strategy and Approach for Implementation Support

111. 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 the country both flexible and efficient. In order to do so, it focuses on the implementation of the risk mitigation measures identified in the ORAF, particularly in the area with a risk rating of significant (i.e. stakeholder risk).

112. The Bank's approach to implementation support strongly emphasizes open and regular communication with all actors directly involved in the Project (such as the four public universities and the four Ministries sitting in the Liaison Commission, CONARE-OPES, SINAES, etc.), constant information exchange, and adequate flexibility to accommodate the specificities of the country. A Monitoring and Evaluation Committee (CSE) has been designed as an option that allows not only for effective M&E but also for putting issues of the Costa Rican higher education system in international perspective.

113. The strategy for implementation support in this Project places strong emphasis on close support and good communication between the Bank, on one hand, and the Project's Coordinating Units, on the other hand. During Project preparation the Team has developed communication channels, informal links, and trust with all implementing agencies, which are expected to facilitate Bank supervision.

Implementation Support Plan

114. The Bank would provide strong implementation support to the Project's Components and Subcomponents as well as guidance to the relevant agencies 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 one or two international experts on higher education, whose support would focus especially on the follow up of subprojects under Component 1 but would extend also to the field of accreditation (Subcomponent 2.1). In particular, close work with universities is required for fostering cooperation and symbiosis wherever possible, and for ensuring that implementation progresses adequately.

(b) **Fiduciary requirements and inputs.** Training would be provided by the Bank's financial management specialist and the procurement specialist before Project effectiveness *and* during Project implementation. This would allow building capacity among implementing agencies in matters of FM and Procurement, particularly regarding Bank procedures. Supervision of financial management 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 on a timely basis as required by the country.

(c) **Safeguards.** The Bank's social specialist would ensure that training is provided to relevant counterpart staff. On the social side, supervision would focus on the

implementation of the agreed IPPF and Five-year IPP to ensure compliance with safeguard policy on Indigenous Peoples (OP/BP 4.10). Field visits would be made on a semi-annual basis. On the environmental side, supervision would focus on civil works executed by universities under Component 1, ensuring that they comply with the Bank's safeguards policies on Environmental Assessment (OP/BP 4.01), Natural Habitats (OP/BP 4.04) and Physical Cultural Resources (OP/BP 4.11).

(d) **Country Relations**. The Task Team Leader would coordinate the Bank Team to ensure Project implementation is consistent with Bank requirements, as specified in the legal documents. Moreover, the TTL would meet with Government and universities senior officials on a regular basis to keep them informed of Project progress and issues requiring resolution at their level. As stated above, constant channels for information exchange would be maintained with all major actors, taking advantage of trust and communication capacity built during Project preparation.

115. The Bank is considering hiring a local Operations Officer to provide on-the-ground implementation support to Project Coordination and to support semi-annual Bank missions.

Table 10 – Main Focus in terms of Support to Implementation

Time	***Focus***	***Skills Needed***	***Resource Estimate***	***Partner Role***
First 12 months	Supervision of Annual Investment Plans	Education Economist; Education Specialist; Science and Technology Specialist; Infrastructure Specialist; Local Operations Officer	US$131,000	N/A
	Preparation of Indigenous Peoples Plan and Supervision	Social Development Specialist		
	Supervision of ESMF and EMPs	Environmental Specialist		
	Supervision and training in fiduciary matters	Financial Management Specialist; Procurement Specialist		
12-60 months	Monitoring of compliance with fiduciary guidelines	Financial Management Specialist; Procurement Specialist	US$131,000/year	N/A

	Monitoring of compliance with Safeguards Policies and instruments	Environmental Specialist; Social Development Specialist		
	Supervision of Annual Investment Plans; monitoring of Project implementation and results	Education Economist; Education Specialist; Science and Technology Specialist; Infrastructure Specialist; Local Operations Officer		

Table 11 – Bank Staff Skills Mix Required for the Project's Implementation Support

Skills Needed	***Number of Staff Weeks***	***Number of Trips***
Task Team Leader	20 SW the first year then 15 SW	4 the first year
Higher Education Specialist	10 SW annually	4 the first year then 3
Science and Technology Specialist	10 SW annually	2
Infrastructure Specialist	6 SW annually	4
Financial Management Specialist	4 SW annually	Once a year
Procurement Specialist	6 SW annually	3 the first year then once a year
Social Specialist	3 SW	Twice a year
Environmental Specialist	3 SW	Once a year
Local Operations Officer	25 SW	

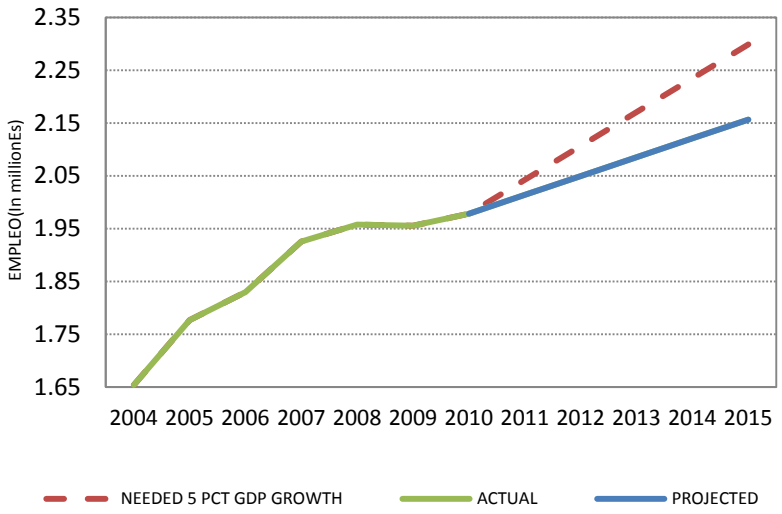
Annex 6: Economic and Financial Analyses

COSTA RICA: Higher Education Improvement Project

116. In the past decade, Costa Rica grew on average 5 percent per year, one of the highest rates in Central America. This evolution created better opportunities for its population. Different factors explain this impressive evolution, but clearly the high education achievement of its population was a major contributor. To sustain future economic growth, further investments in the education sector will be needed26. The Higher Education Improvement Project supports higher education both in terms of quality and number of graduates in certain prioritized fields of study, and it is likely to contribute to future growth with needed high skilled human capital. The analysis presented below shows strong evidence on the relationship between economic growth and human capital in Costa Rica. Detailed calculations, under conservative assumptions, show a strong IRR of 13 percent, without considering positive externalities.

117. Future growth in Costa Rica will depend on the capacity to provide the labor force needed by the productive structure. Given the demographic tendencies and assuming the current productivity of the labor force, Costa Rica would be experiencing restrictions in its growth. As can be observed in Figure 4, there is an important gap between the evolution of the labor force needed to register a 5 percent growth over the next decade, vs the evolution of the labor force projected on the basis of demographic tendencies. An option to ensure growth is to continue with the professionalization of the labor force, which would guarantee a continuous demand for higher education graduates.

Figure 4 – Labor Force Needs



[26] See Central America Policy Note for a complete description of the human capital challenges faced by Costa Rica.

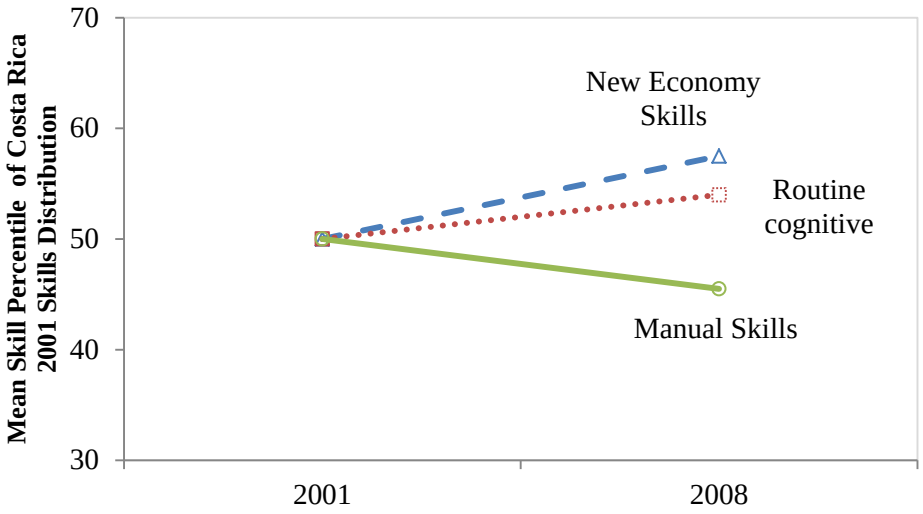
Table 12 -- Structure of the Labor Force by Occupation

Type Occupation	2001	2009	Change
Management positions	34,954	62,498	79%
Professionals	126,105	182,680	45%
Mid level professionals	136,766	214,597	57%
Administrative support	67,223	102,209	52%
Retail and direct services	162,845	221,295	36%
Qualified agriculture related	61,849	57,999	-6%
Technical workers	140,115	155,209	11%
Mining related work	110,030	140,294	28%
Unqualified occupations	264,572	345,473	31%
Total	1,104,459	1,482,254	34%
Memo			
Share Management + Prof + Mid level	27%	31%	
Source: Household Surveys - 2001 -			

118. The professionalization of the labor force in Costa Rica is a continuous process that must continue. Recent growth in Costa Rica altered the structure of the labor force, and, therefore, the type of skills embedded in the labor force. As presented in Table 12, the employed labor force increased by 34 percent in Costa Rica between 2001 and 2009, but the number of professional and mid level positions increase by 45 percent and 57 percent, respectively, increasing their combined share among the working population from 26 percent to 31 percent. That evolution was compensated by the lower growth workers in unqualified occupations. This evolution was likely related to higher education attainment of the population, besides better business environment. This positive evolution in terms of quality of jobs was reflected on the trend of the skill content of the labor force. As observed in Figure 4, the new economy skills (related to analytical and interpersonal skills) increased strongly between 2001 and 2009, while the manual skills declined[27]. A similar trend was observed in the USA by Author, Levy and Murnane (2001), and it was related to the adoption of new technologies at the work place. These technologies are improving the labor force productivity, therefore improving labor conditions. To achieve continuation of the trend, it is necessary for the education system to provide graduates with the capacity to engage in this new economy skill jobs.

[27] Source: Regional Skill Study, Aedo and Walker, The World Bank, 2012.

Figure 5 – Mean Skill Percentile in Costa Rica



119. Higher education achievement of the population has paid a major role on the growth process, enabling the change in the structure of the occupation and the adoption of new economy skills. As observed in Table 13, the number of workers with tertiary degree or more (workers with more than 15 years of education) increased at a faster rate than the total labor force (45 percent vs. 34 percent). This evolution was accompanied by lower rates of labor market inactivity, lower levels of unemployment, a higher share working at mid level and higher occupations (with the exception of Law graduates) and higher salaries. Once categorized into different field studies, we observe the growth of graduates from Health Related careers, Social Sciences and administration, education, and science and engineering related characterize the growth of higher education attainment in the labor force. Most university graduates have occupations that involve managerial activities, professional or mid-level professionals task, which indicates an adequate transition into the labor force despite the growth in supply of graduates. As observed in Table 13, it is important to notice that graduates of science and engineering fields registered the highest growth in salaries and improvement in professional level employment.

Table 13 – Labor Indicators by Field of Tertiary Education

Field	Total	Inactive	Unemployed	Professional level employment 1/	Salary In Contant US$
2001					
Education	28608	17%	1%	95%	637
Social sciences-administration	47235	10%	2%	89%	915
Law	11955	3%	0%	100%	1067
Sciences-engineering	24109	5%	2%	91%	972
Health related	13306	7%	1%	96%	1220
Other	28664	14%	2%	44%	335
Total	153877				
2009					
Education	42466	10%	1%	95%	785
Social sciences-administration	80228	8%	1%	91%	1151
Law	16891	9%	0%	93%	1438
Sciences-engineering	34340	9%	1%	94%	1309
Health related	26721	5%	1%	98%	1342
Other	22163	16%	0%	64%	733
Total	222809				
Change					
Education	48%	-8%	0%	0%	23%
Social sciences-administration	70%	-1%	-1%	2%	26%
Law	41%	6%	0%	-7%	35%
Sciences-engineering	42%	3%	-1%	3%	35%
Health related	101%	-2%	0%	1%	10%
Other	-23%	2%	-2%	20%	119%
Total	45%				

1/ ISCO occupations either on group 1, 2 or 3 on one digit standarization.

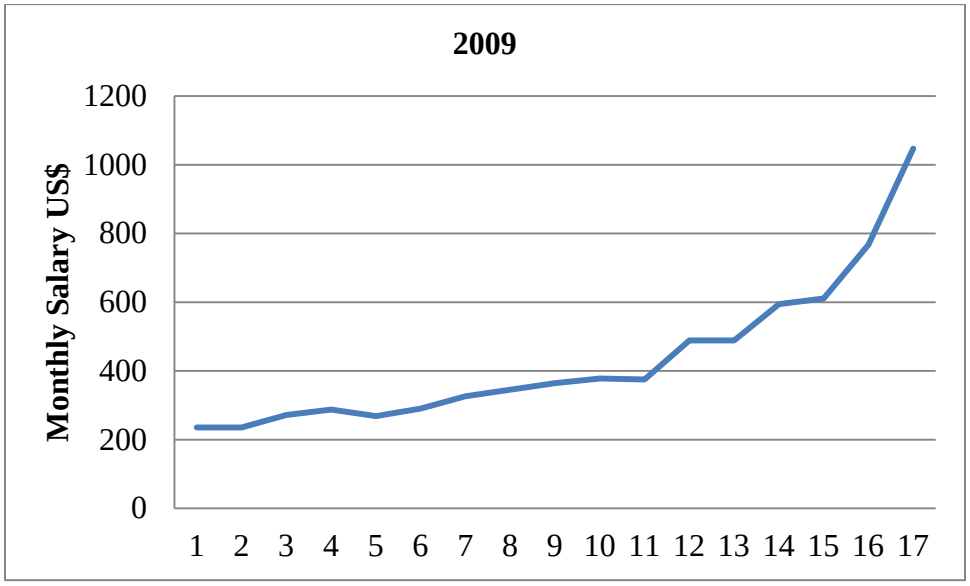
Source: Household surveys 2001 - 2009.

120. The Higher Education Improvement Project is expected to provide the high skilled human capital needed for Costa Rica to keep the current growth patterns. The project will: (i) increase access and retention to tertiary education, (ii) improve the quality and relevance of programs and human resources, (iii) strengthen scientific and technological development, and (iv) improve institutional management and accountability. The project is expected to increase

lifetime earnings of individuals that access to the project given the growth in enrollments and better quality of education (private benefits), and important social returns as new Research & Development implemented directly through the project or by improved universities facilities will likely improve overall productivity (overall benefits).

121. In order to calculate the benefits for students that may take advantage of new opportunities, we employ the current structure of the salaries by year of education in Costa Rica (Figure 6). The Project will increase enrollment in higher education from students finishing secondary education, and will produce movements between majors.

Figure 6 – Income by Years of Education



Source: Household survey 2009

122. By end of the project, the PDO establishes that the project will increase access to higher education. According to the projection of overall indicators, total enrollment in the four CONARE public universities in Costa Rica will increase by 18,953 students28. This assessment assumes that students who access university through the new student places generated by the Project correspond to students who would otherwise not stop studying after finishing secondary education29. In this scenario, the monthly earnings for these individuals will increase from US$ 488 (average earning of individuals with secondary education) to US$1,047 (average earning of individuals with tertiary education). The expected present value of the change in total lifetime (from age 18 to 65) income per individual due to the higher education attainment is US$ 83,10330. Once all the new entrants are considered, the aggregate change in lifetime income is equal to US$1.4 billion.

[28] Targets for Project indicators referred to in this document come from the addition of targets indicated in the Institutional Improvement Plans of the UCR, UNA, ITCR, and UNED.

[29] Different trajectories would be reflected in this assumption with the same final value. For instance, the new university student may come from a technical school, so that their migration from technical to secondary school would open up an additional free place in the technical school that would be taken up by a student with only secondary education.

[30] Discounted at 5 percent. The estimates assume 13 payments during a year.

123. Additionally, intermediate indicator 1 establishes that enrollment in priority areas is expected to increase by 9,222 students by the end of the project. Assuming that students that change careers to prioritized ones earn the average salary of a engineer/health related professional (US$1,320) rather than the average salary of individuals working on social sciences (US$1,151), the expected change in lifetime earnings will be US$31,925. Once all the new individuals enrolled in the priority areas is considered, the aggregate change in lifetime income is equal to US$263 million.

124. The second PDO-level indicator of the Project focuses on improvements in quality and relevance of tertiary education. New education facilities, improved teacher training, improvements in accreditation are likely to increase the capacity of students, improving their productivity in the labor market and their expected wages. The assumption is a conservative impact of 5 percent on wages, and that the quality improvements affect students progressively, reaching 15 percent per year. Once all individuals enrolled in universities during the duration of the project, total impact on their income is US$484 million.

Table 14 – Summary Cost-Benefit Analysis

Concept	**US$**
Private Benefits	
General expansion in enrollment	1,431,990,127
New enrollment in selected areas	262,857,347
Improvement in Quality	484,539,475
Total private benefits	**2,179,386,950**
Costs	
Project Cost	249,110,000
Project cost adjusted by infrastructure use	167000000
Higher current costs due to additional	464,377,070
Total costs	**631,377,070**

Note: Based on project information, household survey

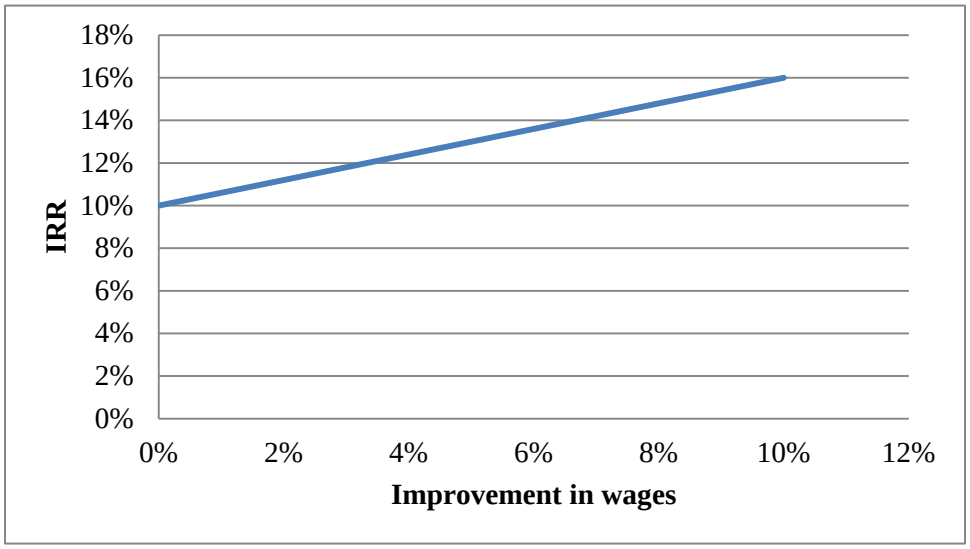
Administrative data from universities. Discount rate 5 %.

125. As indicated in Table 14, total private benefits of the project related to changes in lifetime earnings of individuals under the Project are expected to be US$2.1 billion. With regards to costs: (i) the total project costs will be US$249.11 million (including resources from the World Bank and universities), (ii) higher enrollment will require additional current expenditure by the universities not covered by the project activities (assuming unit expense per student of US$7,600, new current expenses for universities will be US$464 million), and (iii) following standard practices, total project costs should be adjusted for infrastructure use (total infrastructure investment is S$116 million, with an expected duration of 20 years).

126. Given the structure of benefits and costs presented, the project has an expected rate of return (IRR) of 13 percent. This number should be considered a lower bound given that: (i) it

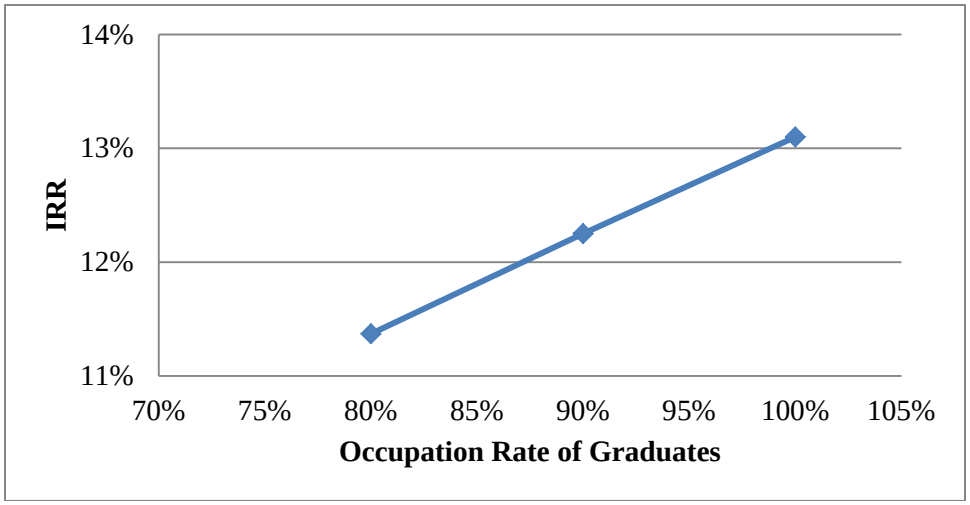
considers that the impact of the project lasts during the duration of the Project, and (ii) it does not include possible externalities as result of project implementation due to the higher number of university graduates and higher resources invested in R&D. Additionally, sensibility analysis shows that in the unlikely scenario that productivity of graduates and their wages does not change, the IRR will be 10 percent. In a more aggressive scenario, with an increase in productivity and wages of graduates of 10 percent, the IRR will be 16 percent (see Figure 7).

Figure 7 – IRR under different scenarios of quality improvements



127. **Relaxing the assumption of 100 percent graduate participation in the labor force.** The analyses presented in Table 14 and Figure 7 assume a 100 percent participation of graduates in the labor force. In case this does not happen, return to the Projects would diminish. A sensibility analysis (presented in Figure 8) shows that if the occupation rate was 80 percent, the Project would have an IRR of 12.3 percent. As previously mentioned, the IRR would equal 13 percent with an occupation rate of 100 percent. The rest of this analysis will assume a 100 percent occupation rate.

Figure 8 – IRR under different scenarios of graduates' participation in the labor force



128. **Social impact of R&D.** It is expected that, during the duration of the Project, universities spend US$470 million in R&D. With the currently available information it is difficult to assess exactly how much of the Project funds will be spent in R&D. It is expected that a total number of 33 subprojects or "initiatives" include activities of R&D. Some of the outputs of those R&D activities are described in the intermediate indicators: the number of full time academics that carry out research activities will go from 581 (baseline) to 692 in 2017, and the number of articles published in indexed journals will increase from 624 to 789. It is expected that these R&D activities reach society and have a high social return. According to Jones and Williams (1997), there is a great empirical literature estimating the rate of return of R&D between 30 and 100 percent for developing countries. Assuming expenses in R&D equal 20 percent of the Project (US$50.8 millions), and assuming a conservative social return of 30 percent, R&D activities will increase Project benefits by US$65.8 millions, thus leading to total Project benefits of US$2.24 billion.

129. **Adjustment for social costs.** The social evaluation requires adjusting the cost to the real opportunity cost for society. Given that Costa Rica is a rather opened economy, with access to international markets and a market economy environment, the economic analysis will assume that prices do not have distortions related to market inefficiencies. However, and in order to present real prices for society, it is important to control prices for the impact of taxes. Taxes on sales and income will affect the different spending categories that the Project will have. Goods and services, including those in infrastructure, will be subject to sales taxes. Consultancy works and salaries will be subjected to income tax.

Table 15 – Expense by category

Type	**Amount Bank (US$)**
Infrastructure	121,797,470
Equipment	55,340,948
Technical assistance, services,	7,273,700
Salaries	10,933,250
Scholarships	24,389,940
Others	11,805,605
Total	**231,540,913**

Source: Project files

130. Expenses in infrastructure and equipment are adjusted for the sales tax. In order to do this, it is assumed that only a 50 per cent of these expenses are subjected to the sales tax (a larger share will increase the social return rate). This adjustment reduces the costs of the Project by about US$14 millions.

131. Table 16 presents the Project's value once the social considerations are included. The new present value equals US$2.24 billion. The social IRR is 15 percent. As observed in Table 16, the total discounted costs (ACV) equal US$574 million and the net value (benefits minus costs, NPV) approximately US$1,600 million.

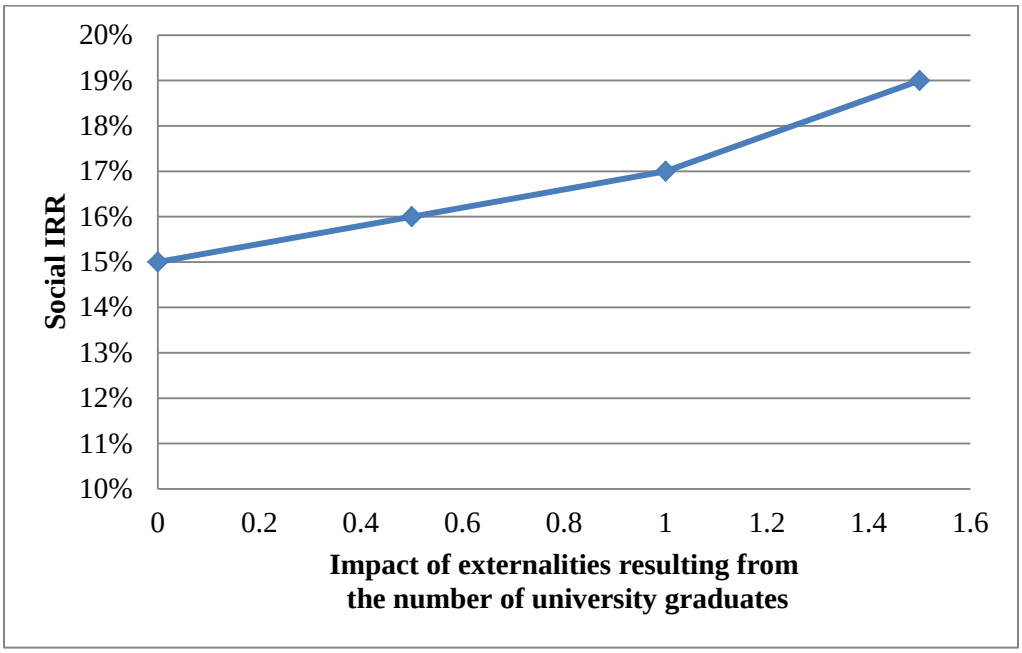
Table 16 – Summary of the Cost-Benefit Analysis, including Social Considerations

Concept	**US$**
General expansion in enrolment	1,431,990,127
New enrolment in selected areas	262,857,347
Quality improvements	484,539,475
Total private benefits	*2,179,386,950*
Social impact of R&D	*65,000,000*
Total benefits	**2,244,386,950**
Costs with social adjustments	
Project cost	231,540,913
Project cost adjusted for the use of infrastructure	$156,618,000
Larger current costs as a result of the expansion in	417,939,363
Total costs	**574,557,363**

Note: Based on Project information, household survey data, and universities'

132. **Positive externalities of a larger number of graduates.** Last, and besides the positive social impact of new research undertaken by universities, the larger number of university graduates will generate a positive externality in the economy. It is expected that this positive externality is both non-monetary and monetary. In a recent document, Moreti (2004) quantifies the monetary impact of externalities in the United States. Moreti finds, after controlling for other factors, that a rise in 1 percent of the share of the labor force with a university degree in a given area increases salaries for all workers: (i) 1.9 percent for those participants of the labor force without a secondary education diploma; (ii) 1.6 percent for participants in the labor force with a secondary education diploma, and (iii) 0.4 percent for university graduates. It is expected that the increase in the number of university graduates as a result of the Project has a similar impact in the Costa Rican economy. The Project will lead to a 3 percent direct increase in the number of university graduates. If the elasticities indicated by Moreti were to hold in Costa Rica, the Project would increase its social IRR to 17 percent (see Figure 9, impact number 1 on the horizontal axis). However, it is expected that the impact is larger than the one capture by Moreti given the number of higher education graduates is relatively smaller than in the United States. If the impact was a 50 percent larger, the Project's social internal rate of return would increase to 19 percent. It is woth noting that this impact would probably work through the attraction of investments generated by the growth in the stock of human capital. Costa Rica has been able to attract investments in the past for its adequate human capital. This Project would guarantee the human capital that future investments would require.

Figure 9 – Adjusting the social returns for the externalities resulting from the increased number of university graduates



Annex 7: Indicative list of 'Subprojects' Planned under Component 1

COSTA RICA: Higher Education Improvement Project

133. This Annex presents, as an indicative list, the subprojects included under each of the PMIs of the four participating universities. It is expected that most of these subprojects, with the indicated objectives, activities and budgets, would be implemented under the Project. However, since the AMIs have not been signed yet by the GoCR and the universities, and since further changes may be made even after signature upon the parties' agreement (and with the no objection of the Bank), the following list can only be taken as provisional. Tables 17 to 20 at the end of the Annex summarize the PMIs. Tables 21 to 25 present the preliminary distribution of investments by expenditure category.

134. ***Subcomponent 1.1: Universidad de Costa Rica*** *(estimated total cost: US$59.5 million; Bank: US$50 million)*. The University of Costa Rica (UCR), created in 1940, is the oldest and largest university in the country. The UCR's PMI aims to increase access and retention of students, with a 21 percent increase in undergraduate students over the Project's lifespan; boosting the development of Costa Rica's regions, emphasizing the quality and relevance of education (with a planned 50 percent increase in the number of accredited programs), and boosting the development of infrastructure in order to strengthen scientific and technological development. UCR's PMI includes the following subprojects:

(i) *Subproject 1.1.1: Widening access and coverage in the area of Engineering: electric and computer science and multimedia technology (SRP), civil (SRG), industrial (SRO), electric, chemical, naval (SRL) and industrial (SRA), as well as in the Biology school (SRF)*[31] *(Total estimated cost: US$11.51 million; Bank: US$8.99 million, UCR: US$2.52 million).* The general objective is to increase enrolment in biology and in civil, electric, industrial and chemical engineering, nd in the degree in computer science and multimedia technology, both in the regional and in the central campuses. This subproject would focus on the development of infrastructure, equipment, and human resources in these disciplines. Among the expected results are an increase of 5,494 m^2 in infrastructure and a 328-people increase of first-year student quotas in the above-mentioned disciplines.

(ii) *Subproject 1.1.2: Strengthening the Research Center in Human Movement Sciences (including the Biomedicine Laboratory) (CIMOV) (Total estimated cost: US$2.02 million; Bank: US$1.40 million, UCR: US$0.59 million).* The general objective is to strengthen research in prosthetics, orthotics, electronics, digital processing of biosignals and medical images, as well as to train professionals and systematize knowledge in human movement sciences, so that Costa Ricans' life quality is improved. This subproject would address the lack of specialized laboratories by creating labs in the following areas: controlled climate, physiology of exercise, strength, bioelectricity, biomechanics, motor functions, and body composition. This subproject would thus finance space, equipment and human resources for the Research Center in Human Movement (CIMOV, *Centro de Investigaciones del Movimiento Humano*). The expected results of this subproject include the construction of a 816 m^2 building, the provision of adequate

[31] SRA: Regional Campus Atlántico; SRF: Campus Rodrigo Facio; SRG: Regional Campus Guanacaste; SRL: Regional Campus Limón; SRO: Regional Campus Occidente; SRP: Regional Campus Pacífico.

equipment and software for its functioning, and the upgrade of academic qualifications of 4 faculty members.

(iii) *Subproject 1.1.3: Widening coverage by creating a program that involves ICTs and arts, as well as strengthening the Musical Arts School (Total estimated cost: US$5.31 million; Bank: US$4.25 million, UCR: US$1.06 million).* The general objective is to create innovative programs that strengthen creativity and satisfy the needs of the current labor market. This subproject would focus on the development of programs that emphasize problem solving, which would generate added value for students. In order to achieve this, the interaction of a number of disciplines (e.g. graphic design, music, computer science, and collective communications) and the use of information and communication technologies would be fostered. This subproject would focus on financing equipment and human resources for developing new programs, and infrastructure for the new school of musical arts. In particular, the subproject has as expected results the construction of a 2,400 m^2 building for the School of Musical Arts, the hiring of new 40 full-time equivalent faculty members, and a 10-people increase in the first-year quota of the School.

(iv) *Subproject 1.1.4: Strengthening the laboratories of hydraulics and mechatronics (Total estimated cost: US$1.85 million; Bank: US$1.40 million, UCR: US$0.45 million).* The general objective is to develop and strengthen the areas of mechatronics and hydraulics in order to contribute to the efficiency and quality of industrial and agro-industrial appliances, the simulation of human movements for prostheses, and the protection of hydraulic, fluvial, and maritime infrastructure. This subproject would thus focus on addressing the lack of equipment at the hydraulics and mechatronics laboratories and on upgrading the academic qualifications of faculty, leading to additional 12 research projects in place per year.

(v) *Subproject 1.1.5: Strengthening the training of professionals in the field of food quality by (i) widening coverage in the program of Food Technology (SRF), (ii) deconcentrating the program of Food Technology (SRG), and (iii) creating the Technology Development Center (SRF) (Total estimated cost: US$5.55 million; Bank: US$4.74 million, UCR: US$0.807 million).* The main objective is to incentivize teaching and research in the field of food quality through the implementation of strategies for strengthening the agricultural-food sector and increasing its competitiveness and innovation. This subproject would thus include investments in infrastructure, equipment and human resources for the Center for Research in Food Technology and the School of Food Technology, as well as for the SRG. Expected results of this subproject are, *inter alia*, the construction of a 1,700-m^2 annex, a 690-m^2 increase in teaching space, a 20-people increase in student quotas (10 at first-year undergraduate level and 10 at the postgraduate level), and an increase of 13 active research projects per year.

(vi) *Subproject 1.1.6: Strengthening the Research Center in Materials Science and Engineering (CICIMA) (Total estimated cost: US$3.31 million; Bank: US$2.81 million, UCR: US$0.50 million).* This subproject focuses on strengthening the existing Center for Research in Materials Science and Engineering. Activities to

be financed include the execution of civil works for the Center and the purchase of the relevant equipment. This subproject is expected to lead to the construction of a 1,580-m^2 building dedicated to research, with adequate equipment, as well as the upgrade of the academic qualifications of 4 faculty members.

(vii) *Subproject 1.1.7: Creating a research network: laboratories in SRF, SRO and SRA (Total estimated cost: US$0.72 million; Bank: US$0.63 million, UCR: US$0.09 million).* The general objective of this country-wide network would be to promote sustainable development on the basis of multidisciplinary work. This subproject would focus on developing the infrastructure, equipment, and human resources needed for such a Network. The expected results of this subproject include an increase in laboratory space by 171 m^2, the development of 8 new research projects, and a 3 full-time equivalent increase in faculty members dedicated to teaching and research.

(viii) *Subproject 1.1.8: Strengthening the Research Center in Environmental Pollution (CICA) (Total estimated cost: US$1.91 million; Bank: US$1.34 million, UCR: US$0.57 million).* The general objective of this subproject would be to strengthen research in the following fields: water quality, analysis of pesticide residues, air quality, bioassays, metabolism and biodegradation, in order to contribute to ensuring environmental quality. This subproject would focus on developing the infrastructure of the existing Center for Research in Environmental Pollution. It is expected that this subproject results in the construction of a 1,266-m^2 building, a 100 percent increase in the number of active research projects per year, and an increase in the qualifications of 12 faculty members, among others.

(ix) *Subproject 1.1.9: Creating the Energy Efficiency Center (CEETER) (Total estimated cost: US$2.16 million; Bank: US$1.86 million, UCR: US$0.305 million).* The general objective of this subproject is to promote innovative research in the fields of renewable energy, use and exploitation of energy, returns of traditional combustibles, environmental pollution, and transport in order to contribute to energy efficiency at the national and regional levels. This subproject would focus on creating a Center for Energy Efficiency and Renewable Technologies. Among the expected results are the construction of 1,000 m^2 and the incorporation to the center of teaching and research staff who currently work in different units.

(x) *Subproject 1.1.10: Strengthening and widening coverage in the training of professionals in the area of health through Public Health (SRF), Health Technology (SRF), Medicine (SRG) and Health Technologies (Environmental Health) (SRG) (Total estimated cost: US$8.01 million; Bank: US$7.12 million, UCR: US$0.89 million).* The main objective of this subproject is to find solutions for relevant problems in integral health through training, technology development, the systematic production of scientific knowledge and the dissemination of results, in order to improve the quality of Costa Ricans' life. This subproject would focus on strengthening the schools of Medicine, Public Health, and Health Technologies, through the execution of civil works and the purchase of relevant equipment. The expected results of this subproject are, *inter alia*, the construction of 5,600 m^2 for the different schools involved, hire 4 new full-time equivalent

faculty members, upgrade the academic qualifications of 8 faculty members, and increase by 85 the quotas of first-year students.

(xi) *Subproject 1.1.11: Creating the Research Center in Neurosciences (Total estimated cost: US$1.51 million; Bank: US$1.38 million, UCR: US$0.13 million).* The general objective is to strengthen research in the following areas of neuroscience: neurophysiology, neurogenetics, and cognition, in order to contribute to the improvement of health and education in the country. This subproject would focus in developing the infrastructure and equipment of the Neuroscience Laboratory. Expected results of this subproject include the construction of 750 m^2 of laboratories, the hiring of 3 full-time equivalent staff, and an increase from 5 to 11 active research projects per year.

(xii) *Subproject 1.1.12: Strengthening research in atomic, nuclear and molecular sciences, applied in the area of health (acquisition and installation of a Cyclotron and PET/CT) (Total estimated cost: US$9.96 million; Bank: US$9.54 million, UCR: US$0.42 million).* The general objective of this subproject is to support research in the development of medical devices for the detection of diseases and treatments. This subproject would focus on strengthening the Center for Research in Atomic, Nuclear, and Molecular Sciences. This subproject is expected to lead to the construction of 1,200 m^2 and to benefit 316 faculty members and over 2,600 students linked to these areas, and the doctoral training of one faculty member,

(xiii) *Subproject 1.1.13: Strengthening the Institute for Pharmaceutical Research (INIFAR) (Total estimated cost: US$2.76 million; Bank: US$2.25 million, UCR: US$0.51 million).* The main objective of this subproject is to support research projects in the field of pharmaceutics, in order to improve the security and efficacy of new medicaments, thus contributing to the creation of knowledge and the training of professionals. This subproject would focus in strengthening the infrastructure and equipment of the Institute for Pharmaceutical Research. Expected results of this subproject include the construction of 2,100 m^2, the upgrade of the academic qualifications of 3 faculty members, and an increase from 11 to 13 active research projects.

(xiv) *Subproject 1.1.14: Strengthening information systems for decision making (Total estimated cost: US$0.67 million; Bank: US$0 million, UCR: US$0.67 million).* The main objective is to develop an articulated system of university management in order to allow for quicker, more flexible and more efficient processes. This subproject would focus in developing the strategic direction system, the information system, and the quality management system. This subproject is expected to lead, among other results, to the design, development and implementation of the System for the Integration of Services for the General Services Bureau, the implementation of the System for Budget Management and Posts, and improvements to the Student Systems (Online Registration, System of Socioeconomic Services, and Academic Record).

135. ***Subcomponent 1.2: Universidad Estatal a Distancia*** *(estimated total cost: US$55.8 million; Bank: US$50 million).* The National University for Distance Learning (UNED), created in 1977, uses distance learning methodologies in order to make higher education available to a wider sector of the Costa Rican society. Nowadays, in order to reach this objective, it is required to accelerate the transformation of teaching and learning processes, as well as academic management by digitalizing the educational resources produced, widening services and doing online management. Moreover, in order to ensure coverage and access, which are essential to the democratization of education and knowledge, it is necessary to improve the connectivity between all the University Centers network and the central Campus that integrate the UNED. All this will increase the regional coverage of distance-learning university education; increase in 12 percent increase in undergraduate students over the life of the Project; foster quality in the offered programs (with a planned 225 percent increase in the number of accredited programs); as well as to strengthen its model of distance education, which includes providing more digital learning resources over the Internet, and diversifying its academic offer in priority disciplines.

(i) *Subproject 1.2.1: Network of University Centers for innovation and local and national development (Total estimated cost: US$17.06 million; Bank: US$14.73 million, UNED: US$2.32 million).* The main objective is to provide a series of services common to all of UNED's University Centers in order to increase access, equity and coverage, thus contributing to local development and to establish links with society. The common services to be provided as a result of this subproject are technology rooms, computing laboratories, science laboratories, engineering laboratories, centers of academic resources, optic fiber connections in all centers, and increased wireless connectivity. The expected results of this subproject include a 15 percent increase of regular students in priority disciplines, as well as a 100 percent increase, by the end of the project, in the number of students who attend laboratory courses.

(ii) *Subproject 1.2.2: Center for the Management of Change and Regional Development: University Center at Cartago (Total estimated cost: US$4.97 million; Bank: US$4.53 million, UNED: US$0.44 million).* This subproject focuses on developing the infrastructure needed for a University Center that, since its creation in 1978, has had its seat in several public schools, which fails to provide for the adequate learning environment. The subproject would build new infrastructure with a surface of 2,198 m^2 including technology rooms, multi-purpose rooms for teaching, computing laboratories, engineering laboratories, science laboratories and optic fiber connectivity. The expected results of this subproject include a 15 percent increase of regular students in priority disciplines, as well as a 50 percent increase in the number of students in those courses that involve the use of laboratories at the Center.

(iii) *Subproject 1.2.3: Center for the Management of Change and Regional Development: University Center at Puntarenas (Total estimated cost: US$4.37 million; Bank: US$3.96 million, UNED: US$0.41 million).* This subproject focuses on developing the infrastructure needed for a University Center that, since its creation in 1977, has had its seat in a series of public schools, which fails to provide for an adequate learning environment. This subproject would finance the construction of a 2,000-m^2 building, which would implement technology rooms,

computing laboratories, engineering laboratories, the equipment of laboratories for teaching, the implementation of a center of academic resources for students, and the training of the Center's members. As a result, a mean 250-student increase is expected in the courses that use the academic laboratories at the Center.

(iv) *Subproject 1.2.4: Improving equity in students' access to digital and online learning resources (Total estimated cost: US$0.82 million; Bank: US$0.77 million, UNED: US$0.05 million).* The main objective of this subproject is to increase access to and participation in online teaching and academic activities. This would be done by assigning technological devices to students in difficult social and economic conditions, in order to facilitate their learning process. As a result of this subproject it is expected that between 1,000 and 1,500 students from low socioeconomic backgrounds would have access to mobile devices and the Internet, and that 800 devices would be installed in the academic resources centers of those cantons with the least social development.

(v) *Subproject 1.2.5: Diversifying the academic supply of engineering programs (Total estimated cost: US$1.87 millions; Bank: US$1.68 million, UNED: US$0.19 million).* The main objective of this subproject is to develop new engineering programs, in the distance learning modality, that serve the country's needs and contribute to the priorities established in the Costa Rican and the Central American development plans. Three engineering programs are to be created: industrial, water and sanitation, and telecommunications engineering. In order to do that, this subproject contemplates the curricular and pedagogical design of courses and programs, the design and production of pedagogical materials in a variety of means, the programming of the self-evaluation and accreditation of those programs, and the provision of the necessary infrastructure and equipment, among other actions. Expected results include 185 undergraduate students, at least 3 publications per year, and the development of 93 internships and research projects developed together with the private sector.

(vi) *Subproject 1.2.6: Training for strengthening the distance learning model (Total estimated cost: US$2.74 millions; Bank: US$2.32 million, UNED: US$0.42 million).* The main objective of this subproject is to provide for the additional faculty training and education to ensure that all other objectives of the PMI (regarding access and quality) are met, namely by supporting all other subprojects through programs in professional training and internships in universities and other public and private institutions. As a result, it is expected that 362 staff members of the university benefit from additional training, 53 of which with postgraduate degrees.

(vii) *Subproject 1.2.7: Diversifying and widening digital, multimedia and online production (Total estimated cost: US$2.88 million; Bank: US$2.41 million, UNED: US$0.47).* The main goal is to increase students' access to teaching and academic support, and to promote faculty's interaction with colleagues in and outside the country, in line with Costa Rica's technological development. This subproject would focus on the acquisition of the necessary equipment for video and radio and television broadcasting, as well as the training of specialists in

design, animation, and broadcasting, among others. As a result of this subproject it is expected that 97 new educational videos are produced and made available online every year, that 1,500 hours of audiovisual materials are digitalized, that 199 documentaries are produced per year, and that capacity for video and audio streaming in real time are implemented.

(viii) *Subproject 1.2.8: Strengthening production, experimentation and research for technological development and innovation at UNED (Total estimated cost: US$17.95 million; Bank: US$16.78 million, UNED: US$1.17 million).* The main goal of this subproject is to strengthen the areas of production, research and scientific development so that they are aligned with global ICT trends and allow for the production of written pedagogical materials, multimedia materials, audiovisual materials, videoconferencing, and online learning materials. Particularly important here would be the development of "virtual laboratories" (interactive computer appliances that introduce them to the activities to be undertaken in a real laboratory) and a research network for knowledge development and technological proposals. In order to reach this subproject's objectives a building of 5,945 m^2 would be built, which would include laboratories, a main center for the video-communications system, a data center, offices for the staff of the ICT Directorate and the Research Vice-Rectory, among others. The expected results of this subproject include, among others, comprehensive and improved ICT systems for the whole University, 30 indexed publications, the creation of 5 research networks, and 18 new researchers with postgraduate degrees.

(ix) *Subproject 1.2.9: Information system for supporting decision making and institutional management (Total estimated cost: US$2.95 million; Bank: US$2.81 million, UNED: US$0.14 million).* This subproject has as its general objective to strengthen and improve the institutional information systems by integrating them and making them more responsive to users' needs. Special emphasis would be put on supporting decision making, institutional management, and supplying automatic services in the academic and administrative areas. Therefore, this subproject would finance the necessary technical assistance as well as the implementation of the required technological infrastructure. The expected results of this subproject are the generation of relevant indicators in support of institutional management and decision making, an 80 percent improvement in the quality of databases with essential information, and the provision of 24 new services for students, 16 new services for faculty, and 12 new services for other staff.

136. ***Subcomponent 1.3: Instituto Tecnológico de Costa Rica*** *(estimated total cost: US$58 million; Bank: US$50 million).* The Technological Institute of Costa Rica (ITCR), created in 1971, focuses mostly on engineering programs. ITCR's PMI has as its main objectives to increase access (with a planned 14.5 percent planned raise in enrolment over the life of the Project), improve quality of the learning process (leading to a 42 percent increase in the number of accredited programs) and develop technological innovation in engineering programs.

(i) *Subproject 1.3.1: Student dormitories (Total estimated cost: US$9.88 million; Bank: US$7.83 million, ITCR: US$2.05 million).* This subproject aims at removing the barriers to access for students of low socioeconomic background and the lack of subsidized accommodation. A building for student accommodation is to be built, which would lead to a 60 percent increase in the number of students with university accommodation. The expected results of this subproject include a 136-student increase in the number of people accommodated in ITCR dormitories, and a better distribution by gender in the allocation of dormitory places.

(ii) *Subproject 1.3.2: Student meal service facility (Total estimated cost: US$3.77 million; Bank: US$3.32 million, ITCR: US$0.45 million).* A combination of the location of ITCR's main campus and the insufficient supply of food services make it difficult for students to access food at university, thus affecting their wellbeing and performance. This subproject aims at addressing this need by building an additional student meal service facility that can increase coverage for food demand from about 45 percent to 60 percent.The expected results of this subproject include the construction of a 1,458 m^2 student meal service facility and the provision of its necessary equipment.

(iii) *Subproject 1.3.3: Information and Communication Technologies Core (Total estimated cost: US$13.12 million; Bank: US$11.48 million, ITCR: US$1.64 million).* The main objective of this subproject is to improve conditions for developing teaching, research, and extension in the fields of electric engineering, computer engineering, and mechatronics engineering. To this end, infrastructure works (new building with 4,843 m^2) and investments in equipment would be undertaken to significantly increase teaching and research capacities in this area of knowledge. This subproject is expected to lead to a 72-student increase in first-year students, and the continuation of activities towards the accreditation of programs, among others.

(iv) *Subproject 1.3.4: Security at Work Integrated Core (Total estimated cost: US$2.90 million; Bank: US$2.52 million, ITCR: US$0.38 million).* The main objective of this subproject is to increase teaching and research capacities in the fields of security at work and industrial hygiene. To this end, a new, 1,179-m^2 building would be constructed and equipped, and the qualifications of faculty improved. The expected results include a 40 percent increase in first-year students, a 30 percent increase in the academic qualifications of faculty, and the maintenance of students' employability rates at 95 percent.

(v) *Subproject 1.3.5: Student and Academic Information and Management System (Total estimated cost: US$0.96 million; Bank: US$0.89 million, ITCR: US$0.07 million).* The main objective of this subproject is to design and implement a new computer system for managing student and academic information in a reliable, efficient, and flexible way. Investing in equipment and in systems development, this subproject would lead to improvements in the areas of student services, academic decision-making, and administrative processing. Expected results of this subproject are: the development of online systems, the automatization of processes, the development of integrated and user-friendly systems, the increased

use of ICTs in the development of student processes, and the elaboration of statistics in support of decision-making processes.

(vi) *Subproject 1.3.6: Academic training for faculty (Total estimated cost: US$5.25 million; Bank: US$5 million, ITCR: US$0.25 million).* The main objective of this subproject is to increase the number of faculty members with doctoral degrees, which would lead to significant improvements in teaching and research and, in the mid-term, to the establishment of ITCR's own doctoral program. This subproject would fund scholarships for professors to undertake doctoral studies at world-class universities. The expected results of this subproject include a 25 increase in the number of professors with doctoral degrees in engineering, a 25 increase in the number of research projects, and a 25 increase in the number of yearly publications in indexed journals.

(vii) *Subproject 1.3.7: Library extension (Total estimated cost: US$2.68 million; Bank: US$2.36 million, ITCR: US$0.32 million).* The main objective of this subproject is to increase the library's capacity to serve its users, increasing its surface in 987 m^2, widening its schedule to make it a 24-hour library, and creating new services in specialized areas.

(viii) *Subproject 1.3.8: Strengthening the San Carlos Regional Campus (Total estimated cost: US$4.74 million; Bank: US$4.10 million, ITCR: US$0.64 million).* This subproject aims at matching the increase in demand from and influence in the San Carlos region by strengthening the ITCR's regional campus and its research area. Specifically, infrastructure works would be undertaken to increase the classroom capacity and the research facilities on campus. Among the expected results are the creation of 2 new programs in this Regional Campus, a 35 percent in student enrolment in this campus, a 20 percent in the number of research subprojects undertaken in the campus, and a 50 percent increase in the number of publications stemming from it.

(ix) *Subproject 1.3.9: Environmental Chemistry Integrated Core (Total estimated cost: US$8.03 million; Bank: US$7 million, ITCR: US$1.03 million).* The objective of this subproject is to establish an area for the Chemistry School and the degree in Environmental Engineering. This subproject would strengthen infrastructure (construction of 3,250 m^2), equipment, and human resources in this area in order to improve teaching, research and extension in a field that is critical for the country. The expected results of this subproject include, among others, a 35 percent increase in the number of students, having 3 faculty members obtain a doctoral degree, improving time-to-graduation of environmental engineers, and improving the retention rate of the first to the second year from 80 to 85 percent.

(x) *Subproject 1.3.10: Industrial Design Integrated Core (Total estimated cost: US$2.88 million; Bank: US$2.49 million, ITCR: US$0.39 million).* The main objective of this subproject is to improve the conditions for teaching, research and extension in the field of industrial design engineering. This would be done by supporting works of infrastructure (1,200 m^2), the acquisition and renovation of equipment, and the improvement of faculty's human capital. All this would lead to a 35 percent increase in the number of students, a 31 percent increase in the

number of faculty members with postgraduate degrees, and an improvement of the retention rate of the first to the second year from 80 to 85 percent, among others.

(xi) *Subproject 1.3.11: Strengthening the San José Academic Center (Total estimated cost: US$3.48 million; Bank: US$3 million, ITCR: US$0.48 million).* The main objective of this subproject is to adapt ITCR's Academic Center located in the capital city, the infrastructure of which is 50 years old, to increasing demand and regulations regarding accessibility and safety. To this end, this subproject would support the construction of a new building (including 10 new classrooms, a new 500 m^2 library), as well as an increase in faculty's qualifications. Expected results of this subproject include a 20 percent increase in the number of first-year students, the supply of one new program, and the strengthening of the relationship with the private sector.

137. ***Subcomponent 1.4: Universidad Nacional*** *(estimated total cost: US$58.5 million; Bank: US$50 million).* The Universidad Nacional (UNA), created in 1973, is characterized by an especially diverse academic supply and a widespread presence across the country. The objective of UNA's PMI is to increase enrolment by 16 percent over the life of the Project, with an emphasis on humanistic education of students and the development of entrepreneurial skills, as well as on the improvement of the quality of programs through the modernization of their contents and the development of research and postgraduate teaching in priority areas (leading to a planned 118 percent increase in the number of accredited programs). To reach these objectives, UNA's PMI considers the following activities:

(i) *Subproject 1.4.1: Developing entrepreneurial competencies in the academic and student community at the local and regional levels (Total estimated cost: US$2.98 million; Bank: US$1.95 million, UNA: US$1.04 million).* This subproject aims at investing in infrastructure (a new building of about 2,000 m^2) and human capital (further training for human resources and training for academics) in order to develop leadership and competence for the creation of companies that integrate innovation, equity, and competitiveness that is both socially and environmentally friendly. The expected results of this subproject include, *inter alia*, the training of 700 people per year in entrepreneurial skills, 20 entrepreneurial projects with viable business plans generated in the local and regional community per year, and the provision of 40 training and advisory services to small and medium-sized companies and other entrepreneurial organizations, among others.

(ii) *Subproject 1.4.2: Lifelong learning for widening the supply of training and the update of non-formal education (Total estimated cost: US$2.49 million; Bank: US$1.97 million, UNA: US$0.52 million).* Among this subproject's objectives is to integrate and improve the management of the existing lifelong learning programs in order to ensure their quality and their relevance to the educational needs of society in general and the productive sector in particular. To do this, the subproject would support the creation of infrastructure (with a new building of about 2,000 m^2), the development of faculty's human capital in the area of lifelong learning, and the academic exchange among peers. The expected results of the subproject include a 100 percent increase in the number of people who benefit from lifelong learning activities, the postgraduate training of 1 academic,

as well as the definition of a strategy for the continuous identification of educational needs in lifelong learning.

(iii) *Subproject 1.4.3: Creation of a program in the field of supply and logistics (Total estimated cost: US$2.43 million; Bank: US$1.91 million, UNA: US$0.52 million).* The main objective is to train professionals who can manage the information flow and the operations of the logistic chain in a company or organization. Investments would be made to build a classrooms and laboratories building of 500 m^2, to contract technical assistance, and to ensure postgraduate training for 4 professionals who would lead the program. Expected results include the establishment of a program that would enroll 40 students if it is undergraduate, 15 if it is postgraduate, and the establishment of alliances with the public and the private sector for fostering graduates' employability.

(iv) *Subproject 1.4.4: Strengthening training, research and innovation in applications of ionizing and non-ionizing radiation, with an emphasis on health (Total estimated cost: US$2.46 million; Bank: US$2.15 million, UNA: US$0.31 million).* This subproject will contribute to serving the growing demand of competencies physics applied to the health sector and to the promotion of the use of ionizing and non-ionizing radiation in the field of therapeutic and diagnostic applications. This would be done by extending and consolidating the Masters in Medical Physics, and by establishing laboratories (new building of 500 m^2) for research, innovation, and service provision in the field of radiation. Expected results include the enrolment of 16 – 24 students in the new masters program, the development of 3 R&D projects, and the provision of 10 advisory services to public or private organizations in the field.

(v) *Subproject 1.4.5: Creation of a program for the promotion of innovation in pedagogical management of CIDE and Education Centers for the integral development of a quality education (Total estimated cost: US$1.72 million; Bank: US$1.20 million, UNA: US$0.52 million).* The main goal of this subproject is to contribute to the development of dynamic, inclusive and innovative learning environments that ensure students' successful completion of education programs. This subproject would thus fund investments in human capital (postgraduate training of 1 – 2 faculty) and infrastructure (new building of 350 m^2, including a pedagogical laboratory). The expected results are the reaccreditation of 3 programs and accreditation of 3 new programs, the creation for an innovation strategy for CIDE's academic supply, and the training of 750 educational administrators, among others.

(vi) *Subproject 1.4.6: Improving the conditions of academic activity to favor creativity and innovation for the construction of interactive artistic processes (Total estimated cost: US$6.21 million; Bank: US$5.69 million, UNA: US$0.52 million).* The goal of this subproject is to support the reorientation of the Center for Research, Teaching, and Artistic Extension (CIDEA) towards the construction of processes that favor the development of interactive arts. This would include self-evaluation processes of undergraduate programs, the training of faculty, and the promotion of creativity. To this end, 2 academics would be trained at the doctoral level, a new, 2,600 m^2 building would be built, and laboratories would be

equipped, among other actions. The expected results include a 5 percent increase in the enrolment rate of the CIDEA programs, the enrolment of 500 students per year in CIDEA's pre-university programs, and the development of innovation, improvement and accreditation processes for 4 undergraduate programs.

(vii) *Subproject 1.4.7: Academic strengthening in new industrial bioprocesses and alternatives for cleaner and environmentally, occupationally and socially sustainable production. (Total estimated cost: US$12.76 million; Bank: US$11.98 million, UNA: US$0.78 million).* The goal of this subproject is to develop a program for training professionals in industrial bioprocesses (biotechnology and nanobiotechnology), the curricular design of a graduate program in the field, and the accreditation of the industrial chemistry program, and the academic development in areas like ecotoxicology and occupational health. This subproject would therefore support faculty and student mobility activities, faculty postgraduate training, and the construction of one building for the Chemistry School and the Regional Institute for Studies on Toxic Substances (4,500 m^2). The results of this subproject are expected to include the enrolment of 40 first-year students in the Industrial Bioprocesses program, the development of 4 research, teaching and/or extension projects, the development of 1 postgraduate degree, and the accreditation of the program in Industrial Chemistry.

(viii) *Subproject 1.4.8: Strengthening the programs in human movement sciences, complementary health, and life quality (Total estimated cost: US$3.002 million; Bank: US$2.69 million, UNA: US$0.31 million).* The main goal of this subproject is to renew and strengthen the training of professionals in the above-mentioned disciplines. This would include the construction of a new, 1,400-m^2 building for the School of Human Movement Sciences, which would include a school-clinic, as well as the self-evaluation of a number of programs aimed at innovation, improvement and accreditation. The expected results of this subproject include, among others, the enrolment of 200 students per year, the training of 100 people through "free courses", 5 intervention models developed and/or improved, 5 research projects, and 15 scientific publications.

(ix) *Subproject 1.4.9: Creation of an Observatory of Climate Change and Development (Total estimated cost: US$3.76 million; Bank: US$2.93 million, UNA: US$0.83 million).* This subproject would create an Observatory of Climate Change and Development, which would promote multidisciplinary approaches for the study of climate change and development. This Observatory would be accompanied by a series of educational activities addressed to faculty and to society in general, including the training of 6 faculty members at the postgraduate level, the acquisition of equipment for laboratories, and the creation of the program in Hydraulic Resource Engineering. Expected results include 10 research projects, 10 extension projects oriented to social organizations, 30 new first-year students per year in the Hydraulic Resource Engineering program, and 25 scientific publications, among others.

(x) *Subproject 1.4.10: Holistic training under the principle of humanism and students retention (Total estimated cost: US$11.72 million; Bank: US$11.41 million, UNA: US$0.31 million).* The main objective of this subproject is to increase the

retention of students by providing holistic and humanistic training, including the integral care to students, actions that incentivize high academic performance, and the integration of students in projects and programs, among others. This would be done through a series of academic mobility actions, as well as investments in infrastructure (a new Center for General Studies and new student dormitories totaling 2,000 m^2, urban restructuring of open-air areas) and equipment. The expected results of this subproject include the provision of dormitory places for additional 211 students, a 15 percent increase in the number of graduates, a reduction of the dropout rate per cohort from 25 to 20 percent, and the yearly monitoring of indicators for university life activities.

(xi) *Subproject 1.4.11: Organizing a system of university quality and relevance (Total estimated cost: US$8.95 million; Bank: US$6.10 million, UNA: US$2.85 million).* This subproject's objective is to strengthen the modernization and flexibilization of institutional processes that impact quality management and academic pertinence and, especially, to create a system that articulates the following institutional processes: evaluation and training of staff, curriculum innovation and management, program innovation and management, academic projects and activities, planning, information systems, decision making and accountability, internationalization and access of society to academic production. This would be done through a series of management activities, academic mobility activities, and the acquisition of hardware and development of software. The subproject's expected results include the self-evaluation of 80 percent of undergraduate programs, the accreditation of 13 new programs, improvement of work performance of 10 percent staff members, the development of a quality indicators system, the development of an academic-administrative management indicators system, and a 20 percent increase in the number of indexed publications, among others.

Table 17 – Overview of subprojects to be financed under Subcomponent 1.1 (UCR)

Subprojects	Strategic axes				Budget (US$ M)		
	Access	Quality	Science	Management	Total	WB	U
1.1.1: Widening access and coverage in the area of Engineering: electric and computing and multimedia technology (SRP), civil (SRG), industrial (SRO), electric, chemical, naval (SRL) and industrial (SRA), as well as in the Biology school (SRF).	X	X	X		11.51	8,99	2.52
1.1.2: Strengthening the Research Center in Human Movement Sciences (including the Biomedicine Laboratory) (CIMOV)		X	X		2.02	1.40	0.59
1.1.3: Widening coverage by creating the program that involves ICTs and arts, as well as strengthening the Musical Arts School.	X	X	X		5.31	4.25	1.06
1.1.4: Strengthening the laboratories of hydraulics and mechatronics.		X	X		1.85	1.40	0.45
1.1.5: Strengthening the training of professionals in the field of food quality by (i) widening coverage in the program of Food Technology (SRF), (ii) deconcentrating the program of Food Technology (SRG), and (iii) creating the Technology Development Center (SRF).	X	X	X		5.55	4.74	0.807
1.1.6: Strengthening the Research Center in Materials Science and Engineering (CICIMA).		X	X		3.31	2.81	0.50
1.1.7: Creating a research network: laboratories in SRF, SRO and SRA.			X	X	0.72	0.63	0.09
1.1.8: Strengthening the Research Center in Environmental Pollution (CICA)			X		1.91	1.34	0.57
1.1.9: Creating the Energy Efficiency Center (CEETER).			X		2.16	1.86	0.30
1.1.10: Strengthening and widening coverage in the training of professionals in the area of health through: Public Health (SRF), Health Technology (SRF), Medicine (SRG) and Health Technologies (Environmental Health) (SRG).	X	X	X		8.01	7.12	0.89
1.1.11: Creating the Research Center in Neurosciences. .			X		1.51	1.38	0.13
1.1.12: Strengthening research in atomic, nuclear and molecular sciences, applied in the area of health (acquisition and installation of the Cyclotron and PET/CT) (CICANUM).			X		9.96	9.54	0.42
1.1.13: Strengthening the Institute for Pharmaceutical Research (INIFAR).			X		2.76	2.25	0.51
1.1.14: Strengthening information systems for decision making.		X		X	0.67	0.00	0.67
Subtotal Subprojects					57,31	47,78	9,53
Urbanization					1.72	1.72	0.00
Technical assistance					0.50	0.50	0.00
Subcomponent's total budget					**59.53**	**50.00**	**9.53**

SRA: Regional Campus Atlántico; SRF: Campus Rodrigo Facio; SRG: Regional Campus Guanacaste; SRL: Regional Campus Limón; SRO: Regional Campus Occidente; SRP: Regional Campus Pacífico.

Table 18 – Overview of subprojects to be financed under Subcomponent 1.2 (UNED)

Subprojects	Strategic axes				Budget (US$ M)		
	Access	Quality	Science	Management	Total	WB	U
1.2.1: Network of University Centers for innovation and local and national development.	X	X		X	17.06	14.73	2.32
1.2.2: Center for the Management of Change and Regional Development: University Center at Cartago.	X	X		X	4.97	4.53	0.44
1.2.3: Center for the Management of Change and Regional Development: University Center at Puntarenas.	X	X		X	4.37	3.96	0.41
1.2.4: Improving equity in students' access to digital and online learning resources	X	X			0.82	0.77	0.05
1.2.5: Diversifying the academic supply of engineering programs.	X	X	X		1.87	1.68	0.19
1.2.6: Training for strengthening the distance learning model		X	X		2.74	2.32	0.42
1.2.7: Diversifying and widening digital, multimedia and online production	X	X	X		3.08	2.41	0.67
1.2.8: Strengthening production, experimentation and research for technological development and innovation at UNED		X	X		17.95	16.78	1.17
1.2.9: Information system for supporting decision making and institutional management.				X	2.95	2.81	0.14
Subcomponent's total budget					**55.81**	**50.00**	**5.81**

Table 19 – Overview of subprojects to be financed under Subcomponent 1.3 (TEC)

Subprojects	Strategic axes				Budget (US$ M)		
	Access	Quality	Science	Management	Total	WB	U
1.3.1: Student dormitories.	X	X			9.88	7.83	2.05
1.3.2: Student meal service facility.	X	X			3.77	3.32	0.45
1.3.3: Information and Communication Technologies Core.	X	X	X		13.12	11.48	1.64
1.3.4: Security at Work Integrated Core.	X	X	X		2.90	2.52	0.38
1.3.5: Student and academic information and management system.		X		X	0.96	0.89	0.07
1.3.6: Academic training for faculty.		X	X		5.25	5.00	0.25
1.3.7: Library extension.	X	X			2.68	2.36	0.32
1.3.8: Strengthening the San Carlos regional campus.	X	X	X		4.74	4.10	0.64
1.3.9: Environmental Chemistry Integrated Core.	X	X	X		8.03	7.00	1.03
1.3.10: Design Integrated Core.	X	X	X		2.88	2.49	0.39
1.3.11: Strengthening the San José Academic Center.	X	X			3.48	3.00	0.48
Subcomponent's total budget					**57.69**	**50.00**	**7.69**

Table 20 – Overview of subprojects to be financed under Subcomponent 1.4 (UNA)

Subprojects	**Strategic axes**				**Budget (US$ M)**		
	Access	**Quality**	**Science**	**Management**	**Total**	**WB**	**U**
1.4.1: Developing entrepreneurial competencies in the academic and student community at the local and regional levels.		X	X		2.98	1.95	1.04
1.4.2: Lifelong learning for widening the supply of training and the update of non-formal education.	X	X	X		2.49	1.97	0.52
1.4.3: Creation of a program in the field of supply and logistics.	X	X	X		2.43	1.91	0.52
1.4.4: Strengthening training, research and innovation in applications of ionizing and non-ionizing radiation, with an emphasis on health.	X	X	X		2.46	2.15	0.31
1.4.5: Creation of a program for the promotion of innovation in pedagogical management of CIDE and Education Centers for the integral development of a quality education.	X	X	X		1.72	1.20	0.52
1.4.6: Improving the conditions of academic activity to favor creativity and innovation for the construction of interactive artistic processes.	X	X	X		6.21	5.69	0.52
1.4.7: Academic strengthening in new industrial bioprocesses and alternatives for production that is cleaner and environmentally, occupationally and socially sustainable.	X	X	X		12.76	11.98	0.78
1.4.8: Strengthening programs in human movement sciences, complementary health, and life quality.	X	X	X		3.00	2.69	0.31
1.4.9: Creation of an Observatory of Climate Change and Development	X	X	X		3.76	2.93	0.83
1.4.10: Holistic training under the principle of humanism and students retention.	X	X			11.72	11.41	0.31
1.4.11: Organizing a system of university quality and relevance.		X	X	X	8.95	6.10	2.85
Subcomponent's total budget					**58.50**	**50.00**	**8.50**

Table 21 – Preliminary distribution of expenses per expenditure category (in US$) under Subcomponent 1.1 (UCR)

Subprojects	Bank				University		
	Infras-tructure	**Equip-ment**	**Technical assistance, services**	**Inciden-tal expenses**	**Training, scholar-ships**	**Salaries**	**Other**
1.1.1: Widening access and coverage in the area of Engineering: electric and computing and multimedia technology (SRP), civil (SRG), industrial (SRO), electric, chemical, naval (SRL) and industrial (SRA), as well as in the Biology school (SRF).	5,431,000	3,301,000	9,400	251,000	1,966,000	552,000	0
1.1.2: Strengthening the Research Center in Human Movement Sciences (including the Biomedicine Laboratory) (CIMOV)	899,000	485,000	1,800	41,000	480,000	115,000	0
1.1.3: Widening coverage by creating the program that involves ICTs and arts, as well as strengthening the Musical Arts School.	3,024,000	1,089,000	12,800	132,000	800,000	258,000	0
1.1.4: Strengthening the laboratories of hydraulics and mechatronics.	0	1,391,000	0	14,000	390,000	54,000	0
1.1.5: Strengthening the training of professionals in the field of food quality by (i) widening coverage in the program of Food Technology (SRF), (ii) deconcentrating the program of Food Technology (SRG), and (iii) creating the Technology Development Center (SRF).	2,578,000	2,038,000	4,800	123,000	305,000	502,000	0
1.1.6: Strengthening the Research Center in Materials Science and Engineering (CICIMA).	1,663,000	1,069,000	2,700	78,000	270,000	234,000	0
1.1.7: Creating a research network: laboratories in SRF, SRO and SRA.	160,000	464,000	300	11,000	23,000	66,000	0
1.1.8: Strengthening the Research Center in Environmental Pollution (CICA)	1,293,000	0	2,500	52,000	415,000	154,000	0
1.1.9: Creating the Energy Efficiency Center (CEETER).	1,019,000	788,000	2,300	49,000	240,000	65,000	0
1.1.10: Strengthening and widening coverage in the training of professionals in the area of health through: Public Health (SRF), Health Technology (SRF), Medicine (SRG) and Health Technologies (Environmental Health) (SRG).	5,723,000	1,145,000	18,900	240,000	604,000	289,000	0

1.1.11: Creating the Research Center in Neurosciences.	768,000	576,000	2,100	37,000	0	136,000	0
1.1.12: Strengthening research in atomic, nuclear and molecular sciences, applied in the area of health (acquisition and installation of the Cyclotron and PET/CT) (CICANUM).	2,885,000	6,525,000	17,000	115,000	318,000	107,000	0
1.1.13: Strengthening the Institute for Pharmaceutical Research (INIFAR).	2,144,000	7,000	12,200	86,000	450,000	61,000	0
1.1.14: Strengthening information systems for decision making.	0	0	0	0	0	0	673,000
Subtotal	27,587,000	18,878,000	586,800	1,229,000	6,261,000	2,593,000	673,000

Table 22 – Preliminary distribution of expenses per expenditure category (in US$) under Subcomponent 1.2 (UNED)

Subprojects	Bank				University	
	Infras-tructure	**Develop-ment**	**Equipment**	**Training**	**Project administration (5%)**	**Other**[32]
1.2.1: Network of University Centers for innovation and local and national development.	5,234,500	0	8,978,200	520,000	736,635	1,591,223
1.2.2: Center for the Management of Change and Regional Development: University Center at Cartago.	3,320,300	0	1,122,000	90,000	226,615	209,500
1.2.3: Center for the Management of Change and Regional Development: University Center at Puntarenas.	2,868,500	0	999,000	90,000	197,875	209,500
1.2.4: Improving equity in students' access to digital and online learning resources	0	0	600,000	170,000	38,500	8,000
1.2.5: Diversifying the academic supply of engineering programs.	0	0	1,292,300	385,000	83,865	110,000
1.2.6: Training for strengthening the distance learning model	0	0		2,320,000	116,000	300,000
1.2.7: Diversifying and widening digital, multimedia and online production	0	0	2,080,000	335,000	120,750	550,000
1.2.8: Strengthening production, experimentation and research for technological development and innovation at UNED	8,433,200	0	6,472,500	1,880,000	839,285	327,000
1.2.9: Information system for supporting decision making and institutional management.	0	2,599,500	0	210,000	140,475	0
Subtotal	19,856,500	2,599,500	21,544,000	6,000,000	2,500,000	3,305,223

[32] This corresponds to the following costs, per initiative: plans and security, cleaning, and maintenance services (1.2.1), security, cleaning, and maintenance services (1.2.2), security, cleaning, and maintenance services (1.2.3), 150 datacard and 200 USB pen drives (1.2.4), hiring of professors for the new engineering programs (1.2.5), hiring of training specialists (1.2.6), refurbishment (1.2.7), security, cleaning, and maintenance services (1.2.8).

Table 23 – Preliminary distribution of expenses per expenditure category (in US$) under Subcomponent 1.3 (ITCR)

Subprojects	Bank				University			
	Infra-structure	**Equip-ment**	**Technical assistance, services**	**Scholar-ships**	**Infra-structure**[33]	**Equip-ment**[34]	**Technical assistance, services**[35]	**Scholar-ships**[36]
1.3.1: Student dormitories.	7,334,000	500,000	0	0	733,400	40,000	391,700	880,940
1.3.2: Student meal service facility.	2,916,000	400,000	0	0	291,600	0	165,800	0
1.3.3: Information and Communication Technologies Core.	10,257,000	1,228,000	0	0	1,025,700	40,000	547,250	0
1.3.4: Security at Work Integrated Core.	2,222,000	300,000	0	0	222,200	30,000	126,100	0
1.3.5: Student and academic information and management system.	0	165,500	725,000	0	30,000	0	44,525	0
1.3.6: Academic training for faculty.	0	0	0	5,000,000	0	0	250,000	0
1.3.7: Library extension.	2,000,000	362,500	0	0	200,000	0	118,125	0
1.3.8: Strengthening the San Carlos regional campus.	4,000,000	100,000	0	0	400,000	40,000	205,000	0
1.3.9: Environmental Chemistry Integrated Core.	6,500,000	500,000	0	0	650,000	30,000	350,000	0
1.3.10: Design Integrated Core.	2,400,000	90,000	0	0	240,000	30,000	124,500	0
1.3.11: Strengthening the San José Academic Center.	3,000,000	0	0	0	300,000	30,000	150,000	0
Subtotal	40,629,000	3,646,000	725,000	5,000,000	4,092,900	240,000	2,500,000	880,940

[33] Includes the cost for designing the plans and the technical specifications
[34] Includes the moneys assigned to equipment by TEC during the subproject's corresponding years.
[35] Includes the administration of the subproject and the corresponding costs of biddings.
[36] Includes the student scholarships that will be assigned to support students in dormitories.

Table 24 – Preliminary distribution of expenses per expenditure category (in US$) under Subcomponent 1.4 (UNA)

Subprojects	Bank					University	
	Infrastructure	**Equip-ment**	**Training of human resources**	**Technical assistance and quality**	**Inciden-tal expenses**	**Salaries**	**Technical assistance and quality**
1.4.1: Developing entrepreneurial competencies in the academic and student community at the local and regional levels.	1,230,000	300,000	250,000	75,000	92,750	1,036,056	0
1.4.2: Lifelong learning for widening the supply of training and the update of non-formal education.	1,230,000	400,000	200,000	45,000	93,750	518,028	0
1.4.3: Creation of a program in the field of supply and logistics.	615,000	225,000	830,000	150,000	91,000	518,028	0
1.4.4: Strengthening training, research and innovation in applications of ionizing and non-ionizing radiation, with an emphasis on health.	1,107,000	685,000	230,000	30,000	102,600	310,817	0
1.4.5: Creation of a program for the promotion of innovation in pedagogical management of CIDE and Education Centers for the integral development of a quality education.	461,250	263,125	330,000	90,000	57,219	518,028	0
1.4.6: Improving the conditions of academic activity to favor creativity and innovation for the construction of interactive artistic processes.	3,382,500	1,307,500	630,000	102,000	271,100	518,028	0
1.4.7: Academic strengthening in new industrial bioprocesses and alternatives for production that is cleaner and environmentally, occupationally and socially sustainable.	6,765,000	3,375,000	1,230,000	42,000	570,600	777,042	0
1.4.8: Strengthening programs in human movement sciences, complementary health, and life quality.	1,845,000	425,000	230,000	66,000	128,300	310,817	0
1.4.9: Creation of an Observatory of Climate Change and Development	984,000	550,000	1,230,000	30,000	139,700	828,845	0
1.4.10: Holistic training under the principle of humanism and students retention.	10,087,750	519,165	230,000	30,000	543,346	310,817	0
1.4.11: Organizing a system of university quality and relevance.	1,940,600	2,966,158	860,000	45,000	290,588	2,693,745	157,500
Subtotal	29,648,100	11,015,948	6,250,000	705,000	2,380,952	8,340,250	157,500

Table 25 – Preliminary distribution of expenses per expenditure category (in US$ million) under Component 1

Subcom-ponents	**Bank**						**University**						
	Infras-tructure	**Equip-ment**	**Techni-cal assistance, services**	**Trainin g**	**Scholarsh ips**	**Other**	**Infras-tructure**	**Equip-ment**	**Technical assistance, services**	**Train-ing**	**Salaries**	**Scholars hips**	**Other**
1.1: UCR	27.5	18.8	0.6	0	0	2.9	0	0	0	6.3	2.6	0	0.7
1.2: UNED	19.8	21.5	0	6.0	0	2.6	0	0	0	0	0	0	5.8
1.3: ITCR	40.6	3.6	0.7		5.0	0	4.1	0.2	2.5	0	0	0.9	0
1.4: UNA	29.6	11.0	0.7	6.2	0	2.4			0.2		8.3		
Total Comp. 1	**117.7**	**55.1**	**2.5**	**12.2**	**5.0**	**6.2**	**4.0**	**0.2**	**2.6**	**6.3**	**10.9**	**0.9**	**6.5**