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Report No: PAD1635

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT PAPER

ON A

PROPOSED ADDITIONAL CREDIT

IN THE AMOUNT OF SDR 2.7 MILLION
(US\$3.664 MILLION EQUIVALENT)

TO THE

CO-OPERATIVE REPUBLIC OF GUYANA

FOR A

UNIVERSITY OF GUYANA SCIENCE AND TECHNOLOGY SUPPORT PROJECT

November 13, 2015

Education Global Practice
Latin America and the Caribbean Region

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CURRENCY EQUIVALENTS

(Exchange Rate Effective October 31, 2015)

Currency Unit = SDR
SDR 0.71588 = US\$1
US\$1.39687 = SDR 1

FISCAL YEAR

January 1 – December 31

ABBREVIATIONS AND ACRONYMS

AF	Additional Financing
EMF	Environmental Management Framework
EMF	Environmental Management Plan
ICT	Information and Communications Technology
IDA	International Development Association
GRS	Grievance Redress Service
IP	Implementation Progress
IPPF	Indigenous Peoples Planning Framework
IRR	Internal Rate of Return
LCDS	Low Carbon Development Strategy
PAD	Project Appraisal Document
PDO	Project Development Objective
UG	University of Guyana
SDR	Special Drawing Rights
WB	World Bank

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GUYANA
AF UG SCIENCE AND TECHNOLOGY SUPPORT

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ADDITIONAL FINANCING DATA SHEET

Guyana

AF UG Science and Technology Support (P156746)

LATIN AMERICA AND CARIBBEAN

EDUCATION

Basic Information – Parent							
Parent Project ID: P125288	Original EA Category: B - Partial Assessment						
Current Closing Date: 30-Jun-2017							
Basic Information – Additional Financing (AF)							
Project ID: P156746	Additional Financing Type (from AUS): Cost Overrun						
Regional Vice President: Jorge Familiar	Proposed EA Category:						
Acting Country Director: Karin Kemper	Expected Effectiveness Date: 15-Jan-2016						
Senior Global Practice Director: Claudia Maria Costin	Expected Closing Date: 30-Jun-2017						
Practice Manager/Manager: Reema Nayar	Report No: PAD1635						
Team Leader(s): Hongyu Yang							
Borrower							
Organization Name	Contact	Title	Telephone	Email			
Ministry of Finance	Dr. Winston Jordan	Minister of Finance	592-227-1114	wjordan@finance.gov.gy			
Project Financing Data - <u>Parent</u> (UG Science and Technology Support-P125288) (in USD Million)							
Key Dates							
Project	Ln/Cr/TF	Status	Approval Date	Signing Date	Effectiveness Date	Original Closing Date	Revised Closing Date
P125288	IDA-49690	Effective	23-Jun-2011	30-Sep-2012	13-Dec-2012	30-Jun-2017	30-Jun-2017
Disbursements							

Project	Ln/Cr/TF	Status	Currency	Original	Revised	Cancelled	Disbursed	Undisbursed	% Disbursed
P125288	IDA-49690	Effective	XDR	6.20	6.20	0.00	2.75	3.45	44.29
Project Financing Data - Additional Financing AF UG Science and Technology Support (P156746)(in USD Million)									
<input type="checkbox"/> Loan <input type="checkbox"/> Grant <input type="checkbox"/> IDA Grant <input checked="" type="checkbox"/> Credit <input type="checkbox"/> Guarantee <input type="checkbox"/> Other									
Total Project Cost:		3.664		Total Bank Financing:		3.664			
Financing Gap:		0.00							
Financing Source – Additional Financing (AF)								Amount	
BORROWER/RECIPIENT								0.00	
International Development Association (IDA)								3.664	
Total								3.664	
Policy Waivers									
Does the project depart from the CAS in content or in other significant respects?							No		
Explanation									
Does the project require any policy waiver(s)?							No		
Explanation									
Team Composition									
Bank Staff									
Name	Role	Title	Specialization	Unit					
Hongyu Yang	Team Leader (ADM Responsible)	Senior Education Specialist	Education	GEDDR					
Plamen Stoyanov Kirov	Procurement Specialist	Senior Procurement Specialist		GGODR					
David I	Financial Management Specialist	Senior Financial Management Specialist	Financial Management	GGODR					
Ignacio Jauregui	Counsel	Senior Counsel	Legal	LEGLE					

Ingrid Bjerke	Team Member	Operations Analyst	Operations	LCROS	
Javier Botero Alvarez	Team Member	Senior Education Specialist	Education	GEDDR	
M. Yaa Pokua Afriyie Oppong	Safeguards Specialist	Senior Social Development Specialist	Safeguards	GSURR	
Tatiana Cristina O. de Abreu Souza	Finance Officer	Finance Officer	Finance	WFALN	
Noreen Beg	Environment Specialist	Senior Environment Specialist	Environment	GENDR	
Maria Elena Paz Gutzalenko	Team Member	Program Assistant	Program Assistant	GEDDR	
Locations					
Country	First Administrative Division	Location	Planned	Actual	Comments
Guyana	Demerara-Mahaica	Greater Georgetown			
Institutional Data					
Parent (UG Science and Technology Support-P125288)					
Practice Area (Lead)					
Education					
Contributing Practice Areas					
Cross Cutting Topics					
[X] Climate Change					
[] Fragile, Conflict & Violence					
[X] Gender					
[] Jobs					
[] Public Private Partnership					
Sectors / Climate Change					
Sector (Maximum 5 and total % must equal 100)					
Major Sector	Sector	%	Adaptation Co-benefits %	Mitigation Co-benefits %	

Education	Tertiary education	57		
Information and communications	Information technology	34		
Public Administration, Law, and Justice	Public administration-Education	9		
Total		100		
Themes				
Theme (Maximum 5 and total % must equal 100)				
Major theme	Theme		%	
Human development	Education for the knowledge economy		91	
Environment and natural resources management	Climate change		9	
Total			100	
Additional Financing AF UG Science and Technology Support (P156746)				
Practice Area (Lead)				
Education				
Contributing Practice Areas				
Cross Cutting Topics				
[X] Climate Change				
[] Fragile, Conflict & Violence				
[X] Gender				
[] Jobs				
[] Public Private Partnership				
Sectors / Climate Change				
Sector (Maximum 5 and total % must equal 100)				
Major Sector	Sector	%	Adaptation Co-benefits %	Mitigation Co-benefits %
Education	Tertiary education	57	50	50
Information and communications	Information technology	34		

Public Administration, Law, and Justice	Public administration-Education	9		
Themes				
Theme (Maximum 5 and total % must equal 100)				
Major theme	Theme		%	
Human development	Education for the knowledge economy		91	
Environment and natural resources management	Climate change		9	
Total			100	

I. Introduction

1. This Project Paper seeks the approval of the Executive Directors to provide an additional credit in an amount of SDR 2.7 million (US\$3.664 million equivalent) for the University of Guyana Science and Technology Support Project (P125288, Credit No. 4969-GY).
2. The proposed Additional Financing (AF) (P156746, Credit No. 5753-GY) was requested by the Borrower on June 29, 2015 in order to cover a financing gap due to the depreciation of the SDR versus the US Dollar and cost increases related to inflation and design modifications. The overall financing gap is US\$3.664 million.
3. There are no new activities and no changes proposed to current components or objective of the Project. The additional funds would enable continuation of the improvements in University of Guyana (UG) infrastructure, in particular, the procurement of laboratory equipment and furniture, as well as a campus-wide drainage improvement, which will enhance the facilities for the science and technology faculties and improve the learning environment.
4. In addition, a minor change to the Results Framework is proposed. An intermediate indicator on Beneficiary Feedback has been added to the Results Framework. The outcome indicators and other current Intermediate Outcome Indicators would remain unchanged.

II. Background and Rationale for Additional Financing in the Amount of US\$3.664

5. **Country Context.** Guyana is the third smallest country in South America, after Suriname and Uruguay, and has a population of less than one million inhabitants. It is the third poorest country in the Western Hemisphere, after Haiti and Nicaragua, with a per capita GNP of approximately US\$4,170 (2014). Guyana is well-endowed with natural resources, fertile agricultural lands, bauxite, gold and extensive tropical forests that cover more than 80 percent of the country. Guyana has one of the lowest deforestation rates in the world (estimated at 0.1-0.3 percent) and 90 percent of Guyana's forests remain intact. Most of the country's indigenous population (9.2 percent of total population) lives in forests on which they depend for their livelihood. The majority of the population (90 percent) lives on the narrow coastal plain, where population density is more than 115 persons per square kilometer. Preserving and maintaining its forestry resources are central to the Country's Low Carbon Development Strategy (LCDS)¹ that aims to generate fiscal revenue by reducing global carbon emissions, and propelling the development of economic sectors such as tourism.

6. **Sector Context and Institutional Context.** Improving higher education in Guyana would be critical to building the relevant skills that match labor market demand as the country aims to execute its LCDS. As the only university in the country, UG plays a central role in developing the nation's human capital. Guyana was a founding member of the University of the West Indies system in 1948. UG was established in 1963 and moved to the present main campus at Turkeyen. A second campus at Tain in Berbice was opened in 2000, with a neighboring science facility at John opening a year later. Throughout these transitions and expansions, UG has maintained close

¹ Government of Guyana, LCDS, 2013

links with the Caribbean academic community and other international institutions. A total of 1,493 students graduated from UG in 2014, of which approximately 25 percent studied in the science faculties.

7. **Project Background and Status.** The original Project, in the amount of US\$10 million, was approved by the Board on June 23, 2011 and became effective on December 13, 2012. The Project Development Objective (PDO) is to strengthen the four science and technology faculties² at the University of Guyana through infrastructure, research and curricular improvements while building the basis for improved facilities management and future growth. The Project has three components: (i) Education Quality Improvement Program; (ii) Infrastructure Rehabilitation; and (iii) Institutional Capacity Building.

8. The Project was restructured on October 28, 2014 to amend the Results Framework, insert data that was not available at Appraisal, and modify disbursement estimates in response to the delays in effectiveness and implementation. Following the restructuring, there was an improvement in Project implementation, including the signing of several key contracts, based on an agreed action plan with the Government of Guyana. The Project underwent a second restructuring on September 18, 2015 to make additional revisions to the Results Framework in order to better align it with Project activities and to fully capture the Project impacts. No changes were made to the PDO or to Project components.

9. The latest ratings for both the PDO and Implementation Progress (IP) are Moderately Satisfactory. Implementation is proceeding well in all components:

- a. Under Component 1, the curriculum reform for 15 undergraduate programs in four Science and Technology faculties is progressing. Fifteen program documents have been submitted to UG. Work is underway for the eight research grant proposals from teams of UG lecturers from the first round of proposals awarded last year. A second call for research grant proposals has been completed and work on an additional eight proposals has begun.
- b. Under Component 2, the civil works for the rehabilitation of 13 buildings of the Science and Technology Faculties began in May 2015 and are on track to be completed as scheduled. Network equipment for the UG campus-wide network has been delivered and works for the installation of the fiber ring have been completed. The procurement process for laboratory equipment is ongoing and contracts are ready for signing.
- c. Under Component 3, the Project Coordination Unit continues to be adequately staffed. The technical committees meet regularly and participate actively in Project implementation. Four studies have been programmed under the Project to provide capacity building for planning, assessing, and developing directions for UG. The study “Assessment of the Existing Human Resources of UG” was completed in May 2014. Some of the recommendations from the report have been implemented by UG. The Feasibility Study for the Establishment of a Center of Excellence for the Study of Biodiversity was completed, and the other two studies are underway.

² The four target faculties are: Agriculture and Forestry, Environmental and Earth Sciences, Natural Science, and Technology.

10. No extension of Project Closing date is envisaged.

11. **Rationale for Additional Financing: Existence of a financing gap.** Due to the depreciation of the SDR versus the US Dollar, the original Credit amount of SDR6.2 million decreased from US\$10 million equivalent at the time of Project approval to about US\$8.6 million equivalent to date. In addition, the cost of the remaining civil works is greater than the estimate made at Project appraisal (March 2011) due to inflation and cost increases related to design modifications. The overall financing gap is US\$3.664 million.

12. Three solutions to the funding shortfall were considered: (i) reduce the Project scope; (ii) increase counterpart funding; and (iii) seek additional IDA 17 financing. As all Project activities have started and remain priorities for the Government of Guyana and to achieve the PDO, reducing the scope of the Project was not considered a desirable option. Given fiscal constraints in the context of less favorable commodity prices, the Government of Guyana is unable to increase counterpart funding. Therefore, option (iii), i.e. to seek additional IDA 17 financing, was identified as the most appropriate financing mechanism to enable completion of the Project's activities. Additional financing would enable achievement of the PDO and completion of the Project by its original closing date of June 30, 2017.

13. The new Government, through the Ministry of Finance, confirmed its commitment to the Project and the relevance of the Project objective during the mid-term review in May 2015. Project activities are expected to be included in the Country Education Strategy currently being formulated by the new Minister of Education. Furthermore, the Project remains aligned with the Country Engagement Note currently under finalization that includes two pillars, one on strengthening environmental sustainability and the other on improving education quality. Finally, the Project remains relevant to the World Bank Group twin goals of reducing poverty and boosting shared prosperity, through its contribution to enhancing human capital to support job creation as well as safeguarding natural resources for all.

III. Proposed Changes

Summary of Proposed Changes	
The proposed additional financing would help finance the costs associated with a financing gap, as requested by the Borrower on June 29, 2015.	
Change in Implementing Agency	Yes [] No [X]
Change in Project's Development Objectives	Yes [] No [X]
Change in Results Framework	Yes [X] No []
Change in Safeguard Policies Triggered	Yes [] No [X]
Change of EA category	Yes [] No [X]
Other Changes to Safeguards	Yes [] No [X]
Change in Legal Covenants	Yes [] No [X]
Change in Loan Closing Date(s)	Yes [] No [X]

Cancellations Proposed	Yes [] No [X]
Change in Disbursement Arrangements	Yes [] No [X]
Reallocation between Disbursement Categories	Yes [] No [X]
Change in Disbursement Estimates	Yes [] No [X]
Change to Components and Cost	Yes [] No [X]
Change in Institutional Arrangements	Yes [] No [X]
Change in Financial Management	Yes [] No [X]
Change in Procurement	Yes [] No [X]
Change in Implementation Schedule	Yes [] No [X]
Other Change(s)	Yes [] No [X]

Development Objective/Results

Project's Development Objectives

Original PDO
 The objective of the Project is to strengthen the four science and technology faculties at UG through infrastructure, research and curricular improvements while building the basis for improved facilities management and future growth.

Change in Results Framework

The Project Development Objectives (PDO) indicators and Intermediate Outcome Indicators would remain unchanged under the AF with the exception of adding one new Intermediate Outcome indicator to measure beneficiary feedback.

Compliance

Covenants: None

Source of Funds	Finance Agreement Reference	Description of Covenants	Date Due	Recurrent	Frequency	Action
				<input type="checkbox"/>		

Conditions: None

Source Of Fund	Name	Type
Description of Condition		

Risk

Risk Category	Rating (H, S, M, L)
----------------------	----------------------------

1. Political and Governance	Substantial			
2. Macroeconomic	Moderate			
3. Sector Strategies and Policies	Low			
4. Technical Design of Project or Program	Moderate			
5. Institutional Capacity for Implementation and Sustainability	Substantial			
6. Fiduciary	Moderate			
7. Environment and Social	Moderate			
8. Stakeholders	Moderate			
9. Other	N/A			
OVERALL	Moderate			
Finance				
Loan Closing Date - Additional Financing (AF UG Science and Technology Support - P156746)				
Source of Funds	Proposed Additional Financing Loan Closing Date			
IDA Credit	June 30, 2017			
Allocations - Additional Financing (AF UG Science and Technology Support - P156746)				
Source of Fund	Currency	Category of Expenditure	Allocation	Disbursement %(Type Total)
			Proposed	Proposed
IDA	XDR	1) Honoraria, Research Grants, goods, consultants' services, Non-Consultants' services, Training and Operating Costs under Part A of the Project	135,000	100%
IDA	XDR	(2) Honoraria, goods, works, consultants' services, Non-consultants' services, and Operating Costs under Part B of the Project	2,295,000	100%
IDA	XDR	(3) Honoraria, goods, consultants' services, Non-consultants'	270,000	100%

		services, Training and Operating Costs under Part C of the Project		
		Total:	2,700,000	

Appraisal Summary

Economic and Financial Analysis

Explanation:

The results of the economic analysis for the Additional Financing (AF) suggest that the UG Science and Technology Support Project remains economically justified. Using the original analytical framework, the economic analysis accounts for a six-year program period (the same closing date as the original Project) associated with AF. It should be noted that the economic and financial analysis is conducted for the entire Project, which includes the original credit and proposed AF. It uses updated data on students' enrollment and graduation rate and program benefits (including wage earnings premium for university graduates). The revised internal rate of return (IRR) is estimated at 5.5 percent (from the original 6 percent) and is robust to sensitivity analysis under varying scenarios of internal efficiency (completion rates) and external efficiency (employment rates). The Net Present Value of the benefits is US\$13,981,258 and the benefit-cost ratio is 1.12. It is noted that the benefit should still be considered as a lower bound given that it did not consider its positive externalities on health, gender equality, and living conditions, through its impact on age at marriage, fertility rates, improved birth practices and childrearing, better education for the subsequent generation, and any subsequent protections of Guyana's natural resources.

Technical Analysis

Explanation:

The current conditions at UG, in terms of existing infrastructure, laboratories, equipment, teaching staff, research facilities, etc., justify the continued Project investments. Short of sending abroad all Guyanese secondary school graduates wishing to continue their science studies at the higher education level, and/or importing the requisite skills and expertise for the implementation of the LCDS at high cost, there is no alternative to investing in the UG. The UG is the primary source of the human capital needed for the LCDS and generation of this human capital requires a holistic approach and the full range of Project investments proposed.

The curriculum reform is designed to ensure that higher education in Guyana contributes to implementation of the LCDS and corresponds to the needs of the labor market. In addition, both reforms and investments are focused on the generation of 21st century skills (multidisciplinary problem-solving, teamwork/networking skills, and technology-related skills). This is further enhanced by the provision of campus-wide ICT infrastructure, which provides for the first time broad access to high-speed connectivity to promote national and international partnerships. Such partnerships and communication should increase the UG's external orientation and its ability to learn from and share with others. Moreover, the research grants and studies are designed to increase capacity of the faculty at the university and create additional research for the LCSD, as well as the improved performance of the UG. Finally, the building renovations and laboratory equipment are designed to generate an appropriate environment for learning.

A university is a knowledge-based enterprise whose primary capital is its faculty. This means the faculty must be the driver of the quality improvement process. As such, the Project is designed to maximize initiative and ownership by UG faculty. In particular, UG faculties are incentivized and empowered to take initiative in driving forward the reform of curricula through partnerships between Heads of Department and external consultants throughout the process; engaging in research through self-selection of projects (subject to specific

criteria); and ensuring suitability of the civil works investments through dedicated committees. This is the most appropriate way to achieve the Project's objectives to strengthen the science faculties at UG in a sustainable manner.

Social Analysis

Explanation:

Component 1 offers the potential for "inclusive" curriculum development and research intended to benefit among others the rural (particularly Amerindian) populations. The original Indigenous Peoples Planning Framework (IPPF) has been reviewed and updated and further consultation have been held with Amerindian Peoples representatives in order to ensure that their concerns are effectively taken into consideration. The updated IPPF has been disclosed in the country on the UG website as well as on the World Bank website prior to Appraisal. Beyond the Amerindian population the main Project beneficiaries would be the students and lecturers at the UG. Indirect beneficiaries would include private sector employees, local communities, and international researchers engaged in rainforest conservation and biodiversity preservation.

Gender. The number of direct beneficiaries from the Project is estimated to be 14,901 individuals, including 14,601 students and 300 staff, of which approximately 64 percent are female. The ratio of female to male labor participation rate (%) in Guyana has also risen up from 0.52 (2011) to 0.54 (2014)³. Regarding the four Faculties of Science and Technology funded by this Project, male students account for about 60% of the enrollment. Female students, however, are catching up and even outnumbering male students in faculties of Natural Science (54.9%) and Earth & Environmental Science (60.2%), as well as the closing gap in Agriculture & Forestry⁴. Through University wide activities, such as drainage and ICT activities, the Project creates a better learning environment. Activities targeted to improving the four Faculties of Science and Technology thus promote the inclusion and success of both men and women in higher education in Guyana.

Environmental Analysis

Explanation:

The Project includes environmental considerations that were developed during Project preparation to ensure the Project's environmental sustainability and its compliance with Guyana national regulations and the World Bank Group's safeguard policies. The Environmental Assessment for the Project would be maintained as Category B, following OP/BP 4.01, similar to the Parent Project. The main environmental impacts expected from the Project would be those connected to the rehabilitation works planned under Component 2, which have been mitigated through the implementation of the Environmental Management Framework (EMF) and Environmental Management Plan (EMP). The original EMF and EMP have been updated and has been re-disclosed in the country on the UG website, as well as on the World Bank website before Appraisal. There are no changes in the nature of the physical investments or baseline environmental conditions at the Project sites. The Project has confirmed that all environmental permits are up to date.

Implementation of the Safeguard during the Parent Project:

During the implementation of the parent project, an Environmental and Social Specialist was designated as part of the Implementation Unit to supervise the implementation of the EMP, the EMF and IPPF. Periodic reports are prepared and available for review. There are no outstanding issues. The Overall Safeguards

³ World Bank: Country Engagement Note for the Cooperative Republic of Guyana (2015) and World Bank (2011)

⁴ University of Guyana, Student Enrollment Statistics Report (2014/2015)

implementation rating is Satisfactory. The AF will continue to closely monitor the implementation of the safeguards policies.

Amerindian People were identified as key stakeholders under the Component 1b – Research relevant to the Low Carbon Development Strategy (LCDS). Consultations were conducted during the Parent project preparation and implementation. They will be continued under the AF to assess and measure potential project impacts on the Amerindian population.

Risk

Explanation:

The Overall Risk Rating for the Project is determined to be Moderate. The main challenges identified are: (a) fiscal constraints, and (b) low technical capacity at the UG. The Government continues to operate in a very tight fiscal space, with little room for flexibility in the event of unforeseen expenditures. This would be managed by close implementation support and adherence to the current timeline, to minimize the risks from further SDR depreciation, and country inflation which could drive up the cost of project implementation. Low capacity at UG is being managed by close support in terms of procurement and financial management, and training as needed of appropriate staff. Capacity has been steadily increasing throughout Project implementation. Given that no changes in design or scope of the Project are envisaged, the risk rating for the Project is maintained at Moderate.

V. World Bank Grievance Redress

14. Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB’s Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB’s independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank’s attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank’s corporate Grievance Redress Service (GRS), please visit <http://www.worldbank.org/GRS>. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

**ANNEX 1: RESULTS FRAMEWORK AND MONITORING
GUYANA: UG Science and Technology Support Project**

Project Development Objective (PDO)												
Project Development Objective (PDO): The objective of the Project is to strengthen the four science and technology faculties at UG through infrastructure, research and curricular improvements while building the basis for improved facilities management and future growth.												
Results Indicators	Core	Unit of Measure	Base-line	Cumulative Target Values					Frequency	Data Source/ Methodology	Responsibility for Data Collection	Description (indicator definition etc.)
				2013	2014	2015 (Actual)	2016	2017				
PDO Indicator One: <u>Strengthen science and technology faculties:</u> Number of research grants with at least one paper evaluated as successful	<input type="checkbox"/>	#	0	0	0	0	0	10	Upon completion of research projects	UG Evaluation Committee, consisting of external experts, will review research papers at their completion	UG Office of Quality Assurance / Project Implementation Unit	Evaluated as successful means (i) papers meet minimum standards of research quality and relevance to the LCDS; and (ii) satisfies one of the following: (a) paper presented to the local/national stakeholders; or (b) paper presented at international conferences; or (c) paper submitted for publication.
PDO Indicator Two: <u>Basis for improved facilities management:</u> Maintenance of buildings, equipment in 13 rehabilitated buildings, and of ICT campus-wide	<input type="checkbox"/>	%	Buildings 54 Equipment 28 ICT 0	Buildings 54 Equipment 28 ICT 0	Buildings 54 Equipment 28 ICT 0	Buildings 60 Equipment 30 ICT 100	Buildings 65 Equipment 32 ICT 100	Buildings 70 Equipment 33 ICT 100	Annual	Annual Inventory of buildings, equipment and ICT verifies whether they are maintained and in working order. The protocol for the measurement of the maintenance of buildings, equipment and ICT (as a percentage) is	Independent consultant	Scores stem from an annual inventory of buildings and equipment that follows a standardized protocol in order to assign a percentage score from 0% to 100% to each building and piece of laboratory equipment, as well as to UG's ICT. Baseline data from Inventory in 2013.

Results Indicators	Core	Unit of Measure	Base-line	Cumulative Target Values					Frequency	Data Source/ Methodology	Responsibility for Data Collection	Description (indicator definition etc.)
				2013	2014	2015 (Actual)	2016	2017				
										detailed in the Operational Manual		
PDO Indicator Three: <u>Basis for improved growth</u> Studies produced by the Project are incorporated into the UG strategy	<input type="checkbox"/>	Text	No Project financed studies incorporated into the UG strategy	Studies not yet commenced	Studies have just commenced. There are no results yet	The studies related to the creation of the Biodiversity Institute and the Assessment of Existing Human Resources have been incorporated into the UG strategy	All 4 studies are incorporated into the UG strategy		End of Project	Minutes of Decisions taken by UG Academic / Policy / Planning Committee and/or the UG Governing Council with respect to the Biodiversity Institute, the Research and Innovation Fund, the Business Development Unit, and the Assessment of Existing Human Resources study	Project Coordinator in collaboration with Secretary of UG Governing Council	Studies produced by the Project are completed, reviewed and discussed by the UG Academic/Policy/Planning Committee and/or the UG Governing Council, with Decisions incorporated into the UG strategy.
PDO Indicator Four: <u>Strengthen science and technology faculties:</u> Number of reformed/strengthened Programs offered		#	0	0	0	0	0	15	End of Project	University Academic Department	Project Coordinator / UG Office of Quality Assurance	Number of revised programs included in UG list of Offered Program published on http://www.uog.edu.gy

Results Indicators	Core	Unit of Measure	Base-line	Cumulative Target Values					Frequency	Data Source/ Methodology	Responsibility for Data Collection	Description (indicator definition etc.)
				2013	2014	2015 (Actual)	2016	2017				
<i>Component 1: Improving curriculum, teaching and research</i>												
<i>Intermediate Result Indicator One:</i> Updated curricula in each of the 4 Science faculties	<input type="checkbox"/>	Text	No updated curricula in the 4 Science faculties		Situational analysis of 15 programs is completed	Program documents for the 15 identified programs completed	Revisions of Year 1, Year 2, Year 3, and Year 4 courses are completed	Revisions of Year 1, Year 2, Year 3 and Year 4 courses are approved by the Academic Board	Annual	Approvals of courses by Deans of Science Faculties and Decisions by the Academic Board	Project Coordinator / UG Office of Quality Assurance	Curriculum update achieved when approved by UG Academic Board. The indicator refers to the 15 existing undergraduate programs in the 4 Science and Technology faculties.
<i>Intermediate Result Indicator Two:</i> Number of scientific research projects funded	<input type="checkbox"/>	#	0	8	16	16	16	16	Annual	Contracts between the grantor and the grantee	Project Coordinator / UG Office of Quality Assurance	Number of LCDS-related research projects awarded.
<i>Component Two: Infrastructure rehabilitation</i>												
<i>Intermediate Result Indicator Three:</i> Rehabilitate and equip laboratory buildings	<input type="checkbox"/>	#	0	0	0	5	12	13	Annual	Annual Inventory of Buildings and Equipment	UG Facilities Management office / Facilities Management Coordinator	Rehabilitation process would involve work on electricity, water and sewage supply as well as security and other components. Equipping would involve laboratory equipment, consumables and other instructional materials.
<i>Intermediate Result Indicator Four:</i> Campus-wide rehabilitation of the drainage systems	<input type="checkbox"/>	Yes / No	No	No	No	No	Yes	Yes	Annual	Annual Inventory of Buildings and Equipment	UG Facilities Management Office / Facilities Management Coordinator	To improve basic drainage infrastructure.

Results Indicators	Core	Unit of Measure	Base-line	Cumulative Target Values					Frequency	Data Source/ Methodology	Responsibility for Data Collection	Description (indicator definition etc.)
				2013	2014	2015 (Actual)	2016	2017				
<i>Intermediate Result Indicator Five:</i> Existence of a single, working UG connection to external networks	<input type="checkbox"/>	Yes / No	No	No	No	Yes	Yes	Yes	Annual	Report by the Manager of UG's Center for Information Technology verifying whether the single connection has been established and it is working, and what are its benefits to UG	Manager of UG's Center for Information Technology	External networks include Internet and the e-government network.
<i>Component Three: Institutional capacity building</i>												
<i>Intermediate Result Indicator Six:</i> Facility management plan established and under implementation	<input type="checkbox"/>	Yes/ No	No	No	No	No	Yes	Yes	Annual	Facilities Management Plan and Progress Reports	UG Facilities Management Office / Facilities Management Coordinator	The Facilities Management Office creates and implements a Facilities Management Plan for the whole campus.
<i>Intermediate Result Indicator Seven:</i> Forward looking studies completed	<input type="checkbox"/>	#	0	0	0	2	4	4	Annual	Studies completed	Project Coordinator	The 4 studies envisioned are: Center for Excellence for the Study of Bio-Diversity, Research and Innovation Fund, Business Development Unit, Personnel Distribution.

Results Indicators	Core	Unit of Measure	Base-line	Cumulative Target Values					Frequency	Data Source/ Methodology	Responsibility for Data Collection	Description (indicator definition etc.)
				2013	2014	2015 (Actual)	2016	2017				
<i>Intermediate Result Indicator Eight:</i> Direct Project beneficiaries (percent female)	<input checked="" type="checkbox"/>	# of students enrolled (%)	0	6,774 (64%)	9,383 (64%)	11,992 (64%)	14,601 (64%)	14,601 (64%)	Annual	UG enrollment reports	Project Coordinator / UG Office of the Vice-Chancellor, Registrar	Project beneficiaries are defined as UG students who are studying at the Turkeyen campus at some point during the life of the Project, as well as those students who graduated from the Turkeyen campus during the life of the Project. The value for 2013 corresponds to actual UG enrollment and graduation numbers at the Turkeyen campus in 2013/2014.
<i>Intermediate Result Indicator Nine:</i> Survey on beneficiaries	<input type="checkbox"/>	Text	No such survey exists.				Survey Conducted, Report Published and Action Plan Prepared	Survey Conducted, Report Published and Action Plan Prepared	Once	Online surveys are conducted with students, faculty to measure their level of satisfaction with the Project interventions.	Online survey designed and analyzed by statistics professor; distributed UG Office of Quality Assurance / Project Coordination unit	A survey on beneficiaries was added as intermediate results indicator in order to comply with the Bank requirement for new IDA lending. This survey will be conducted to measure the level of satisfaction of the beneficiaries regarding: (i) research grant, (ii) curriculum reform, (iii) improved learning environment; (iv) campus wide internet network; (v) gender dimensions.