PROJECT INFORMATION DOCUMENT (PID)
APPRAISAL STAGE

Report No.: PIDA24418

Project Name	Development of systems to prevent forest fires and monitor vegetation cover in the Brazilian Cerrado (P143185)
Region	LATIN AMERICA AND CARIBBEAN
Country	Brazil
Sector(s)	Forestry (65%), General agriculture, fishing and forestry sector (20%), Public administration- Agriculture, fishing and forestry (15 %)
Theme(s)	Land administration and management (60%), Environmental policies and institutions (20%), Climate change (20%)
Lending Instrument	Investment Project Financing
Project ID	P143185
Borrower(s)	Fundacao de Desenvolvimento da Pesquisa (FUNDEP)
Implementing Agency	Ministerio da Ciencia, Tecnologia e Inovacao (MCTI)
Environmental Category	C-Not Required
Date PID Prepared/Updated	16-Jul-2015
Date PID Approved/Disclosed	27-Jul-2015
Estimated Date of Appraisal Completion	25-Sep-2015
Estimated Date of First Grant Approval	19-Nov-2015
Appraisal Review Decision (from Decision Note)	

I. Project Context

Country Context

Brazil is a developing country with a complex and dynamic economy. In 2010 it was the seventh largest economy in the world in GDP terms (USD 2.1 trillion), but only number 44 in terms of GDP per capita (USD 10,700). Between 2000 and 2010 the average annual economic growth rate was 3.7%. Over the same period the country's population grew by 12.3%, making it the world's fifth largest population with 191 million inhabitants, of which 84.35% live in urban areas.

Brazil’s economy is partly anchored in the export of primary products, including agricultural commodities. The country is ranked first as an exporter of sugarcane, beef, poultry, coffee, tobacco and ethanol. Brazil is also the second largest exporter of soybeans and corn, the fourth largest exporter of pork, and has the second largest cattle herd in the world. The country exports around 1,500 different agricultural products to over 200 markets in Europe, Asia, Africa, the Americas and the Middle East. Agriculture and livestock contribute to eight percent of Gross Domestic Product

(GDP), account for 30 percent of the country's exports and for 19 percent of its employment. Much of this agricultural growth has occurred over the last decade, and much of it has taken place in the Brazilian savanna, known as the Cerrado biome.

Sectoral and institutional Context

Brazil has developed a suite of sector-specific greenhouse gas (GHG) mitigation actions that it estimates will result in a reduction of 36.1 to 38.9 percent below a projected baseline by 2020. During the 2009 15th Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC) in Copenhagen, Brazil announced its voluntary targets, followed by a communication of its Nationally Appropriate Mitigation Actions (NAMAs) to Annex II of the Copenhagen Accord. In December 2009, shortly after the COP announcement, Brazil instituted this goal in Law No. 12.187/2009, establishing the National Policy on Climate Change (NPCC). The NPCC defines the objectives and guidelines for domestic operations in Brazil for dealing with climate change, and is the main reference point for Brazil's REDD+ type actions. In December 2010, the Brazilian Government approved Decree 7.390, which regulates the NPCC and establishes specific targets for reducing GHG emissions through sectoral plans and initiatives.

For the agriculture, forestry, and other land use (AFOLU) sector, these initiatives include the Action Plan to Prevent and Control Deforestation in the Amazon (PPCDAm), the Action Plan to Prevent and Control Deforestation and Fire in the Cerrado (PPCerrado), and the Low-Carbon Agriculture Plan (ABC Plan), including the following targets: (i) 80% reduction of deforestation in the Amazon compared to the 1996-2005 average (19,535 km²/yr); (ii) 40% reduction of deforestation in the Cerrado compared to the 1999-2008 average (15,700 km²/yr); (iii) recovery of 15 million ha of degraded pastures; (iv) expansion of crop, livestock and forestry integrated systems by 4 million ha; (v) expansion of no-tillage farming systems by 8 million ha; (vi) expansion of planted forests by 3 million ha; (vii) increase the treatment of animal waste by 4.4 million m3; and (viii) increased use of charcoal from planted forests in steelmaking.

In addition to these sector plans, the Forest Code is considered the most important land-use regulation in the country, given its national scope and the constraints it imposes on private property for the purpose of protecting public goods such as forests and other vegetation. The code requires farmers to preserve the most fragile areas of their property such as riparian forests, steep slopes, mountain tops, etc. (Permanent Preservation Areas – APP), with an additional obligation to ensure that part of the original native vegetation is maintained (Legal Reserves –RL). The percentage to be held as RLs varies from 80 % in the Amazon to 20-35 % in the Cerrado (depending on location), to 20 % in the rest of Brazil. Landowners must seek official authorization from the relevant state agencies to convert native vegetation (not already classified as RLs or APPs) to other uses permitted by law. Recent estimates show that the Cerrado is the biome with by far the vastest extent of native vegetation still available for legal deforestation, estimated at 88±6 million hectares, with a potential to emit 18±4 GtCO2e. The Forest Code includes the creation of the Rural Environmental Cadaster (Cadastro Ambiental Rural, CAR), which sets a deadline for farmers to register APPs and RLs on their farms, and to submit proposals for restoring their degraded areas if they are not compliant with the legislation.

The PPCerrado , launched in September 2010, aims to promote a sustained reduction in the rate of deforestation and forest degradation in the biome, as well as in the incidence of forest fires, through a coordinated set of actions organized around four major pillars: i) monitoring and control; ii)

protected areas and territorial planning; iii) sustainable production activities; and iv) environmental education. It is managed by an executive commission comprising representatives from 17 ministries and coordinated by the Casa Civil. It is based on the National Program for the Conservation and Sustainable Use of the Cerrado Biome - Sustainable Cerrado Program (PCS) , established by Decree No. 5.577/2005, which aims to promote conservation, recovery, and sustainable management of natural ecosystems in the Cerrado biome, as well as to revert the present negative socio-environmental impacts. Thus, the PPCerrado can be seen as a continuation of the PCS, although focused on the issue of deforestation and forest fires.

Brazil has an institutional, normative and policy structure with proven capacity for reducing deforestation and promoting the sustainable use of natural resources, and has set ambitious goals for reducing deforestation in the Amazonia and Cerrado biomes while increasing production and exports of cash crops and biofuels, and intensifying cattle production. In Amazonia, emissions peaked in mid-1990s and early 2000s, and have had a big drop since 2005 after the onset of the PPCDAm . Data from the National Institute of Spatial Research (INPE) to present these achievements in Amazonian deforestation reduction has supported the Brazilian position in multilateral forums such as the UNFCCC and backed bilateral agreements. The government wants to use its successful experience in controlling deforestation in Amazonia to increase control and protection of the Cerrado. However, while Brazil has set up in INPE a good monitoring infrastructure for land cover change in the Amazon, it lacks a similar information system for the Cerrado and the other biomes.

One of PPCerrado’s key challenges is to establish a monitoring system for deforestation and degradation in the Cerrado biome. Unlike in the Amazon, attempts to monitor deforestation and degradation in the Cerrado are relatively new. A current effort by the Ministry of Environment to monitor forest cover change in the Cerrado, has limited resources, and do not measure deforestation and degradation in real time and with the same level of accuracy as is the case in the Amazon.

Given the extent of land available for legal deforestation in the Cerrado and its potentially high productivity, it is expected that agriculture will continue to increase in the region for some time. New technologies have been developed for tropical agriculture, which allow for significant productivity gains without expanding into new Cerrado areas. The challenges are to: (i) promote a broader adoption of such practices , and (ii) enable full implementation of the Forest Code and compliance with APP and RL requirements. In this context, the generation and provision of spatially and temporally consistent information on forest resources and change is needed to underpin the elaboration and implementation of strategies for improving land-use sustainability and efficiency. These actions would contribute to the maintenance of natural ecosystems, together with their biodiversity and associated environmental services.

II. Proposed Development Objectives

The project development objective is to enhance Brazil's institutional capacity to monitor deforestation, provide information on fire risks and estimate related GHG emissions in the Cerrado.

III. Project Description

Component Name

Deforestation monitoring

Comments (optional)

The component will finance strengthening the monitoring of deforestation by:
(a) designing and implementing a deforestation monitoring system of the Cerrado, including annual deforestation mapping and near real-time deforestation detection based on the PRODES and DETER systems;
(b) training selected stakeholders on access, interpretation and use of the information generated by the deforestation monitoring system; and
(c) designing and implementing a data quality control system for the deforestation monitoring system for the Cerrado.

Component Name

Information systems on forest fire risk and GHG emissions estimation

Comments (optional)

The component will finance:
(a) Improving INPE's fire risk information system by designing, implementing and providing, inter alia, (i) localized fire risk warning barometers, (ii) applications for interactive fire risk updates, (iii) higher fire risk resolution maps, (iv) instruments for fire risk statistical analysis, and (v) automatic status updates.
(b) Adapting a fire ignition, spread and carbon model to the Cerrado, including the integration of daily-updated, on-line fire spread forecast information on INPE's Queimadas website, and applying such model in selected conservation units as a fire management tool.
(c) Adapting INPE's GHG emissions estimation system to the Cerrado; and
(d) Carrying out a program of hands-on training on the practical application of fire risk modelling tool

Component Name

Project management, monitoring and evaluation

Comments (optional)

The component will provide support for managing the technical and administrative aspects of the Project, including financial management, procurement, the carrying out of audits, overall Project coordination, monitoring and evaluation of Project implementation.

IV. Financing *(in USD Million)*

Total Project Cost:	9.25	Total Bank Financing:	0.00
Financing Gap:	0.00		

For Loans/Credits/Others	**Amount**
Borrower	0.00
Strategic Climate Fund Grant	9.25
Total	9.25

V. Implementation

The Research Development Foundation (Fundação de Desenvolvimento da Pesquisa - FUNDEP) will be the grant Recipient and Project implementing agency. FUNDEP is a private foundation with an extensive experience in project management. FUNDEP will sign a technical cooperation agreement with MCTI and the three other participating institutions (see below), establishing the Project governance structure and its administrative procedures. FUNDEP will adopt an Operational Manual satisfactory to the Bank. Its responsibilities include: (i) procurement and financial

administration; and (ii) monitoring and reporting (jointly with MCTI).

The Ministry of Science, Technology and Innovation (Ministério da Ciência, Tecnologia e Inovação - MCTI), through the Secretariat for Policies and Research Programs and Development (SEPED), will approve the Project's Annual Operational Plans (POA) and budgets and will be responsible for institutional coordination, implementation monitoring, quality assurance and results evaluation. SEPED will appoint a staff member as project director and contract a project coordinator/manager with extensive experience to run day-to-day operations.

A Project Institutional Coordination Committee (PICC) will be created through a MCTI Ministerial Ordinance (portaría), to ensure coordination between FUNDEP, MCTI and the three participating institutions: the National Institute for Space Research (INPE), the Federal University of Minas Gerais (UFMG) and the Federal University of Goiás (UFG). The PICC will be composed of representatives of all these institutions and also of the Ministry of Environment (MMA), to facilitate coordination at the level of the FIP Plan and PPCerrado. The PICC will be responsible for: (i) reviewing the Operational Manual of the Project (MOP); (ii) validating POAs; (iii) reviewing the physical and financial implementation progress reports; (iv) ensuring that project execution and results are timely, consistent and ultimately contribute to the attainment of the strategic objectives of the Project; and (v) providing strategic recommendations to strengthen project implementation.

INPE will be in charge of PRODES/DETER Cerrado monitoring system development and implementation (and related sub-products and systems), improvements to the fire risk information system, GHG emissions estimations system and related training and dissemination. UFMG will be in charge of developing and adapting the FISC model, its application in four conservation units and training in the use of the model. UFG will be in charge of the PRODES/DETER data quality control system.

Project execution. FUNDEP will administer the Project and MCTI will be in charge of technical supervision. INPE, UFMG and UFG will be responsible for delivering the Project products and results respectively assigned to each of them. Activity execution will proceed as follows: (i) the POA will be inserted into FUNDEP's management system, (ii) INPE, UFMG and UFG will prepare the technical specifications of the goods to be procured as well as the terms of reference of the consultants to be recruited; (iii) INPE, UFG, UFMG will request the purchase of goods and services and hiring of consultants through FUNDEP's system; (iii) SEPED will review and approve these requests directly in the system; and (iv) FUNDEP will carry out the procurement and execute payments.

VI. Safeguard Policies (including public consultation)

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment OP/BP 4.01		×
Natural Habitats OP/BP 4.04	×	
Forests OP/BP 4.36	×	
Pest Management OP 4.09		×
Physical Cultural Resources OP/BP 4.11		×
Indigenous Peoples OP/BP 4.10		×
Involuntary Resettlement OP/BP 4.12		×

Safety of Dams OP/BP 4.37		x
Projects on International Waterways OP/BP 7.50		x
Projects in Disputed Areas OP/BP 7.60		x

Comments (optional)

VII. Contact point

World Bank

Contact: David Tuchschneider
Title: Senior Rural Development Speci
Tel: 473-7118
Email: dtuchschneider@worldbank.org

Borrower/Client/Recipient

Name: Fundacao de Desenvolvimento da Pesquisa (FUNDEP)
Contact: Fabiano Siqueira
Title: Gerente de Projetos
Tel: 3134094200
Email: fabianosiqueira@fundep.ufmg.br

Implementing Agencies

Name: Ministerio da Ciencia, Tecnologia e Inovacao (MCTI)
Contact: Andrea Portela
Title: Assessoria de Capacitação e de Recursos
Tel: 6133177918
Email: aportela@mcti.gov.br

VIII. For more information contact:

The InfoShop
The World Bank
1818 H Street, NW
Washington, D.C. 20433
Telephone: (202) 458-4500
Fax: (202) 522-1500
Web: http://www.worldbank.org/infoshop