INTEGRATED SAFEGUARDS DATA SHEET
CONCEPT STAGE

Report No.: ISDSC4403

Date ISDS Prepared/Updated: 19-Aug-2013

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I. BASIC INFORMATION

A. Basic Project Data

Country:	Brazil		Project ID:	P143185	
Project Name:	Development of systems to prevent forest fires and monitor vegetation in cover in the Brazilian Cerrado (P143185)				
Task Team Leader:	David Tuchschneider				
Estimated Appraisal Date:			Estimated Board Date:	20-Feb-2013	
Managing Unit:	LCSAR		Lending Instrument:	Technical Assistance Loan	
Sector(s):	Public administration- Agriculture, fishing and forestry (50%), Forestry (50%)				
Theme(s):	Environmental policies and institutions (30%), Climate change (30%), Land administration and management (20%), Analysis of economic growth (20%)				
Financing (In USD Million)					
Total Project Cost:	9.15		Total Bank Financing:	0.00	
Total Cofinancing:			Financing Gap:	0.00	
Financing Source				Amount	
Borrower				0.00	
Strategic Climate Fund Grant				9.15	
Total				9.15	
Environmental Category:	C - Not Required				
Is this a Repeater project?	No				

B. Project Objectives

The development objectives of the project are to (i) generate and disseminate geospatial and on-time information about deforestation, forest degradation and land use in the Cerrado, Caatinga and Pantanal biomes; and (ii) develop an early-warning system to prevent forest fires at national scale. Although the BIP focuses on the Cerrado, the proposed project will be a joint exercise in the three biomes owing to the structural similarities and common major transition areas.

C. Project Description

The proposed US$9.25 million grant is part of the Brazil Investment Plan (BIP) and will support the Ministry of Science, Technology and Innovation (MCTI) in the development of systems to monitor changes in the vegetation cover and prevent forest fires in the Brazilian Cerrado, Caatinga and Pantanal biomes. The proposed project has three components:

Component 1: Design and Implementation of a model for monitoring changes in the vegetation cover. Estimated FIP funds: US$ 3.5 million.

The component will co-finance
(i) the revision of current monitoring methods and the production of a new Cerrado land cover and land-use map at 1:100.000 scale that can be periodically adjusted;
(ii) the development of a high resolution, spatially-explicit land-use, forestry and land-use change model to monitor vegetation cover and land use in the Cerrado, Caatinga and Pantanal biomes;
(iii) the testing of several scenarios examining the feedbacks between climate change, deforestation and agricultural expansion as well as several recent public policies (such as infrastructure investments of the Growth Acceleration Plan, MAPA plan to expand croplands, cattle ranching intensification and other measures promoted under the low carbon agriculture plan (ABC), forest restoration programs, as well as the National Climate Change plan, including the action of PPCerrado on fire regimes in the Cerrado biome .
(iv) the monitoring of degradation processes by evaluating the spectral-temporal signals for areas previously identified as planted pastures with high accuracy;
(v) the periodical measurement of the changes in vegetation coverage and land use; and
(v) the analysis and dissemination of the results for the information of stakeholders.

Component 2: Implementation of an early-warning system for the prevention of forest fires. Estimated FIP funds: US$ 4.5 million.

The second component will co-finance the revision and development of suitable protocols for producing and disseminating information that can guide fire prevention and fire fighting activities. Activities include:
(i)   Understanding fire history and the spatial and temporal changes in fire regime;
(ii)   Estimating regional behavior of fires (building the relationship with climate, land use, landscape structure);
(iii)   Fire probability and estimation of area at risk of burning;
(iv)   High- spatial resolution land-use, vegetation and fire dynamics model for the Cerrado Biome;
(v)   Training rural managers and landholders so that they can evaluate the risks (and losses) involved in using fire as a routine agricultural tool;
(vi)   Dissemination of information and training in the use of information related to fire alert systems that will also help to develop innovative instruments for reducing the risks of fire damage such as introducing forest insurance against fires and systems of regional rural prevention services for combating fires; and
(vii)   Information to facilitate the improvement of legislation and administrative processes for regulating the use of prescribed burnings and for attributing civil and criminal responsibility to landholders for fires caused by negligence, bad faith etc.

Component 3: Project Management and Implementation. Estimated FIP funds: US$ 1.25 million.

The FIP Brazil Investment Plan (BIP)

The BIP intends to promote sustainable land use and improve management of the productive landscape in the Cerrado. The BIP focuses on two thematic areas: Management and Use of Already Anthropized Areas and Generation and Management of Forest Information. The forest information focus area, includes two projects: (1) Development of Systems to Prevent Forest Fires and Monitor Vegetation Cover in the Brazilian Cerrado Project (P143185), supported by the World Bank and (2) Forest information to support public and private sectors in managing initiatives focused on conservation and valorization of forest resources, supported by IDB. Under the management of anthropized areas theme, the Bank is supporting Environmental regularization of rural lands (based on the Rural Environmental Registry) (P143334), and the Promotion of Low Carbon Agriculture in the Brazilian Cerrado Project (P143184).

D. Project location and salient physical characteristics relevant to the safeguard analysis (if known)

Brazil's territory contains six continental biomes: Amazon, Cerrado, Pantanal, Atlantic Forest, Caatinga and Pampa. The proposed Project will focus on Cerrado, Pantanal and Caatinga biomes, covering almost 32% of the country or 3 million km2.

The proposed Project will produce information by monitoring vegetation cover and land use similar to that already produced for the Brazilian Amazon forest. In the case of the forest fire early-warning system, the focus of the project will be on a national scale, concentrating mainly on the three above-mentioned biomes and on the Amazon, given that these are the regions where forest fires are most frequent.

The information generated by this project will complement that obtained in the Amazon biome (and vice versa). The responses to different policies and instruments deployed in the forest and land-use sectors to tackle climate change depends on having an understanding of the dynamics of vegetation cover and land-use throughout the entire national territory so that the effective reduction of emissions can be obtained nationally.

E. Borrowers Institutional Capacity for Safeguard Policies

The Brazilian Government has advanced environmental laws, reflecting a political culture of strong environmental protection. The Brazilian Government has also shown adequate procedures and capacity to identify and mitigate impacts under Bank funded operations. The Client will prepare a operation manual for the Project which will provide overall guidance on unexpected environmental and social issues that could arise during Project implementation, according with the principles and guidelines of Banks environmental and social safeguard policies.

F. Environmental and Social Safeguards Specialists on the Team

Alberto Coelho Gomes Costa (LCSSO)

Maria Bernadete Ribas Lange (LCSEN)

II. SAFEGUARD POLICIES THAT MIGHT APPLY

Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/ BP 4.01	No	The proposed Project is a conservation Project, and it was assigned environmental Category C. The project will focus on producing maps, digital data and information, monitoring reports, and training activities. As such, there are no

| | | investments in physical works and the activities of the project will not have significant impacts. No further EA action will be required during the preparation. The expected indirect positive impacts expected are: (i) the improve environmental management in the Cerrado, Pantanal and Caatinga biomes; and (ii) suitable protocols for producing and disseminating information that can guide fire prevention and firefighting activities. The contribution of the project to a transformational impact derives from: (i) the availability of timely official good quality information linked to the forest inventory, which helps to measure deforestation and forest degradation while enabling GHG emissions from these processes in the Cerrado, Caatinga and Pantanal biomes to be properly calculated; and (ii) the development of an early warning fire prevention alarm system for providing innovative public and private services and instruments to reduce forest fires and the damage caused by fires to communities, the environment and economic activities. The Operation Manual to be prepared by the Recipient should provide guidance on unexpected environmental and social issues that could arise during Project implementation, according with the principles and guidelines of Banks environmental and social safeguard policies. "Slash and burn" agriculture is a common practice among small landholders in the Cerrado due to cultural tradition, lack of access to other technological alternatives and the shared understanding of the use of fire in land preparation as an effective technique and a practical means for achieving various purposes. These include: pasture renewal, clearing of land to eliminate crop residues, increasing availability of nutrients in the soil and, consequently, of its productive capacity, reducing the incidence of pests and diseases, spending on labor for land clearing, and reducing production costs, among others. However, damage is also caused by fires in agricultural production in the Cerrado, ranging |

from the accidental burning of pastures and crops, to the destruction of improvements such as houses, fences, equipment, and protected areas. In the Brazilian Cerrado, the actions taken for forest fire prevention and management are primarily focused on the strengthening of local capacity to prevent and control fires, as well as research and education. They include awareness raising campaigns, public mobilization and partnership building, support to controlled fires, and the establishment of participatory systems of surveillance and communication. Thereby, they have the potentials of reducing the impact of this practice to acceptable levels and bringing about a change of attitude toward forest fires without causing adverse socioeconomic impacts. Additionally, it shall be emphasized that the new Brazilian Forest Code (Law 12651/2012, art. 38 §2) allows "Slash and burn" practices carried out by traditional and indigenous populations.

During implementation, the Bank team would supervise the project's activities, ensuring that implementation activities are consistent with Category C. Environmental and social supervision during project implementation should provide technical assistance to enhance effectiveness of land use planning and management.

Stakeholder consultations. The proposed consultation process was a two-stage process. Several rounds of consultations were held with a wide range of stakeholder to discuss the concept of the Brazil Investment Plan. These took place from May 2011 to March 2012, and included several meetings in Brasilia with representatives from the States of the Cerrado biome.

Arrangements for involvement and consultation process were coordinated by the Environment Ministry (MMA), with participation of the Ministry of Agriculture, Livestock and Food Supply (MAPA), the Ministry of Science, Technology and Innovation (MCTI), the Ministry of Finance (MF), the National Indigenous Foundation (FUNAI), and the Brazilian Forest Service (SF B).

In addition to a number of informational

sessions held since the Brazil Investment Plan scoping mission (May 2011), the plan included direct and online (via the internet) consultations. This process involved public and private sector representatives interested in the main themes addressed in the BIP and who are active in the geographical area targeted by the intervention. Thus, representatives of the private sector, academia, NGOs, social movements and State environmental agencies, as well as indigenous peoples and traditional communities were consulted. This process has provided inputs for defining the project scope.

 The second phase of the consultation process has discussed specific FIP projects, including this proposed project. This consultation phase was held in Brasilia on January 30 and 31, 2013. This phase was focused on rural civil society organizations, environment agencies, and local communities. Project approach and activities proposed have received broad support by state governments, producers' organizations, and local communities. Additionally, meetings with Government agencies and Universities to discuss the project scope are being held as part of project preparation. So far, as a result of these meetings it was agreed:

(i)   the Project will adopt a mechanism to keep stakeholders fully informed of FIP and each project implementation activities;

(ii)   institutions were identified as potential partners Among them, were mentioned: Cemaden/MCTI (the National Centre for Monitoring and Alert of Natural Disasters at the Ministry of Science, Technology and Innovation - MCTI), Prevfogo/Ibama (the national center for fire prevention and control at the Brazilian Federal Environmental agency – Ibama), ICMBio (Brazilian Agency for Protected Areas), Cerrado NGO's network (Rede Cerrado), Conacer (Cerrado's National Commission);

(iii)   the analysis and dissemination of results for the information of stakeholders needs to be broadly promoted.

The project design will incorporate these agreements. The proposed monitoring system/

		platform must be designed with a multisensory and multiscale approach for various objectives and many institutions, functioning as a command and control instrument but also generating information to management and assessment of land use planning in the near and long terms.
Natural Habitats OP/BP 4.04	TBD	The preliminary environmental screening indicates there is no potential for conversion or degradation of critical or other natural habitats. The Cerrado biome is one of the world's biodiversity hotspots. The Cerrado has the richest flora among the world's savannas (>7000 species) and high levels of endemism. Species richness of birds, fishes, reptiles, amphibians, and insects is equally high, whereas mammal diversity is relatively low. Deforestation rates have been higher in the Cerrado than in the Amazon rainforest. Currently circa 7.2% of Cerrado biome is declared as protected areas. Approximately 48% of the Cerrado has been converted into pasture and agricultural lands over the past 50 years. Some of Cerrado vegetation characteristics, as presence of a grass layer ignitable during the dry season, make this vegetation extremely fire prone. Depending on frequency fire can damage the vegetation structure compromising biodiversity and ecological patterns functioning and maintenance of ecological communities. In the Cerrado biome fire is generally used to clear land. Flames caused by farmers setting fire to pastures to induce regrowth in the dry season often get out of control and spread over large areas. These fires can also affect Protected Areas, Indigenous Lands, Areas of Environmental Preservation and Legal Reserves. Forecasts of climate change scenarios indicate an increased occurrence of fires, not only as the result of longer dry seasons but also due to the reduction of intervals between periods of extreme drought (the cause of the majority of large fires in the tropics).

The Brazilian Government has been improving its detection system for forest fires and forest deforestation since the late 1980s. The National |

		Institute for Space Research (INPE) currently provides data on prescribed burning and forest fires. However, the available data is based on hotspots and does not permit burned area calculations, which would enable more precise and accurate calculation of associated GHGs emissions. The proposed project is focused on the most modern way of monitoring and warning of forest fires, using fire forecasting models. These help to understand the main temporal, spatial and climatic factors that contribute to fires starting and can therefore be employed to minimize impacts locally. Using these forecasting models to predict flame-spread, risk maps can be generated at the pre-fire stage. These are vital tools in any early warning forest fire prevention system. The system can be coupled with the monitoring of vegetation cover and greenhouse gas emission models to provide estimates of emissions and to assess post-fire damage (e.g. the extent of the burned area, type of vegetation affected etc). Models designed to assess smoke-spread can also contribute to prior identification of the areas that could be damaged by fire, thus supporting decision-making process and possibly reducing the impact of such events. The monitoring system to be implemented under the proposed Project should lead to positive impacts on natural habitats, including protected areas, such as monitoring of vegetation cover and greenhouse gas emission models to provide estimates of emission and to assess post-fire damage. The proposed models to assess smoke-spread could also contribute to prior identification of the areas that could be damaged by fire, thus supporting decision-making process and possibly reducing the impacts of such events.
Forests OP/BP 4.36	Yes	This policy is being triggered as the information generated by the project will be used to implement existing fire management regimes for forests as well as introduce new management policies and methods. The monitoring system to be implemented under the proposed Project should lead to positive impacts on the health of forests, such as monitoring of

		vegetation cover and contribute to prior identification of the areas that could be damaged by fire, thus supporting decision-making process and possibly reducing the impacts of such events.
Pest Management OP 4.09	No	This policy is not being triggered because the proposed Project will not support the purchase or increased use of pesticides and other agricultural chemicals as defined under the policy. The proposed Project will not include any support for forest plantations or other agriculture land use, which would promote pest management.
Physical Cultural Resources OP/ BP 4.11	No	It is not expected that Project implementation activities would have any negative impact on archeological or physical cultural resources. Therefore, this policy is not being triggered at this time.
Indigenous Peoples OP/BP 4.10	TBD	During project preparation the team will determine if it is necessary to trigger this policy. Based on the preliminary assessment undertaken, only beneficial impacts are expected from the Project, insofar as a significant proportion of forest fires reach indigenous lands, particularly in the areas of transition between the Cerrado and the Amazon Forest. Capacity building and training for preventing and combating forest fires is one of the main activities included in the National Policy for Land and Environmental Management in Indigenous Lands (Decree 7,747/2012), which was intensely consulted with Indigenous Peoples all over the country and is broadly supported by them. However, at this stage, further information is needed on the extent of activities related with dissemination of information and training that are proposed to be co-financed under Component 2 to understand if they will make an effort or not to reach Indigenous Peoples and other traditional communities located in the three priority biomes. Inclusion of Indigenous Peoples among the target population will trigger this policy and an adequate Indigenous People Policy Framework will be prepared prior to appraisal according with the World Bank guidelines.

		The planned ESMF shall include an assessment of potential impacts of grant activities on traditional farming practices, such as shifting cultivation or "slash and burn," undertaken by indigenous peoples and traditional communities.
Involuntary Resettlement OP/BP 4.12	No	The Involuntary Resettlement policy is not triggered because the proposed Project will neither cause involuntary physical resettlement, nor negative impacts on livelihoods. The monitoring system and early alert system have no bearing on land property or use rights, including indigenous rights. Fire management regimes supported under the project would not lead to the restriction of land use practices in – or restriction of access to – protected areas.
Safety of Dams OP/BP 4.37	No	The proposed Project will neither support the construction or rehabilitation of dams nor will it support other investments related with services of existing dams.
Projects on International Waterways OP/BP 7.50	No	The proposed Project will not affect international waterways.
Projects in Disputed Areas OP/BP 7.60	No	The proposed Project will not be implemented in disputed areas.

III. SAFEGUARD PREPARATION PLAN

A. Tentative target date for preparing the PAD Stage ISDS: 17-Sep-2013

B. Time frame for launching and completing the safeguard-related studies that may be needed. The specific studies and their timing[1] should be specified in the PAD-stage ISDS:

Safeguard related studies that are needed will be determined before the end of June 2013. All studies will be completed by September 15, 2013

IV. APPROVALS

Task Team Leader:	Name: David Tuchschneider	
Approved By:		
Regional Safeguards Coordinator:	Name:	Date:
Sector Manager:	Name: Laurent Msellati (SM)	Date: 27-Aug-2013

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[1] Reminder: The Bank's Disclosure Policy requires that safeguard-related documents be disclosed before appraisal (i) at the InfoShop and (ii) in country, at publicly accessible locations and in a form and language that are accessible to potentially affected persons.