



Project Information Document/ Integrated Safeguards Data Sheet (PID/ISDS)

Concept Stage | Date Prepared/Updated: 30-Aug-2017 | Report No: PIDISDSC23043

BASIC INFORMATION

A. Basic Project Data

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Country Brazil	Project ID P164602	Parent Project ID (if any)	Project Name FIP: Brazil Investment Plan: Integrated Landscape Management in the Cerrado Biome Project (P164602)
Region LATIN AMERICA AND CARIBBEAN	Estimated Appraisal Date Feb 05, 2018	Estimated Board Date Sep 20, 2018	Practice Area (Lead) Environment & Natural Resources
Financing Instrument Investment Project Financing	Borrower(s) Brazil - Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)	Implementing Agency Ministry of Agriculture, Livestock, and Food Supply (MAPA), Serviço Nacional de Aprendizagem Rural, Ministry of Environment / Brazilian Forest Service, EMBRAPA - Cerrado	

Proposed Development Objective(s)

The Project will assist landholders in implementing the Forest Code (Law 12,651/2012) and promote low carbon emissions agriculture technologies; recovery of degraded pastureland and implementation of integrated crop-livestock-forestry systems under Low Carbon Emissions Agriculture Plan (ABC Plan) in selected municipalities.

Financing (in USD Million)

Financing Source	Amount
Climate Investment Funds	25.00
Total Project Cost	25.00

Environmental Assessment Category B-Partial Assessment	Concept Review Decision
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Have the Safeguards oversight and clearance functions been transferred to the Practice Manager? (Will not be disclosed)

No

Other Decision (as needed)

B. Introduction and Context

Country Context

1. In 2015, the Brazilian government announced at the United Nation Climate Conference in Paris the intended Nationally Determined Contribution (NDC) to the global effort of mitigating climate change. The NDC calls for reducing GHG emissions by 37 percent below 2005 levels by 2025 and 43 percent by 2030. The NDC includes a combined target of restoration and reforestation of 12 million hectares (7 million hectares of tree plantation plus 5 million hectares of restoration), along with zero net emissions from land-use change, zero illegal deforestation and other land-based targets by 2030¹.
2. The NDC reaffirms the National Plan on Climate Change and the National Policy on Climate Change, Law 12.187/2009 (*Política Nacional de Mudanças Climáticas*, PNMC). The PNMC, establishes specific targets for reducing GHG emissions, including: (i) 40 percent reduction of deforestation in the Cerrado compared to the 1999-2008 average; (ii) recovery of 15 million hectares (ha) of degraded pastures; (iii) expansion of crop, livestock and forestry integrated systems in 4 million ha; (iv) expansion of no-tillage farming systems in 8 million ha; and, (v) expansion of cultivated commercial forests in 3 million ha. The NDC also states that Brazil will comply with its Native Vegetation Protection Law (Law 12.651/2012, the Forest Code).
3. Brazil's greenhouse gas emissions (GHG) in 2014 dropped 3.8 percent from a year earlier². In fact, the bulk of Brazil's emissions comes from land-use change and forestry (LUCF). In 2014, 33 percent of Brazil's GHG net emissions came from the agricultural and livestock sector, and 18 percent from LUCF-sector activities. Agricultural and livestock activities represent a significant source of GHG emissions in Brazil, mainly due to methane (CH₄) emissions from enteric fermentation in animals, accounting for 87 percent, and nitrous oxide (N₂O) emissions from agricultural soils (mostly from soil fertilization and animal waste disposal³).
4. These recent estimates also indicate that the Cerrado Biome, the second-largest biome in Brazil and South America, with 204 million ha, represented 38 percent of national GHG emissions from the LUCF sector, in 2014. In the same year, the Amazon Biome represented a negative contribution of 4 percent.
5. Twenty-two percent of Brazil's population (42.7 million) lives in the Cerrado, compared to 14 percent who reside in the rural areas. Distributed over 11 Federative Units, the Cerrado Biome is mostly occupied by private landholdings and is responsible for more than half of Brazil's soybean production. Agriculture occupies around 22 million ha, including mechanized farming on large tracts of land and the widespread use of chemical inputs to correct soil acidity and

¹ Brazil's INDC restoration and reforestation target – Analysis of INDC land-use target. The World Bank. July 2017.

² Análise das emissões de GEE Brasil (1970-2014) e suas implicações para políticas públicas e a contribuição brasileira para o acordo de Paris. Documento Síntese. Setembro 2016. Observatório do Clima. <http://seeg.eco.br/wp-content/uploads/2016/09/WIP-16-09-02-RelatoriosSEEG-Sintese.pdf>.

³ Ministério da Ciência, Tecnologia e Inovação (MCTI), 2016. Estimativas anuais de emissões de gases de efeito estufa no Brasil. 3a edição. Available at: <http://gvces.com.br/arquivos/177/EstimativasClima.pdf>.

enhance fertility. There are around 50 million heads of cattle, almost 33 percent of the national herd, on 54 million ha. Fifty to sixty percent of these hectares are degraded to a greater or lesser extent⁴.

6. Thus, the major challenge in Cerrado Biome management is to meet the ever-growing demand for agricultural products while conserving natural vegetation, providing critical ecosystem services, and maintaining rural livelihoods.

Sectoral and Institutional Context

Alignment with Climate Change Policies

7. The main reference points for Brazil's REDD-plus type actions are the National Plan on Climate Change, launched by Brazil in 2008, and the National Policy on Climate Change Law (NPCC), enacted in 2009. The set of mitigation actions stipulated by the NPCC to achieve this goal include reducing the rates of deforestation by biome, disseminating sustainable technologies in the agricultural sector, increasing energy efficiency and renewing the steel manufacturing sector. The NPCC stipulates the launch of the Action Plan to Prevent and Control Deforestation and Fires in the Cerrado Biome (PPCerrado). This plan is complementary to the Native Vegetation Protection Law (Law 12.651/2012, the Forest Code), which requires rural property owners both to maintain the most fragile areas (Permanent Preservation Areas – APP), and to ensure the preservation of part of the original native vegetation (Legal Reserve – RL) in their properties. The Forest Code includes the Rural Environmental Cadaster (CAR), a strategic database for controlling, monitoring and combating deforestation in Brazil, and for the economic planning of rural private lands (see: www.car.gov.br)⁵.
8. In the context of the NPCC, the Ministry of Agriculture, Livestock and Food Supply (MAPA) developed the "Sector Plan for Mitigation and Adaptation to Climate Change for the Consolidation of a Low Carbon Emissions Agriculture Economy", also known as the ABC Plan. Its overall objective is to promote the reduction of GHG emissions and the increase of carbon sequestration in agriculture by improving efficiency in the use of natural resources, increasing the resilience of production systems and enabling adaptation of the agricultural sector to climate change. The plan is expected to reduce pressure on forests by increasing agricultural productivity and promoting sustainable management practices.
9. It is important to note that the implementation of the Forest Code and the Low Carbon Agriculture Plan are priorities for the Federal Government. Thus, the proposed Project's institutional sustainability will be guaranteed through the implementation of the policy framework to improve the management of the Cerrado Biome.

Alignment with country Investment Plan

10. The Forest Investment Program (FIP) is a targeted program under the Strategic Climate Fund (SCF), one of the two Climate Investment Funds (CIF) managed by the World Bank. The SCF provides financing for developing or up-scaling activities that seek to respond to specific challenges related to climate change or to provide a sector response through directed programs.
11. The FIP was designed to achieve four specific objectives: (i) initiate and facilitate steps towards transformational change in developing countries' forest related policies and practices; (ii) pilot replicable models to generate understanding and learning of the links between the implementation of forest-

⁴ <https://www.embrapa.br/busca-de-noticias/-/noticia/2361250/embrapa-mapeia-degradacao-das-pastagens-do-cerrado>.

⁵ Brazil's INDC restoration and reforestation target – Analysis of INDC land-use target. The World Bank. July 2017.



related investments, policies and measures and long-term emissions reductions from REDD-plus; (iii) facilitate the leveraging of additional financial resources for REDD, including through a possible UNFCCC forest mechanism; and (iv) provide valuable experience and feedback in the context of the UNFCCC deliberations on REDD.

- 12. The Brazil Investment Plan, (FIP-BIP), approved by the FIP Subcommittee in May 2012, seeks to promote sustainable land use and forest management improvement in the Cerrado Biome in order to reduce pressure on remaining forests, reduce GHG emissions and increase carbon dioxide (CO2) sequestration. As such, it is expected to make a positive contribution to Brazil's current REDD+ efforts. For more information, see FIP: Brazil Investment Plan at <https://www.climateinvestmentfunds.org/cifnet/investment-plan/brazils-fip-investment-plan>.
- 13. The FIP-BIP adopts the integrated landscape initiative (ILI) approach. This is defined as projects, programs, platforms, initiatives, or sets of activities that: (i) explicitly seek to simultaneously improve food production, biodiversity or ecosystem conservation, and rural livelihoods; (ii) work at a landscape scale and include planning, policy and management, or support activities at this scale; (iii) involve intersectoral coordination or alignment of activities, policies or investments at the level of ministries, local government entities, farmer and community organizations, nongovernmental organizations (NGOs), donors, and/or the private sector; and (iv) are highly participatory and support adaptive, collaborative management within a social learning framework (Milder, Hart, Dobie, Minai, and Zaleski 2014, 10).
- 14. The BIP's specific objectives are to: (i) improve environmental management in previously converted areas in the Cerrado Biome, and (ii) produce and disseminate environmental information at the biome scale. The BIP comprises coordinated actions by the Ministry of the Environment (Ministério do Meio Ambiente, MMA), the Ministry of Science, Technology & Innovation (Ministério da Ciência, Tecnologia e Inovação, MCTI), and the Ministry of Agriculture, Livestock, and Food Supply (Ministério da Agricultura, Pecuária e Abastecimento, MAPA). At present, the BIP has two thematic areas and four projects, which are under implementation as a coordinated set.

Theme 1: Management and Use of already anthropized areas

Improvement on access by producers to resources on offer for Low Carbon Emission Agriculture
Implementation of the Rural Environmental Cadastre in the entire biome

Project 1.1- Environmental regularization of rural lands (based on based on the Rural Environmental Registry, CAR)

Loan: US\$32.5million
MDB: IBRD

Project 1.2- Sustainable production in areas previously converted to agricultural use (based upon the ABC Plan)

Grant:US\$10.72million
MDB: IBRD

Theme 2: Generation and Management of Forest Information

Generation and availability of spatially and temporally consistent environmental information = forest inventory, remote sensing monitoring and early warning system for forest fires

Project 2.1- Forest information to support public and private sectors in managing initiatives focused on conservation and valorization of forest resources

Grant:US\$16.55million
MDB: IDB

Project 2.2- Implementation of an early-warning system for preventing forest fires and a system for monitoring the vegetation cover.

Grant:US\$9.25million
MDB: IBRD

- 15. The Project Sustainable Production in Areas Previously Converted to Agricultural Use Project (Under the Low Carbon Emissions Agriculture Plan) (P143184), under implementation, aims to test and evaluate the effect of training activities and technical assistance on the adoption of technologies with low carbon emission by participating rural producers in Brazil's Cerrado region. The Environmental Regularization of Rural Lands Project (P143334), in early stage of implementation, supports activities in 47 selected municipalities, within this 9 States and the Federal District. Although these projects will be implemented in a complementary way, each one has its own pace, focus area, and strategy.

16. The Brazil Investment Plan: Integrated Landscape Management (ILM) in the Cerrado Biome Project will be part of the Brazil Investment Plan (BIP).
17. The Project will act in synergy with the other BIP projects and contribute to the achievement of objectives of both the National Policy on Climate Change and the Plan to Prevent and Control Deforestation and Fires in the Cerrado, furthermore for promote the environmental compliance of the rural properties assisted by this project will be full compliance with Brazilian Forest Code rules, and the expectative is the income increase of the rural properties especially producer of dairy and beef cattle.

Relationship to CPF

18. The objectives of the proposed Project are fully in line with the current Country Partnership Framework for the Federative Republic of Brazil (CPF FY18-23), discussed by the Executive Directors on July 13, 2017 (Report No 113259 BR), under the Focus Area 3: Inclusive and Sustainable Development, objective: support the achievement of Brazil's NDC focusing particularly on land use.
19. As mentioned in the CPF, Brazil committed to a 43 percent reduction in greenhouse gas emissions at the Paris Climate Conference in 2015. In doing so, Brazil affirmed its leadership in the international environmental agenda. However, the current economic crisis is rekindling conflicts over land and natural resources, especially in Brazil's Amazon and Cerrado biomes, highlighting the challenges the country faces in meeting its NDC commitments.
20. Through this proposed project, the WBG will work with the government to further expand the use of low carbon agriculture (ABC) technologies, as well as enhance environmental governance and landscape management. It will also continue to support strengthening the Rural Environmental Cadaster (CAR) at the federal and subnational level.
21. In this context, the Project will increase the Government's capacity to manage the Cerrado Biome's natural resources on a sustainable path that may protect the interests of future generations and promote social resilience in face of climate-change envisaged effects. Also, fostering a sustainable growth of agriculture sector, given its economic importance and a growing global food demand.

C. Proposed Development Objective(s)

22. The Project will assist landholders in implementing the Forest Code (Law 12,651/2012) and promote low carbon emissions agriculture technologies; recovery of degraded pastureland and implementation of integrated crop-livestock-forestry systems under Low Carbon Emissions Agriculture Plan (ABC Plan) in selected municipalities.

Key Results (From PCN)

23. The transformation of agricultural production from one of the greatest threats to global biodiversity and ecosystem services to a major contributor to ecosystem integrity is unquestionably a key challenge of the Twenty-first century. In this scenario, the use of land and land resources plays a fundamental role in delivering national economic growth in Brazil, and will continue to do so in the future. Agriculture business sector leadership is imperative if Brazil is to continue its agricultural expansion and become more ecologically sustainable.

24. The solutions presented by the Climate Change National Policy and Forest Code are consistent with Brazilian economic growth needs, the long-term ecological future of Brazil, and ultimately the financial future of all who benefit from Brazil’s productive lands. In addition, incentives for increasing carbon stocks in vegetation provide by the Forest Code and Low Carbon Emissions Agriculture Plan are major impetus for a wide range of forest restoration interventions, as well as conservation of existing forests.
25. Overall, the proposed Project will help MMA and MAPA to implement the Low Carbon Emissions Agriculture Plan and the Forest Code.
26. Following FIP monitoring and report indicators, the following results are expected:

Theme/Indicator	Target
Theme: GHG emission reduction or avoidance /enhancement of carbon stocks	
Land area of landholdings where environmental registered in the CAR system	To be determined during preparation
Land area where low carbon agriculture technologies were adopted as result of the Project	
Theme: Livelihoods co-benefits	
Number of landholders provided with support to adopt ABC technologies - disaggregated by gender	To be determined during preparation
Number of landholdings with environmental liabilities provided with support to prepare and/or implement plans to rehabilitate degraded areas	To be determined during preparation
Number of people attending training courses and field days on Low Carbon Agriculture technologies	To be determined during preparation
Theme: Biodiversity and other environmental services	
Total area of Legal Reserves (RLs) and Areas of Permanent Preservation (APPs), inserted in the CAR system, with restauration practices as result of the Project	To be determined during preparation
Theme: Governance	
Partner institutions provided with capacity building to manage landscape approach	To be determined during preparation

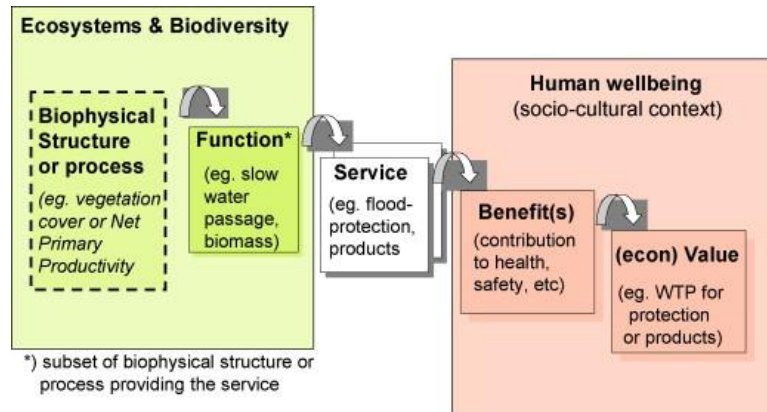
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Potential beneficiaries

27. The overall rural population in selected river basins is expected to benefit from Project implementation. The Project will bring benefits both for the government and for landholders. For landholders, the benefits include: (i) greater legal certainty: the ability to demonstrate environmental compliance; (ii) suspension of fines (in some cases); (iii) access to credit: after five years, i.e., in 2017 the official credit cannot be extended to landholdings not registered in the CAR; (iv) access to programs that promote environmental regulation (loans, grants and technical assistance for planting and restoring APPs and RLs); (v) input for better planning of a landholding’s land use; and (vi) recovery of degraded lands and increased productivity.
28. The Project would bring benefits both for the Government and for landholders. For landholders, the benefits include the following: (i) greater legal certainty: the ability to demonstrate environmental compliance; (ii) suspension of fines (in some cases); (iii) access to credit: after five years, i.e., in 2017 the official credit cannot be extended to landholdings not registered in the CAR; (iv) access to programs that promote environmental regulation (loans, grants and technical assistance for planting and restoring APPs and RLs); (v) input for better planning of a landholding’s land use; and (vi) recovering of degraded lands and increased productivity.

Potential to generate co-benefits

29. Improvement in social and economic well-being: Most of the estimated 5 million landholdings in Brazil are very small, and many produce at the subsistence level. Yet small-scale agriculture, which is known as “family agriculture⁶” in Brazil accounts for about 70 percent of the country’s food production and a significant share of food exports. This means that family agriculture has a strong potential to improve economic well-being, one of the main challenges facing Brazil. The Project will work closely with the landholders and supports its efforts to increase the productivity in ways that are sustainable and protective of the environment, enabling poor rural people to overcome poverty. As demonstrated by Groot at all the figure below summarizes the framework for linking ecosystem to human wellbeing⁷.



30. In addition, the Project is expected to increase job creation through the rural extension service⁸ and more labor-intensive technologies; increased capacity and knowledge retained at the farmer level for the application of improved agricultural, land use and management practices and production systems (i.e., ABC technologies and APP and RL reforestation).
31. Potential Gender-Related Co-benefits: Priority targeting of Project’s activities to small rural landholders increases its potential to mainstream gender and, consequently, to provide both men and women with opportunities to access all Project’s resources and services, proportional to the importance of the activity to their livelihoods. As usually happens, taking gender into account would involve a Project focus on women since women most often occupy a subordinate position in rural society and hold a multitude of productive, reproductive and domestic responsibilities that bring a burden on their time and reduce their agency and economic empowerment.
32. In the Cerrado Biome (as well as on the selected municipalities), women play a critical – although often unrecognized – role in the livelihood strategies and economy of poor rural households. Many women contribute labor and generate income through agroforestry and husbandry activities. Most of the women’s traditional production is: (i) often limited to marginal soils in rain- fed agricultural systems that are extremely susceptible to climate change impacts; (ii) reliant on their traditional knowledge of the biodiversity, non-timber forest products, seed varieties and drought- resistant species; and (iii) based

⁶ A family landholder and rural family entrepreneur is one who carries out activities in rural areas, simultaneously meeting the following requirements: (i) he or she does not hold, in any capacity, an area of up to four fiscal modules; (ii) he or she mostly uses the manual labor of his or her own family in the economic activities of his or her establishment or undertaking; (iii) he or she has a minimum percentage of household income arising from economic activities of his or her establishment or enterprise, i.e., those defined by the Executive Authority (wording of Law N° 12.512 of 2011); and (iv) he or she directs his or her establishment or undertaking with his or her family. Law 11.326/2006.

⁷ R.S. Groot; R. Alkemade, L. Braat, L. Hein, L. Willems, L. 2010. Challenges in integrating the concept of ecosystem services and values in landscape planning, management and decision making. Ecological Complexity. Vol 7. Issue 3.

⁸ Agricultural extension system is advisory and support services that render farming activities more productive and environmentally friendly and that help farmers to overcome poverty and/or improve productivity.

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on techniques of low-cost farming and land management practices such as the use of compost, agroforestry, rotational grazing or small-scale conservation tillage.

33. Mainstreaming gender at this Project would involve adapting each Project activity to take gender specificities into account rather than designing separate activities for women and men. Women may particularly benefit because: (i) the Project is expected to contribute to biodiversity conservation and enhancement as well as to forest restoration and management and women's traditional production may directly and largely benefit from these outcomes; and (ii) when implementing the low- carbon pathways for agricultural development, the Project is expected to encourage the participation of small farmers in low-carbon agriculture by making training venues, agricultural extension services, and credit accessible to them and, consequently, also to poor rural women who hold an experience with "climate- smart agriculture" that would no longer be neglected. The Project would include gender analysis in design and gender-sensitive monitoring and evaluation indicators to ensure that Project activities incorporate the needs and interests of women as well as men, allows for women and men participation and benefits, do not disproportionately increase the workload of women, nor negatively affect women's control over resources and technologies, contributing to gender equity.
34. Protection of biodiversity: The Cerrado biome has expressive biodiversity and is one of the most endangered biomes in Brazil. It covers nearly one quarter, or 2.04 million km², of the country, with a mosaic of 23 types of vegetation composed of tropical savannas, woodlands, grasslands and forests⁹. It covers a large area with significant carbon stocks and water resources, and with substantial biodiversity. The Cerrado is home to 935 species of birds and nearly 300 mammals, including such endangered species as Giant anteater (*Myrmecophaga tridactyla*); Jaguar (*Panthera onca*); Maned wolf (*Chrysocyon brachyurus*), and pampas deer (*Ozotoceros bezoarticus*). Through the implementation of this Project the main foreseen co-benefits are: (i) enhancement of the biodiversity of riparian areas and legal reserves; (ii) creation and enhancement of ecological corridor connectivity along the rivers; (iii) enhanced biodiversity conservation through reduced loss of native vegetation cover in the selected areas; (iv) combined sustainable cattle ranching and farming with conservation of rural landscapes; and, (v) improvement of soil and erosion control. Moreover, conservation of biodiversity in agriculture landscapes embraces all three elements of agricultural biodiversity defined by the Convention on Biological Diversity: genetic diversity of domesticated crops, animals, fish and trees; diversity of wild species on which agricultural production depends (such as wild pollinators, soil micro-organisms and predators of agricultural pests); and diversity of wild species and ecological communities that use agricultural landscapes as their habitat (Convention on Biological Diversity 2002).
35. Strengthened resilience of ecosystems, with associated ecosystem services: As the second largest biome in South America, Cerrado Biome is home to the headwaters of three major South American river basins: the Tocantins-Araguaia, the Paraná-Plata and the São Francisco. The Central position of the Cerrado means that its biome overlaps with others, such as the Atlantic and Amazon Forests, Caatinga and the Pantanal. The Cerrado is highly seasonal, with marked wet and dry seasons and rainfall between 800-1,800 mm. Approximately 90 percent of the annual rainfall occurs during the rainy season (between October and April).
36. As mentioned in the Brazil Investment Plan, changes in the Cerrado landscape have already increased wet season river discharge (Costa et al. 2003¹⁰), where pastures and crops have replaced the deep rooted native vegetation that can tap water from deep soil layers (Oliveira et al. 2005¹¹, Ferreira et al.

⁹ Conservation International considers the Cerrado Biome one of the world's 34 biodiversity hotspots.

¹⁰ Costa, MH, A. Botta, A. Cardille, J.A, 2003, 'Effects of large-scale changes in land cover on the discharge of the Tocantins River, Southeastern Amazonia', *Journal of Hydrology*, vol. 283, no. 12, pp. 206-217.

¹¹ Oliveira, RS, Bezerra, L, Davidson, EA, Pinto, F, Klink, CA, Nepstad, DC, & Moreira, A, 2005, 'Deep root function in soil water dynamics in cerrado savannas of central Brazil', *Functional Ecology*, no. 19, pp. 574-581.



200612). The regional CO₂ and energy balances have also changed (Potter et al. 200913). Well-managed cultivated pastures may provide enough organic carbon to maintain soil carbon contents (Roscoe et al. 200114; Santos et al. 200415). However, most of the pastures are in an advanced stage of degradation and C inputs from degraded low-productive pastures may be too low to sustain the high soil carbon storage under native Cerrado (100 Mg C ha⁻¹ for 100 cm soil depth).

37. In 2012, 37 percent of Brazil GHG emissions originated from the Agriculture and Livestock sector and 15 percent from Land Use Change and Forestry activities (LUCF) sector. Agriculture and livestock activities represent a significant source of GHG emissions in Brazil, mainly due to CH₄ emissions from enteric fermentation in animals, 55.90 percent and N₂O emissions from agricultural soils (mostly from soil fertilization and animal waste deposition¹⁶). These recent estimates also indicate the Cerrado Biome represents 62 percent of national GHG emissions originated from the LUCF sector. In 2012, Amazon Biome represents 18.7 percent of the LUCF sector in the country. In this context, the regeneration of degraded pastures and integrated crop-livestock-forestry management would contribute to the maintenance of natural ecosystems, together with their biodiversity and associated environmental services.

D. Concept Description

38. Central to this proposed Project will be integrated landscape management in which conservation and production units within the agricultural matrix are managed jointly for long-term sustainability.
39. Integrated landscape management is an approach to forest restoration that seeks to balance human needs with those of biodiversity, thus aiming to restore a range of forest functions and accepting and negotiating the tradeoffs among them. Landscape management¹⁷ not only allows a better balance between native and human-dominated areas, but can also define and impose a new landscape configuration that makes it possible to take maximum advantage of the services that landscapes can provide, whether these are targeted to agricultural production, biodiversity conservation, provision or regulation services, or a combination of those services (Metzger and Brancalion 2013¹⁸).
40. The Integrated Landscape Management is an approach to forest restoration that seeks to balance human needs with those of biodiversity, thus aiming to restore a range of forest functions and accepting and negotiating the trade-offs between them. A 'landscape' is a socio-ecological system that consists of a mosaic of natural and/or human-modified ecosystems, with a characteristic configuration of topography, vegetation, land use, and settlements that is influenced by the ecological, historical,

¹² Ferreira, JN, Bustamante, MMC, Garcia-Montiel, DC, Caylor, KK, Davidson, EA, 2007, 'Spatial variation in vegetation structure coupled to plant available water determined by two-dimensional soil resistivity profiling in a Brazilian savanna', *Oecologia*, no. 153, pp.417-430.

¹³ Potter, C, Klooster, S, Huete, AR, Genovese, V, Bustamante, MC, Ferreira, LG, Oliveira Jr, RC, & Zepp, R, 2009, 'Terrestrial carbon sinks in the Brazilian Amazon and Cerrado Region predicted from MODIS Satellite Data and ecosystem modeling' *Biogeosciences Discussions*, no. 6, pp. 1-23.

¹⁴ Roscoe, R, Buurmann, P, Velthorst, EJ, & Vasconcellos, CA, 2001, 'Soil organic matter dynamics in density and particle size fractions as revealed by the ¹³C/¹²C isotopic ratio in a Cerrado's Oxisol', *Geoderma*, no. 104, pp.185-202.

¹⁵ Santos, AJB, Quesada, CA, Silva, GT, Maia, JF, Miranda, HS, Miranda, AC, & Lloyd J, J, 2004, 'High rates of net ecosystem carbon assimilation by *Brachiaria* pasture in Brazilian cerrado' *Global Change Biology* no. 10, pp. 877-885.

¹⁶ Ministério da Ciência, Tecnologia e Inovação (MCTI), 2014. Estimativas anuais de emissões de gases de efeito estufa no Brasil. 2 edição. Available at: <http://qvces.com.br/arquivos/177/EstimativasClima.pdf>.

¹⁷ "Landscape means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors" (Council of Europe, 2000).

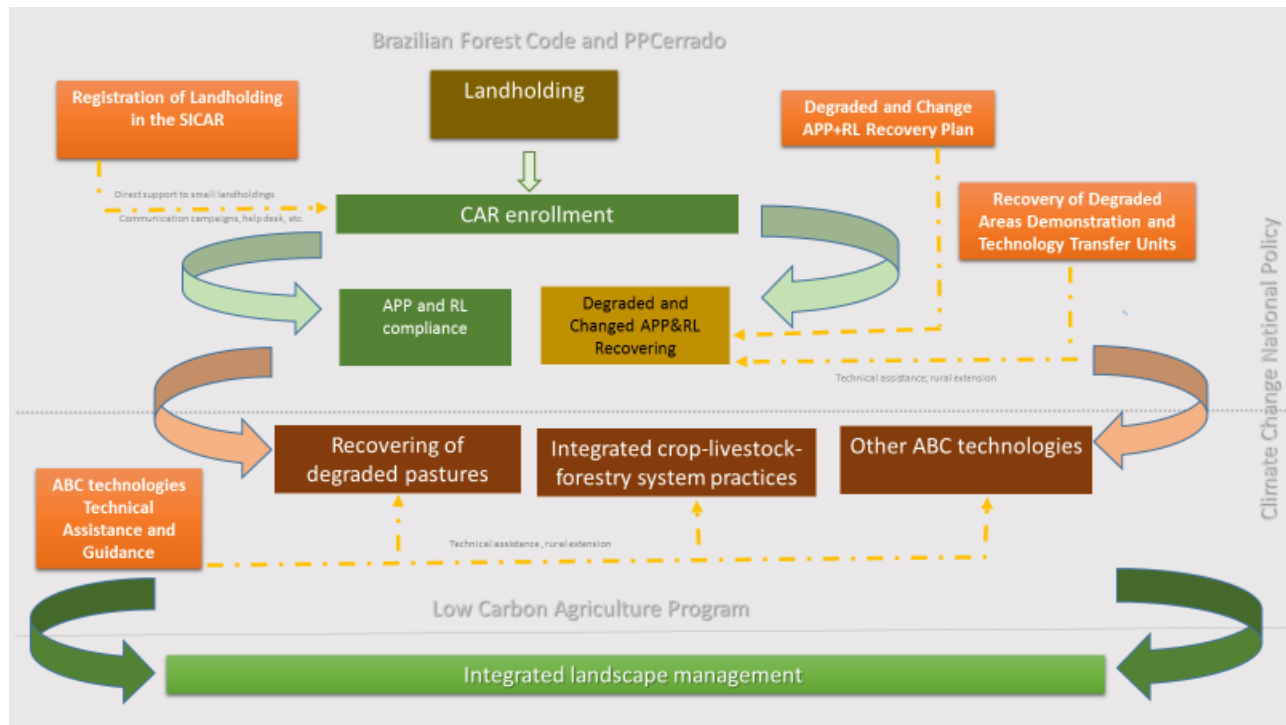
¹⁸ Metzger and Brancalion. 2013. Challenges and opportunities in applying a landscape ecology perspective in ecological restoration: a powerful approach to shape neolandscapes. *Natureza and Conservação* 11(2):103–107, December 2013.



economic and cultural processes and activities of the area. The mix of land cover and use types (landscape composition) usually includes agricultural lands, native vegetation, and human dwellings, villages and/or urban areas.

- 41. The elements of the proposed integrated landscape management are:
- 42. Improving the implementation of the environmental regularization of rural landholdings through the rural environmental cadaster enabling more effective supervision and monitoring of the deforestation and degradation of natural vegetation;
- 43. Restoration and protection of critical habitats within private landholdings (Permanente Protected Areas, APPs, and Legal Reserves, RLs), including re-establishment of biological and hydrological fluxes; reconnection of fragmented habitats; and restoration of multiple ecological process;
- 44. Promoting on-farm sustainable agriculture management, including restoration of degraded pastures and integrated crop-livestock-forestry system; and,
- 45. Promoting land use planning and integrating agriculture production with biodiversity conservation.
- 46. The figure below summarizes the Project's logical strategy. In this context, forest restoration and low-carbon emission agricultural practices not only allow a better balance between native and human-dominated areas, but can also define and impose a new landscape configuration that enables agricultural production, biodiversity conservation, carbon sequestration and provision of environmental services.

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- 47. In this context, forest restoration and low-carbon emission agricultural practices not only allow a better balance between native and human-dominated areas, but can also define and impose a new landscape configuration that enables agricultural production, biodiversity conservation, carbon sequestration and provision of environmental services.

Project Components

48. The Project would have three components: (i) Integrated Landscape Approach; (ii) On-Farm Landscape Mainstreaming; and (iii) project management and monitoring and evaluation.

Component 1: Integrated Landscape Approach

49. The aim of this component is to strengthen the capacity of implementing agencies which are responsible for pr obtain up-to-date environmental cadastral data that contain information about landholders, their landholdings, and their enrollment in the Rural Environmental Cadastre (Cadastro Ambiental Rural, CAR) system of the State Environmental Agencies, focused on 61 selected municipalities. Possible activities to be undertaken under this component are: (i) the preparation of thematic maps based on geoprocessed data; (ii) the conduction of communication campaigns to promote the integrate landscape management and mobilize key stakeholders in selected areas; (iii) the preparation of landscape plans

Component 2: On-Farm Landscape Mainstreaming

50. The aim of this component is to promote the recovery of degraded pastures and improve environmental management through practices aimed at improving production efficiency and environmental regularization compliance. Thus, technical support and assistance are unquestionably essential to effective conservation.
51. This component introduces a new strategy for technology transfer to landholders through field technicians trained in ABC technologies for the restoration of environmental liabilities and productive landholding management.
52. Restoration of degraded areas units will be implemented to help achieve sustainable forest management by providing specific information and expertise that can be shared among landholdings.
53. This component will be based on the experience of the demonstration units support by Brazilian Forest Service (Arboretum Program) and by the Brazilian Agricultural Research Corporation (Empresa Brasileira de Pesquisa Agropecuária, EMBRAPA) and rural extensions agencies on the benefited states. Its aim is to promote the dissemination and transfer of technology, as well as adequate physical structure that functions as autochthone seed warehouses and other inputs for the recomposition of native vegetation and recover degraded pastures, as well as work with the local traditional communities to carry out courses, training and supporting the organization of these communities to provide Implementation services and monitoring of degraded area recovery projects. All initiatives will be implemented for technical assistance and training in form of experiences that allow interventions to be carried out in areas of project performance, as well as in demonstration units.
54. The following activities are envisaged: (i) selection and training of technical supervisors who will be responsible for the training of field technicians and the provision of technical advisory support to landholders who participate in the Project; (ii) selection and training of field technicians for the provision of technical assistance to rural producers on ABC Plan technologies; (iii) the provision of technical assistance to landholdings for the implementation of ABC Plan technologies; (iv) implementation of Demonstration Units

Component 3: Project management, monitoring and evaluation.

55. The aim of this component is to support the Project's effective and efficient management and administration, monitoring and evaluation. This component will include the following activities: (i) technical coordination, monitoring and reporting; (ii) adequate financial management, procurement and auditing; (iii) the building of synergies between the Project and other projects under the BIP, as well as with other initiatives in the Cerrado Biome, with the aim of securing cost-effective solutions; and (v) financial and technical activities for project closure.

56. This component would finance studies, technical assistance, computers, training and operating costs, consultancies, travel, the purchase of limited equipment and operational materials, and the organization of events.

SAFEGUARDS

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

The Cerrado Biome, located in central Brazil, covers almost one quarter, or 2.04 million km², of the country, with a mosaic of 23 types of vegetation consisting of tropical savannas woodland, grasslands and forests. It is considered one of the world's 34 biodiversity hotspots by Conservation International.

The rapid expansion of agriculture in the Cerrado biome has caused the conversion of natural vegetation to alternative land uses (deforestation) and has also increased the use of slash-and-burn as an agriculture practice. The Cerrado had lost about 48% of its forest cover by 2010. Estimates indicate that deforestation in the Cerrado is proportionally more severe than that of the Amazon. Distributed over 11 States and 4 geopolitical regions (North, Northeast, Center-West and Southeast), the Cerrado Biome is mostly occupied by private landholdings.

The proposed Project would assist private landholders to implement the Forest Code (Law 12.651/2012) and promote low-carbon emission agricultural technologies, including the recovery of degraded pasture land and the implementation of integrated crop–livestock–forestry systems under the Low-Carbon Emission Agricultural Plan (Plano ABC–Agricultura de Baixa Emissão de Carbono) in selected municipalities. The Project would scale up the BIP's actions to reduce deforestation, forest degradation and GHG in the Cerrado Biome.

In consequence, the overall environmental and social impacts of the Project are expected to be beneficial. The Project is expected to have an overall positive impact on the environment as it seeks to promote protection of permanent protected areas, legal reserves, reforestation, recuperation of degraded pastures, and the reduction of the environmental impacts of agricultural activities mainly through rural extension activities. Potentially adverse social and environmental impacts are not expected, as they will be avoided or minimized through appropriate preventive and mitigation measures. The Project would be implemented in 61 selected municipalities in the Cerrado Biome in Brazil and will benefit rural landholders. There are an estimated 82,458 landholdings in the selected municipalities, 61,146 (74 percent) of which are smallholdings or family landholdings. These values would be checked during project preparation.

B. Borrower's Institutional Capacity for Safeguard Policies

Regulatory Framework: The Brazilian Government has advanced environmental laws, reflecting a political culture of strong environmental protection. This regulatory framework is closely aligned with several international conventions focusing on biodiversity conservation and climate change. In addition, the Brazilian government announced at the 2015 UN climate conference in Paris (COP21) the country's Nationally Determined Contribution (NDC) to the global effort of mitigating climate change. The NDC includes a combined target of restoration (return of ecosystem as close as possible to the original "reference" ecosystem) and reforestation (any process that returns complete or partial tree cover on forest land through planting or through natural or assisted regeneration processes) of 12 million hectares (Mha), along with zero net emissions from land-use change, zero illegal deforestation and other land-based targets by 2030.

Environmental and Social Performance: The implementing agencies (MMA and MAPA) have shown adequate procedures

and capacity to identify and mitigate impacts under Bank funded operations. The experience gained with the MMA (P143334) and MAPA (P143184) previous projects shows that conducting the process in close consultation and cooperation with the landholdings minimizes the potential conflicts and better responds to their needs and demands. With regards to safeguard policies, the key elements to be considered during project preparation are: (i) definition of a clear vertical and horizontal institutional arrangement; (ii) adoption of decision-making and monitoring processes; and (iii) establishment of a system of accountability through transparency and documentation.

The preparation of the Brazil Investment Plan for the FIP, the FIP: CAR Project (P143334) and the FIP: ABC project (P143184) included broad consultation of stakeholders, which included government institutions, non-governmental institutions, civil society, producers, academy, entrepreneurs, agribusiness, and farmer organizations. Online information about FIP: Brazil and its projects are available.

Implementation Arrangement: A project technical coordination group would be established, composed by representatives of the Brazilian Forest Service (SFB), the Brazilian Ministry of Agriculture, Livestock and Food Supply (MAPA), the Brazilian Agriculture Research Corporation (EMBRAPA), the National Institute for Space Research (INPE), and the National Rural Learning Service (SENAR) and the Brazil - Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). This group would: (i) determine the overall implementation strategy and changes thereof; (ii) agree on annual project implementation plans and budgets; and (iii) monitor and evaluate project implementation.

The Brazil - Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) would be the Grant Recipient. GIZ would be responsible for the Project’s FM and procurement. GIZ would have a coordinating role. GIZ would also manage the project funds in close agreement with primary partners: SFB, MAPA, EMBRAPA, INPE and SENAR. For purposes of assisting in the carrying out Components 1, 2, and 3 of the Project, GIZ may transfer a portion of the loan proceeds to SENAR under terms and conditions acceptable to the Bank.

MAPA and MMA would be responsible for revising, combining and updating the Environmental and Social Management Frameworks prepared for operations FIP: CAR Project (P143334) and the FIP: ABC project (P143184), which address the same issues of the proposed Project.

The partners would sign a Technical Cooperation Agreement (TCA) aimed at achieving Project objectives. This TCA would commit the parties to implement, in a coordinated manner, all joint actions and control mechanisms. It would also set forth their respective responsibilities under the Grant Agreement.

C. Environmental and Social Safeguards Specialists on the Team

Alberto Coelho Gomes Costa, Social Development Specialist
 Marcio Cerqueira Batitucci, Environmental Safeguards Specialist

D. Policies that might apply

Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/BP 4.01	Yes	The Project is expected to have a positive impact on the environment as it seeks to promote environmental conservation, restoration and the adoption low carbon agriculture practices, reducing the environmental

impacts of agricultural activities.

Component 1: Landscape Approach will focus on: (i) producing maps, digital data and information; (ii) designing and implementing, communication strategy; (iii) producing monitoring reports; and (iv) mainstreaming the integrated landscape approach into public policies as well as land use monitoring. As such, this component focus on Technical Assistance, institutional strengthening and capacity building activities that would not make any investment in physical works. Component 2 would support a set of actions focusing on reforestation, agroforestry, seed nurseries, livestock production, training activities, and technical assistance. Component 3 will focus on project management and monitoring and evaluation of its implementation.

Based on preliminary assessments undertaken and previous projects, no significant negative impact is expected since all proposed activities are intended to promote and consolidate the adoption of sustainable natural resources and land management practices that would contribute to reduce carbon emissions.

Thus, the proposed Project consists essentially on a conservation an agricultural technology transfer project and a Category B is proposed.

The project would also finance the acquisition of satellites images, computers and equipment, geographic data and information; operational infrastructure such as tents and stands, design and development of communication materials, wireless service, training-event services, meetings and workshops, consultants and travels, and small civil works, including maintenance and rehabilitation of Offices and forest restoration demonstration units. Following the Interim Guidance for Using Safeguard Frameworks in the World Bank (2013, World Bank) and as the selected areas where the project would support conservation and restoration practices, as well as low carbon emission agriculture would not be defined/known ex ante (i.e., prior to project appraisal), an Environmental and Social Management Framework (ESMF) will be prepared by the Recipient and prepared by the Recipient and will provide overall guidance as to how to proceed during

		<p>implementation.</p> <p>The ESMF will be prepared on the basis of the experience with MMA (P143334) and MAPA (P1431284) previous projects.</p> <p>The ESMF will include: (i) environmental and social screening criteria; (ii) potential impact and risk mitigation measures; (iii) guidelines to mitigate and/or avoid damage on natural habitats; (iv) criteria to ensure that the pesticides used have negligible adverse impacts; (v) procedure to ensure that the pesticides used in subprojects do not include Formulated products that fall under WHO Classes IA & IB or formulations that Fall under Class IIA; (iv) institutional responsibilities and monitoring arrangements, including supervision protocols; and (iv) stakeholders communication guidelines.</p> <p>The ESMF would also include a brief socioeconomic assessment of potential Project’s beneficiaries. This assessment will take in consideration gender and generation aspects. It will also include a vulnerability assessment, which will assess potential impacts and risk on indigenous peoples, quilombola and traditional communities of project activities, particularly those supported under Component 1. The previous experience of MMA and MAPA within BIP (P143334 and P143128, respectively) shows that women are a minority among landholders in the Cerrado Biome, but have been significantly involved in the capacity building/training activities related with the promotion of low-carbon emission agricultural technologies.</p>
<p>Natural Habitats OP/BP 4.04</p>	<p>Yes</p>	<p>Activities under proposed Project should lead to positive impacts on natural habitats, such as their conservation and recovery. Given that OP 4.04 would be triggered and therefore all planning activities must follow World Bank policies, identifying monitoring and management activities in the ESMF to prevent or mitigate any possible negative impacts. The rural environmental regularization procedures will comply with: (i) the Brazilian Forest Code; (ii) Brazilian legislation on protected areas (SNUC - Law 9,985 of 2000, Decree 4,340 of 2002 and Decree 5,758 of 2006); and (iii) national, State, and local laws on natural habitats.</p>
<p>Forests OP/BP 4.36</p>	<p>Yes</p>	<p>This Project will contribute to the conservation of the</p>

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		<p>Cerrado Biome. It is expected to have a positive impact by avoid deforestation and maintenance of natural vegetation in parts of private privately owned rural landholdings (all land on steep slopes, along water courses (up to a given distance from the margin) or in the vicinity of springs, protecting environmental services and values of natural vegetation. These areas are Area of Permanent Preservation (APPs). The Project will also contribute to conserve and/or restore special areas in the private landholdings, which are to be set aside and preserved and are known as a “Legal Reserve” (RL). The ESMF should consider the requirements of OB/BP4.36 whenever restoration and plantation activities are being planned and include screening criteria to ensure that project activities identify potential adverse impacts on the forest resource or on the social risks associated with any proposed changes to forest management, especially as it relates to small landholders or other vulnerable groups. The ESMF will also include measures to avoid and/or mitigate potential impacts on forests and forest dwellers.</p>
<p>Pest Management OP 4.09</p>	<p>Yes</p>	<p>Although the activities to be promoted by the proposed Project are focused on the recovery of natural areas and degraded areas and pasture; the implementation of livestock production systems; cultivation forestry cattle raising-forestry or cultivation cattle raising-forestry integration systems; among other practices that are more environmentally sustainable than conventional production practices, they may involve the use of agricultural chemicals. Furthermore, the project will train rural extension agents who will provide support to producers on the recognized agricultural technologies. Thus, this policy is triggered and the ESMF should include guidance on OP/BP 4.09 requirements for field interventions and for leveraging these requirements through the extension agents trained under the project and include screening procedures to identify any adverse risks, as well as measures to promote careful management and use of agricultural chemicals in all situations where appropriate under the project.</p>
<p>Physical Cultural Resources OP/BP 4.11</p>	<p>No</p>	<p>This policy would not be triggered. Project activities will neither include excavations, demolition, movement of earth, flooding or other environmental changes, nor be located in, or in the vicinity of,</p>

		<p>physical cultural resources sites recognized by the relevant Brazilian authorities. Thus, it is not expected that Project implementation activities would have any negative impact on archeological or physical cultural resources. Although unlikely to happen, the implementing agencies should set screening procedures in the ESMF to deal with “chance findings” of archeological material during project implementation.</p>
For Official Use Only	<p>Indigenous Peoples OP/BP 4.10</p> <p>TBC</p>	<p>The triggering of OP 4.10 remains to be defined while the activities under Component 1 are defined during Project preparation. The team will screen Technical Assistance activities under Component 1 and consider the potential geographic areas of intervention to assess if they can interfere with Indigenous Peoples and Lands. In such case, OP 4.10 would be triggered and the team would consider if it would be necessary to prepare an Indigenous Policy Framework or define procedures to promote proper engagement/consultation strategy of all interested parties (including Indigenous People) in the relevant Technical Assistance activities.</p> <p>The target population of Component 2 would be composed only by private landowners. They would not interfere with Indigenous People and Lands. Indigenous Peoples may indirectly benefit from these activities if there are Indigenous Lands in selected river basins (still to be defined) because restoration and conservation activities in private landholdings nearby Indigenous Lands would reduce pressure and improve conditions of natural resources upon which their livelihoods may rely.</p>
	<p>Involuntary Resettlement OP/BP 4.12</p> <p>No</p>	<p>This policy would not be triggered because activities supported by the project would neither require land acquisition, nor imply on the creation of Protected Areas leading to restriction of access to natural resources in which traditional livelihoods are based. Project activities to support conservation and promote protection of protected areas would not involve potential restriction of access to natural resources due to the creation of protected areas as per OP 4.12. No person would be displaced or relocated from his/her landholding or lose any of his/her assets as APP and RL remain part of his/her private landholdings. The Rural Environmental Cadastre (CAR) focuses on regulating natural resources management</p>

on a national and State level (Presidential Decree 7029/2009), but the enforcement of restrictions will not affect access to natural resources in protected areas.

Furthermore OP 4.12 would not be triggered because: (i) the project would only include private landholders who volunteered to register their land under the CAR and pilot test the low-carbon agriculture technologies because participation of landholders in the activities supported by the Project is always voluntary; (ii) land under dispute between private parties would not be included and registered in the CAR system; (iii) the project would not apply any restriction to access to natural resources, because the legislation on Permanent Protected Areas (APPs) and Legal Reserves (RL) has been applied since 1965 and the new Brazilian Forest Code (Law 12651/12) - ruling CAR – does not impose further restrictions to access to/use of natural resources on which the livelihoods of small landholders rely. Consequently, (iv) no person would be displaced or relocated from his/her landholding or lose any of his/her assets as APP and RL would remain part of his/her private landholdings.

These understandings are consistent with the approach followed in previous operations supporting registration in the Rural Environmental Cadastre (CAR) – P143376 *Rural Environmental Cadastre and Fire Prevention in Bahia State Project*, P143362 *Rural Environmental Cadastre and Fire Prevention in Piaui State Project* and P143334 *BR FIP Environmental Cadastre*. It also keeps consistency with the assessment made when was appraised the operation P143184 *BR FIP Sustainable Production in Areas Previously Converted to Agricultura Use*, dealing with the dissemination of low-carbon agriculture technologies.

The proposed Project would neither support the construction or rehabilitation of dams nor will it support other investments related with services of existing dams.

The Cerrado Biome is in central Brazil, and it is not bordered by others countries. The project will not include: hydroelectric, irrigation, flood control, navigation, drainage, water and sewerage, industrial, and similar projects that involve the use or potential pollution of international waterways. Thus, this policy

Safety of Dams OP/BP 4.37

No

Projects on International Waterways
 OP/BP 7.50

No

		would not be triggered because the project will not affect any international waterways as defined under the policy.
Projects in Disputed Areas OP/BP 7.60	No	This policy would not be triggered because the project will not work in any disputed areas as defined under the policy.

E. Safeguard Preparation Plan

Tentative target date for preparing the Appraisal Stage PID/ISDS

Oct 31, 2017

Time frame for launching and completing the safeguard-related studies that may be needed. The specific studies and their timing should be specified in the Appraisal Stage PID/ISDS

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As mentioned above, the ESMF will be prepared on the basis of the experience with MMA (P143334) and MAPA (P1431284) previous projects. The ESMF will include: (i) environmental and social screening criteria; (ii) potential impact and risk mitigation measures; (iii) guidelines to mitigate and/or avoid damage on natural habitats; (iv) criteria to ensure that the pesticides that may be used have negligible adverse impacts; (v) procedure to ensure that the pesticides used in subprojects do not include Formulated products that fall under WHO Classes IA & IB or formulations that fall under Class IIA; (iv) institutional responsibilities and monitoring arrangements, including supervision protocols; and (iv) stakeholders communication guidelines.

The ESMF would also include a brief socioeconomic assessment of potential Project’s beneficiaries. This assessment will take in consideration gender and generation aspects as well as potential impacts on vulnerable groups (Indigenous Peoples, quilombola and traditional communities of small farmers within the Cerrado biome).

Given that OP 4.04 would be triggered and therefore all planning activities must follow World Bank policies, identifying monitoring and management activities in the ESMF to prevent or mitigate any possible negative impacts. The ESMF should also consider the requirements of OB/BP4.36 whenever restoration and plantation activities are being planned.

Consultation process will be carried out by the Implementation agencies during the preparation of the Project’s safeguard documents focusing on the key stakeholders for this operation.

The ESMF will be submitted to the Bank by appraisal stage. The ESMF report will be disclosed and disseminated through websites of grant recipient and implementing agencies websites.

The following preparation timeline is proposed. This timeline would ensure time to allow detail discussion on institutional arrangement and communication with stakeholders.

- Technical meetings to design the project activities – July- October 2017
- Institutional arrangements design - September– October 2017
- Fiduciary and financial assessment of the grant recipient – September – October 2017
- Economic analyses - September – October 2017

- Environmental and social assessment and preparation of an environmental and social management framework for the project, as well as stakeholder consultation – September-November - 2017
- Project operation manual preparation – October 2017
- Preparation of the appraisal package, including draft legal agreement, environmental and social framework – November 2017
- Project Decision Meeting – November 2017
- Submission of the final package to the FIP Subcommittee – November 2017
- Grant Agreement negotiation – January 2018
- Submission of the final package to the Board Directors – February 2018
- Grant signature and project effectiveness – February/March 2018

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APPROVAL

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