



1. Project Data

Project ID P143334	Project Name BR FIP Environmental Cadastre		
Country Brazil	Practice Area(Lead) Environment, Natural Resources & the Blue Economy		
L/C/TF Number(s) TF-19211	Closing Date (Original) 28-Feb-2020	Total Project Cost (USD) 4,728,509.05	
Bank Approval Date 21-Jul-2015	Closing Date (Actual) 31-Dec-2022		
	IBRD/IDA (USD)	Grants (USD)	
Original Commitment	32,480,000.00	32,480,000.00	
Revised Commitment	4,728,509.05	4,728,509.05	
Actual	4,728,509.05	4,728,509.05	
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2. Project Objectives and Components

a. Objectives

Original PDO:

The objectives of the Environmental Regularization of Rural Lands in the Cerrado of Brazil Project were:

- (a) To enhance the capacity of the Federative Republic of Brazil's Ministry of Environment (Ministério do Meio Ambiente – MMA) and nine State Environmental Agency (SEAs) to receive, analyze and approve rural



environmental cadastre entries and link them to the national system (Sistema Nacional de Cadastro Ambiental Rural - SICAR); and,

(b) To support, in selected municipalities, landholding registration in the Rural Environmental Cadastre (Cadastro Ambiental Rural - CAR). (SCF Loan Agreement, Schedule 1, page 5)

Current PDO:

The objectives of the Environmental Regularization of Rural Lands in the Cerrado of Brazil Project were:

(a) To enhance the capacity of the Federative Republic of Brazil's Ministry of Agriculture, livestock and Food Supply (Ministério da Agricultura, Pecuária e Abastecimento - MAPA), through Brazilian Forest Service (Serviço Florestal Brasileiro - SFB) and nine SEAs to receive, analyze and approve rural environmental cadaster entries and link them to SICAR; and,

(b) To support, in selected municipalities, landholding registration in the Rural Environmental Cadastre (Cadastro Ambiental Rural - CAR).

Note that the ICR further disaggregates the PDO statement, (1) to enhance the capacity of the responsible Ministry (MMA, later MAPA) to "receive" CAR entries and link them to SICAR, and (2) to enhance the capacity of nine SEAs to "receive, analyze and approve" CAR entries and to link them to the national SICAR. However, a footnote states that at the federal level there are also instances where there is a need to analyze and approve/reject CAR entries. Therefore, the enhancement of the capacity to receive, analyze and approve CAR entries at the federal and state level is seen as one objective, not two separate objectives for this review.

This is a Strategic Climate Fund (SCF) Loan under the Forest Investment Program (FIP). The FIP is a targeted program of the SCF, which is one of two funds under the framework of the Climate Investment Funds (CIF) managed by the World Bank. At appraisal, the PDO was aligned with the Brazil Investment Plan (BIP), which was approved by the FIP Subcommittee in May 2012, and which seeks to 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. The BIP consists of four projects, including this one.

b. Were the project objectives/key associated outcome targets revised during implementation?
Yes

Did the Board approve the revised objectives/key associated outcome targets?
No

c. Will a split evaluation be undertaken?
No

d. Components

Component 1: Strengthening the State Environmental Agencies' (SEAs) capacity to implement the CAR. (Estimated total cost US\$ 17.28 million, of which FIP 35.5 percent; actual US\$ 6.31 million, of which



FIP 13.2 percent). Investments under Component 1 aimed to increase the capacity of the SFB to receive cadaster entries directly in SICAR or from integrated state systems, and to increase the capacity of SEAs to receive, analyze and approve CAR entries and link them to SICAR.

Component 2: Registration of Landholdings in Selected Municipalities. (Estimated total cost US\$ 31.09 million, of which FIP 81 percent; actual US\$ 3.77 million, of which FIP 100 percent). Activities in Component 2 were to support landholding registration in selected municipalities, by (a) publicizing cadaster procedures and mobilizing landholders, by supplying required geographic material (originally to municipalities, and subsequently to service companies and SEAs); (b) installing service desks in selected municipalities to guide landholders in completing landholding registration, and to assist them with the documentation required to file the registration with SEAs; and (c) providing assistance to smallholders in preparing and submitting their CAR entries through service companies. The component also conducted environmental assessments in each of the selected municipalities, and when necessary, developed plans for the recovery of degraded areas of small landholdings.

Component 3: Project Management, Monitoring and Evaluation. (Estimated total cost US\$1.61 million, of which FIP 71.76 percent; actual US\$ 0.12 million, of which FIP 100 percent). This financed the technical and administrative management of the Project, including monitoring and evaluation activities and 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.

Note that the reductions between appraisal and actual cost did not result in a reduction in the scope of activities.

e. **Comments on Project Cost, Financing, Borrower Contribution, and Dates**

Project cost. The total actual cost is about one-fifth of cost at appraisal. The total project cost at appraisal was estimated at US\$ 49.98 million. The actual project cost at closing was US\$ 10.21 million.

Financing: The project was financed by a loan of US\$ 32.48 million and counterpart funds of US\$ 17.5 million, of which US\$ 4.73 million was disbursed World Bank funding and US\$ 5.48 million in non-Bank funding.

Borrower/Recipient contribution: At appraisal, the Borrower's contribution was estimated at US\$ 17.5 million, with – after two partial loan cancellations (see below) - US\$ 5.48 million disbursed at closure.

Project Dates: The Project was approved on July 21, 2015, and became effective on August 18, 2017. The Mid Term Review (MTR) was conducted on April 9, 2021. The loan was to close originally on February 28, 2020, but was extended by an additional 34 months to close on December 31, 2022.

The Project was restructured three times:

First restructuring, September 2019: The PDO was revised to reflect the change of the responsible federal ministry from MMA to MAPA, and to specify the new executing agency by adding “through Forest Service”. This change was reflected in an amendment to the Loan Agreement of September 2019. Part of the loan, US\$ 8 million (a 25percent reduction), was cancelled due to the considerable devaluation of the Brazilian



Real compared to US Dollar and the considerably lower actual average cost per registration of landholdings. Remaining funds were reallocated.

Second restructuring, December 2019: The Project was restructured to reflect a change of 22 months in loan closing date from February 28, 2020, to December 31, 2021, due to a low disbursement rate.

Third restructuring, December 2021: Part of the loan, US\$ 16.2 million (a reduction of 66 percent), was cancelled due to the considerable devaluation of the Brazilian Real compared to US Dollar and the actual average cost per registration of landholdings being 29 percent of the cost estimated at appraisal. Remaining funds were reallocated. The Project was restructured to reflect a change of 12 months in loan closing date from December 31, 2021, to December 31, 2022, due to Covid-19 related cumulative delays.

Each of the three Project restructurings were at level two and none involved substantive changes to the PDO, or outcomes. The restructurings did not affect the original Theory of Change.

Split Rating: A split rating does not apply because the change in PDOs only reflected a change in the agency responsible for project implementation, and targets became more ambitious as the Project progressed.

3. Relevance of Objectives

Rationale

Country and Sector Context. The value of Brazil's agricultural exports, including processed products, has grown an average of 9.4 percent a year from 2000 to 2021 and accounts for 37 percent of Brazil's total exports. At the time of appraisal, Brazil ranked third among the world's major agricultural exporters, fourth for food products and second for bio-ethanol production. Much of this agricultural growth occurred over the decade before appraisal, and much of it has taken place in the Brazilian savanna, the Cerrado Biome. The Cerrado Biome, located in central Brazil, covers nearly one quarter, or 2.04 million km², of the country, with a mosaic of 23 types of vegetation, and is mostly occupied by private landholdings. The rapid expansion of agriculture in the Cerrado Biome has caused natural vegetation to be converted to alternative land uses and has also increased the use of slash-and-burn as an agricultural practice. The clearing and burning of native vegetation, followed by cultivation of the soil in the process of conversion of the Cerrado's agricultural areas, results in a reduction of carbon stocks in the soil and an increase in greenhouse gas (GHG) emissions.

When the Project was appraised, Brazil went through a tumultuous political time. The president was narrowly re-elected in 2014 and impeached in 2016. The vice-president took over, and after two years of strikes, new elections took place in 2018. The US\$ 32.48 million Forest Investment Program Loan was approved by the Board on July 7, 2015, during a very complex political period, where all Senate approval processes were put on hold. As a result, the agreement was only signed on May 22, 2017 and became effective on August 18, 2017

Consistency with Government Strategies/Priorities. At appraisal, the PDO was in line with Brazil's National Plan on Climate Change, launched in December 2008, the National Policy on Climate Change Law, enacted in December 2009, and the Brazilian Forest Code (Law 12.651 of 2012). The National Policy



on Climate Change, which includes the National Plan as one of its instruments, defines the objectives and guidelines for domestic operations in Brazil that deal with climate change. It legally defines Brazil's voluntary commitment (Copenhagen UNFCCC COP15, 2009) to reduce emissions by 36.1 percent to 38.9 percent in projected emissions by 2020, and visible in Brazil's Second National Communication to the UNFCCC (2010). Brazil's set of initiatives involving emissions mitigation includes combating deforestation and initiating alternative processes in the agricultural sector, among others. The National Plan on Climate Change states that Brazil aims to achieve a 40 percent reduction in deforestation in the Cerrado from the 1999–2008 average (15,700 km²). The National Policy also seeks to promote adaptation measures to reduce the adverse effects of climate change and environmental, social and economic vulnerability. The Brazilian Forest Code requires that all private rural landholdings maintain a percentage of native vegetation as Legal Reserves, and it also obliges landholders to register their landholdings in the CAR.

At completion, the PDO continued to align with Brazil's climate commitments. Brazil adopted the Paris Agreement and submitted its Nationally Determined Contribution (NDC) to the UNFCCC in 2016 and its Updated NDC in 2020 to support its adaptation commitments and continued economic and social development agendas. Brazil recommitted to its first NDC in 2023 and raised its ambitions to reduce its GHG emissions by 48.4 percent below 2005 levels by 2025. Brazil has also committed to addressing climate change impacts on the country's sectors environment, forestry, agricultural and livestock, energy, and health sectors. Brazil submitted its Fourth National Communication to the UNFCCC in 2020.

Consistency with Bank strategy. The Project's objectives aligned well with the World Bank Group's twin global goals of shared prosperity and poverty reduction. At appraisal, the PDO was also aligned with the Bank's Country Partnership Strategy for Brazil (CPS, FY2012-FY2015); specifically Objective 4, Improving sustainable natural resource management and climate resilience, and its sub-objectives (1) to expand sustainable agriculture and (2) to improve environmental management, biodiversity, conservation and climate change mitigation. These two sub-objectives were aligned with the Government of Brazil's Low Carbon Agriculture Program, its National Policy for Climate Change as well as with action plans to prevent and control deforestation. (IEG, CLR FY12-15 Review) The CPS specifically mentions mainstreaming the Amazon Framework approach to conservation with development and opportunities to the sensitive Cerrado savannah region of Central Brazil. The Amazon Framework approach emphasizes conservation, sustainable natural resource management, land tenure regulation, low-impact agriculture, and a strong focus on public policies for improved environmental management, licensing, and access to basic services.

At completion, the PDO continued to be in line with the Bank's Country Partnership Framework (CPF, FY2018-FY2023), which featured a development challenge for improved livelihoods and economic opportunities through the smarter management of Brazil's natural resources and the better mitigation of environmental pollution and the risk of natural disasters. Three principal issues in natural resource management stand out in the CPF and affect the bottom 40 percent of the income distribution directly and indirectly through their effects on growth and incomes: (1) access to land and secure property rights, (2) water management, and (3) more broadly, environmental management.

Level of ambition of the PDO. The PDO' was sufficiently ambitious. Its targets were consistently increased during Project restructurings. The project aimed to strengthen the institutional capacity to receive, analyze, and approve CAR entries of the nine SEAs and SFB, which would have contributed to high number of CAR entries over time.

Summary of Relevance. The Project's objectives aligned well with The Government of Brazil's strategies and priorities and the World Bank strategies and identified development challenges. The relevance of PDOs



remains high at the time of Project closing. It remains high in the context of the Bank's Country Partnership Framework (FY18-23) as well as Brazil's Nationally Designated Contributions (NDCs). The relevance of the objectives is rated as High.

Rating

High

4. Achievement of Objectives (Efficacy)

OBJECTIVE 1

Objective

Objective 1: To enhance the capacity of the Federative Republic of Brazil's Ministry of Agriculture, livestock and Food Supply (Ministério da Agricultura, Pecuária e Abastecimento - MAPA), through Brazilian Forest Service (Serviço Florestal Brasileiro - SFB) and nine SEAs to receive, analyze and approve rural environmental cadaster entries and link them to SICAR.

Rationale

Theory of Change (TOC) for the Project:

PDO ToC: The Project financed the development of the SICAR computer system, the connection to and integration of State systems with the SICAR, and the training of SEA teams to receive CAR entries, to analyze and approve them, and to supervise communication and mobilization campaigns. Note that the PAD did not include a ToC. Based on the results framework and project strategy discussed in the PAD, a retrospective ToC could be developed, and the ICR did provide one (ICR, Page 11).

The ICR's ToC demonstrates that SFB and SEA capacity increase are intermediate outcomes, feeding into the registration of landholdings in the CAR. In the TOC, there were two paths to contribute to the achievement of the Project's intended impact. The first path was to enhance the capacity of SFB and nine SEAs to receive, analyze, and approve rural environmental cadaster entries and link them to SICAR. The second path was to support landholding registration in the CAR. Both paths eventually lead to the intended longer-term impact: landholdings comply with the Forest Code and practice sustainable land and forest management, resulting in a reduction in net GHG emissions and biodiversity losses.

The underlying PDO ToC assumptions included (i) Landholders are aware of their legal, financial, and fiduciary obligations and interests in registering their CAR entry; (ii) once CAR entry is registered, landholders will be more aware of the opportunities to enforce the Forest Code; (iii) while medium and large landholders need little specific support to register, they need information on what to register for, why, and how to do this; (iv) communication and mobilization campaigns will generate interest in registering the CAR entry among landholders; (v) contracted professional technical services will prove effective and efficient in assisting small farmers and traditional communities (particularly quilombos) to register; (vi) adequate digital geographic and land use and/or tenure data will be available, enabling professional services operatives to carry out their work;



and (vi) state governments are willing to cooperate and will accept assistance to implement the Forest Code, through the CAR entry. The ToC also applies to Objective 2.

Outputs:

The SICAR computer system was deployed with associated software modules and user interfaces for SEAs, including the development of the dynamic analysis and environmental regularization modules. The project supported the development and introduction of Landholder's Central Access Window for all landholders to access the SICAR from anywhere in the country and ensured state CAR data was synchronized with SICAR. State CAR systems were synchronized with the national SICAR, and protocols and procedures were put in place to deal with the demand for CAR entries.

Training activities raised the capacity of the SFB and SEAs working with CAR entries and analysis, and SFB started to build institutional capacity by training other SICAR users in the system. The ICR notes that this benefited all 26 states and the Federal District, as recorded under PDO indicator 1 (27 institutions plus SFB). The project trained 451 SEA staff to use SICAR, and to analyze and validate data against the target of 200. Moreover, 200 women received this training, exceeding the target by almost seven times.

The Project had originally intended to support the preparation of rehabilitation plans in 500 smallholdings where the land had been degraded. While this activity was not carried out, the Project did support the development of an Environmental Regularization model in SICAR that helped state authorities enforce compliance with the Environmental Regularization Program (PRA) and identify options and technological solutions to address environmental liabilities.

Outcomes:

SFB and the SEAs increased their institutional capacities to manage the SICAR to receive, analyze and approve CAR entries and to link them to the national SICAR. The evidence of increased capacity in the Forest Service is in the number of CAR entries received and stored in the eleven Cerrado states and the country as a whole (almost 7.0 million holdings over more than 650 million hectares). These numbers are not indicators of this project and are not meant to be attributed solely to this Project but demonstrate the substantial growth in SICAR's capacity to receive CAR entries to which this project contributed.

The ICR notes that the long-term impact is that landholdings must comply with the Forest Code and practice sustainable land and forest management (ICR, page 11). It is questionable whether a landholder who is knowingly not in compliance (for example, by practicing slash-and-burn agriculture) would opt for landholding registration in the CAR. The risk could be that SICAR becomes a registration for those in compliance. The team clarified that environmental compliance, and the application of sustainable management practices were not an outcome indicator within the project's implementation period since "in June 2022, the status of CAR analysis and validation showed a coverage of less than 3 percent of the total registered, and it would take another 10 years to complete this step". The long-term impact also applies to Objective 2.

The PDO outcome level indicator (number of Government institutions provided with capacity-building to improve management of forest resources) is inadequate to measure outcome-level achievements, given the number of institutions reached or targeted does not capture the quality or level of increases of their institutional capacities, and whether that increase is sufficient to support the institutions to manage the SICAR, to receive, analyze and approve CAR entries and to link them to the national SICAR. The ICR notes that evidence of "increased SEA capacity of SEAs is demonstrated by the provision of training to SEA staff,



the adoption of protocols and procedures for handling CAR entries and their analysis, and by providing digital thematic maps and the software to use them". Even though these are important, they are output-oriented. The analysis and processing of CAR entries are still underway, and evidence of enhanced capacity may only materialize in the medium term. Overall, the project's efficacy in achieving Objective 1 is rated modest.

Rating
Modest

OBJECTIVE 2

Objective

Objective 2: To support, in selected municipalities, landholding registration in the Rural Environmental Cadastre (Cadastro Ambiental Rural - CAR).

Rationale

The TOC assessment discussed under Objective 1 also applies to Objective 2. In addition, the Project financed the contracting of technical services to contact, survey and register smallholdings, and it financed communication and mobilization campaigns to inform and mobilize landholders. The assumptions outlined under Objective 1 also apply here.

Outputs:

Technical services were contracted to contact, survey and register small holders, providing assistance in preparing and submitting their CAR entries, and campaigns were carried out to inform and mobilize landholders. One of the intended outputs was to install service desks in selected municipalities to guide landholders in completing landholding registration. The ICR does not provide information as to whether and how many service desks were established.

Outcome:

The outcome of rural holdings in selected municipalities have been registered in CAR was substantially achieved.

Direct Project beneficiaries, i.e., small landholders in a selected municipality registered in the state or national cadaster system, in accordance with applicable federal and state legal norms (number and female percentage). The actual beneficiaries at 321,583 was 200 percent of the revised target of 160,600. The indicator was not gender disaggregated.

Land area where sustainable land management (SLM) practices were adopted as a result of the Project, i.e., land areas of small, medium and large landholdings in a selected municipality registered in the state or national cadaster system, in accordance with applicable federal and state legal norms (ha). The actual achieved was 26.3 million hectares which was 88 percent of the revised target of 30 million hectare.

Medium and larger landholdings in a selected municipality registered in the state or national cadaster system, in accordance with applicable federal and state legal norms; (number and female percentage). The actual



was 17.925 which was 90 percent of the revised target of 20,000. The indicator was not gender disaggregated.

The ICR also attempted to assess the difference between land area registered in the Project target area against other areas (applicable to both objectives) to demonstrate the attribution of the project in terms of CAR registration. A analysis of the land area registered, prior and post-project compares the 199 targeted municipalities with 50 randomly selected (non-Project) municipalities in the Cerrado. The increase in total land registered in SICAR during the Project period relative to pre-project registration was 4.5 times in 195 target municipalities versus 3.3 times in the 42 control municipalities, meaning roughly 75 percent of registrations would have happened without the Project. However, the relatively small size of the control group in the counterfactual analysis might lead to less precise estimates and greater variability in outcomes. Uneven budget allocation ratios also affect generalizability; especially with a control group that is disproportionately smaller, the findings may be less representative of the population compared to a more balanced allocation. Two counterfactual analyses were completed and showed that the results presented by the Project are robust to the risk of endogeneity. The ICR concludes that because of this, “the observed results and impacts are consistently attributable to the Project.” (ICR, Annex 7, Paragraph 9) While a low risk of endogeneity can strengthen the case for a causal relationship between two variables, it doesn't guarantee causation on its own and other factors like omitted variable bias, or reverse causality could still influence results.

Overall, the efficacy of the second objective is rated as Substantial.

Rating

Substantial

OVERALL EFFICACY

Rationale

The project's efficacy in achieving Objective 1 is rated Modest: while there were increased numbers of CAR entries, project attribution was weakened by the inadequate outcome-level indicator of enhanced capacity and the ICR's insufficient evidence that most of the registrations would not have happened without the project's capacity-building efforts. Objective 2 exceeded or substantially achieved the targets

The overall efficacy is substantial with moderate shortcomings.

Overall Efficacy Rating

Substantial

5. Efficiency



Ex-ante:

- The PAD references a preparatory report, named “Economic/financial and co-benefits analysis, and mitigation potential analysis of the Project: Environmental Regularization of Rural Lands in the Cerrado of Brazil.” (Annex 6, Paragraph 15). That report does not provide any specific cost-benefit analysis but states: “When considering a project as rational, one has to consider the costs against the benefits or effectiveness of actions to reach a set of measures that maximize the expected results for a specific public policy. In this case, it means strengthening the main instrument for environmental restoration under the new Forest Code, the CAR. By choosing key municipalities in the Cerrado Biome, both in terms of deforestation status and importance of agricultural production, the Project shows a strong economic rationale both for providing the many socio-economic benefits arising from the CAR, as well as accelerating the implementation of this instrument at a crucial time to the implementation of the new forest code.”
- The report does not define co-benefits but provides a list of what it sees as environmental, socio-economic and institutional co-benefits. It does not quantify or monetize the benefits it lists as co-benefits.
- With a focus on the carbon removals efficiency of the Project, the report calculates the expected carbon removals due to CAR implementation and concludes that, when using the spatialized emission factors of the LCCS Brazil, total removals total between 1.54 and 1.76 billion tons of CO₂. This is extremely high, since carbon emissions from deforestation in the Cerrado Biome in 2005 were no more than 275 million tCO₂, less than 20 percent of the carbon removals to be achieved by this Project.
- The PAD’s assumptions and findings on the Project’s economic rationale are weak, and the referenced report is not a rigorous economic analysis.

Ex-post:

- The ICR notes (Annex 4) that “the economic analysis at appraisal did not establish the viability of the Project, but only to indicate priority areas with a higher benefit of intervention. Thus, the appraisal analysis cannot be repeated ex-post with estimated values of costs and benefits. It is, however, possible to assess the likelihood of economic viability under different assumptions of farmer behavior. Note that there are as yet no tests of the likely behavioral response of farmers in term of land use after CAR registration.” (ICR, Annex 4, Paragraph 3)
- The ICR explains (Annex 4, Paragraph 4) the ex-post cost–benefit analysis to be the reduction of GHG emissions relative to a scenario without the Project, and an increase in absorption (sequestration) of CO₂ by regenerated vegetation. One of the Project’s outcomes was the registration of rural holdings in CAR. The Forest Code prohibits clearing legal reserve (RL) and permanent protection areas (APP), but not of a holding’s other areas. The desired impact of the CAR registration is farmers’ compliance with the law’s stipulations relative to a baseline scenario in which farmers feel less obliged or not obliged to maintain the native vegetation on RLs and APPs. Where vegetation cover in RLs and APPs has already been cleared, the law mandates restoration of that cover over a period of 20 years.
- The Project reached or surpassed most intended outcomes with around 20 percent of the appraisal cost estimate.

Results for avoided deforestation. The CAR registration has an extremely high net present value of incremental benefits, even at very low rates of avoided land clearing. The net present value (NPV) of incremental benefits (i.e., with project net benefits versus without project net benefits) is highly positive, at about US\$52 million over 20 years and at 10 percent discount rate, even under the most pessimistic assumption regarding change in landholder behavior with the Project, namely that the clearing of RL and APP would be



avoided on only 1 percent of the relevant area. This is due in part to the high amount of emissions released by one hectare cleared in the Cerrado (221 tons of CO2 equivalent per ha), and the high carbon prices recommended by the World Bank for use in such analyses. Emissions of one hectare would be worth about US\$8,862 under the recommended price for the year 2022. Total costs, including the cost of analyses of CAR entries and assumed costs of monitoring over 10 years, do not exceed US\$8 per hectare of RL and APP registered. The calculation included costs that were not counted as project cost, such as the cost of maps acquired in 2015, the cost of analysis of CAR entries (between 2023 and 2026), and the cost of monitoring of landholder behavior and law enforcement (taken as US\$ 2 million per state and year after 2022). (ICR, Annex 4, Paragraphs 5-11)

Administrative and institutional efficiency. The following aspects of design helped with efficiency: the selection of a single, effective, and capable executing agency (SFB), the central procurement of all goods and services to be used by the SEAs, the adoption of the “sweeping” methodology to cover large numbers of holdings in a given municipality by topographic service companies. The active lead role played by the SFB, effectively coordinating and supporting the participation of SEAs, was also essential for efficient implementation. Efficiency in implementation was further enhanced by the relatively low turnover of Forest Service staff working on the Project and their sustained commitment to the work.

Reduced Project costs stemmed from factors including a significant drop in land registration costs relative to appraisal estimates. Over the project’s time the unit cost of landholding registration dropped significantly: The actual average cost per registration of landholdings in the selected municipalities was R\$201 per landholding, against R\$688 at appraisal, a reduction of 71 percent. The actual average cost of land area registered was about R\$2.60 per hectare, against an estimate of R\$ 7.25 per hectare, a reduction of 64 percent. Actual costs included expenses made with retroactive financing before May 2017, but not the substantial expense of R\$23 million (US\$7.1 million) for satellite images in 2015, as this occurred more than one year before loan signing. If this expense had been included, total spending would have been US\$17.3 million, or 34 percent of the appraisal estimate. (ICR, Paragraphs 53-54)

Summary of efficiency assessment: Despite the absence of an ERR or FRR ex-ante or ex-post, an avoided deforestation NPV calculation provides a highly positive picture. With the Project able to reach most intended outcomes with around 20 percent of the appraisal cost estimate, the project's efficiency is rated Substantial.

Efficiency Rating

Substantial

a. If available, enter the Economic Rate of Return (ERR) and/or Financial Rate of Return (FRR) at appraisal and the re-estimated value at evaluation:

	Rate Available?	Point value (%)	*Coverage/Scope (%)
Appraisal		0	0 <input type="checkbox"/> Not Applicable
ICR Estimate		0	0 <input type="checkbox"/> Not Applicable



* Refers to percent of total project cost for which ERR/FRR was calculated.

6. Outcome

Relevance of Objectives is rated High. Overall Efficacy is rated Substantial, with shortcomings noted on capacity building aspects at the level of the SEAs. Efficiency is rated Substantial, while noting the lack of comparability between the PAD and ICR economic analyses.

Based on the assigned ratings for the three outcome criteria, and with the capacity building and attribution weaknesses taken into account, the outcome of the Project is rated Moderately Satisfactory.

a. Outcome Rating

Moderately Satisfactory

7. Risk to Development Outcome

The ICR (Paragraph 86) states that there is a low risk to the outcomes. The Project's achievements in providing an improved, publicly accessible SICAR system is solid and not threatened. The systems supported by the Project (CAR entries, geospecialized information, electronic tools, software) are in the SICAR cloud servers now, and have little risk of being lost. The Project was successful in enhancing the institutional capacity to analyze and formulate recovery plans through the Environmental Regularization Module in SICAR, for those landholdings currently registered and validated.

8. Assessment of Bank Performance

a. Quality-at-Entry

As highlighted in section 3, the Project was well aligned with Government Strategies and Priorities, the Bank's Strategy, as well as the Brazil Investment Plan (BIP) under the Forest Investment Program (FIP) managed by the World Bank. At the time of Project preparation, the project was designed with a sound concept, a highly relevant PDO, and in line with national goals and policies that had just been revised, approved and started to be effective.

According to the ICR (Paragraph 81), technical, financial, economic, and fiduciary aspects were adequately considered; environmental and social development aspects were thoroughly reviewed and considered; institutional aspects, and implementation arrangements were well designed; and risk assessment was done in a holistic and strategic manner. The Bank team facilitated preparation and appraised the Project to increase the likelihood of achieving planned development outcomes and was coherent in terms of the Bank's fiduciary role.



According to the PAD (pp.11-12), the Bank team identified capacity constraints on the side of the responsible federal ministry as high. Measures to mitigate capacity risk were put in place, which include qualified procurement staff, procurement packaging, and a dedicated Special Bidding Committee.

The project overestimated the costs of the registration services to be performed by contracted firms, and the cost of environmental assessments in municipalities. As CAR entry gathered pace, experience, and scale, and as the services provided by contracted companies became more routine, the unit cost of CAR entry dropped significantly in the bidding processes and other reasons.

There were also shortcomings in M&E design and data collection methods, particularly regarding indicators of capacity enhancement, indicator definitions, and comparability of measurement over time.

Quality at Entry is rated as Moderately Satisfactory.

Quality-at-Entry Rating

Moderately Satisfactory

b. Quality of supervision

During implementation, the Bank supported the Project closely, including through a Bank team based in Brasília, where the SFB is also located. (ICR, Paragraph 82) The ICR notes that the Bank team was responsive and proactive throughout supervision and during restructuring to facilitate needed changes to improve implementation pace and M&E performance. Missions and meetings were conducted regularly with adequate skills mix. Information to Bank management through Implementation Status & Results Reports (ISRs) was regular and transparent (14 ISRs recorded). Project ISRs provided consistent information and a holistic view of the implementation status of project components, and Bank management promptly and thoroughly reviewed and commented on all ISRs.

The Bank performed a detailed Midterm Review (MTR) in 2019/2020 and discussed the MTR findings and recommendations with the SFB. As one outcome, the Bank spelled out the alternatives to government of either closing the Project in December 2021 or continuing through 2022. The Bank pointed out the importance of adequate budget allocations for continuation, to make good use of the large amount of loan funds available and supported the preparation of adequate transition arrangements for post-loan closing activities. (ICR, Paragraph 84).⁶⁴ Effective implementation relies on timely federal budget allocations but unpredictable financial flows throughout project implementation complicated the disbursement flow and procurement pace.

Even though some of the targets were revised during implementation, the shortcomings in M&E design were not addressed adequately. There were shortcomings in M&E implementation. The ICR notes that the scope (selection of municipalities) varied over time, and this was not always made clear in the reporting. Progress reports usually contained cumulative indicator values for the semester under review although they were not always disaggregated by municipality which affected decision making.

Quality of Supervision is rated as Moderately Satisfactory.



Quality of Supervision Rating

Moderately Satisfactory

Overall Bank Performance Rating

Moderately Satisfactory

9. M&E Design, Implementation, & Utilization

a. M&E Design

M&E Design. An explicit Theory of Change (ToC) was not included in the PAD as it was not required at the time of project appraisal. Indicators were specific, measurable, achievable, relevant, and time-bound. While the logic of the results framework was sound in the moving from activities to outputs and results, it did not provide sufficient information to guarantee proving a cause-and-effect relationship. There were shortcomings in the adequacy of indicators for measuring enhanced capacity.

The M&E design consisted of the PDO, the mentioned indicators, and the assignment of monitoring and reporting functions to SFB and SEAs. SFB, responsible for Monitoring and Evaluation (M&E), was to provide semi-annual progress reports to the Bank. SEAs were charged with carrying out monitoring and providing reports to their respective states. Given the specific jurisdictions of the SFB (federal) and the SEAs (state-level), their responsibilities make sense towards aggregated (federal-level) M&E reporting and state-level monitoring.

b. M&E Implementation

M&E Implementation. The M&E system was created mainly by using SICAR as the principal data source. Aspects of gender response to CAR registration were not included because data disaggregated by gender were not recorded in the SICAR system. Indicators were measured by the SFB directly from the SICAR entries and consistently reported in ISRs. Indicators on staff training were received from the SEAs and reported by the SFB in the ISRs.

The ICR notes that the scope (selection of municipalities) varied over time, and this was not always made clear in the reporting. Progress reports usually contained cumulative indicator values for the semester under review although they were not always disaggregated by municipality which affected decision making.

c. M&E Utilization

The ICR notes (Paragraph 72) that progress reports usually contained cumulative indicator values for the semester under review although they were not always disaggregated by municipality. For example, when progress reports stated that targets had already been exceeded, they failed to clarify that this no



longer referred to the originally selected municipalities. According to the ICR, (Paragraph 74) M&E were integrated into the Project's decision-making processes. SICAR's available data were applied by SFB to monitor and report progress to the Bank. However, there were shortcomings in the access of SICAR's data which ended up generating difficulties and delays in the collection of the information necessary to monitor the results. Difficulties in measuring certain indicators were discussed by the SFB with the Bank and led to adjustments in restructurings.

Quality of M&E is rated as Modest. There were some shortcomings in the adequacy of outcome indicators for measuring enhanced capacity, as well as shortcomings in M&E data collection and reporting.

M&E Quality Rating

Modest

10. Other Issues

a. Safeguards

Three safeguards policies were triggered at appraisal: Environmental Assessment (OP/BP 4.01), Natural Habitats (OP/BP 4.04), and Forests (OP/BP 4.36). The Project was classified as environmental Category B. The nature and scale of the proposed investments in environmental regularization were not expected to have significant adverse impacts. At appraisal, the Project was expected to positively impact the effectiveness and efficiency of federal- and state-level environmental management. Project activities should lead to positive impacts on natural habitats, such as their conservation and recovery. The Project aimed to contribute to the conservation of the Cerrado Biome, and as such was expected to have a positive impact by avoiding deforestation and by maintaining natural vegetation in parts of privately owned rural landholdings, thus protecting the environmental services and values of natural vegetation.

During project preparation, the team carried out a detailed assessment of the potential impacts on private landholders from registering their landholdings in the CAR system. The assessment concluded that the legal framework gives special treatment to small landholdings or family agricultural landholdings, settlements, agrarian reform projects, and traditional communities that make collective use of their territories. The project provided technical assistance to landholders in their cadastral statements for these landholdings. Medium and large landholders will not receive direct assistance in preparing their entries in the CAR but could benefit from the service desks being set up in the States and Municipalities where they can receive guidance, ask questions, and request geographic information.

Compliance with Environmental Safeguards. According to the ICR (Paragraph 76) the Forest Service prepared an Environmental and Social Management Framework, and made it publicly available, including social and environmental assessments, to provide guidance on potential issues that might arise during Project implementation. No issues of negative environmental impacts of noncompliance were raised or detected, and the exit rating at closing was Satisfactory. The SICAR and landholdings enrollment in the system as a result of the Project delivered positive impacts on natural habitats. The data and system are being used to monitor natural forests and enhance the focus of public policies on Forest Code requirements.



Compliance with Social Safeguards. According to the ICR (Paragraph 77), a Grievance Redress Mechanism was in place at the responsible federal ministry (MMA and MAPA) through its Ombudsman, which was part of the Federal Government Ombudsman-General since August 2019. Thus, it was not the Forest Service itself that was directly responsible for receiving complaints. Citizens could access the Integrated Ombudsman and Access to Information Platform to register complaints and grievances online. The Ombudsman's Office received no complaints but did receive technical and other queries regarding the functioning of SICAR. The Project responded appropriately.

b. Fiduciary Compliance

Financial Management. Financial management (FM) was rated Satisfactory at Project closure and the FM risk rating was consistently moderate throughout implementation. The Borrower (specifically the Forest Service) performed satisfactorily in terms of financial management and FM arrangements were deemed satisfactory in the most recent assessment (2022). The Project Management Unit had competent personnel; the budget process worked well; control systems and the flow of funds were adequate; and the accounting and financial reporting system and external auditing arrangements met World Bank standards. All Interim Financial Reports received during the life of the Project were considered acceptable and were generally submitted within the agreed deadlines. There were no cases of ineligible expenses in the project. All audit reports submitted so far were acceptable to the Bank. (ICR, Paragraph 78)

Procurement. Project procurement was rated Satisfactory at closing. (ICR, Paragraph 79) The Project did not face any major procurement challenges. Procurement was undertaken in accordance with Bank regulations and procedures without significant difficulties, although sometimes affected by budget constraints, particularly in the early stages of implementation. The SFB, with support from the Bank, created a set of carefully designed measures and mechanisms to strengthen procurement capacity and accelerate Project implementation. The measures included the establishment of a Special Bidding Committee solely dedicated to meeting the Project's procurement needs. A technical cooperation agreement with the IICA Interamerican Institute for Agricultural Cooperation (IICA), signed in December 2020, helped to speed up procurement processes during the last two years of the Project.

c. Unintended impacts (Positive or Negative)

d. Other

11. Ratings

Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Moderately Satisfactory	Moderately Satisfactory	



Bank Performance	Moderately Satisfactory	Moderately Satisfactory
Quality of M&E	Modest	Modest
Quality of ICR	---	Substantial

12. Lessons

The ICR included five lessons. Three lessons are emphasized with adaptation of language to support broader applicability.

The collection of land ownership data disaggregated by gender and social group would increase the accuracy and impact of policymaking and support targeted to vulnerable or marginalized groups. CAR does not currently disaggregate land ownership data by gender or social group. In the future, enriching the data with disaggregated information on gender and social groups would help mainstream these considerations in policymaking and target initiatives intended to support underrepresented or marginalized groups.

Effective land management and environmental regulation demand the integration of targeted outreach, robust data integration, and accessibility. The success of increasing rural land registration in the Cerrado biome highlights the importance of tailored outreach efforts to engage diverse stakeholders, including small, family, and collective landholders. By leveraging targeted communications, these harder-to-reach groups can better understand their responsibilities under environmental regulations, such as the Forest Code.

Continuous updates of online rural cadaster systems are needed to continuously enhance accessibility, usability, and thus relevance to stakeholders. For example, integrating and aggregating land data in private land registration systems like SICAR would provide valuable insights for coordinated land conservation efforts. This includes leveraging advanced technology to analyze data comprehensively and propose optimal land-use strategies. Further integration of cadaster systems offers insights into rural land characteristics, facilitating informed decision-making on environmental regularization and sustainable land use. To ensure the effectiveness of environmental regularization policies, it is imperative for governmental agencies to actively analyze landholders' compliance with environmental regulations and provide necessary support for rectification and restoration efforts.

13. Assessment Recommended?

No

14. Comments on Quality of ICR



Quality of Evidence. Overall, the ICR provided adequate information about the project, the restructurings and changes made to targets, and sufficient evidence to support most achievements reported.

Quality of Analysis. The ICR reported the outputs and outcomes based on the project's M&E and summarized studies that had taken place. The ICR introduced longer-term impact in the reconstituted Theory of Change but could have elaborated on the mechanisms of the relationship between intermediate results and the longer-term impact envisioned. The ICR could have also better elaborated on the reasons for the ratings e.g. on Bank performance.

Lessons. The lessons reflected the project experience and were based on evidence and analysis.

Conciseness. The ICR provided comprehensive coverage of project activities.

Overall, the Quality of the ICR is rated as Substantial, since shortcomings were minor.

a. Quality of ICR Rating
Substantial