FOR OFFICIAL USE ONLY

Report No: PAD5080

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT APPRAISAL DOCUMENT
ON A
PROPOSED LOAN

IN THE AMOUNT OF US$500 MILLION

TO

BANCO DO BRASIL S.A.

FOR A

BRAZIL CLIMATE FINANCE PROJECT

December 1, 2022

Finance, Competitiveness and Innovation Global Practice
Latin America and Caribbean Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective Date of Appraisal)

Currency Unit = Brazilian Real (BRL)

BRL 5.19 =	US$1

FISCAL YEAR
January 1 - December 31

Regional Vice President:	Carlos Felipe Jaramillo
Country Director:	Johannes C.M. Zutt
Regional Director:	Robert R. Taliercio, Anna Wellenstein
Practice Manager:	Yira Mascaro, Genevieve Connors
Task Team Leader(s):	Shireen Mahdi, Gabriel Sensenbrenner, Renato Nardello, Chandra Shekar Sinha

ABBREVIATIONS AND ACRONYMS

ABC	Brazil’s Low-Carbon Agriculture Program
AC	Advisory Committee
ADR	American Depository Receipts
AM	Accountability Mechanism
AUM	Assets Under Management
B3	Sao Paulo Exchange
BAU	Business as Usual
BB	Banco do Brasil S.A.
BCB	Central Bank of Brazil
BRL	Brazilian reais
CCAP	Climate Change Action Plan 2021-2025
CCPs	Core Carbon Principles
CDF	Climate Debt Fund
CDFM	Climate Debt Fund Manager
CDM	Clean Development Mechanism
CERF	Climate Emissions Reduction Facility
CGU	Office of the Comptroller General of the Union (*Controladoria Geral da União*)
CMN	National Monetary Council
CORSIA	Carbon Offsetting and Reduction Scheme for International Aviation
CPF	Country Partnership Framework
CVM	Brazilian Securities Exchange Commission (*Comissão de Valores Mobiliários*)
D-MRV	Digital MRV
ERPA	Emission Reduction Purchase Agreements
ESPR	Environmental and Social Performance Report
ESRS	Environmental and Social Review Summary
FI	Financial Intermediary
FM	Financial Management
GIIP	Good International Industry Practice
GRS	Grievance Redress Service
IBAMA	Brazilian Institute for the Environment and Renewable Natural Resources (*Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis*)
IC	Investment Committee
ICAO	International Civil Aviation Organization
IC-VCM	Integrity Council for Voluntary Carbon Markets
IETA	International Emissions Trading Association
IFAC	International Federation of Accountants
IFRs	Interim Financial Reports
IFRS	International Financial Reporting Standards
IIA	Institute of Internal Auditors
IOSCO	International Organization of Securities Commissions
ISA	International Standards on Auditing
ISO	International Organization for Standardization
MIS	Management Information System
MOs	Mitigation Outcomes
MRLD	Lines of Defense Reference Model
MRV	Monitoring, Reporting, and Verification

NDC	Nationally Determined Contribution
NGFS	Network of Central Banks and Supervisors for Greening the Financial System
NPL	Nonperforming Loan
PAP	Program Action Plan
POM	Project Operational Manual
PPSD	Project Procurement Strategy for Development
PRI	Principles for Responsible Investment
PRSAC	Responsible Social, Environmental and Climate Policies
PSI	Principles for Sustainable Insurance
REDD+	Reduce Emissions from Deforestation and Forest Degradation
ROA	Return on Assets
ROE	Return on Equity
SAC	Customer Service
SLB	Sustainability Linked Bond
SLL	Sustainability-Linked Loan
SNCR	National Rural Credit System
SPTs	Sustainability Performance Targets
STN	Secretariat of the National Treasury
TCU	Supreme Audit Institution
TOR	Terms of Reference
TSVCM	Taskforce on Scaling Voluntary Carbon Markets
UNFCCC	United Nations Framework Convention on Climate Change

TABLE OF CONTENTS

DATASHEET

BASIC INFORMATION

Country(ies)	Project Name	
Brazil	Brazil Climate Finance Project	
Project ID	**Financing Instrument**	**Environmental and Social Risk Classification**
P178888	Investment Project Financing	Substantial

Financing & Implementation Modalities

[ ] Multiphase Programmatic Approach (MPA)	[ ] Contingent Emergency Response Component (CERC)
[ ] Series of Projects (SOP)	[ ] Fragile State(s)
[ ] Performance-Based Conditions (PBCs)	[ ] Small State(s)
[✓] Financial Intermediaries (FI)	[ ] Fragile within a non-fragile Country
[ ] Project-Based Guarantee	[ ] Conflict
[ ] Deferred Drawdown	[ ] Responding to Natural or Man-made Disaster
[ ] Alternate Procurement Arrangements (APA)	[ ] Hands-on Enhanced Implementation Support (HEIS)

Expected Approval Date	Expected Closing Date
22-Dec-2022	30-Apr-2028
Bank/IFC Collaboration	**Joint Level**
Yes	Complementary or Interdependent project requiring active coordination

Proposed Development Objective(s)

To support the expansion of sustainability-linked finance for climate mitigation, and strengthen the private sector's capacity to access high quality carbon credit markets in Brazil.

Components

Component Name	Cost (US$, millions)
Expanding access to sustainability-linked finance for mitigation.	496.75
Technical assistance.	2.00

Organizations

Borrower:	Banco do Brasil
Implementing Agency:	Banco do Brasil

PROJECT FINANCING DATA (US$, Millions)

SUMMARY

Total Project Cost	1,893.50
Total Financing	1,893.50
of which IBRD/IDA	500.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Bank for Reconstruction and Development (IBRD)	500.00

Non-World Bank Group Financing

Commercial Financing	1,393.50
Unguaranteed Commercial Financing	1,393.50

Expected Disbursements (in US$, Millions)

WB Fiscal Year	2023	2024	2025	2026	2027	2028	2029
Annual	33.20	113.16	104.66	87.12	61.90	48.65	51.31
Cumulative	33.20	146.36	251.02	338.14	400.04	448.69	500.00

INSTITUTIONAL DATA

Practice Area (Lead)

Finance, Competitiveness and Innovation

Contributing Practice Areas

Climate Change, Environment, Natural Resources & the Blue Economy

Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

Risk Category	Rating
1. Political and Governance	Moderate
2. Macroeconomic	Substantial
3. Sector Strategies and Policies	Moderate
4. Technical Design of Project or Program	High
5. Institutional Capacity for Implementation and Sustainability	Moderate
6. Fiduciary	Moderate
7. Environment and Social	Substantial
8. Stakeholders	Moderate
9. Other	Moderate
10. Overall	Substantial

COMPLIANCE

Policy

Does the project depart from the CPF in content or in other significant respects?

[ ] Yes [√] No

Does the project require any waivers of Bank policies?

[ ] Yes [✓] No

Environmental and Social Standards Relevance Given its Context at the Time of Appraisal

E & S Standards	Relevance
Assessment and Management of Environmental and Social Risks and Impacts	Relevant
Stakeholder Engagement and Information Disclosure	Relevant
Labor and Working Conditions	Not Currently Relevant
Resource Efficiency and Pollution Prevention and Management	Not Currently Relevant
Community Health and Safety	Not Currently Relevant
Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Not Currently Relevant
Biodiversity Conservation and Sustainable Management of Living Natural Resources	Not Currently Relevant
Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Not Currently Relevant
Cultural Heritage	Not Currently Relevant
Financial Intermediaries	Not Currently Relevant

NOTE: For further information regarding the World Bank's due diligence assessment of the Project's potential environmental and social risks and impacts, please refer to the Project's Appraisal Environmental and Social Review Summary (ESRS).

Legal Covenants

Conditions

Type	Financing source	Description
Effectiveness	IBRD/IDA	5.01. The Additional Conditions of Effectiveness consist of the following: (a) the Borrower has adopted the Operational Manual, in form

		and substance acceptable to the Bank; and (b) the Borrower has established a Project Coordination Team ("PCT") acceptable to the Bank.
Type Disbursement	Financing source IBRD/IDA	Description Withdrawal Conditions: No withdrawal shall be made: (a) for payments made prior to the Signature Date, except that withdrawals up to an aggregate amount not to exceed USD 100,000,000 may be made for payments made prior to this date but on or after June 30, 2022, for Eligible Expenditures under Categories 1 and 3; (b) under Category (1), until and unless: (i) the Mitigation Framework has been developed by the Borrower and approved by the Bank; and (ii) the Borrower has provided to the Bank evidence of compliance with the environment and social risk management requirements for the Eligible Expenditures related to the first five (5) Sub-Loans to be reimbursed, as further defined in the Operational Manual; (c) under Category (2) until and unless: (i) (A) the Commitment Agreement has been executed and is binding and enforceable upon the respective parties thereto in accordance with its terms; (B) the Bank has provided its no-objection over the draft Fund Bylaws, including to the description of the draft Fund ESMS; (C) the Borrower has furnished evidence acceptable to the Bank that the CDF has been duly established in accordance with applicable laws and regulations and using the draft Fund Bylaws approved by the Bank; (D) the Borrower has furnished evidence acceptable to

		the Bank that Co-investors have capitalized the CDF with an amount equivalent to at least twice the amount provided by the Borrower; and (ii) for each withdrawal request, the Borrower has furnished evidence acceptable to the Bank that Co-investors have capitalized the CDF with an amount equivalent to at least twice the amount provided by the Borrower.

I. STRATEGIC CONTEXT

1. **The proposed Brazil Climate Finance Project is a financial intermediary project that seeks to encourage firms to reduce their company-wide carbon footprint.** To do this, the project adopts an innovative, outcome-based financing approach that incentivizes firms to adopt and implement credible greenhouse gas (GHG) emission reduction plans. The project would also increase the access of these firms to high quality carbon markets. The project design pilots solutions to address market failures that limit the access of Brazilian firms, small and medium sized companies in particular, to outcome-based financing and high-quality carbon credit markets through innovative approaches.

2. **The project proposes to leverage private finance to scale-up impact in support of Brazil's net-zero target, including in agriculture and land-based sectors.** Brazil's greenhouse gas (GHG) emissions profile is dominated by Agriculture, Forestry, and Land Use (AFOLU). In partnership with the Banco do Brasil, the largest bank in Brazil and the market leader in lending to agriculture and land-use based sectors, the project aims to leverage US$1.4 billion in private capital and to achieve up to 90 million tCO2e in additional emission reductions by 2030[1] across a range of sectors, with AFOLU sectors expected to represent an important share.

A. Country Context

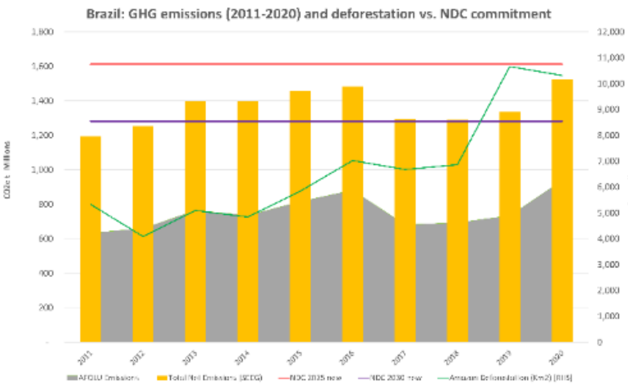
3. **Brazil has significant potential to accelerate its transition to a low-carbon economy.** Brazil's GHG emissions profile is dominated by agriculture (38 percent), energy (26 percent), and land use and forestry (24 percent).[2] The country has significant potential to transition to a low carbon-economy given that it is home to the world's largest rainforest, the Amazon, covering about 50 percent of the country's territory. Moreover, renewable energy accounts for almost 50 percent of the Brazilian energy matrix and more than 80 percent of its electricity matrix. These characteristics not only differentiate Brazil but also offer enormous potential in transitioning to a low carbon economy if paired with the right policy and institutional context and access to capital to finance the transition.

4. **Yet, the country faces a growing disconnect between its climate commitments and outcomes.** Brazil set a nationally determined contribution (NDC) target for a 50 percent reduction in GHG emissions[3] by 2030 and carbon neutrality (net-zero) by 2050 (Figure 1). Still, its carbon footprint has been growing over the past ten years and the country remains the world's seventh top emitter, contributing 2.9 percent of global net GHG emissions in 2019.[4] In 2020, Brazil's net emissions grew by 16 percent (compared to the average of the previous three years) driven by the rapid emissions increase in land use change and forestry (Figure 2). Increased deforestation rates in the Amazon, Cerrado and other biomes undermine their potential as global carbon sinks and are of local, regional, and global concern.[5] These outcomes are observed despite Brazil's strong institutional and legal frameworks on environmental protection and climate change. Brazil adopted the National Climate Change Policy in 2009 as the cornerstone and overarching legal framework for climate change mitigation and adaptation.[6] In 2012, Brazil adopted the Forest Code[7] as a critical part of the country's climate strategy given the contribution of deforestation to its carbon profile. It constitutes one

[1] Relative to a business-as-usual scenario.
[2] Source: Sistema de Estimativas de Emissões e Remoções de Gases de Efeito Estufa (SEEG), 2020.
[3] From 2005 levels.
[4] The top eight global GHG emitters are (by share of global GHG emissions): China (23.9%), USA (11.8%), India (6.7%), EU-27 (6.7%), Russia (4.1%), Indonesia (3.5%), Brazil (2.9%), Japan (2.4%). Source: Climate Watch https://www.climatewatchdata.org/
[5] Source: Brazil's National Institute of Space Research, data from August 2020 to July 2021.
[6] The National Plan on Climate Change (Plano Clima) was established to support the implementation of the National Climate Change Policy.
[7] Native Vegetation Protection Law 12.651/2012.

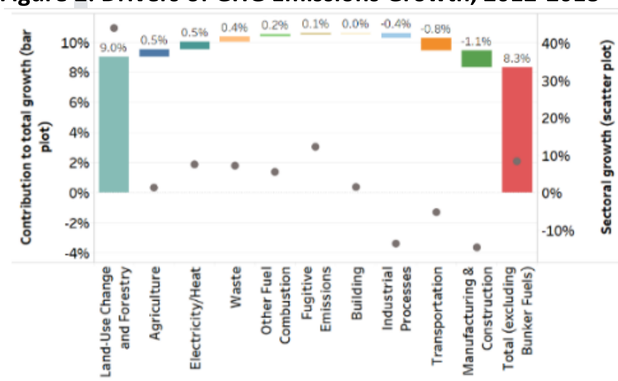
of the most advanced and stringent forest regulations in the world. But significant challenges persist in terms of implementation and enforcement reflected in the growing rate of deforestation in recent years, as highlighted in the forthcoming country climate and development report (CCDR) for Brazil.

Figure 1: Brazil's GHG Emissions and NDCs, 2011-2020



Source: World Bank staff, based on SIRENE, SEEG data).

Figure 2: Drivers of GHG Emissions Growth, 2012-2018



Source: World Bank Staff (Brazil CCDR report – forthcoming).

5. **In this context, urgent action is required to accelerate Brazil's path to net-zero by leveraging the roles of both the public and private actors if Brazil is to meet its NDCs.** The World Bank is implementing a diverse program of activities in this regard, both to strengthen institutional capacity against deforestation and to support sectoral transitions to net-zero, mainly through public sector-linked interventions (Box 1). Continued progress in strengthening institutions and enforcing laws to accelerate the climate transition is critical. But these efforts would be reinforced by interventions that leverage the financial sector's potential for supporting the path to net-zero, particularly given the large costs associated with meeting Brazil's NDCs[8]: the most recent estimates place these costs at US$1.4 trillion between 2016 and 2030, equivalent to US$100 billion (or about 7 percent of GDP) per year.[9] These figures underline the need for a sharp acceleration in market-based financing and more robust climate finance markets to meet these costs, especially in Brazil's more constrained fiscal setting post-COVID-19.

6. **This project recognizes Brazil's financial sector as an entry point for climate action and pilots an innovative financial-intermediary approach to catalyze private capital in support of Brazil's net-zero target.** The project pilots an outcome-based financing approach to leverage private financing and incentivize private firms to achieve meaningful mitigation targets. More specifically, the project aims to support the expansion of sustainability-linked financing for climate mitigation. Sustainability-linked financing instruments are "outcome-based" financing tools in that they track the achievement of results linked to the overarching carbon footprint[10] of the borrowing company, not just of a specific project, thus offering a more robust incentive-based approach than traditional green lending. The project would also strengthen the private sector's capacity to access high quality carbon credit markets, providing an additional incentive and a source of financing for firms that can achieve GHG emission reductions.

[8] Brazil country climate and development report, 2022. Forthcoming.
[9] Source: IFC, 2016. By 2030, the financing gap for achieving net-zero emissions is estimated at US$ 1.3 trillion for energy, transportation, building, waste management, and industrial energy efficiency sectors. An additional US$163 billion for agriculture, of which $78 billion in livestock-related activities is obtained from Climate Bonds Initiative, 2020.
[10] Sustainability targets can relate to environmental, social and governance outcomes. In the case of this project, they will relate to mitigation outcomes.

7. **The project seeks to overcome three main market failures in an integrated manner (described in more detail in the subsequent sections):**

   i. **Sustainability-linked finance is a nascent market in Brazil that is largely serving large corporations in a few industries and best practices have not been evenly applied, potentially undermining its credibility.** To date, sustainability-linked deals in Brazil have mostly benefited larger companies in a few industries (mainly renewables and paper and pulp) and have been limited to Scope 1 and 2 emissions.[11] International best practices such as independent external reviews have not been consistently applied (only a third of sustainability-linked deals received an external review), raising concern around the lack of transparency with performance-linked instruments.
   ii. **Carbon credit creation is a complex and lengthy process, raising integrity risks if not well managed.** It involves specialized methodologies and an intensive set of repeat transactions with several entities, domestic and international, such as project developers and certification agencies. The complexity of the carbon credit creation process creates informational asymmetries and raises implementation costs for interested firms that, if not well managed, could raise credibility risks.
   iii. **Carbon credit trading takes place within a highly heterogeneous and fragmented global market, adding transaction costs and uncertainty on the price outlook for the carbon credits.** Numerous carbon credit markets, registries, and exchange platforms coexist globally, each with its own specifications and quality standards, making it difficult for companies to engage in this market. The fragmentation in carbon credit trading rules and institutions leads to a wide price dispersion, adding uncertainty to the price outlook for carbon credit sellers.

8. **To address these market challenges, the project will combine financial and technical assistance resources to offer an integrated solution that:** (i) strengthens the access of micro, small and medium enterprises (MSMEs) to sustainability-linked finance whilst adhering to international best practices such as independent external validation of target and periodic review progress; (ii) supports borrowing firms to develop and implement credible mitigation plans and targets that can also lead to the generation of high-quality carbon credits; and (iii) supports Banco do Brasil (BB) in the establishment of a credit carbon marketplace through which firms can monetize the returns from investing in GHG emissions reduction.

9. **The project proposes a strategic partnership with BB, Brazil's second largest bank and a leader in sustainability.** BB brings to the project an unparalleled capillarity in Brazil's regions (with presence in 97 percent of Brazil's municipalities), market share in MSME finance, and capacity to support investors and corporate clients to invest in climate change mitigation (55 percent market share in agribusiness). As agent for programs that provide financing and technical support to agribusiness and MSMEs, BB has proven capacity to develop solutions and services packaged with financing. State-of-the-art socio-environmental risk management is therefore critical for BB's reputation, and BB started in 2004 to implement socio-environmental standards that have since been periodically refined. (See Box 1- "Why Banco do Brasil").

[11] Scope 1 emissions cover direct emissions from a companies owned or controlled resources. Scope 2 emissions cover indirect emissions from the use of purchased electricity, steam, heating, and cooling consumed by the company. Scope 3 emissions include all other indirect emissions that occur in a company's value chain.

Box 1: Why *Banco do Brasil*?

The rationale for the proposed partnership with BB lies in the attributes of this financial intermediary, including its demonstrated track record in sustainable practices, strong presence in sectors that are linked to Brazil's emissions profile, extensive territorial presence, and its financial soundness.

***Banco do Brasil* - the country's largest bank, with 50.4 percent public shareholding and a strong network of institutional and private investors, has a long-standing commitment to sustainability.** BB is a member of initiatives aiming to reflect and propose actions to combat climate change (including U.N. Business for the Climate and Brazil's GHG Protocol Program) and has had formal three-year Sustainability Plans since 2005. The current plan (Agenda 30 BB) contains 40 actions and 110 indicators for 2023, as well as 10 Long-Term Commitments to 2030 under three blocks: Sustainable Businesses, Responsible Investment, and ESG (environment, social and governance). BB follows good practices on corporate governance and social, environmental, and climate guidelines set by the Brazilian Central Bank, Basel regulations, and voluntary guidelines such as the Equator Principles, U.N. Principles for Responsible Investment (PRI), and for Sustainable Insurance (PSI). BB is included in the Dow Jones Sustainability Index, the Corporate Sustainability Index of the Sao Paulo exchange, the FTS4Good index of the London Stock Exchange, and the MSCI ESG Ratings, among others (see Annex 1 for more details).

BB's sustainability credentials present an opportunity for high-impact mitigation in Brazil. It has a large market share in high-emitting activities, notably 55 percent share of the agribusiness credit market thanks to being present in 97 percent of Brazil's 5,500 municipalities. BB's lending strength extends to agribusiness support services and extension services. For example, BB's Agri-Energy Program supports the use of renewable energy for rural producers; BB Convir is a partnership with farming cooperatives that supports integration of farming chains. BB is teaming up with Agtech companies to provide rural producers with low-carbon planting services, optimized crop management, and harvesting decisions. In 2020, BB launched *Broto, a* digital one-stop shop for agribusiness services to rural producers.

BB's financial soundness supports its sustainability strategy: strong capitalization, low non-performing loans fully provisioned for, and ample liquidity and profitability. In particular, BB capital adequacy ratios are well above the regulatory requirements, with the total capital ratio at 17.7 percent (see Annex 7 for more details on Banco do Brasil).

(See Annex 1 for more detail on BB)

10. **The project complements the World Bank Group's engagements on the climate agenda in Brazil.** The World Bank Group is implementing a diverse program of activities in Brazil in support of the climate agenda and has a longstanding engagement at both national and subnational levels such as supporting the implementation of the Forest Code, climate-smart agriculture, and sectoral transitions to net-zero both in the public sector (see Box 2 on "The WBG climate related program in Brazil").

Box 2: The World Bank Group's Climate Change Engagement in Brazil

The World Bank has taken a multi-pronged approach to address the climate agenda in Brazil, including deforestation, through investment and policy lending at subnational level, leveraging global environment facility (GEF) resources, and investing in sound analytical work to underpin policy dialogue with the federal authorities and other stakeholders.

The World Bank is supporting the implementation of the Forest Code through both investment and policy lending at subnational level. Two development policy financings (DPFs) to support fiscal and environmental sustainability in the Amazon Biome helped the states of Mato Grosso and Amazonas in strengthening their institutional framework to combat deforestation, establishing integrated early warning systems to increase responsiveness to environmental crimes, advancing the environmental regularization of rural landholdings, creating the legal framework for the payment for environmental services, and leveraging domestic and external funding to support state-level environmental actions. A similar approach has recently been approved with the state on Goiás in the Cerrado biome, another hot spot of deforestation. The Bank is also supporting the implementation of the Low-Carbon Agriculture Program (ABC+), Brazil's main strategy for climate-smart agriculture, at both the federal and subnational levels. In addition, the World Bank is financing investment projects to support the development of transport systems that deliver both adaptation and mitigation benefits in several States and metropolitan areas (Sao Paulo, Tocantins, Bahia, Belo Horizonte, Rio de Janeiro) and projects that support disaster-risk mitigation infrastructure and strategies in urban settings such as in Belo Horizonte (P174619), Sao Paulo (P169140), and in Southern Brazil (P170682).

The World Bank is also implementing a regional Amazon Sustainable Landscapes Program in partnership with the Global Environment Facility (GEF). A US$113 million GEF financing approved in 2015, US$ 80million of which for Brazil, aims to protect globally significant biodiversity and support policies to foster sustainable land use and restoration of native vegetation cover.

Regarding IFC, its exposure to climate related projects amount today to nearly 36 percent of its portfolio (US$1,330 million), a share that is expected to grow over time (in FY22, 62 percent of IFC's own account investments were in climate-related projects). With its extensive portfolio in biofuels, in which Brazil is one of the leading countries, IFC provides financing to support the implementation of climate smart agriculture, improve resource efficiency and prevent land degradation, and auto financing for flex fuel cars.[12] IFC also maintains a focus on renewable energy, which is critical for keeping Brazil's energy matrix green, with wind and solar projects, amongst others.[13] In urban development, IFC is investing in public lighting PPPs, mass transportation projects, such as Lines 8 and 9 in Rio de Janeiro, and in the water/ sanitation sectors.[14] The IFC is also investing in new technologies to decrease costs and improve scale of climate mitigation and adaptation through some upstream and early-stage scoping projects in sectors such as electric buses, green buildings, circular economy and waste management, beef traceability, green hydrogen point to the emergence of viable investment opportunities. Finally, the IFC has also signed memoranda of understanding with the CBIC (Brazilian Chamber of Construction) and the Brazilian Federation of Banks (Febraban) to support capacity building for municipalities and financial institutions on areas such as green buildings and green banking.

Lastly, the World Bank is also influencing the agenda on climate change through knowledge products that analyze the underlying causes and the economy-wide impacts of deforestation and of Climate Change. This includes the Amazon Economic Memorandum and the Climate Change and Development Report (CDDR), that look at long-term low-carbon trajectories to ensure a transition path to green, resilient, and inclusive growth, as well as a climate change institutional assessment for reducing deforestation.

11. **The project is expected to provide impact and additionality through mitigation benefits, lessons learnt for replicability, and private capital mobilization:**

- **Mitigation benefits**: the project will mobilize outcome-based financing to change the behavior of firms, thus encouraging them to reduce their carbon footprint. This approach is expected to deliver robust mitigation benefits: up to 90 million tCO2e in emission reductions are expected by 2030 that are additional in the best-case scenario[15] (i.e., over and above a business-as-usual scenario), across a range of sectors, thus contributing to Brazil's progress towards its NDCs. This is estimated to be equivalent to about 4.5 percent of the annual emission reduction that Brazil needs to stay on track for its net-zero commitment by 2030. The project is also expected to support efforts for dealing with deforestation (see Box 3).
- **Lessons learnt (global public goods)**: By mainstreaming mitigation-based financing within a large financial institution, the project is piloting an innovative approach with strong potential for replicability at scale in Brazil and elsewhere in the world. The innovations and approaches that would be piloted under this project offer important learning opportunities. To extract lessons and to measure impact, the project will conduct regular reviews during implementation and adopt an impact evaluation to study the incentives and attributes behind successful firm mitigation outcomes.
- **Private capital mobilization**: the project is expected to mobilize up to US$1.4 billion in private capital through the scale-up of financing by *Banco do Brasil* and private investors.

[12] Santa Adelia (#45828), CVA (#603178); Usina Delta (#34394); Cerradinho (#35523); São Manoel (#37809); RSE Jalles (#44203); SM Gogen (#43319); Belagricola (#34883), (Alfa - (#44697).
[13] Bansicredi (#44773); Enel Wind (#33579) – In the Pipeline Solis (#45494), Solfácil (#45494).
[14] Projects: #604261, #604258,# 604260, #604257, #604259, #604256, #604255, #604207.
[15] Estimates of the project's contributions in terms of additional emissions reductions range between 39-90 million tCO2e by 2030.

Box 3: How could this project support efforts in dealing with deforestation?

Forests and other nature-based solutions play an essential and cost-effective role in the fight against climate change, as they contribute both to reduce GHG emissions and increase carbon sequestration. Deforestation in Brazil is a complex issue with many interlinked causes, including illegal land grabbing, a weak institutional context and a growth model that reflects a legacy of reliance on commodity exports that is straining the country's natural resources. This project alone cannot address all of these issues. But it could help provide a part of the solution by creating incentives for firms and farms to maintain the standing forest on their land, invest in reforestation/afforestation and recover degraded areas on private lands. By offering a package of sustainability-linked financing and access to carbon credit markets, the project could make some low-carbon activities more rewarding than other environmentally adverse practices. The project could also reach large anchor firms in agribusiness industries with climate finance solutions that reduce deforestation pressures from their supply chains:

- **Encouraging avoided deforestation on legal land**: The project could help to protect native vegetation by recognizing carbon credits for areas that landowners could otherwise legally deforest.[(a)] Maintaining native vegetation in areas exceeding the mandatory "legal reserve" can generate carbon credits. The project could assist landowners to generate and trade those credit while providing mitigation-linked financing to support complementary investments. Carbon market specialists associated with *Banco do Brasil* estimate that, under specific conditions, the current price of carbon from nature-based solutions already makes the conservation solution more profitable than selling beef (S&P Global, 2022).

- **Curbing deforestation by small farmers and cattle ranchers by working with anchor firms on Scope 3 emissions.** The high-quality independent monitoring, reporting and verification systems supported by the project (which may include satellite data, artificial intelligence models, drone monitoring, for example) would be highly relevant for efforts to help anchor firms in agribusiness reduce emissions from their suppliers (Scope 3 emissions reduction). This is particularly relevant for land-based activities, where anchor firms may have several degrees of separation from suppliers directly or indirectly linked to deforestation. Such high-quality systems can be replicated in different regions of Brazil and provide a template for application at scale on public lands and forests, supporting the effective implementation of the Brazilian Forest Code and the achievement of Brazil's NDC through nature-based solutions.

(a) According to the Brazilian Forest Code, landholders must maintain a "legal reserve" of native vegetation, depending on their biome: minimum of 80 percent of the area (in the Legal Amazon), 35 percent (in other biomes of the Legal Amazon states), or 20 percent (in the rest of Brazil).

B. Sectoral and Institutional Context

Brazil's sustainability-linked finance market.

12. **Globally and in Brazil, financial institutions are channeling more resources to green and climate-related activities through a range of financial products, including sustainability-linked financing.** Green "use of proceeds" loans or bonds that channel resources to specific uses that are consistent with a green taxonomy have been the primary instrument used in climate finance markets in recent years.[16] These instruments can be characterized as "output-based" in that they track the application of resources to specific projects undertaken by borrowers, rather than results or outcomes achieved. Since 2019, the global climate finance market has expanded its toolkit to introduce outcome-based financing instruments known as sustainability-linked loans or bonds. Unlike "use of proceeds" instruments, sustainability-linked financing instruments are "outcome-based" in that they track the achievement of results through sustainability performance targets linked to the overarching carbon footprint of the borrowing company, not just of a specific project. Resources raised through these instruments are not traced to specific subprojects/activities and can go to general corporate purposes, but the terms of the financing are tied to the

[16] See annex 2 for an overview of Brazil's green finance market.

achievement of these targets, with coupon/interest rate "step-ups" (or "step-downs")[17] or other financial penalties depending on performance. In this way, sustainability-linked instruments aim to encourage the issuer or borrower to adapt their business model, track and achieve results at the company level, as opposed to the project level.

13. **Even though the sustainability-linked mechanism is gaining popularity among Brazilian issuers (see Annex 2), the instrument is largely serving large firms and best practices have not been evenly applied, potentially undermining its credibility.** To date, sustainability-linked deals in Brazil have mostly benefited larger companies in a few industries (mainly renewables and paper and pulp),[18] and have been limited to Scope 1 and 2 emissions. In addition, international best practices such as independent external reviews (second party opinion), have not been consistently applied. Only a third of sustainability-linked deals received an external review.[19] This raises concern about the lack of transparency with performance-linked instruments. Similarly, concerns around the level of ambition of the targets adopted under this instrument and the strength of the financial penalty could raise concerns around its credibility.[20] Developing this financing tool in a manner that promotes integrity and high-quality outcomes will require efforts to increase transparency and quality assurance standards. It will also require piloting mechanisms with more robust features to measure the ambition of targets and reward achievements/penalize underachievement of mitigation targets.[21] In addition to this, the Brazilian market has rarely used sustainability-linked instruments to target Scope 3 emissions, even though these form the bulk of the carbon footprint of anchor firms in key industries such as livestock, agriculture, and forestry. Developing solutions to generate results through the supply chains will help to extend sustainability-linked finance to Scope 3 emissions and deepen mitigation outcomes.

Brazil's carbon credit market.[22]

14. **Brazil's experience with international carbon markets was mainly through its participation in the Clean Development Mechanism (CDM), established under the Kyoto Protocol.** To date, Brazil's engagement with carbon markets has been on voluntary markets. Brazil was the fourth largest global seller of "Certified Emission Reductions"[23] and ranked as the third largest host country for CDM projects, with 4.3 percent of registered projects and roughly 40 percent of Latin America's issuances.[24] Since then, however, the global financial crisis of 2008 steered the policy discussions away from climate-related aspects and contributed to the collapse of the international demand for carbon credits after 2012.[25] This, combined with the delay in the overarching definitions of a global market under the United Nations Framework Convention on Climate Change (UNFCCC), led to a substantive decline in the international carbon market dialogue until 2015. With the lack of reliable signals for a short-term carbon market recovery at global level, prospects for the development of a carbon market in Brazil came to a halt over this period.

15. **More recently, Brazil has been an active player in the current revival of carbon markets, with a growing share in global issuances.** Brazil's carbon credit issuances have been growing steadily, increasing from 1.3 percent of global issuances in 2018 to 11.4 percent by end 2021. The bulk of the growth stems from activities that reduce emissions

---

[17] Step-ups are increases in the coupon/ interest rates increases whereas step-downs are decreases.
[18] Six of the ten international deals were benchmark-sized, from companies such as Movida (US$500m), Simpar (US$625m), Klabin (US$500m) and Suzano (US$500, US$750m, US$1.6bn).
[19] CBI (2021). Agriculture Sustainable Finance State of the Market, Brazil briefing paper.
[20] *https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4007629*.
[21] Features would include design choices aimed at addressing recent criticisms of sustainability-linked finance, such as the need for more frequent test dates, larger step ups, etc. See *https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4007629*.
[22] See annex 3 for more information on the trends and challenges of carbon markets.
[23] A certified emission reduction is an emissions unit (or carbon credit) generated from a clean development mechanism project activity.
[24] https://www.cdmpipeline.org/cdm-projects-region.htm#7
[25] Under the scopes of both the Kyoto Protocol and the European Union ETS (EU ETS).

from deforestation and forest degradation (REDD+). This trend corresponds to Brazil's net emission profile, which sees growth in emissions driven by land-use change and deforestation and indicates the potential for further growth in this sector as well as others such as livestock waste management, amongst others. Further information on the status of Brazil's carbon markets ecosystem, including activity under the CDM, Verified Carbon Standard, Gold Standard, and ART REDD+ and service providers involved in those projects is available in Annex 4.

Figure 3: Brazil's Carbon Cre*dit* Issuances (as a share of global issuances)

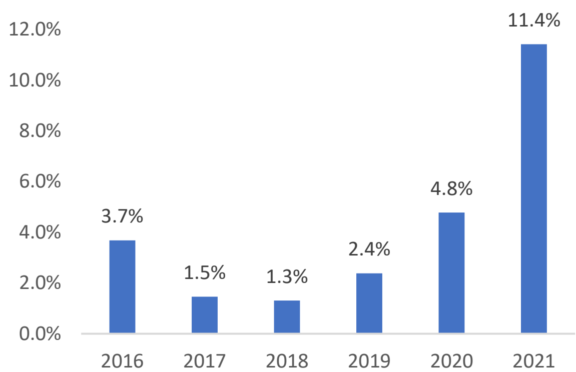
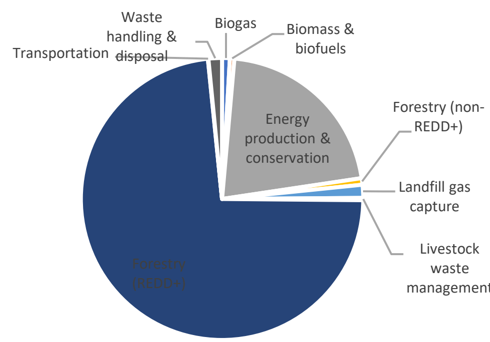


Figure 4: Brazil's Carbon Credit Issuances by Category (2016 -2021)



Source: Ecosystem marketplace

16. **A rapid expansion of the carbon market could be held back by the complex and lengthy process for creating carbon credits, which also raises integrity risks if not well managed.** The process involves applying specialized methodologies to assess mitigation outcomes and performance targets and monitoring, reporting, and verification of compliance with internationally agreed standards. It entails an intensive set of repeat transactions over time with several domestic and international entities (such as carbon market developers, verification bodies, and certification standards). The complexity of the carbon credit creation process and its degree of industry-level specialization creates informational asymmetries and raises transaction and implementation costs for interested firms. If the carbon credit creation process is not well managed, it can raise credibility risks (i.e., concerns about "greenwashing") affecting the market's integrity and liquidity.

17. **Carbon credit trading poses further challenges as it takes place within a highly heterogeneous and fragmented global market, adding transaction costs and uncertainty to the price outlook for the carbon credits.** The Paris Agreement introduced a bottom-up approach for addressing climate change by recognizing that countries may engage in carbon markets to meet their NDCs and may promote the development of diverse voluntary carbon markets driven by non-state actors. It is an approach that will lead to more heterogeneous and fragmented carbon markets going forward, thus calling attention to the need for greater coordination. Already today, numerous carbon credit markets, registries, and exchange platforms coexist globally, each with its own specifications and quality standards, making it difficult for companies to select options to monetize their carbon credits. The fragmentation in carbon credit trading rules and institutions leads to a wide price dispersion, adding uncertainty to the price outlook for carbon credit sellers.

C. Relevance to Higher Level Objectives

18. **The project is fully aligned with the World Bank Group's (WBG) Brazil Country Partnership Framework (CPF - Report No. 113259-BR) for Brazil for the Period FY18-FY23 as revised by its Performance and Learning Review (PLR - Report No. 143636-BR).** The project directly contributes to the third focus area of the CPF - Inclusive and Sustainable Development. Under this focus area, the CPF envisages the development of economic instruments to reduce carbon emissions across economic sectors in Brazil, including by measuring GHG emissions avoided through conservation and enhancement of carbon stocks in forests and other forms of native vegetation, as well as the volume of climate financing provided through financial institutions. The project will also contribute to the second focus area of the CPF that seeks to improve credit availability and allocation by increasing the access of businesses, and MSMEs in particular, to longer-term finance.

19. **The project is also aligned with the WBG's Climate Change Action Plan 2021-2025 (CCAP, 2021) and the Roadmap for Climate Action in Latin America and the Caribbean 2021-2025[26] that supports green, resilient and inclusive development.** More specifically, the project is fully aligned with the CCAP recommendation that the WBG should (i) support client countries' access to climate finance investors and build local currency finance ecosystems for key climate transitions in nascent markets through technical assistance and targeted risk mitigation; and (ii) step up its efforts to develop countries' green bond and loan markets and other innovative financing instruments, including sustainability-linked loans. The project is further aligned with the WBG's recent climate action plan for Latin America. This document recognizes that green financing in Brazil and other countries falls short of the level required to meet climate and environmental objectives, despite its significant growth in recent years. It recommends, among other actions, to develop "green financing solutions, including green taxonomies and sustainability standards, systems for monitoring, reporting and verification aligned with accepted sustainability standards, and disclosure of climate-related risks and achievements by financial intermediaries and the broader corporate sector".

20. **The project is also fully aligned with Brazil's climate agenda, as defined in the country's NDC and the National Policy on Climate Change (Law 12.187 of December 29, 2009).** The Brazilian Government has been advocating for the crucial role of market mechanisms in the implementation of the Paris Agreement. Recent legislative developments (see Box 3) signal the government's renewed interest in creating a regulatory infrastructure for the establishment of a robust carbon credit market and sectoral climate change mitigation plans that support the country achievement of its NDCs. By leveraging private capital for climate financing and supporting the development of a nascent carbon credit market, the project is fully aligned with national climate change policies.

21. **The project is aligned with the fourth pillar of the Global Crisis Response Framework (GCRF) and the World Bank's Green Resilient and Inclusive Development framework (GRID).** The fourth pillar of the GCRF focuses on Strengthening Policies, Institutions and Investments for Rebuilding Better. All components of this project are aligned with this objective given their contributions to climate smart policies and incentives and green and sustainable growth. In addition, the project is aligned with the World Bank's GRID approach through its contributions to sustainability and resilience to climate shocks.

Box 4: Brazil's Proposed Regulatory Framework for Carbon Markets

A bill aimed at establishing the Brazilian emissions reduction market and regulating carbon credits transactions is ready for presentation for a vote in the Chamber of Deputies (*PL 528/2021*). It proposes to regulate critical aspects of the voluntary market, including its legal nature,

[26] World Bank Group, 2022 <*https://openknowledge.worldbank.org/bitstream/handle/10986/38001/English.pdf*>

registration, certification, and accounting of carbon credits. The bill proposes a National Registration System, which would concentrate information about GHG removal or reduction projects and about national and international transactions with carbon credits originating in Brazil. The bill also proposes the creation of an agency that would manage the registration system. Additionally, the bill sets a deadline of five years for the Government of Brazil to adopt a regulated carbon market.

The bill was presented to the Chamber of Deputies plenary in February 2021 and has received several amendments aligned with the recommendations of the World Bank Partnership for Market Readiness Brazil (PMR) project. The bill specifies that a regulated mandatory program must be based on the sectors of the economy with the highest GHG emissions and removal capacity, as well as sector-specific reduction targets.

Pending the approval of the bill and to advance this agenda, the Brazilian authorities adopted Presidential Decree 11.075/2022, dated May 19, 2022. The decree sets standards for carbon crediting mechanisms linked to a single registry that will centralize and track GHG emission mitigation projects, the resulting carbon credits and the relevant transactions, up to their usage and retirement. It also establishes a pathway for sectoral plans for the gradual reduction of GHG emissions to be negotiated with sectors, under the oversight of the Brazilian Inter-ministerial Committee on Climate Change and Green Growth. Beyond starting the process to comply with Brazil's NDC, the decree signals the continued commitment of the Brazilian government to the carbon pricing agenda, with the private sector urging for the establishment of a carbon market in Brazil.

II. PROJECT DESCRIPTION

A. Project Development Objective

PDO Statement

22. To support the expansion of sustainability-linked finance for climate mitigation and strengthen the private sector's capacity to access high quality carbon credit markets in Brazil.

PDO Level Indicators

1) Volume of sustainability-linked finance (tied to climate mitigation plans and targets) leveraged through the project.
2) Number of carbon credit projects registered in recognized registries through project activities.
3) Volume of GHG (tCO2e) emission reductions validated through project activities.

B. Project Components

23. **The project proposes to pilot an integrated climate finance solution in partnership with Banco do Brasil.** This is a financial intermediary (FI) project through which the World Bank would provide funds to a financial intermediary (Banco do Brasil) that would on-lend to final borrowers.[27] It seeks to offer an integrated package, combining financing and technical assistance, to support firms[28] in reducing their carbon footprint through sustainability-linked financing and in accessing high-quality carbon credit markets. To that end, the project comprises two components:

i. A financing component (US$497 million) to expand access to sustainability-linked financing for borrowers with credible mitigation plans and targets; and

[27] The Project's design follows World Bank guidance "investment Project Financing—Financial Intermediary Financing", dated March 30, 2016.
[28] Companies operating in the fossil fuels sector are not eligible for financing or technical assistance under the project, regardless of their mitigation plans.

ii. A technical assistance (TA) component (US$2 million) to support companies in adopting credible mitigation plans and facilitate their access to high-quality carbon markets.[29]

24. **The two project components will work together in a mutually reinforcing manner.** The project will support BB to provide a one-stop-shop of climate mitigation financing and technical assistance. Under Component 1, the project will finance companies that are deemed to have credible mitigation plans and GHG emission reduction targets. These companies could have the potential to generate carbon credits based on the emission reductions achieved. Under Component 2, BB will support companies in adopting robust mitigation plans, will identify the subset of companies with potential for generating and monetizing high-quality carbon credits (see Box 6) and support them with technical assistance and services. For these companies, income earned through the sale of carbon credits would provide an incentive and help defray the costs of implementing their mitigation plan. It is expected that beneficiaries will use carbon credits to lower the all-in cost of financing. Annex 6 details the linkages between measuring and monitoring mitigation outcomes and carbon credits creation.

25. **The project aims to reach Brazilian firms that are seeking to reduce their carbon footprint, and will primarily reach small and medium enterprises, directly, or indirectly through supply chains.** These companies would have access to sustainability-linked sub-loans under Component 1a of the project (Credit Line). They are likely to be small and medium sized firms in a range of sectors that are relevant for Brazil's emissions profile. Firms can also benefit from increased financing for climate mitigation through Component 1b (Climate Debt Fund), which would catalyze capital towards firms that are seeking to reduce their carbon footprint. Through this channel, the project could reach large firms engaged in capital markets, especially when their mitigation targets relate to reducing Scope 3 emissions from small and medium enterprises in their supply chains. Lastly, firms that implement mitigation plans could be able to generate high-quality carbon credits based on their GHG emission reductions. Component 2 (Technical Assistance) would support these companies in generating and monetizing carbon credits.

Component 1: Expanding sustainability-linked finance for mitigation[30]

26. **Component 1 aims to expand sustainability-linked finance for mitigation.** Unlike green lending instruments that follow a "use of proceeds" approach (financing a specified pool of assets or investments), sustainability-linked instruments support the attainment of company-wide sustainability results by tying financing conditions to specific outcomes. The proceeds of the financing typically go to general corporate purposes, thus, there is no pre-defined use of proceeds. But financing terms will be linked to the achievement of predetermined sustainability performance targets (SPTs) that are both ambitious and relevant to borrowers' operations and sustainability strategy. Progress against the targets is assessed at defined intervals against the achievement of key performance indicators (KPIs).

27. **The project will tie sustainability-linked financing to mitigation outcomes, as measured through net GHG emission reductions.** Sustainability-linked financing under this project will be tied to the attainment of mitigation outcomes. These outcomes would be achieved as beneficiary companies adopt and implement GHG emission reduction (mitigation) plans to decarbonize their business models as further described in Box 5 below.

[29] The remaining amount (US$ 1.25 million) corresponds to the cost of front-end fees of the World Bank loan in line with the selected financial conditions be Banco do Brasil.

[30] MIGA is exploring the potential to contribute to this project by supporting BB in raising additional capital through its non-honoring of financial obligations (NHFO) coverage. NHFO coverage provides credit enhancement in transactions involving sovereign and sub-sovereign entities, as well as state-owned enterprises. The primary beneficiaries that can benefit from this cover are commercial lenders that provide loans to these public sector entities for infrastructure and other productive investments. NHFO protects the lender against losses resulting from a failure to make a payment when due under an unconditional financial payment obligation or guarantee. Such coverage could support BB in raising additional capital to increase project financing.

Box 5: Sustainability-Linked Finance for Mitigation – eligibility and approach

To be eligible for financing under Component 1 of the project, beneficiary companies will need credible mitigation plans and GHG emissions reduction targets to form the basis for the SPT(s) and KPI(s). The project will require that beneficiary companies (i) adopt a credible mitigation plan with robust and measurable near-term sustainability performance targets and indicators, and (ii) be subject to independent verification of progress on their mitigation plan and targets at periodic intervals.

The main attributes of a "credible mitigation plan" would include:
- Definition of the current emissions profile - the business-as-usual scenario (setting a baseline);
- Expected mitigation outcomes in terms of GHG emissions reduction (establishing sustainability performance targets - SPTs);
- Interim targets towards the intended mitigation outcome (defining key performance indicators - KPIs);
- Commitment to reduce company-level Scope 1 and Scope 2 emissions at entry[31] and to progressively report upstream Scope 3 emissions as relevant for larger beneficiaries (increasing ambition).

The institutional process for quality assurance of the mitigation plans would include protocols for:
- Ex-ante validation of the mitigation plans, including baseline and targets by independent second-party opinion providers;
- Reporting and monitoring of progress in the implementation of the plan and achievement of targets;
- Independent verification of the progress towards the achievement of targets, at intervals not exceeding three years by second party opinion providers.

Currently, BB does not apply the eligibility criteria above and the development of the mitigation framework to be used under Component 1 will be financed under Component 2. Technical assistance under Sub-component 2a will enable BB to develop and adopt robust standards for this mitigation framework that are based on internationally recognized benchmarks.[32] The standards will be outlined in the Project Operational Manual (POM), acceptable to the World Bank.

28. ***Subcomponent 1a: Provision of Sustainability-Linked Sub-Loans to Eligible Companies (IBRD: US$400 million).*** BB will on-lend the resources of this subcomponent to BB, who will originate BRL-denominated sustainability-linked sub-loans (SLLs), at market terms, to companies that have credible mitigation plans and targets (as described in box 5). This subcomponent will not finance sub-projects and the sub-borrowers will be able to use the proceeds of the loan to general corporate purposes. The Bank will not track the use of the loan proceeds and the scope of fiduciary and environmental and social oversight will be at the company-level (as opposed to at the sub-project level), as explained in the relevant sessions below.

29. **The sub-loans will be available to companies with validated emission reduction plans on a company-wide basis.** Given the composition of BB's client base, it is expected that a significant share of credit line beneficiaries will be MSMEs in agribusiness supply chains. However, the project will not earmark resources to specific sectors or industries. It is expected that the target beneficiary companies operate in sectors that contribute the most to Brazil's GHG emissions, including agriculture, forestry, energy (excluding fossil fuels), and transport (see Box 7 for selected examples). An illustrative distribution of financing across sectors may be found in the economic analysis section

[31] Tools to measure baseline carbon footprints are available under standards such as GHG Protocol. Emissions are calculated in-house or by an expanding third-party ecosystem (academia, NGOs, start-ups, rating agencies, etc.). For example, S&P Trucost Carbon Emissions Dataset already provides Scope 1, 2 and 3 quantities and intensities of emissions for 22,000 companies listed around the world. S&P's Private Company Database covers 16 million unlisted companies, 10 million with financial statements, which allows to estimate baseline footprints by matching business models. More recently, Trucost Paris Alignment dataset assesses company-level transition pathways compatible with a below 2C world.
[32] The framework will draw on the Science Based Targets Initiative's Net-Zero Standard, the UNFCCC's Race to Zero, ISO 14064 (greenhouse gases) and 14065 (general principles and requirements for bodies validating and verifying environmental information) and emerging standards under VERRA and the Forest Stewardship Council.

(section IV.A).[33] Due to operational matters, BB plans to use some of their existing credit lines and committed to make the necessary adjustments so they follow Project requirements.

30. **The sub-loans would provide incentives to beneficiary firms by linking financing terms to indicators that measure progress against the borrower's GHG-related targets.** In line with the sustainability-linked approach, borrowers would receive a financial incentive to meet their SPTs. The most commonly used inducement in the loan market currently is an interest rate step-down. Incentives may also take the form of BB waiving residual loan installments or other commercially viable financial consequences.[34] Should a project beneficiary's implementation of the agreed mitigation plan not proceed as planned, they will be subject to less favorable financial conditions through a higher cost of borrowing than would have otherwise been the case. The World Bank will work with BB to ensure that the financial incentives are material to ensure the effectiveness of the loans in promoting sustainability, that the SPTs are sufficiently ambitious, while ensuring significant participation of MSMEs.[35] Maturities will be aligned, as much as possible, with the duration of mitigation plans, to ensure BB's capacity to monitor and verify results in the medium term. There will be no remedies in the legal agreement in case the sub-borrowers do not meet the mitigation targets, i.e. no suspension or acceleration of the loan is expected to take place.

31. **To incentivize participation of smaller companies, the project will consider a grouped approach for small borrowers that are sufficiently homogeneous**. Under this approach, such a group of borrowers (for example: small cattle ranchers operating in a contiguous geographical area) could develop a joint mitigation plan and share costs relating to the development, validation and verification of their plans and their performance.[36] BB is implementing a grouped approach in some rural areas with a view to generating carbon credits for the borrowers as a group.

32. **Subcomponent 1a is expected to mobilize private capital** through the estimated rollout of up to US$1.2 billion equivalent in BB's own resources, as BB broadens uptake of this approach to its wider client base upon proof of concept. This is not a legally-binding financial commitment for BB and is not reflected in the legal agreement.

33. ***Subcomponent 1b: Establishment, Capitalization, Management, Administration and Distribution of the Climate Debt Fund (CDF) (IBRD US$97 million).*** **This subcomponent seeks to pilot a Climate Debt Fund (CDF) to mobilize additional private capital towards sustainability-linked financing for mitigation.** The objective of the pilot debt fund is to develop a market for debt instruments of companies with credible mitigation plans. To this end, the fund would provide finance, via Brazil's debt capital market and private markets, to larger companies linked to their mitigation plans and targets through the acquisition of debt instruments issued by these companies.[37] The fund will operate under the supervision of the capital market's regulator Comissão de Valores Mobiliares (CVM)[38] and will be established under governance, risk management and investor protection requirements regulated by CVM.[39] The

[33] Companies will be monitored after obtaining financing and will be subject to remedial measures if found to be incompliant with the project's standards, including the exclusion of the company from the pool of firms financed by project, suspension or acceleration of the loan in line with BB rules.
[34] Some of BB's existing results-based loan products have incentives built around waiving loan installments.
[35] BB will apply a menu approach: charging project fees as it does currently for larger borrowers, using a grouped approach for the smallest borrowers, share costs with scope 3 anchor firms, grants or forward purchase of yet-to-materialize carbon credits.
[36] Each borrower in the group remains individually subject to project standards.
[37] The IFC cannot provide a direct loan to *Banco do Brasil*, since it is a state-controlled entity. But the IFC is exploring the potential for joining BB as an anchor investor in the climate debt fund, and for providing advisory support for the structuring the fund.
[38] CVM is Brazil's equivalent of the US Securities and Exchange Commission.
[39] Instruction No 555 *sobre a constituição, a administração, o funcionamento e a divulgação das informações dos fundos de investimento* as subsequently revised by Instructions Nº 563/15, 564/15, 572/15, 582/16, 587/17, 604/18, 605/19, 606/19, 609/19, 615/19 and resolution Nº 3 of 2020. The regulations set forth the conditions for offering and operating investment funds as concerns: creation, registration, liquidation; the fund's shares—emission, redemption, voting rights, liquidity; fund documentation and communication; general assembly; fund administration, management team and fees, fund custody, etc.;

Project will finance the capitalization of an investment fund that will have BB as its anchor investor. The loan proceeds will be used to capitalize BB's share in the CDF and, indirectly, to pay certain management fees and operating costs of the fund. BB will select the service providers (fund manager and fund administrator) that will establish the fund and will have a key role in the preparation of the fund documentation and definition of its structure, investment strategy and governance.

Investment strategy

34. **The CDF will invest in BRL-denominated debt instruments of Brazilian companies with credible mitigation plans and targets**, in line with the approach of Box 5. CDF-eligible securities would include:[40]

- BRL-denominated debt instruments issued by Brazilian companies with pre-defined interest rates and validated mitigation plans and targets, including companies whose mitigation plans incorporate Scope 3 emission reductions. Market sounding suggests that there is investor demand for sustainability-linked debt investing in entities that have higher integrity than current ESG investment opportunities. Market sounding also suggests that there is a pipeline of anchor firms that are developing Scope 3 plans as a result of market pressure from foreign buyers. By investing in such companies, the CDF will signal their integrity to the broader market and will help ensure spillovers to the supply chains of anchor firms, both in technical and financing support to members of such supply chains.
- Securitizations will be considered for CDF-eligibility provided that the pools are of loans to bank clients other than BB originated under Box 5 methodology. This will help develop the market for sustainability-linked loans beyond BBs client base.
- If the CDF is established as an open-ended fund, Government securities for the sole purpose of maintaining a liquidity buffer in compliance with CVM minimum liquidity requirements for open-ended funds. A cap for this liquidity buffer will be defined in the Operational Manual.

35. **The debt fund will pilot mechanisms that provide incentives to firms for reducing their carbon footprint.** The CDF will be mandated to divest from companies or sell the debt instruments held from companies that fall off-track with regards to their mitigation plans and targets, based on periodic independent verification.[41] This is expected to have a signaling effect as to the reputation of companies. Failure to meet mitigation goals is expected to reduce investor appetite in the company, with knock-on effects on premiums over time, thus providing an incentive to remain on-track. Other potential incentive mechanisms that could be piloted by the CDF include non-performance premiums, interest rate step-up, more frequent test dates, early repayment clauses for bonds, etc. The project could also explore the potential use of carbon credits generated by mitigation plans as a form of collateral to incentivize performance. The project operational manual will define specific eligibility criteria and protocols for validation and monitoring, acceptable to the World Bank.

36. **Prior to investing, the Fund Manager will screen investments using criteria consistent with the eligibility, environmental and social safeguard standards of the project, similarly to Component 1a.** The project operational manual will provide detailed eligibility criteria in this respect, aligned with Component 1a. The CDF portfolio will be subject to diversification (composition, concentration) and liquidity requirements as regulated by the Brazilian capital

portfolio composition and concentration limits; qualified and professional investors. *https://conteudo.cvm.gov.br/legislacao/instrucoes/inst555.html*
[40] The POM will set forth specific eligibility criteria.
[41] This is similar to portfolio realignments undertaken by fixed-income fund managers following downgrades/upgrades of credit ratings. The review is expected to occur on an annual basis.

market authority.

Fund governance

37. **The CDF will adopt a governance structure that adheres to sound global practices.** It will comply with local regulations and ensure the establishment of robust risk management, underpinned by clear standards and criteria for assets and investments, transparent and professional selection, as well as monitoring, reporting and information disclosure.[42] It is expected that an Advisory Committee will be responsible for advising the overall governance of the fund, including advising the strategic direction and investment areas, approval of fund auditors, dealing with conflict-of-interest cases, and executing the right to terminate the fund manager. The Advisory Committee will be comprised of independent professionals with adequate experience and expertise in debt funds. It will have no responsibility for selection and exit decisions of individual investments by the fund.

Fund management

38. **The Climate Debt Fund will be managed by an independent, competitively selected Fund Manager (CDFM)**, in line with applicable regulatory requirements of CVM, Brazil's capital market, and following the Bank procurement rules. Clear criteria will be agreed to guide CDFM selection. Minimum criteria for fund manager selection would include: corporate commitment to Paris-aligned investing and familiarity with global standards of Paris-aligned investing; commitment to reach the expected fund size within a specified timeframe; demonstrated experience and track record in ramping-up fixed-income investment strategies by attracting anchor investors; and capacity to manage open-ended and closed-ended funds commensurate with size of the envisioned CDF.

39. **The Fund Manager will increase the CDF size by marketing it to domestic and international investors whose investment objectives are aligned with those of the CDF.** BB will seed the CDF with US$97 million equivalent. The fund manager will then seek to reach the expected size of the CDF of US$290 million equivalent, or more. The World Bank will not disburse BB's share of the CDF (US$97 million) prior to: the selection/appointment of fund manager in accordance with WB criteria; the incorporation of the fund in compliance with Brazil laws and World Bank requirements; and the mobilization of minimal co-investment from investors representing at least twice the amount of each capital contribution from BB.

40. **The Fund Manager will provide quality assurance to ensure compliance with the project's objectives.** The Fund Manager will implement a layer of quality assurance to screen investments and ensure that they are consistent with the eligibility criteria of the project, with support from independent validation and verification entities as in Component 1a.

41. **Subcomponent 1b is expected to mobilize around US$193.5 million in private capital through investments in the CDF.** The fund will offer an investment vehicle grounded in best practices for climate investment, offer diversification to investors, operate fully on a commercial basis and apply sound governance practices. These features are expected to be appealing to potential investors and support the estimated volume of private capital mobilization.[43]

[42] The fund manager, the fund administrator, and the other service providers of the fund will have the roles and responsibilities defined in the applicable CVM regulation. Additional committees will be established in the Fund Bylaws, document that will define all key governance rules for the fund, BB political powers to enable implementation of the Project as defined in the legal agreement and the operational manual, and that will encompass the Fund ESMS.

[43] Market sounding through domestic and international investors confirmed the demand for a diversified, fixed income, debt fund with sound governance and strong climate credentials. Potential investors identified this as a gap in the Brazilian market and considered the WB's role to be relevant in innovating and in

Figure 5: Component One Flow of Funds

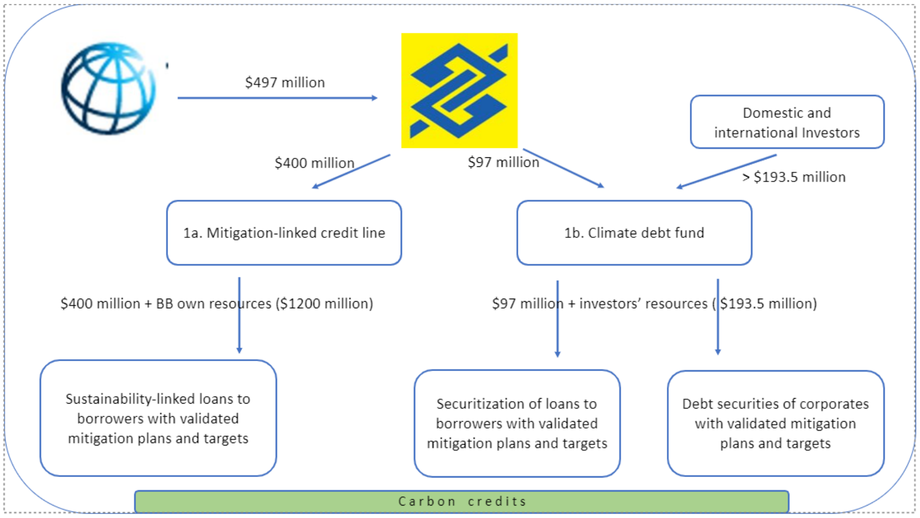


Table 1: Project IBRD Financing and Expected Private Capital Mobilization (PCM) Amounts (US$ Million)

	IBRD financing	BB/ Investors PCM
Subcomponent 1a: Sustainability-linked credit-line for mitigation	400	1200
Subcomponent 1b: Climate Debt Fund	97	193.5
Component 2: Technical Assistance	2	6[44]
Total PCM (excluding TA)	497[45]	1393.5

See Annex 5 for supporting PCM information.

42. ***Component 2: Technical Assistance (IBRD US$2 million).***[46] This component would provide TA to BB in order to strengthen its internal capacity and processes to provide their clients with services and achieve project goals. The TA will enable BB to support firms in adopting credible mitigation plans and in accessing high quality carbon markets. Activities will focus on supporting BB in a sequenced manner in the following areas: (i) adopting standards for credible company mitigation plans and high-quality carbon credits; (ii) developing tools and processes to support companies in the implementation of their mitigation plans and the creation of carbon credits; and (iii) providing companies with channels and solutions for carbon credit monetization. IBRD financing for this component will be supplemented by BB's own resources for strengthening internal processes and services to firms, bringing the total TA package to an estimated US$8 million (Table 1).

43. **Subcomponent 2a: TA to establish the framework for credible mitigation plans and the carbon credit standards for**

helping set credible climate mitigation standards.
[44] Indicative.
[45] The remaining amount (US$ 1.25 million) corresponds to the cost of front-end fees of the World Bank loan in line with the selected financial conditions be Banco do Brasil.
[46] The project estimates up to approx. US$6 million in BB own resources to supplement TA activities.

the project:

- **Establishing a framework for credible mitigation plans.** In the preliminary stages of the project, TA will support BB in adopting a framework for assessing the credibility of participating firms' mitigation plans and targets, based on recognized initiatives such as the Science Based Targets Initiative's Net-Zero Standard and the UNFCCC's Race to Zero. The project will support BB in defining requirements for corporate accounting and reporting for these plans. The framework will also define the institutional process for quality assurance, including ex-ante validation of the mitigation plans (including the baseline) and independent verification of the achievement of targets under these plans. The timing of this phase is crucial because it will help define the pipeline of companies screened for eligibility to project financing and TA support.
- **Establishing the project's carbon credit standards.** The project will assist BB in defining the standards and process to assess the quality and integrity of the carbon credits that may be generated by the participating firms (see Box 6).

Box 6: What is a High-Quality Carbon Credit?

The project will adopt minimum thresholds to define high-quality carbon credits aligned with internationally adopted principles for high-quality carbon credits. A carbon credit must ensure environmental integrity, be generated from an activity that is sustainable and under a robust certification standard/program, and be uniquely owned and counted:

Environmental Integrity:

Real: Credits are generated through a robust process, i.e., measured, monitored, reported, and verified ex-post by an accredited third-party entity.

Additional: Net emission abatement compared to the business as usual (BAU) emissions at company level, based on a conservative baseline estimation of emissions.

Permanent: Mitigation activities which are exposed to reversal risks should have proper mitigation measures in place to monitor, mitigate, and compensate any material incidence of non-permanence.

No leakage: Leakage assessment (increase in emissions outside of the project boundary) is required to identify material sources of leakage and provide measures in the event of leakage.

Sustainable: Mitigation activities do not create adverse environmental and social impacts.

Robustly certified: Credits are generated from a robust certification standard/program that adheres to clear governance rules, including public access to information and grievance and redress mechanisms.

Unique: Credits have not been double counted and are owned by one entity at a time.[47]

44. **Subcomponent 2b: TA to support the implementation of credible mitigation plans and carbon credit creation.** The project proposes to accompany the implementation of the mitigation plans and facilitate the process of creating high quality carbon credits by:

- **Establishing a cadre of service providers aligned with the project's mitigation and carbon credit standards.** The project will support BB in selecting internationally agreed standards and industry-specific methodologies for monitoring, reporting, and verification (MRV) systems.[48] It will also support BB in selecting and accrediting a cadre of service providers to assist companies with designing, validating, monitoring, reporting and verifying projects for carbon credit generation, consistent with the project's

[47] Blockchain technology, through the tokenization of carbon credits, helps to ensure traceability and avoid double counting.

[48] This includes compliance with a recognized taxonomy and validated methodologies, requirement for independent ex-ante and ex-post validation of project design, adopting an additional layer of quality assurance as needed. Currently, the existing green taxonomy in Brazil is developed by the Brazilian Federation of Banks (FEBRABAN) and accounts for sectors with social and environmental contributions for a green economy.

standards. This will address common challenges for businesses that are new to this market in identifying the appropriate service providers and technical criteria.

- **Providing standardized documentation to facilitate project transactions.** The project will support BB to develop and standardize documents, including template terms of reference and contracts with service providers, and contracting templates for emission reduction purchase agreements (ERPAs). For example, a single project design document could cover multiple distributed projects and MRV could be standardized across types of projects for simplicity and reduction of transaction costs. The TA will seek to reduce administrative burdens on BB's clients and uncertainty regarding how to engage in project development and purchase agreements.
- **Adopting new technologies for end-to-end digitalization of carbon asset generation.** Significant technological progress has been made in offering digital services that can streamline processes and lower costs for the generation of carbon credits. Digital MRV (D-MRV) systems use technology and data management tools to quantify, communicate, and authenticate outcomes in real-time, allowing for end-to-end digitalization of carbon asset generation.[49] Emerging digital technologies such as smart meters, remote sensors, and satellite data can be incorporated in D-MRV systems to digitally report, record, and analyze project information. These systems have the potential to reduce the time required for data collection, increase the accuracy of reporting, lower reporting, and third-party verification costs, and increase the scalability and security of databases. The technical assistance will also design a data management system to collect MRV information and access market transaction services.

45. **Subcomponent 2c: TA supporting carbon credit monetization.** The project would support BB in establishing a "carbon credit marketplace", pooling high-quality carbon credit projects to monetize the credits produced by project beneficiaries and crowd-in other market players. This is a key component for realizing the returns of investing in GHG reduction. The marketplace will offer multiple channels to carbon credit sellers to meet their diverse needs, including:

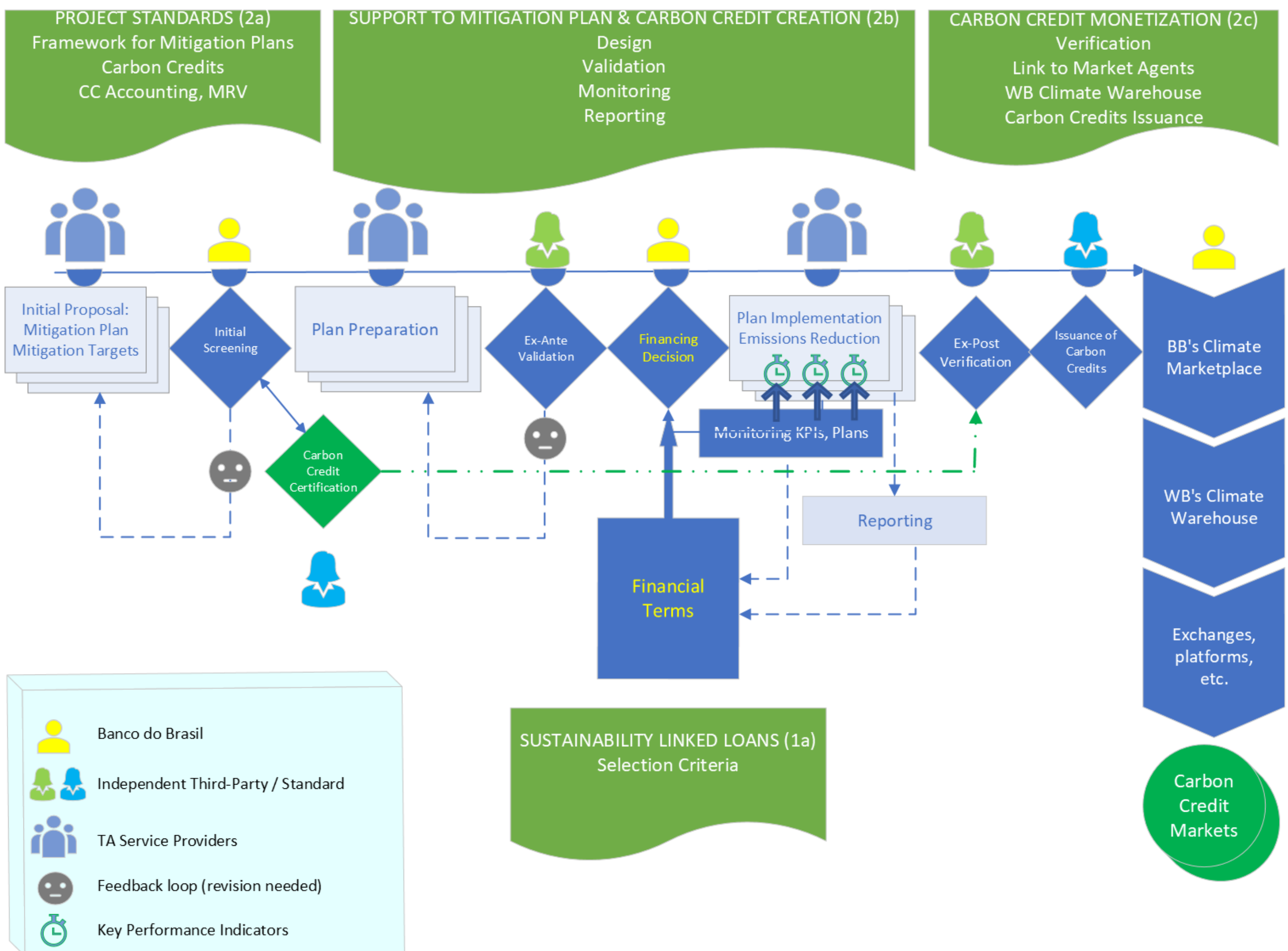
- **"Over the counter" transactions and auctions:** Over the counter transactions link sellers with buyers in domestic and international markets on spot or forward terms, including options to secure longer-term repeat transactions between sellers and buyers seeking a supply of quality credits. These transactions generally require signing one or more Emission Reduction Purchase Agreements (ERPA) and can be facilitated through long-term partnerships. Auctions, on the other hand, do not require signing ERPAs with individual buyers but instead offer multiple potential buyers the opportunity to purchase carbon credits through a competitive process. Auctions can facilitate price discovery and transparency.
- **Linkages to exchanges and global marketplaces:** The project will support BB in establishing linkages to liquid international carbon credit exchanges. It will also link BB to the World Bank's Climate Warehouse, which is an effort to support the global carbon marketplace through the establishment of a public information system in which information on carbon credits will be transparently shared from linked registries and exchanges. The Climate Warehouse will help to facilitate market access and credible tracking and reporting of climate project information.
- **Emerging technologies:** The project will help BB in adopting emerging technologies such as carbon credit tokenization and smart contracts, based on demand. Carbon credits can be converted into digital carbon assets and reside on a blockchain. Tokenization can help to increase the fungibility, liquidity and tradability

[49] The WB hosts a Center of Excellence for MRV Systems and Registries that is leading, coordinating, and collaborating to develop global knowledge and support countries. The WB has recently piloted D-MRV systems for renewable energy projects in Jordan (working with the European Bank for Reconstruction and Development) and is working on a proof-of-concept of a service to estimate carbon stock changes from space (Mozambique) in forestry emission reduction programs. The technical assistance will draw on the WB's experience and networks to provide BB and its accredited service providers the latest D-MRV tools and knowledge.

of credits. In addition, specifying the minimum quality and characteristics associated with the carbon credits can help to target certain categories of buyers in specific market segments. The use of emerging technologies such as smart contracts can help to channel part of the revenue from carbon credit sales back to the original project owner, even in secondary transactions.

- **New financial products:** The project will also support the development of market demand for carbon credits generated by BB's clients through the development of relevant financial products that would facilitate access to additional private finance based on improved project returns with carbon revenues, lower the cost of capital for carbon credit projects, and reduce risks for carbon credit sellers and buyers. Product options include financial guarantees that are structured to address risks present in carbon markets and carbon-linked bonds that raise capital and make carbon revenues available to project entities as upfront finance.

Figure 6: Supporting a One-Stop-Shop of Climate Financing and Technical Assistance: Activities and Sequencing



C. Project Beneficiaries

46. **The project's main beneficiaries would be companies with a commitment to implementing credible mitigation plans and achieving GHG emission reductions.** The beneficiaries are expected to cut across the main GHG emitting sectors of Brazil, including agriculture, forestry, energy and transport. It is expected that a large share of project beneficiaries will be active in nature-based sectors given the composition of BB's client base, notably its relative concentration and density in agribusiness supply chains. Project beneficiaries through the credit line are mostly expected to be small and medium sized firms. The project is also expected reach large firms engaged in capital markets through the debt fund, especially when their mitigation targets relate to reducing Scope 3 emissions from small and medium enterprises in their supply chains.

47. **The project will also benefit BB as the Implementing Agency.** The project will provide technical assistance to BB that will increase its capacity to reach clients with climate finance solutions. This is expected to strengthen the climate impact of BB, with positive spillovers across Brazil given the size and the reach of this financial institution.

Box 7: Examples of Potential Project Beneficiaries and Mitigation Activities

Reducing emissions through the conservation/ restoration of forest cover. The Brazilian Forest Code requires landowners to maintain a minimum natural forest cover requirement on their landholding. A major challenge has been the failure to maintain this minimum cover, or to exceed it, typically due to land-intensive production models of farmers and livestock breeders. Such potential beneficiaries could increase forest cover on their landholding through intensification techniques that are less-land intensive, thus helping deal with deforestation. The project could reach such potential beneficiaries by supporting them in adopting a mitigation plan for shifting to a less land-intensive production model, providing financing towards their activities then supporting them in generating carbon credits from the resulting emission reductions.

Reducing emissions from beef production. The release of methane, a potent greenhouse gas, from animal waste is an important source of GHG emissions from Brazil's beef industry. By adopting a mitigation plan and financing through the project, potential beneficiaries from this industry could be incentivized to reduce the release of methane by improving animal waste management practices, resulting in GHG emission reductions and other environmental benefits, such as improved water quality. The project would also support these beneficiaries in earning carbon credits to renumerate these efforts. This type of activity could also be implemented in coordination with an anchor firm in the beef industry through a Scope 3 emission reductions program.

Reducing emission through the deployment of renewable energy. Investments financed by the project could support companies in replacing fossil fuels with renewable energy, resulting emission reductions across a range of sectors. For example, potential beneficiaries in the transport sector could adopt mitigation plans to transition vehicles by substituting gasoline blends with ethanol in flex-fuel vehicles, leading to substantial GHG emissions reduction and potential carbon credits, particularly when applied to large commercial fleets.

D. Results Chain

48. **The project expects to strengthen the focus of sustainability-linked finance and carbon credit markets on high quality mitigation outcomes.** These interventions are expected to ultimately contribute to two long-term outcomes: (i) an increase in the financial and private sectors' contributions to Brazil's mitigation outcomes; and (ii) a more robust market for Brazil's carbon credits. Table 2 below describes the results chain, while section VII captures the proposed results framework. While the project expects that mitigation outcomes will continue materializing well beyond the life of the project (for example, REDD+ projects often have crediting periods that extend beyond 20 years), the results framework captures only the measurable results until the end of the project cycle. The project will leverage BB's existing systems to collect data for the results framework on an annual basis.

49. **The project will closely monitor firms' progress in achieving the anticipated reductions in emissions.** Monitoring will be anchored in the project's core requirement that beneficiary firms monitor, and report externally verified emission reduction outcomes (Box 5). To facilitate this, the technical assistance component of the project will support BB in developing robust systems for monitoring results, for example, through the adoption of a customized end-to-end MRV digital platform for clients (see annex 6 for more detail). In addition to this, the project's requirement for ex-ante independent validation of mitigation plans will support the quality of the mitigation plans at entry, including their sustainability over time.

50. **Recognizing the pilot nature of the project and the opportunities it offers to extract lessons learnt, the World Bank will work with BB to hold reviews at key intervals to capture lessons about what works and where there is need to adjust course during project implementation.** The project will hold regular implementation reviews to capture lessons about what works and where there is need to adjust course during implementation. The project will also adopt an impact evaluation approach to study the incentives and attributes behind successful firm mitigation outcomes.

Table 2: Results Chain

Development challenges	Project outputs	Intermediate outcomes	PDO outcomes	Long-term outcomes
Market underdeveloped for "outcome-based" financing.	Sustainability-linked credit line for mitigation operational. Climate debt fund investing in sustainability-linked products operational.	Increase in the number of firms receiving loans through the sustainability-linked credit line. Increase in the number of investors in the climate debt fund.	Volume of potential GHG (tCO2e) emission reductions certified through project activities. Capital leveraged from domestic and international investors for outcome-based climate finance.	Increased financial and private sector contribution to Brazil's mitigation outcomes. Mainstreamed high-quality standards for carbon credits.
Lack of a robust and liquid market for high quality carbon credits.	Capacity building delivered on standards, procedures, and service provider accreditation for the generation of high-quality carbon credits. Capacity building delivered for developing a marketplace with multiple channels for the monetization carbon credits.	Increase in the number of firms using high quality standards for the generation of carbon credits. Increase in the number of firms with access to carbon credit monetization channels.	Carbon credits registered and monetized through project financed activities.	

51. **The project will also seek to contribute to increasing the access of women-led firms to climate finance.** Women have lower levels of financial inclusion in Brazil. They are less likely to own an account in a financial institution (67.5 percent versus 73.8 percent for men) and are less likely to have borrowed (22.8 percent versus 30.2 percent for men).[50] Brazilian women tend to own fewer and smaller enterprises than men, as a result of the sectors in which women entrepreneurs tend to operate. According to an OECD study[51], in terms of credit disbursed to entrepreneurs under the MEI regime (for micro entrepreneurs), the average loan size for men is BRL 80,600, almost 20 percent higher than for women (BRL 67, 500). Moreover, men account for 69 percent of MEI loans, compared to 31 percent for women, although women represent 45 percent of MEIs. Finally, although women have lower delinquency rates than men (3.7 percent vs. 4.4 percent), they typically pay higher interest rates on their loans. BB has made strong commitments to improve women's access to credit and is tracking the number of women-led firms it finances. At the end of 2021, BB had over one million women-led companies in their customer portfolio, a 40.5 percent share of the total portfolio. These companies accounted for 35.9 percent of the loan portfolio balance, up 12.4 percent in a 12-month period, and historically have had a lower delinquency level in rural areas (BB 2021 Annual Report). This project has the opportunity to leverage BB's strong leadership towards gender commitments to ensure that finance is made available to female-led firms, willing to reduce their carbon emissions. The project team will work with BB to leverage its gender program known as "BB para Elas" to increase the number of potential women-led firms benefiting from the project, and to have well defined indicators to track this increase. BB para Elas is a program with the main objective of supporting women entrepreneurship. Activities under this program include a platform with initiatives aimed at supporting female entrepreneurs such as training, financial education, and access to information about services and credit facilities. Potential gender interventions will leverage BB's program and may include awareness campaigns to attract female-owned/led companies and targeted communication to female-led companies to reach them with information about climate finance products. The project will also monitor the share of female-owned/led companies that will benefit from project-financed activities, to track progress toward a target of 30 percent[52] (see Intermediate Indicators 1.2 and 2.2). In addition, BB has made strong commitments to improve women's representation in its ranks through its corporate gender strategy. BB surpassed a target to reach 22 percent of women in leadership positions by December 31, 2022, and has an additional target to reach 30 percent of women in leadership positions by 2025.

E. Rationale for Bank Involvement and Role of Partners

52. **The project involves the strategic use of development finance to mobilize and scale-up private capital towards climate mitigation in light of the urgency for climate action in Brazil and globally and the magnitude of the financing gap.** IBRD financing will help mobilize and deploy private capital into transparent and ambitious sustainability-linked investments that adopt internationally accepted integrity standards crucial for the sound development of the market.

53. **The World Bank's value added in this project is also based on its long-established experience, credibility, and innovations in the field of climate finance**, which will strengthen BB's credibility to develop trustable climate finance solutions and to leverage and deploy domestic and international private capital towards the project's objectives. The World Bank will also leverage its broader climate and environmental program to build synergies by supporting policy reforms and investments towards the achievement of Brazil's NDCs.

[50] Source (2017).
[51] *https://www.oecd-ilibrary.org/sites/cc5feb81-en/1/2/5/index.html?itemId=/content/publication/cc5feb81-en&_csp_=a785eb8de77c906eb32397f9c2e77129&itemIGO=oecd&itemContentType=book*
[52] In the absence of a baseline regarding the share of female-owned/led companies that benefitted from climate finance, an ambitious target of 30 percent was selected.

54. **The World Bank has played a pioneering role in the development of products and services in the carbon market and catalyzed its development through the Prototype Carbon Fund in 1997.** In the subsequent years, the Bank has developed over a dozen carbon funds with nearly US$ 4.5 billion under management with about US$ 980 million in contribution by the private sector to demonstrate business models, methodologies, and monitoring, reporting, and verification approaches to increase the credibility and transparency of the carbon markets. New carbon instruments are being developed through the Climate Emissions Reduction Facility (CERF) and private sector fund aggregation approaches are being designed by the IFC. Technical assistance, capacity building, and institutional development through programs like the Partnership for Market Readiness have supported countries – including Brazil – to design carbon markets. The development of regulatory frameworks and institutional capacity continues to be supported by the World Bank through programs like the Partnership for Market Implementation. Efforts to increase credibility and transparency through carbon market infrastructure are central to the Bank's Climate Warehouse initiative. The combined learning of the past two decades of experience with the carbon markets and contribution from the ongoing World Bank programs will contribute to the development of high-quality carbon markets in Brazil.

55. **Additional value added comes from the potential for scalable lessons, for Brazil and elsewhere**, from the proposed "one-stop-shop" solution, which is particularly relevant for MSMEs and corporates operating in high-emitting industries that lack expertise to successfully navigate the complexities climate finance and carbon credit markets. Scalable lessons learnt could also emerge from the solutions linked to reducing Scope 3 emissions in supply chains.

F. Lessons Learned and Reflected in Project Design

56. **The design of the project reflects key lessons learned from financial intermediary and climate finance projects, as well as from the implementation of the CPF in Brazil.** The main lessons learnt and incorporated include:

57. **The project benefits from the accumulated experience with the World Bank Group's engagement in carbon credit markets since the Kyoto Protocol.** Lessons learnt from the World Bank's engagement will support the development of high-quality carbon markets through the project. This includes experience with technical assistance, capacity building, and institutional development through programs like the Partnership for Market Readiness that will increase credibility and transparency of carbon markets.

58. **The project incorporates lessons learned from previous Financial Intermediary Financing projects.** The Project supports BB as a financially sound and well-managed financial intermediary that lends responsibly and operates on competitive market terms. To ensure sustainability beyond loan closing, both financing and business services flow to beneficiaries on a commercial basis. The participating financial intermediaries rely on market financing and beneficiaries receive no subsidies from the Project.

III. IMPLEMENTATION ARRANGEMENTS

A. Institutional and Implementation Arrangements

59. **BB will be both the Borrower and the implementing agency for the proposed project.** The Ministry of Finance will provide a sovereign guarantee to the World Bank on behalf of the Federative Republic of Brazil. As the implementing

agency for the Project, BB will supervise/monitor components to ensure they are in compliance with Brazilian and World Bank requirements. BB will provide periodic reports, including fiduciary, technical, and safeguards reports to the Ministry of Finance and the World Bank. An assessment of BB from the perspective of financial intermediation (OP10.00), financial management, procurement, environmental and social standards was finalized during appraisal.

60. **BB will be the direct lender to sub loans under component 1a.** BB will identify and select sub loan beneficiaries based on predefined eligibility criteria and conduct detailed due diligence on technical, economic, environmental, financial, social feasibility, and other project-related assessments. In its role as a lender, BB will have the responsibility to appraise sub loans and make credit decisions. BB will also monitor the compliance of beneficiaries with the eligibility criteria, as well as fiduciary, environmental, and social requirements for the under Component 1a both prior making the sub-loans and throughout Project implementation.

61. **BB will invest directly in the debt fund under component 1b using the BRL equivalent of IBRD loan proceeds.** It will act as the anchor investor to seed the fund and attract other investors (possibly including the IFC). Specific subsidiary implementation arrangements for Subcomponents 1b are as follows: the Fund will be created under Law 6385 of 1976 and regulated by the Brazilian Capital Market regulator (CVM) under its Instruction 555. The Fund administrator is the legal entity authorized by CVM to represent the fund. Its duties and responsibilities are detailed in Chapter 8 of CVM 555, including information to be reported to quota holders and its periodicity. The Fund administrator may outsource the provision of services to the Fund as listed in Chapter 8. If the Fund Manager is selected competitively, it may appoint the Fund administrator using its own procedures in consultation with BB and the Bank.

62. **BB will also be responsible for implementing the TA activities under Component 2.** Private services providers will be contracted by BB to implement the defined TA activities as needed pursuant to the Procurement Regulations for IPF Borrowers November 2020. BB shall appoint a coordinator of the procurement function under this Component to manage STEP and the procurement activities, which consist mainly of hiring consulting services. Procurement under component 2 will consist mainly of the hiring of specialized consulting services. The Procurement Regulations shall apply for the selection of the Fund Manager under Part 1(b) of the Project. An initial procurement plan has been submitted by BB, and approved by the Bank, for the first 18 months of project implementation. A simplified Project Procurement Strategy for Development covering the strategy for the hiring of consultants for procurement under this Component and the Fund Manager has also been prepared. The PPSD includes a statement on the private sector commercial procurement practices generally used under sustainability-linked financing.

B. Results Monitoring and Evaluation Arrangements

63. **BB will be responsible for monitoring project implementation and expected outcomes, including the Results Framework in section VII.** The Operational Manual will include a detailed description of how project activities will be monitored and evaluated, including assigned roles and responsibilities for data collection, analysis, reporting, evaluation, and use within certain time frames. BB already does routine monitoring and evaluation of its own investments and has the capacity to collect and report the data necessary to track the project's indicators. The project will establish standard formats and guidelines for data collection and reporting. Sources of data will include primary data collected through project implementation, as well as relevant government and third-party data collected for the purposes of other reports. Project monitoring will also be informed by the MRV systems established for the monitoring of mitigation and carbon market outcomes under both components.

C. Sustainability

64. **The proposed project is expected to be sustainable given its market-based, commercially oriented nature and the shifting regulatory context in favor of sustainable finance.** The regulatory context for Brazil's financial sector is rapidly evolving as the Central Bank of Brazil adopts regulations to promote environmental sustainability and address climate risks. Notably, a new set of regulations (2021) requires that banks adopt a social, environmental, and climate responsibility policy and report against it, including climate-related risks. Similarly, the CVM established requirements for the disclosure of information on environmental, social and governance aspects by listed companies in 2021 that will become mandatory next year. These domestic changes are helping to build momentum that goes hand-in-hand with growing global climate ambitions in the context of the Paris agreement. The project expects these factors to reinforce the proposed market-based climate finance solutions.

- Credit line (component 1a): The experience of implementing the credit line through the project is expected to consolidate BBs experience in sustainability-linked lending and to establish a new business line that continues to be implemented after the absorption of IBRD resources, as indicated by BBs commitment to top-up the credit line by up to US$1.2 billion.

- Climate debt fund (component 1b): Similarly, the CDF is expected to achieve financial sustainability based on the initial long-term capital provided through IBRD financing and commercial investors, as well as the robust governance structure, professional management and independent decision-making process which will ensure prudent investment choices. This would be supported by the strong market demand for high-integrity climate investments, through instruments that offer both market returns and diversification.

- Carbon credit market: the capacity built by the project within BB for the creation and monetization of carbon credits is expected to be sustained given its strong institutional capacity, along with the integration of these services in BB's own climate finance strategy and product offerings.

IV. PROJECT APPRAISAL SUMMARY

A. Economic and Financial Analysis

65. **The Project is expected to contribute to the Brazilian private sector's progress towards net-zero, an objective with significant relevance to global climate change goals**. The following presents the methodology undertaken to identify the mitigation economic benefits for this project.

66. **The analysis focuses on the costs and benefits of the *GHG emission reductions* that the Project is expected to trigger**. The analysis compares the benefits expected in terms of emissions reductions and the costs for the Brazilian private sector of these reductions. It aims at answering the question: will the Project deliver positive economic gains? It does not explore the costs and benefits for BB or the WBG.

67. **Since the Project will provide financing with market conditions, it is assumed here that applying current practices will ensure the financial and economic viability, i.e., that the beneficiaries are credit worthy**: BB under Component 1a (the credit line) as well as investors under Component 1b (the Climate Debt Fund) will extend financing only if the returns on the financing are sufficient to ensure a positive NPV based on financial flows alone.

1) Level of finance

68. It is assumed that the Project will achieve leverage as follows:

Table 3: Project Financing and Leverage

Finance source	Finance amount
World Bank loan (sustainability-linked credit line+ pilot credit debt fund)	$499,000,000
Private sector mobilization	$1,399,500,000
Total	$1,898,500,000

2) Allocation of finance across sectors

69. I**t is unknown precisely which companies and which sectors will be financed through the Project**. Given this knowledge gap, the distribution of financing across sectors has been developed across two scenarios:

a. *Scenario 1: Current BB portfolio* – The Project will finance companies in sectors assuming a composition aligned with the overall BBs portfolio from 31 December 2021. Sectors, such as public administration that do not drive emissions, are tagged as neutral, and therefore not aligned to an emissions sector. This scenario provides a reference point of where financing is currently located across sectors.

b. *Scenario 2: Aligned BB portfolio* – The Project has the ambition to align mitigation outcomes to those sectors that contribute most to Brazil's greenhouse gas emissions. This scenario assumes an adjusted sectoral allocation of financing that will deliver higher emissions abatement, given a focus on sectors with high ambition potential, an assessment of current emissions across sectors, and BB's *Sustainability Strategy Agenda BB 30.*

Table 4: Sectoral Allocation of BB Portfolio Scenarios

Sector	Scenario 1: BB current portfolio	Scenario 2: Aligned BB portfolio
Waste	2%	2%
Industrial processes	7%	5%
Energy - Electricity/ heat	16%	16%
Energy – Transportation	17%	18%
Energy - Manufacturing/ construction	12%	9%
Energy - Fugitive emissions/other fuel combustion	0%	0%
Energy – Building	7%	6%
Agriculture	31%	35%
LULUCF (generated)	7%	9%

a Portfolio allocation based on WB calculations using sectoral breakdown of BB portfolio.
b Aligned portfolio reflects WB calculations using abatement potential for Brazil taken from Pathways to a Low-Carbon Economy for Brazil, McKinsey and sectoral emissions allocation from the Greenhouse Gas Emission and Removal Estimating System (SEEG).

3) Expected impact of sectoral coverage

70. **To assess the expected impact, we assume that the availability of financing for firms under a WB label for credible mitigation plans will create an incentive for all firms to make such commitments**. We assume that this incentive will be proportional to the share represented by the Project in total financing in a given sector:

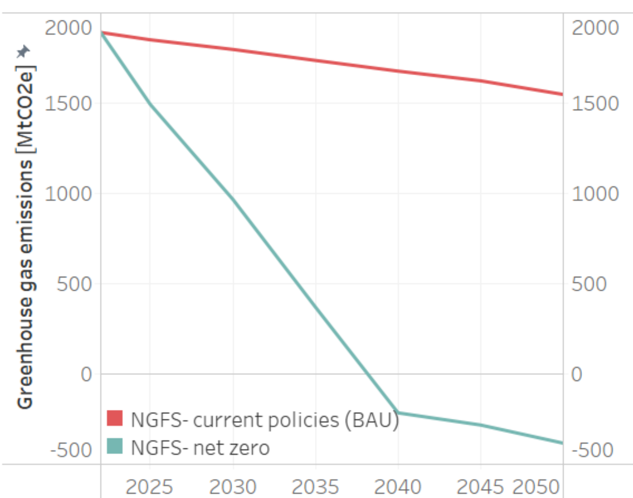
   a. *Hypothesis 1 (BB only)*: Here we assume that the fraction of firms that adopts a credible mitigation plan because of the Project is equal to the fraction of total borrowed funds provided by the Project in a given sector (e.g., if 1 percent of borrowed funds come from the Project in sector A, then 1 percent of firms in sector A adopt a credible mitigation plan).

   b. *Hypothesis 2 (spill-over effect to other financial intermediaries)*: Here we assume that some firms decide to adopt a credible plan even if they do not benefit from financing under the Project (i.e., they obtain financing from other financial intermediaries using the methodology of the Project to signal their integrity to clients and investors). We assume that the fraction of firms that adopt a credible plan is twice the fraction of total financing provided by the Project in a given sector (e.g., if 1 percent of financing comes from the Project in sector A, then 2 percent of firms in sector A have adopted a credible plan using the methodology of the Project).

4) Expected mitigation benefit

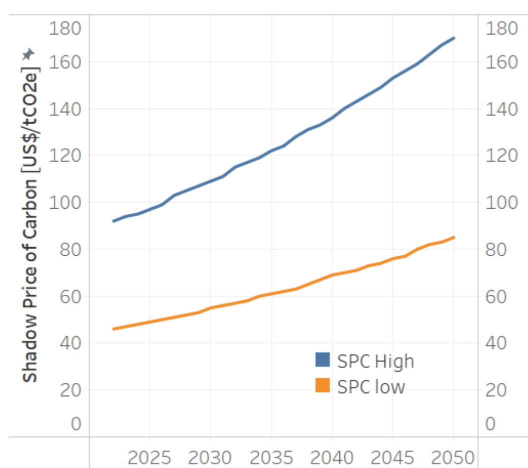
71. **To quantify the emission reductions that are additional to BAU, a BAU pathway is compared to a net-zero pathway and the emissions difference identified, sector per sector**. Both pathways are generated from the Network of Central Banks and Supervisors for Greening the Financial System (NGFS), using the pathways generated by global change assessment model (GCAM) (Figure 7).

Figure 7: Emissions Pathways, Brazil



Source: NGFS

Figure 8: Shadow Price of Carbon



Source: Guidance Note on Shadow Price of Carbon in Economic Analysis

72. **To generate the emission reductions achieved under each hypothesis, we assume that if 1 percent of the firms in a sector adopt a credible plan, then they realize 1 percent of the difference between the BAU and the Net Zero pathway in this sector**. So, to summarize, under Hypothesis 1, if BB financing in sector A is 1 percent of total financing to sector A, we assume that the Project contributes to 1 percent of sector A's emission reductions out to 2030 along Sector A's net zero pathway. Under Hypothesis 2, the Project would contribute to 2 percent of sector A's net zero pathway out to 2030.

73. **Using the additional emission reductions thus generated, we calculate the economic benefits by applying the World Bank's Shadow Price of Carbon (SPC), low and high scenario, to the annual emission reductions achieved by the Project (Figure 8 above)**. Since the Project does not offer differentiated financing conditions and does not increase significantly access to mitigation financing in Brazil, the emission reductions are the only benefits accounted for here. We turn next to the economic costs of generating emission reductions.

5) Abatement costs in Brazil

74. **Abatement potential and abatement costs were based on the McKinsey[4] marginal abatement cost analysis in Pathways to a Low-Carbon Economy for Brazil**. The abatement cost in a given sector is defined as the sum of investments and operating costs net of the economic benefits derived evaluated at the shadow price of carbon. The average abatement cost in Brazil is relatively low. The world average is around US$19 per tCO2e abated for projects with a positive net cost, while in Brazil the average cost is around US$9.50 per tCO2e.[5] For the economy of Brazil, the economic cost of emission reductions estimated in each section with the methodology presented in the previous section is the product of unit abatement cost by sector by tonnage of reductions by sector.

6) Outcome of economic and financial analysis

75. **The Project is expected to deliver robust benefits**. Depending on the scenario, the Project will deliver between 39 and 90 million tCO2e up to 2030, additional to a BAU scenario. Even if evaluated at the World Bank's lowest SPC, mitigation benefits are expected to be six times higher than abatement costs.

Table 5: Results of the Mitigation Outcome Analysis *a*

Scenario	Hypothesis	Additional emission reduction to 2030, MtCO2e	Mitigation benefit -Low SPC (US$m) to 2030	Abatement cost (US$m) to 2030
Scenario 1	Hypothesis 1	39.0	1,461	243.1
Scenario 1	Hypothesis 2	77.9	2,922	486.1
Scenario 2	Hypothesis 1	45.3	1,700	277.2
Scenario 2	Hypothesis 2	90.6	3,400	554.3

a Mitigation benefits to 2030 are shown for the lowest SPC.

76. **BB and its investors will extend financing to creditworthy companies, i.e., the mitigation investments that they will undertake with the financing are financially viable**. The beneficiaries will therefore be able to reimburse the expected financing of US$1894 million with market interest. On top of it, as shown by the NPV calculations, the Project will generate additional benefits of between US$850 million and US$1985 million to 2027 (loan closing) if

evaluated at the World Bank's lowest SPC. Overall, the Project will generate returns of between 45% and 105% at this lowest SPC.

Table 6: Results of the Economic Analysis *a*

Scenario	Hypothesis	NPV ($m) to 2027	Benefit Cost Ratio
Scenario 1	Hypothesis 1	850.12	6.01
Scenario 1	Hypothesis 2	1,700.23	
Scenario 2	Hypothesis 1	992.86	6.13
Scenario 2	Hypothesis 2	1,985.73	

a NPV calculations apply a discount rate of 6% to 2027 and assume the World Bank's lowest SPC.

B. Fiduciary

(i) Financial Management

77. **A Financial Management (FM) Assessment of BB was performed in accordance with Bank Policy: Investment Project Financing and Bank Directive: Investment Project Financing, the Financial Management Manual for World Bank-Financed Investment Operations (effective March 1,2010 and revised September 7, 2021), and the Bank Guidance on Emission Reduction Crediting (formerly Carbon Finance) Projects under Investment Project Financing, effective June 2, 2020.** The scope of the assessment included: (i) an evaluation of the existing FM systems to be used for project planning and budgeting, monitoring, accounting and reporting; (ii) a review of staffing requirements; (iii) a review of the flow of funds arrangements and disbursement methodology; (iv) a review of the internal control mechanisms in place, including internal audit; (v) format and content of Interim Financial Reports (IFRs); and (vi) a review of the external audit arrangements.

78. **The existing Public Financial Management System of Brazil has satisfactory internal rules and controls, with a clear definition of responsibilities and institutional arrangements.** The Ministry of Planning, Development, and Management is responsible for budget preparation; the Secretariat of the National Treasury (STN) takes responsibility for treasury management and accounting functions, and the Office of the Comptroller General of the Union (CGU) carries out internal audits overseeing the budget and is responsible for fighting acts of corruption and enhancing transparency within the federal public administration. The Federal Court of Accounts (TCU) (i.e., the supreme audit institution) has the mandate to audit all public expenditures. Both the TCU and CGU have sufficient autonomy and their recommendations are generally implemented. In 2020, the Federal Court of Accounts (TCU) granted BB a general level of excellence concerning Law 13,303/2016 (State Owned Enterprise Law). BB was the only company in the financial sector to achieve the general adequacy rating of excellence issued by TCU, which analyzed dimensions considered structuring in the State Law: Public interest and social function of BB; compliance and risk management; transparency and bids and contracts and corporate governance.

79. **The conclusion is that BB has sufficient capacity to fulfill its FM responsibilities** and that with the implementation of the proposed mitigating measures and agreed actions to strengthen the FM systems, the FM systems of BB are adequate to provide reasonable assurance, that the Project funds will be used for the intended purposes, with due attention to the principles of economy, efficiency, effectiveness, transparency, and accountability. The Financial Management risk is assessed as **Moderate**. (See Annex 8 for more details)

(ii) Procurement

80. **Pursuant to the Procurement Regulations for IPF Borrowers, Para 2.2 b, the Procurement Regulations do not apply to the procurement of Goods, Works, Non-consulting Services, and Consulting Services financed by the Bank through loans made by eligible financial intermediaries to private borrowers.** This is the case for Component 1a and 1b of the project, under which the proceeds of IBRD financing will be used by BB to finance a sustainability-linked credit line (US$400 million) and to provide seed capital for a pilot Climate Debt Fund (US$97 million). BB will identify and select sub loans and beneficiaries based on predefined eligibility criteria and conduct detailed due diligence on technical, economic, environmental, social, financial feasibility, and other project-related assessments. As the implementing agency for the Project, BB will have the responsibility to appraise sub loans and make credit decisions. BB will supervise/monitor components to ensure they follow Brazilian and World Bank requirements. BB will provide periodic reports, including fiduciary, technical, and safeguards reports to the Ministry of Finance and the World Bank. The Bank also prepared a brief assessment of the procurement practices by the private sector in Brazil concluding that their purchase of goods and services is adequate, fit-for-purpose and care for value-for-money. As an exception to the above, If the Fund Manager's fee is to be paid partially with the Bank's loan proceeds in component 1b, the Fund Manager will be hired competitively using one of the accepted methods of the Procurement Regulations.

81. **The assessment of procurement capacity is limited to Component 2 of the project for technical assistance (US$2 million).** The scope of the assessment included: (i) an evaluation of the existing procurement systems in place to be used for project monitoring and reporting; (ii) a review of staffing requirements; (iii) a review of the procurement processes; and (iii) a review of the internal control mechanisms in place.

82. **The federal framework of laws and regulations for procurement is solid, transparent, and known to both public officials and to the private sector.** Open competitive bidding is the default procurement method, as defined by Article 37 of the Constitution, and provides fair opportunities for bidders to contest decisions including through appeal to an independent entity. All procurement opportunities, regardless of estimated cost, are published via the internet and official gazettes. Companies are required to have local representation to bid on government contracts. This involves establishing a local office or designating a local agent to serve as local representative and obtaining a taxpayer identification number or *Cadastro Nacional de Pessoas Jurídicas*. Once incorporated in Brazil, foreign companies are treated as locals and subject to the same rules and conditions as domestic companies.

83. **The provisions in the federal legal framework governing fraud and corruption are also binding on state owned or partially owned companies.** The World Bank's assessment is that they are adequate. The Federal Constitution and laws to combat fraud and corruption define various categories of misconduct and provide for sanctions such as the suspension of political rights, removal from public office, and freezing of assets and financial compensation for damages caused to public treasury for personal and firms. The Constitution also stipulates that there is no statute of limitations when seeking reparations for damages caused to the public treasury by government officials. Legal action can be filed in court by the public entity that suffered the losses or by the public prosecutor's office (*Ministério Público*); in practice, it is almost always the *Ministério Público*. Any person can file a complaint requesting an investigation of suspected wrongdoing. The Constitution and Anti-Corruption Laws have been complemented by other federal and state legislation, among others, regulating citizens' access to information and establishing a code of ethics for state officials. The procurement activities by BB, including hiring of consultant firms similar to those required under Component 2 and, possibly under Component 1b (for the Fund Manager – if the management fee is paid partially from Bank's loan proceeds in the Fund) are regulated by the Regulations of Bidding and Contracts of BB under Law 13.303 and Decree 8,945 of 2016, which are consistent with the federal law and consistent with good

practices and compatible with the Bank's Regulations.

84. **BB has adequate capacity to implement the TA activities under Component 2.** Individual consultants and consulting firms will be contracted by BB to implement the defined TA activities as needed pursuant to the Procurement Regulations for IPF Borrowers of November 2020. A summary of the procurement plan is presented in Annex 10 identifying about ten consulting services as discussed with BB. Most of the contracts will be for services provided by individual experts, but a handful of more complex activities will be carried out by specialized consulting firms or service providers. Given the specialized nature of the services, it is likely that two or three contracts will be sole-sourced from recognized sources in field with an established technical relation with BB on climate financing. The PPSD will provide the relevant justification for the direct contracting and confirmed when discussing the implementation activities.

85. **BB shall appoint a coordinator of the procurement function under this Component to administer STEP and manage the procurement activities which consist of hiring consultant services.** This simplified Project Procurement Strategy for Development (PPSD) will be finalized by BB before Effectiveness to cover the few procurement activities under Component 2 and the hiring of the Fund Manager under Component 1b (if Bank's loan proceeds in the Fund are used to contribute to the management fee). The Procurement assessment confirmed that: (i) the procurement arrangements for the proposed Component 2 of the loan operation are considered adequate; (ii) the procurement plan has been uploaded in STEP; (iii) the Banco do Brasil has the capacity to finalize the PPSD; and (iv) the PMU will be structured in a way to respond to the operation's implementation arrangements.

C. Legal Operational Policies

	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Areas OP 7.60	No

D. Environmental and Social

86. **OP/BP 4.03 (World Bank Performance Standards for Private Sector Activities) is applicable to the Project in lieu of the World Bank's Environmental and Social Standards.** OP/BP 4.03 is well suited for the Project given that this is a private-sector type of project. The proposed project will be operated by BB, which will use the resources to originate sustainability-linked loans and to invest through a debt fund in companies that have committed to reduce their carbon footprint, achieve mitigation outcomes, and are interested in accessing sustainability-linked finance and carbon markets. Focus will be given to companies operating in sectors that are the greatest GHG emitters in Brazil. The environmental and social co-benefits of the potentially financed sub-loans will far exceed their adverse side-effects. The latter are expected to be mostly limited, site-specific, reversible, and not unprecedented.

87. **For the FI investments the environmental and social risk category of the operation is FI-2.** This categorization is based on the assessment of BB's Environmental and Social Management System (ESMS) - which has been deemed aligned with the World Bank Performance Standards (under OP 4.03) - and will be further enhanced by the adoption of a Project-specific Exclusion List and additional environmental and social risk management measures defined on the Project's Environmental and Social Action Plan (ESAP). The Project-specific Exclusion List and the additional measures agreed in the ESAP will also apply for the sub-loans conceded to eligible companies that are submitted for

retroactive financing. The Bank will carry out the prior review of the first five proposals to provide Sub-loans for eligible companies considered under Subcomponent 1.a to ensure BB's capacity to screen and monitor these companies according to the Environmental and Social criteria and these arrangements will be further described in the Project-specific Environmental and Social Management Manual. Finally, the bylaws of the CDF Manager (Subcomponent 1.b) will require the establishment of a specific Fund ESMS in line with the principles of the World Bank Performance Standards.

88. **The project-specific Exclusion List, set forth in the Loan Agreement with IBRD, will exclude sub-loans to certain companies in order to align the Project with the requirements of the World Bank Performance Standards and Bank-wide corporate commitments (see below).** Based on this, the environmental and social risks and impacts arising from most of the sub-loans are expected to be limited, generally site specific, and can be addressed through implementation of Good International Industry Practice (GIIP), although a very limited number of sub-loans may have potential significant adverse environmental or social risks or impacts that are diverse, irreversible, or unprecedented. Technical assistance activities themselves will not have adverse E&S risk and impacts, and they may provide opportunities to raise environmental and social standards across BB's portfolio. BB will be fully responsible for identifying, assessing and managing the environmental and social risks associated with the project and has a generally recognized capacity to identify, assess and manage these risks associated with the sub-loans it finances. In addition, BB has been a signatory to the Equator Principles (https://equator-principles.com) since 2005 and has experience with the use of the World Bank Performance Standards.

89. **BB's existing ESMS incorporates the principles and elements needed and appropriate to the risk profile of the Eligible Companies that are expected to be supported, in line with OP/BP 4.03 (Performance Standards of the World Bank).** BB's ESMS has also shown adequate procedures and overall capacity to identify and supervise risks and impacts under the technical assistance funded activities.[53] The ESAP adds a few measures for the E&S risk management of the Project, including the Exclusion List set forth in the Loan Agreement, which is needed to align the Project with the requirements of the World Bank Performance Standards and Bank-wide corporate commitments. The Exclusion List encompasses situations, conditions and activities that, if incurred, faced or carried out by a company would prevent it from being considered eligible to receive a sub-loan or debt investments under sub-components 1a and 1 b of the Project, respectively. The **Exclusion List** comprises:

(a) Companies that in their operations face proofs of:
    i. practices of sexual exploration of minors or exploration of child labor in their operations;
    ii. submitting workers to degrading forms of labor or maintain them in conditions analogous to slavery;
    iii. being involved in their operations with activities that (i) imply on the relocation of Indigenous Peoples from lands and natural resources subject to traditional ownership or under customary use, and/or (ii) have significant adverse impacts on critical cultural heritage that is essential to the

[53] Thus, the identification of environmental and social risks is embedded in the analysis of credit risk, which is conducted by Headquarters-based specialists not linked to local loan officers. BB's Sustainability Guidelines prohibit the granting of credit by BB to clients that are responsible for intentional damage to the environment or that have legal restrictions or may affect the bank's reputation (for instance, BB's financing excludes activities associated with the sexual exploitation of minors and/or child labor; gambling; customers who subject workers to degrading working conditions or keep them in conditions similar to slavery; planting of sugarcane for the production of ethanol and other derivatives located in areas prohibited by the agroecological zoning of sugarcane or new sugarcane areas after October 28, 2009, in the Amazon and Pantanal biomes or in the Upper Paraguay basin). Furthermore, to assess the socio-environmental risks in activities with the greatest potential to cause damage, BB applies the criteria of the Equator Principles and adopts the International Finance Corporation (IFC) Social and Environmental Sustainability Performance Standards and the World Bank Group's EHS Guidelines. Activities classified by BB in categories A or B shall carry out an assessment of relevant socio-environmental risks and impacts. BB's Environmental and Social Responsibility Policy and Sustainability Guidelines include – among other criteria - the respect for human rights, labor and working conditions, with provision for preventive actions and mitigators.

identity or the cultural, ceremonial and spiritual aspects of Indigenous Peoples, and/or (iii) use the cultural heritage (knowledge, innovations or practices) of Indigenous Peoples for commercial purposes;

iv. being involved in their operations with activities that lead to forced eviction or significant involuntary resettlement resulting from the types of land-related transactions defined by paragraph 5 of PS 5 Land Acquisition and Involuntary Resettlement; and

v. unsettled lawsuits derived from complaints made by local populations over significant environmental and social issues related to their operations.

(b) Companies operating in: a) in agribusinesses in areas embargoed by the *Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis* – IBAMA; b) commercial logging in primary tropical moist forest or purchasing logging equipment for use in primary tropical rainforest; c) commercial mining in natural areas or purchase of mining equipment for use in mining operations located in natural areas; d) in fossil fuels; and/or e) drift net fishing in the marine environment using nets in excess of 2.5 km in length.

(c) Companies that are engaged with the cultivation, renewal or funding of crops or industrialization of sugarcane for production of ethanol and other byproducts of sugarcane and sugar in areas not listed as appropriate by the Agricultural and Ecological Zoning of sugarcane and new sugarcane areas (after October 2009) within the Biomes of Amazonas and Pantanal or within the *Bacia do Alto Paraguai*.

(d) Companies that are involved with operations located in critical habitats or converting or degrading natural habitats.

(e) Companies that are involved in the construction, operation or maintenance of dams, mining tailings dams, or ash ponds which a) structural elements or components are situated in high-risk locations, and their failure or malfunction may threaten the safety of communities and b) the company has not engaged one or more external experts with relevant and recognized experience in similar infrastructures – separate from those responsible for the design and construction – to conduct a review in project development and throughout the stages of design, construction, operation, and decommissioning and c) lacking a positive stability condition declaration.

(f) Companies operating in the production or trade of: a) any product or activity deemed illegal under host country laws or regulations or international conventions and agreements; b) weapons and munitions; c) alcoholic beverages (excluding beer and wine); d) tobacco; e) radioactive materials; f) pharmaceuticals subject to international phase outs or bans; g) products containing polychlorinated biphenyls; h) unbonded asbestos fibers; i) wildlife or wildlife products regulated under CITES (Convention of International Trade in Endangered Species of Wild Fauna and Flora); and j) pesticides/herbicides subject to international phase outs or bans.

(g) Companies that have operations linked to unregulated gambling or wagering.

(h) [In compliance with the World Bank OP 7.50 – Projects on International Waterways] Companies operating a) hydroelectric, irrigation, flood control, navigation, drainage, water and sewerage, industrial, and similar projects that involve the use or potential pollution of international waterways[54] whenever there is no previously agreed and signed International Treaty among the neighboring national states with regards to the uses of these international waterways.

90. **Furthermore, and as per the requirements of OP 4.03 as set forth in the ESAP:**

[54] According to the World Bank OP 7.50, international waterways include: a) any river, canal, lake, or similar body of water that forms a boundary between, or any river or body of surface water that flows through, two or more national states; b) any tributary or other body of surface water that is a component of any waterway described in (a) above; and (c) any bay, gulf, strait, or channel bounded by two or more national states or, if within one state, recognized as a necessary channel of communication between the open sea and other states-- and any river flowing into such waters.

(a) BB shall ensure compliance with the Project-Specific Exclusion List set forth in the Loan Agreement and develop a Project Specific Environmental and Social Management Manual based on a) its existing Environmental and Social Management System, b) the Project-Specific Exclusion List, and c) the requirements of the ESAP. This Manual will set the Project-specific E&S criteria to validate the eligible expenditures submitted to reimbursement and will be a covenant for disbursements.
(b) BB shall submit for prior review and no-objection by the Bank the first five proposals to provide Sub-loans for Eligible Companies.
(c) BB shall facilitate the Bank periodically reviews a sample of Project-beneficiary Eligible Companies. Bank implementation support may include visits to the BB, as well as selected Eligible Companies.
(d) BB shall immediately notify the Bank of any environmental and social accidents/incidents – including, *inter alia*, cases of sexual exploitation and abuse, sexual harassment, fatalities or serious workplace related injuries, child labor, forced labor, in accordance with the ESMM and ESMS – which have, or are likely to have, significant adverse effect on the environment, the affected communities, the public or workers and shall – as requested by the Bank – provide a subsequent report with sufficient details regarding the incident or accident, and indicating immediate measures taken or that are planned to be taken to address it and prevent its recurrence, as appropriate.
(e) BB shall disclose and permit, in writing, the Bank to disclose at the Bank's external website the Project-specific Environmental and Social Management Manual (ESMM). BB shall keep a channel to collect feedback from citizens and stakeholders on environmental and social issues associated with the Project.
(f) BB shall require the Eligible Companies that are implementing Sub-loans to keep open relationship channels with neighboring communities, as set out in the ESMM.
(g) BB shall disclose information on and operate a Grievance Mechanism to facilitate in a timely manner resolution of concerns and grievances related to the Project.
(h) BB shall furnish to the Bank, throughout implementation, a biannual environmental and social performance report ("ESPR") and shall certify – through the ESPRs – that each beneficiary Eligible Company is in compliance with: the Brazilian national law, BB's specific policies and "Guidelines" and the requirements of World Bank Performance Standards on labor and working conditions, resource efficiency and pollution prevention, community health, safety and security, involuntary resettlement, biodiversity conservation and sustainable management of living natural resources, Indigenous Peoples and cultural heritage.

Community and Stakeholder Engagement

91. **On community and stakeholder engagement, BB's internal Guidelines require the maintenance of relationship channels with the surrounding communities when supporting large investment projects (19th Guideline**, (https://www.bb.com.br/docs/pub/inst/dwn/DirCompleto.pdf)). BB provides channels to meet stakeholders' calls and address specific issues, breach of the Code of Ethics, and torts of any nature reported. Customers have two service channels: the Relationship Center (CRBB) and the Customer Service (SAC). The first is a phone service channel focused on customer relations and meeting banking consumers' calls. The SAC is a multichannel (telephone, Internet and mobile) aimed to resolve consumers calls based on information, questions, complaints, suspension or cancellation of contracts and services. SAC covers calls falling into consumer relations, regardless of whether the complainant is a customer or not. SAC receives and seeks to resolve calls at first contact, which occurs in 93%+ cases.

If the call is not resolved by these primary service channels, customers may escalate the call to the external ombudsman (see below). There is also an Illegal Acts Reporting Channel for reporting situations with suspected torts of any nature in connection with the bank's activities.

92. **As a second level of review, BB has an external ombudsman office which is an autonomous executive management, linked to the Corporate Vice Presidency.** Its main objective is to improve customer satisfaction and experience, being a reference in prevention and resolution. In compliance with BB's Relationship and Users Policy, the ombudsman's office must mediate conflicts, encouraging a cooperative and balanced relationship with customers, dispensing fair and equitable treatment in cases dealt with in the second instance. Users can contact the external ombudsman Office by phone (a toll-free phone line) or through the website (www.bb.com.br/ouvidoria). A special toll-free phone line is available for users with hearing or speech impairments. The ombudsman has a maximum period of 10 working days to investigate the facts and seek to provide a conclusive solution. Customers can resort to the ombudsman as a last resort to register complaints about unresolved issues in BB's usual service channels Contact information is widely disseminated to customers on the website, in print, digital channels, among others.

93. **In addition to the above-mentioned channels for community engagement, it has been agreed with BB as part of the Project's Environmental and Social Action Plan (see paragraph 90(f)), that BB will require that eligible companies receiving sub-loans shall maintain open channels of relationship with neighboring communities, as set out in the ESMM.** BB has a system to assess and classify clients according to the degree of socio-environmental risk, considering size, sectors of activity and the level of excellence of its socio-environmental practices, which will be used to determine which eligible companies will be required to have open channels with local communities.

V. GRIEVANCE REDRESS SERVICES

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

VI. KEY RISKS

95. **The overall risk rating for the project is assessed as "Substantial".**

96. **Macroeconomic risks are substantial, arising mainly from the growth and monetary policy outlook.** Inflationary pressures have motivated a monetary policy tightening cycle in 2021 and 2022, which could dampen growth prospects, further raise the cost of finance, and reduce the private sector's appetite for investing to lower GHG emissions. These risks are mitigated by the project design, which increases incentives for investment by lowering transaction costs faced by firms and facilitate returns through carbon credit markets. In the medium-term, monetary policy is expected to normalize as inflation levels recede, and growth could pick-up if productivity-enhancing reforms are implemented supported by complementary operations under the broader World Bank program in Brazil.

97. **Technical design risks are rated as high.** There could be delays in developing the project's framework and operational modalities for credible mitigation plans. The timing of this phase is crucial because it will help define the whole pipeline of companies and plans screened for eligibility to project financing and TA support. This risk is mitigated through technical assistance to BB that will leverage the experience of the World Bank's Climate Change Group, and the WB's climate related program in Brazil (see Annex 6). The project may also face the risk that the financing proceeds are disproportionately absorbed by larger firms with greater capacity to develop and implement mitigation plans and targets. This risk would be mitigated by the TA package that will support less able firms in adopting the projects proposed framework/ standards. The project will also support MSMEs through its focus on Scope 3 emission reduction in the value chain of beneficiary firms. Further risks arise from the complexity of the carbon credit creation and monetization process (subcomponents 2b and 2c) with significant informational asymmetries and transaction costs linked to creating and monetizing high quality carbon credits. Some companies face higher complexities than others, including in developing and implementing low carbon agriculture projects, which face challenges such as the high cost of soil sampling and the difficulties in ensuring permanence, amongst others. Although the estimated average benefit/cost ratio is high for the project overall (6 times), there is a risk of localized unfavorable cost/ benefit ratio for beneficiaries with capacity challenges, especially MSMEs, or the risk of failure to deliver mitigation outcomes and the associated carbon credits. The project seeks to mitigate these risks by lowering transaction costs through the one-stop-shop TA and financing approach for project beneficiaries and by working, as needed, with large anchor firms with the capacity to reach MSMEs in their supply chains.[55] Finally, there could be delays in getting the debt fund to be fully invested (risk of a longer ramp-up period). Delays could stem from the selection process of the fund manager, as well as the availability of investable securities, i.e. securities of companies with credible mitigation plans and targets. This risk is mitigated by increasing investor demand for climate action by Brazilian corporations and the recently adopted regulations by Brazil's capital market authority, requiring increased transparency and disclosure of ESG practices of publicly held companies, including disclosure of sustainability plans, reports, and targets.[56]

98. **Additional technical risks stem from the complexity in demonstrating the integrity of the underlying investments and the achievement of the desired mitigation outcomes.** The global climate finance market is growing rapidly, but it is facing investors' concerns around "green-washing" risks, including in the new field of sustainability-linked financing. The proposed project will be exposed to these challenges if project beneficiaries invest in climate-unfriendly activities or take on investments that fail to generate the expected GHG emission reductions. Managing these risks will be a central agenda in the design and implementation of the project. Mitigation strategies include the adoption of internationally recognized standards at the outset and technical assistance to support BB and its clients in implementing them and the adoption of company-wide (rather than investment-specific) outcomes. Lastly, the project faces the risk of achieving emission reductions within the scope of its activities, but that Brazil's overall level

of emissions may not improve due to development outside of the project's scope. This is a challenging risk and would be mitigated by more rapid progress through the broader World Bank country program of engagements on climate (see Box 1 and Annex 6).

99. **The environmental and social risks are rated substantial, taking into account context-related factors and the general purpose nature of the FI sub loans for eligible companies.** As a financial intermediary project, Component 1 will support FI general purpose sub loans to a variety of companies working in different sectors and locations. The open design of the Project with regards to the companies and the general purpose nature of the sub-loans increase the overall social and environmental risks of the project. In this regard, it should be noted that the Bank will not track the use of the Loan proceeds. To reduce environmental and social risks, several situations that may be faced by companies have been included in a project-specific Exclusion List set forth in the Loan Agreement (see paragraph 89, above) and a set of requirements have been agreed in the Project's Environmental and Social Action Plan (see paragraph 90, above) to enhance BB's Environmental and Social Management System and will be followed by BB as part of its environmental and social due diligence. To minimize these risks, the Exclusion List will apply at the company-level (i.e. to all activities being carried out by the company) and project will exclude any support to activities that are, for example, high-risk, unsustainable, or violate the country's environmental, social, or labor regulatory framework. Additionally, as part of its due diligence, BB will ensure that the sub-borrowers a) show evidence of corporate commitment and capacity for achieving positive environmental and social outcomes (including when operating in sectors and with activities that are of potentially substantial and moderate risks), b) do not have a track-record of significant infringements of the environmental, social, or labor legislation, and c) will comply with relevant laws and environmental regulations. The Project-specific Exclusion List and the additional measures agreed in the ESAP will also apply for the sub-loans conceded to eligible companies that are submitted for retroactive financing. Furthermore, during project implementation, the World Bank will request verification that the carbon credits supported by the project adhere to globally recognized quality standards (i.e., mitigation outcomes to be real, additional, permanent, independently verified by internationally accredited service providers, and transparently registered). BB is a signatory of the Equator Principles of sustainable banking since 2005, has experience cooperating with international finance institutions and its environmental and social management policies and guidelines are well aligned with the World Bank Group's Performance Standards.

VII. RESULTS FRAMEWORK AND MONITORING

Results Framework
COUNTRY: Brazil
Brazil Climate Finance Project

Project Development Objectives(s)

To support the expansion of sustainability-linked finance for climate mitigation, and strengthen the private sector's capacity to access high quality carbon credit markets in Brazil.

Project Development Objective Indicators

Indicator Name	PBC	Baseline	End Target
PDO Indicators			
Volume of private sustainability linked finance leveraged by the project through the credit line and the CDF. (Amount(USD))		0.00	1,200,000,000.00
Number of carbon credit projects registered in recognized registries through project financed activities. (Number)		0.00	1,000.00
Volume of additional GHG (tCO2e) emission reductions certified through project financed activities. (Number)		0.00	45,000,000.00

Intermediate Results Indicators by Components

Indicator Name	PBC	Baseline	End Target
Achieving GHG emission reductions through sustainability-linked financing for mitigation.			
Number of firms accessing the sustainability-linked credit line. (Number)		0.00	10,000.00
Share of women-led firms accessing the sustainability linked credit line. (Percentage)		0.00	30.00
Number of investors in the debt fund (Number)		0.00	5.00
Strengthening capacity to access carbon credit markets.			
Number of carbon credit service providers accredited. (Number)		0.00	5.00
Number of firms accessing carbon credit generation services. (Number)		0.00	1,000.00
Share of women-led firms accessing carbon credit generation services. (Percentage)		0.00	30.00
Number of firms accessing carbon credits monetization services. (Number)		0.00	300.00
GHG emission reductions achieved.			
Share of potential additional GHG emission reductions realized by project closing. (Percentage)		0.00	30.00

Monitoring & Evaluation Plan: PDO Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
Volume of private sustainability linked finance leveraged by the project through	Volume of private sustainability linked finance	Semi-annually	Banco do Brasil and	Banco do Brasil and fund reporting systems	Banco do Brasil; CDF

the credit line and the CDF.	leveraged through the project, through the credit line and the CDF.		CDF fund manager		fund manager
Number of carbon credit projects registered in recognized registries through project financed activities.	Number of carbon credit projects registered in recognized registries through project financed activities.	Semi-annually	Beneficiaries (firms) and Banco do Brasil reporting	Monitoring of carbon credits registered by beneficiary firms through the BB end to end MRV systems; Banco do Brasil internal reporting tools	Beneficiaries (firms) and Banco do Brasil
Volume of additional GHG (tCO2e) emission reductions certified through project financed activities.	Volume of additional GHG (tCO2e) emission reductions certified through project financed activities.	Semi-annually	Reports delivered by beneficiaries (firms), external validation companies and Banco do Brasil.	Use of GHG accounting reporting delivered by beneficiaries (firms), and ex-post external validation by independent service providers.	Beneficiaries (firms), external validation companies and Banco do Brasil.

Monitoring & Evaluation Plan: Intermediate Results Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
Number of firms accessing the sustainability-linked credit line.	Number of firms accessing the sustainability-linked credit line.	Semi-annually	Banco do Brasil	Banco do Brasil credit-line reporting system.	Banco do Brasil.
Share of women-led firms accessing the sustainability linked credit line.	Share of women-led firms accessing the sustainability	Semi-annually	Banco do Brasil	Banco do Brasil credit-line reporting system	Banco do Brasil

	linked credit line: defined by ownership or top management of the firm.				
Number of investors in the debt fund	Number of investors in the debt fund	Semi-annually	Debt fund reporting system	Use of debt fund reporting system	Debt fund manager
Number of carbon credit service providers accredited.	Number of carbon credit service providers accredited by Banco do Brasil to provide services to BB or its clients.	Semi-annually	Banco do Brasil	Banco do Brasil reporting	Banco do Brasil
Number of firms accessing carbon credit generation services.	Number of firms accessing carbon credit generation services through BB.	Semi-annually	Banco do Brasil	Banco do Brasil reporting	Banco do Brasil
Share of women-led firms accessing carbon credit generation services.	Share of women-led firms accessing carbon credit generation services based on gender of owner or top management.	Semi-annually	Banco do Brasil	Banco do Brasil reporting	Banco do Brasil
Number of firms accessing carbon credits monetization services.	Number of firms accessing carbon credits monetization services through BB.	Semi-annually	Banco do Brasil	Banco do Brasil reporting	Banco do Brasil
Share of potential additional GHG emission reductions realized by project closing.	Share of potential additional GHG emission reductions realized by project closing.	Annual	Banco do Brasil through the reports provided by beneficiaries	Use of information reported by firms and verified by independent verification agencies.	Project beneficiaries (firms) and Banco do Brasil

ANNEX 1: Implementation Arrangements and Support Plan

COUNTRY: Brazil
Brazil Climate Finance Project

The implementing entity: Banco do Brasil

1. **Banco do Brasil S.A. (BB), the sole implementing entity for this project, is a strategic partner given its size and its leading position in rural finance, offering this initiative access to extensive capillarity in the key sectors and regions for reducing Brazil's carbon footprint.** BB is the country's largest bank, listed in Sao Paulo and New York, with 49.6 percent private shareholding in free float (20.6 percentage points of which is foreign) and 50.4 percent public holding. It has Latin America's largest asset manager, with a strong network of institutional and private investors. It has also a large market share in high emitting activities in Brazil (agribusiness alone represents 55 percent of the Bank's market share), with extensive geographical reach, being present in virtually all (97 percent) of the Brazilian 5500 municipalities.

2. **BB exhibits good corporate governance practices, reinforced by its nature of being a publicly traded and designated by the central bank as systemically important, and therefore subject to more intensive supervision.** This implies governance, transparency and risk management requirements set by the State-Owned Entities Law, the Brazilian Securities Exchange Commission (CVM), the National Monetary Council (CMN), and the central bank of Brazil. With 19 US$-denominated securities listed on the Luxembourg stock exchange, BB submits to standards of financial performance and disclosure of information required by global investors. BB shares are listed on the Brazilian Stock Exchange B3; B3 requires disclosure of material information in line with IOSCO (international Organization of Securities Commissions) Objectives and Principles of Securities Regulations. BB is also registered with the US Securities and Exchange Commission for trading Level 1 ADR (American Depository Receipts) on the New York Stock Exchange.

3. **BB's policies and processes incorporate increasingly demanding central bank regulations on responsible social, environmental and climate policies ("PRSAC").** Resolution 4,327 of 2014 required that financial institutions establish, implement, and disclose such policies. Circular 3,846 of 2017 mandated the inclusion of socio-environmental risks in the Internal Capital Adequacy Assessment Process, including assessing capital needs for such risks and whether Basel solvency requirements are breached under adverse climate scenarios (stress testing). In 2021, the central bank issued regulations that further strengthen disclosure using the newer global TCFD standards and updated accordingly its Manual of Rural Credit. In the central bank's latest regulatory package of September 2021, new rules for the management of social, environmental, and climate-related risks seek to mitigate potential losses for a financial institution, due to its own activities or the activities performed by counterparties, controlled entities, suppliers, and providers of outsourced services. The rules reflect in particular:

   - **New definition of environmental risk**, characterized as the possibility of losses resulting from events related to environmental degradation, including the excessive consumption of natural resources. The definition encompasses a non-exhaustive list of instances of environmental risk events, such as: irregular, illegal or criminal act against fauna or flora, including degradation of biomes or biodiversity; air, water, or soil pollution; irregular, illegal or criminal exploitation of natural resources; non-compliance with environmental licensing conditions; environmental disaster, in terms of its environment degradation, such as dam failure, nuclear accident, or spillage of chemicals into waters; among others.

• **New definition of transition risk**, characterized as the possibility of losses resulting from the transition to a low-carbon economy, in which the emission of greenhouse gases is reduced or compensated, and natural carbon sinks are preserved. The definition encompasses a non-exhaustive list of instances of transition climate-related risk events, such as changes in legislation, regulation, or government action; technological innovations; shifts in supply-and-demand; and negative perceptions on the institution's contribution to a low-carbon economy.

4. **BB has in place detailed Sustainability Credit Guidelines for Agribusiness, Energy, Civil Construction, Cement, Mining, Oil & Gas, Transportation, Pulp & Paper, and Steel.** The Guidelines list Excluded Activities, Restricted Activities, and Alert Activities (see activity lists in Table 1 below). Excluded Activities are denied financing. Restricted Activities require environmental impact assessments. Alert Activities require special attention for environmental impacts. In particular, BB does not finance agribusinesses in areas embargoed by the IBAMA. Agribusiness financing in the Amazon Biome is conditional upon proof of environmental and landholding legality. Credit analysis is conducted by HQ-based specialists not linked to local loan officers. Financing contracts include clauses to accelerate repayment and stop disbursement in case of infringement.

5. **In line with competitors, BB’s operations also incorporate a range of voluntary practices**, such as the Equator Principles, Green Protocol, Principles for Responsible Investment (PRI) and for Sustainable Insurance (PSI), among others. BB is in the Dow Jones Sustainability Index; Corporate Sustainability Index of Sao Paulo exchange, FTS4Good index of the London Stock Exchange, as well as various ratings, such as MSCI ESG Rating, CDP standard for environmental reporting, etc. BB has had formal Sustainability Plans since 2005 updated every two years. The current Plan (Agenda 30 BB) contains 40 actions and 110 indicators for the period 2021-23, as well as 10 Long-Term Commitments to 2030 under three blocks: Sustainable Businesses, Responsible Investment and ESG.

6. **BB has made strong commitments to improve women representation in its ranks through its corporate gender strategy.** BB has adopted and surpassed a target to reach 22 percent of women in leadership positions by December 31, 2022 so as to reflect the profile of BB’s staff. BB has an additional target now to reach 30 percent of women in leadership positions by 2025. In addition, BB has targets in its strategy regarding its clients, and it is already tracking the number of women-led firms it finances. At the end of 2021, BB had over one million women-led companies in their customer portfolio, a 40.5 percent share of the total portfolio. These companies accounted for 35.9 percent of the loan portfolio balance, up 12.4 percent in a 12-month period, and historically have had a lower delinquency level in rural areas (BB 2021 Annual Report).

Table 7: BBs Sustainability Credit Guidelines

Non-Implemented Activities	Restricted Activities	Alert List
Non-Implemented Activities – Activities in violation of the law or the principles and values of Banco do Brasil, and in which the bank doesn't invest and for which it denies credit: 1) Companies that have legal restrictions or that may harm Banco do Brasil image. 2) Activities where there is proved practice of sexual exploration of minors or exploration of child labor. 3) Customers that submit laborers to degrading forms of work or maintains them in conditions analogous to slavery. 4) Companies linked to unregulated gambling or wagering. 5) Cultivation, renewal or funding of crops or industrialization of sugarcane for production of ethanol and other byproducts of sugarcane and sugar in: ✓ Areas not listed as appropriate by the Agricultural and Ecological Zoning of sugarcane; and ✓ New sugarcane areas, after 10.28.2009, within the Biomes of Amazonas, Pantanal and Bacia do Alto Paraguai.	**Restricted Activities** - Activities that cause an environmental impact and that, in their process of licensing, require Environmental Impact Assessment Study – EIA and Environmental Impact Report – RIMA, in addition to environmental license: 1) Roadways featuring two or more lanes. 2) Railways. 3) Ports and terminals for ore, oil and chemicals. 4) Airports, as defined by Article 48(I) of Decree-Law no. 32, of 11.18.1966. 5) Oil, gas, and mineral pipelines, sewer trunk collectors and emissaries. 6) Electrical power transmission lines, over 230 kW. 7) Water works for exploitation of water resources such as hydroelectric barrages over 10 MW; sanitation and irrigation dams; opening of navigation, drainage and irrigation channels; rectification of watercourses; opening of river estuaries and mouths and basin transposition; ditches. 8) Extraction of fossil fuels (oil, schist, coal). 9) Extraction of ores, including those of Class II, as defined by the Mining Code. 10) Sanitary embankments, processing and disposal of toxic or harmful waste. 11) Power plants, notwithstanding their primary source of energy, over 10 MW. 12) Industrial and agro-industrial complexes and units (petrochemicals; steel mills; chloro chemicals; alcohol distilleries; coal; extraction and cultivation of water resources). 13) Industrial Districts and Strictly Industrial Zones – ZEI. 14) Economic exploitation of timber or firewood in an area over 100 hectares, or less – in case it affects areas that are percentually significant or environmentally important. 15) City planning projects over 100 hectares or located in an area held as environmentally important (at the discretion of Ibama and competent agencies of local and state governments). 16) Any activity using charcoal, its byproducts or similar products, at a rate over 10 tons per day. 17) Agricultural and livestock projects with areas over 1000 hectares or less – in case of areas that are percentually significant or environmentally important.	**Alert List** - Activities displaying potential environmental impact and subjected to environmental licensing (Conama Resolution no. 237, of December 19, 1997), with updating of requirement criteria or release by Federation Units. The list comprises the following activities: 1) Ore extraction and processing. 2) Industry of non-metal mineral products. 3) Metallurgy/mechanical industry. 4) Industry of electrical, electronic and communication materials. 5) Industry of transportation materials. 6) Timber/paper and cellulose Industry. 7) Rubber/leather and furs industry. 8) Chemical industry 9) Industry of plastic products. 10) Textile, clothing, shoe, and fabric artifacts industry 11) Food and beverage industry. 12) Tobacco industry. 13) Concrete and asphalt plants/galvanoplasty services. 14) Civil works. 15) Public utilities. 16) Transportation, terminals and warehouses. 17) Tourism. 18) Other activities (land, district and industrial area developments). 19) Agriculture and livestock activities. 20) Use of natural resources (forestry/timber/exotic fauna/sylvan fauna/natural genetic heritage/live water organisms/exotic or genetically modified species/biological diversity through biotechnology). Remarks: It is worth stressing that Federation Unit environment agencies, as well as Ibama, update the requirement criteria or release of environmental license in the context of their legal competences, and Banco do Brasil possesses a specific information flow involving its States Superintendencies to monitor environmental legislation of States in order to keep permanently up-to-date.

Implementation arrangements

7. **BB will be both the borrower and the implementing agency for the proposed project.** The Ministry of Finance will provide a sovereign guarantee to the World Bank on behalf of the Federative Republic of Brazil. As the implementing agency for the Project, BB will supervise/monitor components to ensure they are in compliance with Brazilian and World Bank requirements. BB will provide periodic reports, including fiduciary, technical, and safeguards reports to the Ministry of Finance and the World Bank. A full assessment of BB will be conducted from the perspective of financial intermediation (OP10.00), financial management, procurement, environmental and social standards during project preparation.

8. **BB will be the direct lender to sub loans under component 1a.** BB will identify and select sub loans and beneficiaries based on predefined eligibility criteria and conduct detailed due diligence on technical, economic, environmental, social, financial feasibility, and other project-related assessments. In its role as a lender, BB will have the responsibility to appraise sub loans and make credit decisions. BB will also monitor compliance of beneficiaries with

the eligibility criteria, as well as fiduciary, environmental and social requirements for the private sector procurement activities under Component 1a.

9. **BB will invest directly in the climate debt fund under component 1b using IBRD loan proceeds.** It will act as the anchor investor to seed the fund and attract other investors. A fund manager will be selected following a competitive selection process. Specific details are presented in Annex 8.

10. **BB will also be responsible for implementing the TA activities under Component 2 with support from the World Bank.** Private services provider(s) will be contracted by BB to implement the defined TA activities as needed pursuant to the Procurement Regulations for IPF Borrowers dated November 2020. BB shall appoint a coordinator of the procurement function under this Component to manage STEP and manage the procurement activities which consist mainly of hiring consultant services. Procurement under component 2 will consist mainly of the hiring of specialized consultant services. A procurement plan covering the first 18 months of implementation has been uploaded by BB authorized staff into STEP before the Negotiations stage. A simplified Project Procurement Strategy for Development (PPSD) was finalized by BB by Negotiations. The PPSD included an assessment on the private sector commercial procurement practices generally used under sustainability-linked financing. Given the significant risk of forced labor in the global supply chain for solar panels and solar components and to support forced labor risk mitigation, the Bank and BB shall agree on adding to the above Restricted Activities solar panels/components whose contractor has not demonstrated to BB as being free of forced labor as defined by the ESF of the Bank. The procurement coordinator shall also support the hiring process of the Climate Debt Fund Manager if Bank loan resources in the Fund are used to partially pay for the management fee.

11. **IBRD loan proceeds will be disbursed to BB on a reimbursement basis**, after verification that the expenditures are consistent with the eligibility requirements and the environmental and social safeguard standards of the project as detailed in Annex 9.

ANNEX 1: Brazil's Green Finance Market

1. **Although Brazil's financial institutions are channeling more resources to climate lending, most of the growth in loans is attributed to large-size firms in the energy sector.** Climate policies, in tandem with a significant drop in the price of clean technologies, have spurred Brazilian financial intermediaries to mobilize loans to green sectors. In particular, preliminary estimations show that the share of green lending to non-financial corporations increased from 17 percent in 2015 to 25 percent (US$ 90.5 billion) in 2019, remaining stable during the 2015-2016 Brazilian recession.[57] This growth is entirely linked to large firms in the energy sector. The lion's share of growth in green lending originated in Sao Paulo, Rio de Janeiro, and Minas Gerais where most hydroelectric energy plants operate. In addition, North-eastern states have experienced a strong increase in solar and wind energy plants, backed by *Banco do Nordeste* financing lines. In contrast, green lending to non-energy sectors and smaller firms shows a flatter trend (Figure 6). While a greener and diversified energy matrix is desirable, credit directed to this segment might be crowding out other sectors from access to green lending, including MSMEs.[58]

2. **Similarly, although green lending tends to offer longer maturities on average, this is driven by lending to large firms.** At the aggregate level, Brazilian banks' lending to green sectors exhibits a slightly longer maturity: 2.6 years, compared to 2.3 years in the case of brown or neutral sectors. However, the longer average maturity of green lending is also driven by lending to large firms. The average green lending maturity to large firms is between 3-5 years, whereas the average tenor of their loans for neutral or brown activities is between 1-3 years. In contrast, the average maturity of MSMEs' green loans is significantly lower, with a thin tenor difference of green vs. non-green investments for micro, small, and medium enterprises.

3. **The Brazilian green bond market - the largest in the LAC region - has also primarily funded large firms in the energy, leaving investment opportunities relatively unexploited in other industries.[59]** Brazil has issued US$ 10.3 billion (44 entities and 78 deals) to green sectors between 2005 and 2021.[60] The energy (wind and solar) and land use (pulp and paper) industries are the most funded categories (50 percent and 25 percent, respectively). As in the case of bank lending, the bulk of green bonds funding has not reached the agriculture sector, which is strategic sector for both climate mitigation and adaptation.

4. **Despite Brazil's vibrant venture capital market, its venture capital activity in the green/ climate-tech market is still incipient.** According to Pitchbook (2021), as of Dec 2021, out of the 3,628 companies headquartered in Brazil that have received venture capital funding (total raised US$18.7 billion), only 13 are classified as climate-tech (total raised US$ 322 million or 2 percent of the total).[61] Similarly, Brazil's private equity investors are overwhelmingly outside the climate-tech space. This pattern poses a challenge since long- term equity financing is

---

[57] Analysis based on the classification of green finance developed by the Brazilian Federation of Banks (FEBRABAN) and a comprehensive sector-level credit data between 2012 and 2020 from Banco Central do Brasil (Miguel et al., forthcoming). FEBRABAN green taxonomy accounts for sectors with social and environmental contributions for a green economy. By taking a narrower definition of green and excluding sectors with social contribution only (e.g., book retail trade), trends do not change significantly, with a roughly even downscaling of 4 percentage points in the aggregate trend.
[58] This analysis is based on the Central Bank definition for medium firms, which is relatively large compared to international standards (annual gross revenue up to R$300 million or total assets up to R$240 million). Therefore, we bundle medium firms together with large firms for analytical purposes.
[59] By mid-2021, the country was also the second-largest LAC market for the mix of labeled green, social, and sustainability (GSS) debt issuances
[60] CBI, 2021.
[61] One firm accounts for almost 50 percent of the capital raised: Yellow, a provider of urban mobility service platform designed to make bike transportation affordable.

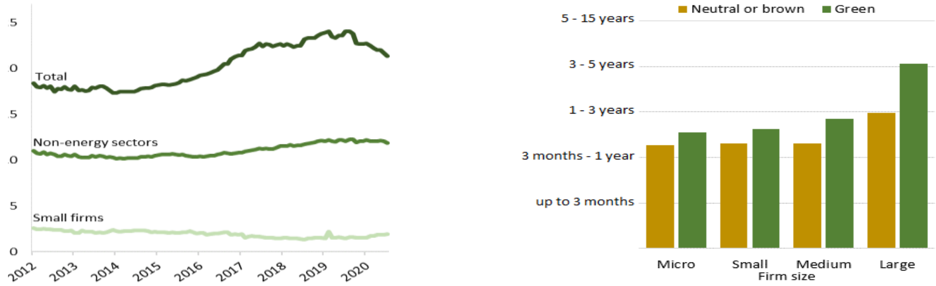
particularly relevant to support the capital investment needed for the development and deployment of innovations or shifts in production models towards sustainable technologies.[62]

5. **New instruments such as sustainability-linked finance are nascent in Brazil and highly skewed towards a few large firms in the renewable energy, and pulp & paper industries.** Most small and mid-sized corporates (stand-alone or as part of larger value chains) operating in most carbon-emitting industries face limited access to sustainable-linked finance and carbon credits. In the past two years, Brazil has seen the emergence of sustainability-linked finance instruments that seek to attract investors interested in linking their investments to acceleration of climate mitigation outcomes. Brazil issued its first sustainability-linked bond in 2019. Since then, this market segment has grown to 15 deals, reaching US$5 billion in volume by mid-2021, mostly serving large firms in the renewable energy and pulp and paper industries (Box 3). By and large, MSMEs and corporates operating in industries with large carbon footprint[63] have yet to access this market. Most corporations faced challenges in accurately assessing and reporting mitigation outcomes and targets, following internationally accepted standards of compliance and independent reviews that can build investors' trust, with the transparency, integrity, and credibility required to expand access to sustainable-linked finance.

Figure 9: Green lending trends in Brazil

– Share of green lending (% of total credit to NFCs)

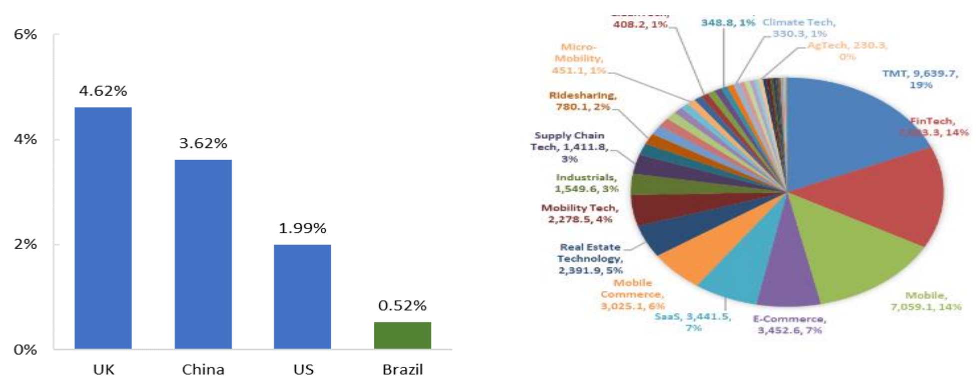
B – Maturity of green lending by firm size



Source: World Bank team estimates using Banco Central do Brasil loan database and Febraban green taxonomy

C - VC financing in selected countries and Brazil, 2021
(% of the GDP)

D - VC capital firms in Brazil, capital invested historically
by verticals
(US$ million and percentage)



Source: A – LAVCA, 2022, B – Own elaboration based on Pitchbook and The World Bank. GDP values are as of

[62] World Bank. 2020. Brazil Rural Finance Policy Note. World Bank, Washington, DC. https://openknowledge.worldbank.org/handle/10986/34195
[63] MSMEs represent more than 97 percent of establishments operating in agriculture, forestry, and energy; sectors that emit more than 3/4 of the country's GHG emissions.

2021, C & D – VE/PC Attractiveness Index, 2021

Box 8: Sustainability-Linked Financing Instruments

SLBs have clauses that commit the issuer to meet or exceed sustainability performance targets (SPTs) with respect to externally verified KPIs, all terms being defined in prospectuses. The issuer pays a higher coupon if SPTs are missed. In 2021, **Brazil's Suzano** issued a SLB (US$ 500 million, 2.5% coupon) maturing in 2028 that pays 25bp more starting in 2025, if targets on (i) Industrial Water Withdrawal Intensity and/or (ii) Women in Leadership Positions are missed, as shown below. Proceeds were used to refinance more expensive debt and general purpose.

Similar approaches apply in the syndicated loan market. Under agreed supervision protocols, external evaluations at periodic test dates determine whether the borrower met the SPTs in the loan contract. Under a typical clause in the UK syndicated loan market, if the number of achieved SPTs is over X% of the total number of SPTs, the borrower is entitled to a step-down interest rate until the next test date. If the number of achieved SPTs is under [X%] of the total number of SPTs, a step-up is applied.

In the specific context of mitigation outcomes, an issuer commits to meet or exceed mitigation performance targets expressed in tCO2e. **Brazil's Simpar,** a large trucking company, is such an example. Starting in 2026, Simpar will pay a higher coupon if it misses a 7.8% reduction of GHG emissions from its 2019 baseline of scopes 1, 2 and 3 emissions (scope 1 = direct emissions from operations; scope 2 = indirect emissions from purchased electricity, steam, heat, or cooling; scope 3 = emissions by its value chain, I.e., its trucking contractors). GHG emissions were calculated using Brazil's GHG Protocol Program (PBGHGP) of 2020. Another example is **Brazil's JBS**. In 2021, it issued US$10 billion 10-yr bond linked to reducing scope 1 and 2 only GHG emissions in its North America plants by 16% in 2025 and 30% by 2030 from the 2019 baseline. Proceeds were used for general purposes, including retiring more expensive debt. Also in 2021, **Chile's CMPC** issued a 10-yr US$500m SLB with performance targets on reducing GHG emissions. CMPC's bond also included an SPT on intensity of industrial water use, like Suzano's.

In so-called "supergreen" SLBs, performance targets are meshed with use of proceeds. In 2021, **Austrian utility Verbund** issued a EUR 500m bond combining use-of-proceeds (fully aligned with the EU taxonomy for sustainable activities) with SLB payout. Verbund pays 25bp more until 2041 if it fails, by 2032, to reach its KPIs of (i) 2000MW newly installed renewables production capacity and (ii) 12,000 MVA additional transformer capacity. SPTs in this case were related to the speed with which Verbund greens its electricity production.

6. **Over the past decade, the Central Bank of Brazil (BCB) has been at the forefront in terms of regulations to promote environmental sustainability and address climate risks.** The BCB adopted a roadmap for regulatory reforms to green the financial sector through to December 2023 and has already achieved several milestones set in this roadmap. A new set of regulations on social, environmental, and climate-related risks and opportunities for the financial sector was implemented in September 2021. The new regulations included improvements in rules related to the management of environmental risk, new requirements for the establishment of a Social, Environmental and Climate Responsibility Policy by financial institutions, as well as reporting requirements on Social, Environmental and Climate-related Risks and Opportunities. This made Brazil the first country to lead a comprehensive reform of this scope in Latin America.

Figure 10: Greening the Financial Sector Regulations in Brazil – Timetable

2014 Social and Environmental Responsibility Policy (PRSA)

- CMN provided guidance for the establishment of a PRSA by supervised entities based on relevance and proportionality.
- FEBRABAN promptly introduced a self-regulatory standard to establish common principles for implementation of E&S governance.

2016 Socio-environmental Risk Matrix

- Implemented to support the preparation of the Supervisory Action Plan (PAS)

2017 Integrated risk management approach

- The new CMN regulation replaced previous requirements on operational risk, market risk, interest rate risk in the banking book, credit risk and liquidity risk, while also incorporating the monitoring, reporting and mitigation of socio-environmental risk as defined in 2014.

2020 Agenda BC# - Sustainability dimension

- The Sustainability dimension of the Agenda BC# was launched with three main objectives: (i) promoting sustainable finance within the SFN; (ii) improving the social, environmental and climate risk management rules applicable to FIs; and (iii) incorporating variables associated with sustainability in the work and decision making processes in the BCB.

2020 Evaluation of RSA in the Credit Information System (SRC)

- SRC allows the BCB to assess credit risk at individual banks and systemic risk across the banking system. SRC contains information on all loans granted by financial institutions covering 99 percent of outstanding balances.

2021 New regulations on social, environmental, and climate-related risks and opportunities for the financial sector

- The definition of climate-related risk was included in the risk management framework.
- New requirements for the establishment of a Social, Environmental and Climate Responsibility Policy (PRSAC)
- Disclosure of information in the Report on Social, Environmental and Climate-related Risks and Opportunities (GRSAC Report)

2021-23 Agenda BC# - Sustainability dimension - Roadmap

- 2021: Structuring and broadening the scope for collecting information on ESG risks; Inclusion of sustainability criteria for selecting counterparties and for investment decisions in international reserves management; Creation of the sustainable financial liquidity facility; Review of the BCB's Socio-environmental Responsibility Policy
- 2022: New regulation on social, environmental, and climate-related risk disclosures, based on the TCFD recommendations (Phase 2 – Quantitative aspects); Creation of the Sustainable Rural Credit Bureau and establishment of incentives to the sustainability of rural credit operations; Stress Test for climate risks
- 2023:Reducing environmental impact of banknotes processing; Strengthening the culture of sustainability.

Source: WB Staff elaboration based on Banco Central do Brasil and FSAP (WB/IMF).

ANNEX 2: The Global Carbon Market and Carbon Credit Market Challenges

1. **Developing and scaling carbon markets could play an important role in financing a transition in line with the 1.5°C pathway set forth by the Paris Agreement.** Carbon finance can provide additional revenue for climate projects, thereby improving the viability of such investments. In the past, under the Kyoto Protocol, carbon markets raised significant revenues. For example, the size of the CDM market was US$33 billion at its peak. Under the Paris Agreement, a new market framework is emerging, offering significant potential for countries to cooperate through compliance markets and to achieve their NDCs. At the same time, voluntary carbon markets are presenting growing opportunities for climate investments funded by the private sector.

2. **At COP26, Parties agreed on the modalities, procedures, and guidelines for the implementation of carbon markets under Article 6 of the Paris Agreement.** Article 6 markets are a form of international "compliance" markets, i.e., governed by international climate treaties and authorized by governments. This agreement is a major milestone, creating a path for international carbon market mechanisms to contribute to meeting NDC goals and support scaling up climate ambition through voluntary cooperation. The share of Parties indicating planned or possible use of voluntary cooperation mechanisms under Article 6 has nearly doubled, from 44 percent to 87 percent in the new or updated NDC submissions,[64] and some countries have already initiated procurement of emission reductions in this context.

3. **In parallel, voluntary carbon markets have seen massive growth over the past two years.** In 2020, the total value of the market tracked was US$473 million, the highest annual value since 2012, bringing the all-time market value to US$6.7 billion. The volume of traded voluntary carbon credits hit record volumes of 188.2 MtCO2e in 2020, representing an 80 percent increase over 2019. Market transactions in 2021 are likely to be the highest annual value ever tracked, exceeding US$1 billion in November 2021, with a global average price of voluntary credits of US$ 3.37 in 2021.[65] However, given the diversity of attributes associated with any given project, and consequently, the emission reduction credits they produce and how they are valued, the average prices of different credit categories over time show an increasingly fragmented market.

Table 8: Voluntary Carbon Market Size by Project Category, 2021 (through 31 August 2021)[66]

Project Category	Volume (MtCO2e)	Price (USD)	Value (USD)
Forestry and Land Use	115	$ 4.73	$ 544.00
Renewable Energy	80	$ 1.10	$ 88.40
Energy Efficiency/Fuel Switching	19.1	$ 1.57	$ 24.20
Agriculture	3.4	$ 1.36	$ 4.60
Waste Disposal	2.7	$ 3.93	$ 10.60
Transportation	2.1	$ 1.00	$ 2.10
Household Devices	1.8	$ 5.75	$ 10.40
Chemical Processes / Industrial Manufacturing	1.1	$ 3.22	$ 3.50

[64] Source: UNFCCC. NDCs under the Paris Agreement. Synthesis report by the Secretariat, 2021: *https://unfccc.int/sites/default/files/resource/cma2021_08_adv_1.pdf*
[65] Ecosystem Marketplace. Voluntary Carbon Markets Top $1 Billion in 2021 with Newly Reported Trades, a Special Ecosystem Marketplace COP26 Bulletin. November 10, 2021, *https://www.ecosystemmarketplace.com/articles/voluntary-carbon-markets-top-1-billion-in-2021-with-newly-reported-trades-special-ecosystem-marketplace-cop26-bulletin/*
[66] Source: Ecosystem Marketplace. EM's State of the Voluntary Carbon Markets 2021: *https://www.ecosystemmarketplace.com/publications/state-of-the-voluntary-carbon-markets-2021/*

4. **This strong market growth is expected to continue in the coming years.** The Taskforce on Scaling Voluntary Carbon Markets (TSVCM) estimates that demand for ERCs could increase by a factor of 15 or more by 2030 and by a factor of up to 100 by 2050, estimating the value of voluntary carbon markets in 2030 between US$5 billion and US$30 billion at the lowest end of the spectrum and up to over US$180 billion at the high end.[67,68] A recent report published by the International Emissions Trading Association (IETA) and the University of Maryland, estimated the Article 6 (compliance) market value, depending on different price scenarios and their underlying drivers, to be up to $300 billion in 2030 and up to US$1 trillion per year by 2050.[69] The increase in financial flows would be mainly driven by rising marginal abatement costs and consequently global carbon prices, which could increase to up to $100/tCO2 in 2030 and $620/tCO2 in 2050.

5. **Brazil's carbon credit market lost momentum a few years after the Kyoto protocol in tandem with global trends, but new openings arise now.** Brazil's experience with international carbon markets is mainly through a long involvement with the Clean Development Mechanism (CDM), established by the UNFCCC under the auspices of the Kyoto Protocol. Brazil was the fourth largest global seller of Certified Emission Reductions and ranked as the third largest host country for CDM projects, with 4.3 percent of registered project and roughly 40 percent of Latin America's issuances.[70,71] Since then, however, the deepening global financial crisis in 2008 stirred the policy discussions away from climate-related aspects and lack of agreement on the continuation of the Kyoto Protocol contributed to the collapse of the international demand for carbon credits after 2012.[72] This led to the substantive decline in the international carbon market dialogue until 2015, when international carbon markets were included under Article 6 of the Paris Agreement. With the lack of clear signals for a short-term carbon market recovery at global level, developments at domestic level declined and prospects for a carbon market in Brazil weakened in this period. Momentum around carbon markets is now accelerating and international regulatory uncertainty is beginning to lift with the interest in the voluntary carbon markets and emerging implementation arrangements of Article 6, post-COP26. For Brazil, additional momentum is building as the government and other institutions advance in regulating and developing its voluntary and compliance carbon markets.

6. **The Paris Agreement has introduced a bottom-up approach for addressing climate change by recognizing that countries may cooperate to meet their NDCs, including through carbon markets.** Article 6 of the Paris Agreement introduces the use of carbon markets globally, providing for a new UNFCCC-governed mechanism and allowing for voluntary bilateral or plurilateral cooperation for the generation and transfer of mitigation outcomes (MOs) from one country to another outside of the UN mechanism. In addition to compliance markets, countries may promote the development of diverse voluntary carbon markets driven by non-state actors. Going forward, the co-existence of voluntary and compliance carbon markets opens new opportunities but also requires greater coordination among heterogeneous markets to overcome challenges of diverse processes of carbon credit generation, issues of rights to and uses of carbon credits, and technological differences in transaction infrastructure.

---

[67] Source: Taskforce on Scaling Voluntary Carbon Markets. Final Report, January 2021: ***https://www.iif.com/Portals/1/Files/TSVCM_Report.pdf***

[68] These estimates for the future size of the voluntary carbon market have been widely referenced in the media. In December 2020, the FT ran an article titled*: "Carney calls for a $100bn/yr carbon offset market"*. In June 2021, Mark Carney was again quoted on the $100bn in 2030 figure in Bloomberg Green, and in early October the independent cited a new estimate from Mark Carney that the market could grow to $150bn a year.

[69] Source: IETA-UMD. The Potential Role of Article 6 Compatible Carbon Markets in Reaching Net-Zero, 18 October 2021: *https://www.ieta.org/resources/Resources/Net-Zero/Final_Net-zero_A6_working_paper.pdf*

[70] *https://www.cdmpipeline.org/cdm-projects-region.htm#7*

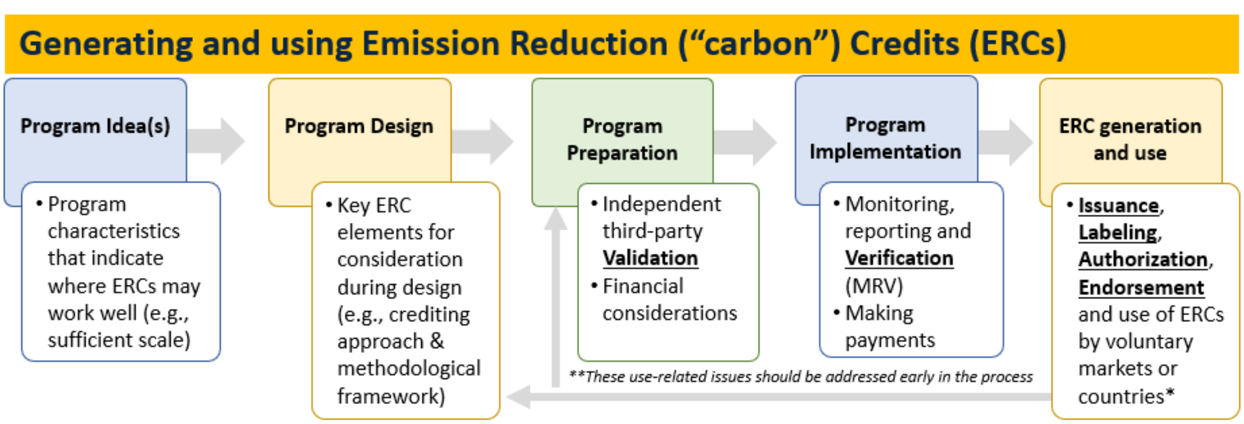
[71] The World Bank has been historically supporting projects in this area in Brazil. There are 17 Emission Reductions Purchase Agreements – ERPAs signed between Brazilian projects and the World Bank's carbon funds. Under these agreements, the World Bank has committed to purchase 16.5 million tCO2e.

[72] Under the scopes of both the Kyoto Protocol and the European Union ETS (EU ETS).

7. **A key challenge for companies that can generate emission reductions or removals from their activities is that they must coordinate with a diverse network of service providers in the carbon credit value chain to turn their activities into carbon credits.** First, projects must be designed, and documentation must be validated by an independent third party to ensure that the selected methodology and monitoring, reporting, and verification (MRV) approaches for emission reduction estimation and MRV have been correctly applied. At this stage, voluntary carbon markets also require certification by an independent carbon standard. After this step, monitored emission reductions or removals that occurred as a result of the registered project activity must be periodically verified by an accredited independent entity. Once verification is completed, the verified quantity of carbon credits can be issued to project participants' accounts in a registry in accordance with the rules and requirements of the mechanism or standard. Issued credits may be traded by public and private sector entities and used for different purposes. If the acquirer intends to use the credits for meeting its NDC target, it has to obtain a Letter of Authorization with a commitment to carry out a Corresponding Adjustment from the government of the seller country. Alternatively, the buyer of ERCs may wish to claim contribution toward the NDC of the country in whose jurisdiction the project is located. Additionally, independent carbon standards may choose to label units to indicate the eligible uses or claims or highlight other key attributes. This process is expected to remain common for compliance and voluntary markets and is depicted in Figure 7.

8. **In addition to the complexity involved in generating carbon credits, the current landscape of carbon markets is fragmented and there is a lack of standardization among market participants regarding the quality, use, and transacting of credits.** Several independent standards exist to certify and issue voluntary market carbon credits, applying different definitions of carbon credits and the rights to own and use them. Current markets show a high degree of price differentiation for carbon credits based on different attributes, such as the country and sector that are the source of the credit, sustainable development benefits, and vintage of the credits (time period in which credits were generated). Differing views on what constitutes "quality" carbon credits adds uncertainty to the price outlook for carbon credit sellers. On the transaction side, one key point of disagreement among applicable standards today is whether voluntary market credits must be authorized by host countries for transfer to buyers in other jurisdictions and whether the host country must make a Corresponding Adjustment to its NDC if that transfer occurs. Beyond issues of carbon credit definition and uses, the transaction infrastructure for carbon credits is comprised of numerous registries and exchange platforms, each with their own fees, specifications, and data and disclosure requirements. These conditions pose a challenge to carbon credit sellers, particularly small and medium sized businesses.

Figure 11: The carbon credit generation process



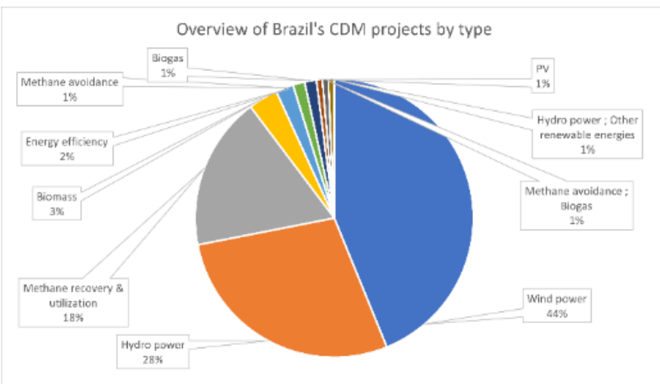
9. **While these challenges are real, several international groups of stakeholders are currently working to define the quality of carbon credits, converge on questions of claims and uses, and define arrangements for sharing data and information across diverse registry and exchange information technology systems.** For example, the Integrity Council for Voluntary Carbon Markets (IC-VCM), launched by the Taskforce on Scaling Voluntary Carbon Markets, is working to establish Core Carbon Principles (CCPs) that will act as a supply-side global benchmark for high-quality carbon credits. These CCPs are aimed at allowing the market supply of carbon credits to scale with integrity. In addition, the Voluntary Carbon Markets Integrity Initiative is developing best practice guidance for the use of carbon credits and credible corporate claims that align with and contribute to the achievement of the goals of the Paris Agreement.

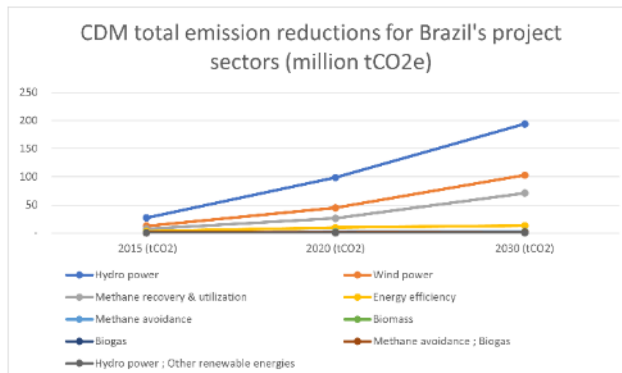
10. **The World Bank is active in developing products and solutions for the evolving carbon markets.** The Bank is also convening stakeholders to discuss the regulatory framework and enabling environment for carbon markets, including the technology infrastructure necessary to support trading and reporting. On the regulatory side, the World Bank and other multilateral development banks have convened a Climate Market Club of interested countries and non-sovereign members to discuss and agree on how different elements of Article 6.2 can be implemented to ensure environmental integrity and how country processes and institutional arrangements will function to support carbon credit transactions. The developed approaches to the carbon market will be implemented through the World Bank's Partnership for Market Implementation. On market infrastructure, the World Bank's Climate Warehouse initiative has convened countries, independent standards, exchanges, and other stakeholders to prototype a meta-data layer based on blockchain technology, which, as a global public good, will surface and record information on carbon credit trades across registry and exchange systems. The Climate Warehouse will connect the fragmented carbon markets and is expected to increase transparency and trackability and reduce the fragmentation in the market. These stakeholders are working together to define data requirements for transparent and standardized information on carbon credits so that the information may be used by countries and other entities to avoid double counting and claiming of the same emission reductions or removals. In addition to developing approaches and infrastructure for the emerging carbon markets, the World Bank is also setting up the Climate Emissions Reductions Facility (CERF) to be launched at CoP27 to aggregate capital from donors and buyers to make payments for emission reduction credits. The IFC is designing a fund mechanism to pool resources from the private sector to facilitate the development of the carbon markets by working with buyers and sellers to identify and procure carbon credits from high impact climate projects.

11. **In the context of Brazil credits linked to Brazil's extensive forestland (REDD+ and a/reforestation) will be important and involve specific challenges.** Some of the activities associated with the recovering of degraded areas and a/reforestation require substantial investments for several years before generating revenues. In addition, international regulated markets – including the Kyoto Protocol and the EU ETS – have restricted nature-based solution carbon credits for compliance purposes due to difficult MRV practices and risks related to the permanence of these credits, leaving the credits to compete for smaller voluntary markets. This is expected to change in the coming years as the market develops under the Paris Agreement, promoting solutions to these concerns and creating opportunities for rapid market development. Moreover, with increasing international concerns on ecosystems sustainability – the Amazon in particular – nature-based activities and associated credits tend to have higher value in the international carbon market, providing Brazil with a unique competitive market advantage if high-quality credits are created.

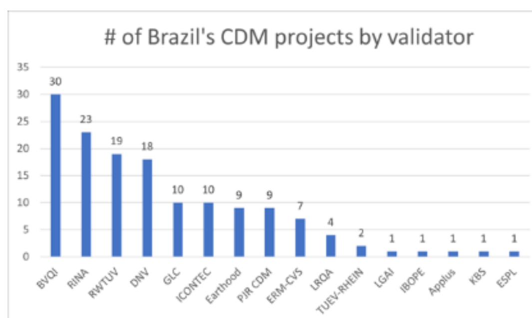
ANNEX 3: Status of Brazil's Carbon Markets Ecosystem

1. **Brazil has an extensive history with carbon offset projects, both in the UNFCCC's compliance market and in the voluntary market.** Clean Development Mechanism (CDM) projects earn tradable, saleable Certified Emission Reduction (CER) credits that can be used by countries to meet a part of their emission reduction targets. The CDM, established under the Kyoto Protocol, will continue for a transitional period under Article 6. Brazil advocated to allow a full transition of CDM projects into the Article 6 market. CERs from activities registered on or after January 1, 2013 may be used towards countries' first NDCs (which ends in 2030 for Brazil). Brazil is the third-largest host country for CDM projects registered on or after January 1, 2013, with 146 projects[73] representing 5.13% of registered projects.[74] Wind power, hydro power, and methane recovery and reutilization are the main project sectors with 64, 41, and 26 projects registered respectively. Brazil's total amount of emission reductions for CDM projects was estimated at 184 million tCO2e in 2020, and is expected to reach 388 million tCO2e by 2030. Hydropower is expected to remain the leading emission reduction sector with 194 million tCO2e estimated for 2030.





2. **In the voluntary space, there are several sources of demand for offsets.** For example, the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) of the International Civil Aviation Organization (ICAO) represents a significant source of future demand.[75] So far, ICAO has approved seven voluntary standards as eligible for use by airlines to meet their emission-cutting obligations[76], of which Verified Carbon Standard (VCS), Gold Standard, and Architecture for REDD+ Transactions (ART), are relevant for Brazil. The piloting phase of CORSIA will allow for credits issued to activities that started their first crediting period



[73] This number excludes projects in the database that were rejected by the CDM Executive Board for registration.
[74] Source: Institute for Global Environmental Strategies (2022), Clean Development Mechanism (CDM) Project Database, version 13.1. Available at: https://pub.iges.or.jp/pub/iges-cdm-project-database
[75] International airline operators taking part in CORSIA have pledged to stabilize international civil aviation net CO2 emissions at 2019 levels, from 2021, using offsetting programs
[76] https://www.icao.int/environmental-protection/CORSIA/Documents/TAB/TAB%202020/ICAO_Doc_CORSIA_Eligible_Emissions_Units_November_2020.pdf

from January 1, 2016 and in respect of emissions reductions that occurred through December 31, 2020. For this analysis, projects registered under or in the pipeline for these voluntary standards after January 1, 2016 are considered. There are 16 companies supporting the validation and verification of these activities, Bureau Veritas Quality International (BVQI), RINA Services S.p.A (RINA), and Rheinisch-Westfälischer Technischer Überwachungsverein (RWTUV) are the leading ones with 30, 23, and 19 projects respectively.

3. **Under the VCS, Brazil is the fourth largest host country of projects with 67 projects (7.71% of registered projects) and 20 pipeline projects**[77]. Energy industries (renewable/non-renewable sources) account for the most activities with 51 projects. Agriculture Forestry and Other Land Use (AFOLU) projects are the second biggest sector with 25 projects, followed by waste handling and disposal with 6 projects. Over 40 companies are involved in these projects as "project proponents."[78] There are 12 companies supporting the validation and verification of these activities, Tuev Nord Cert GmbH (Tuev Nord), Earthood Services, and RINA are the leading ones with 23, 16, and 11 projects respectively. Brazil's total amount of annual emission reductions for VCS projects was estimated at 5 million tCO_2e in 2016, and with registered and pipeline projects is expected to reach 18 million tCO_2e annually by 2025. Agriculture, Forestry, and Other Land Use is expected to remain the leading emission reduction sector under VCS with 14 million tCO_2 estimated for 2025.

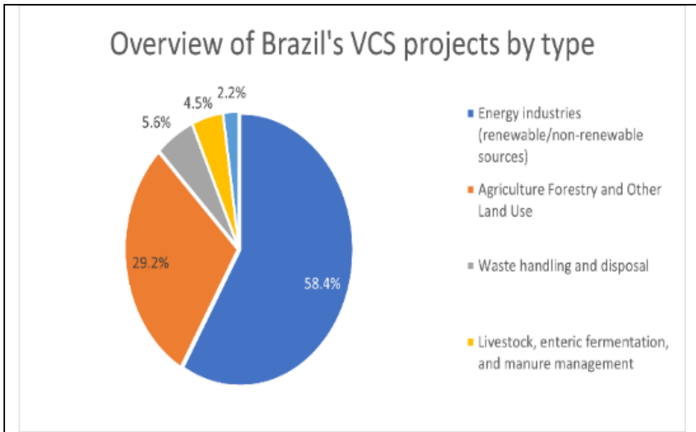
4. **Under the Gold Standard[79], Brazil has 4 projects in energy efficiency, biogas, and biomass**. Multiples companies have supported the validation and verification of VCS and Gold Standard projects. Brazil's total amount of annual emission reductions for Gold Standard reached 47,000 tCO_2e in 2016. Under ART Registry there are 3 registered REDD+ programs.[80]

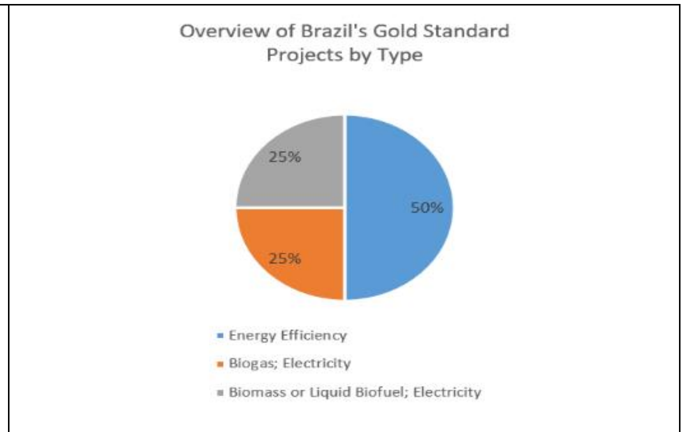
[77] Source: Verra VCS public registry, available at https://registry.verra.org/

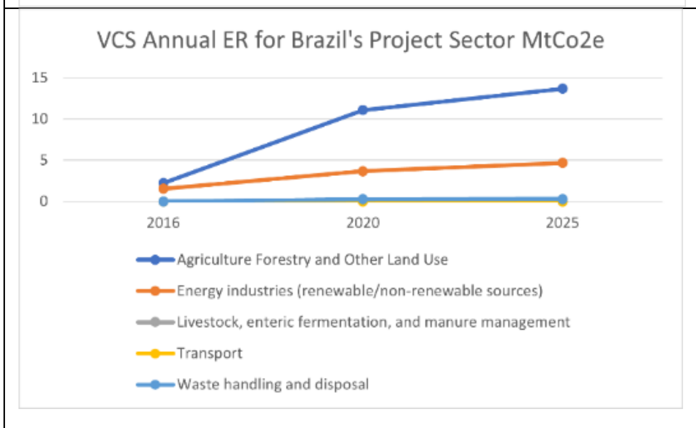
[78] A project proponent is who develops the project description (describes all the details of the project and project activity, including location, start date, project crediting period and ownership of the emission reductions). The project proponent will also demonstrate additionality, identify the most plausible baseline scenario, estimate the emission reductions in the baseline and project scenarios, and set out the data and parameters that will be monitored over the course of the project. The project proponent must have the project description validated by an approved validation/verification body. 44 VCS projects have multiple proponents. The other VCS project proponents are Brascarbon Cosultoria Projetos e Represetacao SA, VTRM Energia Participações S.A., EcoSecurities International Limited, Amazon Reforestation Consortium, Alianca Geracao de Energia S.A., Agcert do Brasil Solucoes Ambientais Ltda., Kitambar Artefatos de Cerâmica Ltda., Brazil AgFor LLC, Ceramic Sao Judas Tadeu Ltda.,Brascarbon Cosultoria, Projetos e Represetacao Ltd.,Cerâmica Lucevans Ltda. – ME., Ecológica Assessoria Ltda., Luara Indústria e Comércio de Materiais Ltda. Indústria Cerâmica Panorama LTDA., Patrícia Matos de Cunha LTDA, Centrais Eletricas do Rio Jordao S.A. – ELEJOR, RMDLT Property Group Ltd., Milton A. Salzedas Panorama - "ME", Ceramica Milenium, Rialma Companhia Energética I S.A., Ceramica Tuiutaba LTDA – ME, Social Carbon Company, Combio Energia S.A., ZSCORE S. A., Consórcio Empresarial Salto Pilão – CESAP, Dori Alimentos LTDA. The Gold Standard Foundation project proponents include Instituto Perene, myclimate Foundation, Lumina Engenharia e Consultoria Ltda., EQAO, Energas Geracao de Energia Ltda

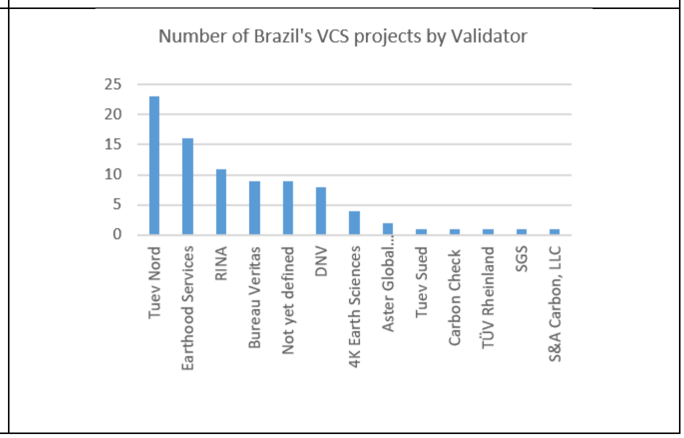
[79] Source: Gold Standard Impact public registry, available at: https://registry.goldstandard.org/

[80] Source: ART public information on REDD+ programs, available at: *https://art.apx.com/myModule/rpt/myrpt.asp*.









5. **Brazil has a dynamic carbon markets ecosystem with hundreds of organizations involved in the carbon standards programs,** project development and proposal, and emissions validation and verification of GHG avoidance or sequestration. The illustration below summarizes some of the main actors involved in the CDM, VCS, and Gold Standard carbon markets development.


1
Carbon Standards programs
2
Project development
3
Project validation and verification
United Nations Climate Change Carbon Mechanisms
VERRA
Gold Standard
ART
Architecture for REDD+ Transactions
Energia Sustentável do Brasil
eco securities
GDF SUEZ
BIOFÍLICA
MOSS
TELES PIRES
ECO URBIS
SantoAntônio
aperam
ENVIRONMENTAL
vital
NOVO GRAMACHO
ENERGAS
CARBONEXT
ECOLÓGICA
institutoperene
myclimate
shape our future
eQAO
LUMINA
SUSTAINABLE CARBON
estre
energimp
Gestamp Renewables
NEOENERGIA
CRVR
BUREAU VERITAS
RINA
Aplus
ERMCVS
Informed Assured
Earthood
icontec
4K
TÜVRheinland
BRASIL
LRQA
S&A CARBON
SGS
DNV
IBOPE
TÜV NORD
SUSTAINCERT
Carbon Check
ASTER GLOBAL

ANNEX 4: Summary Information on Alignment with PCM Methodology

1. The Brazil Climate Finance Project (P178888) proposes US$1393.5 million in private capital mobilization through two components:

   - ***Subcomponent 1a: Sustainability-Linked Credit Line (IBRD: US$400 million).*** BB will on-lend the resources of this subcomponent to originate BRL-denominated sustainability-linked loans, at market terms, to companies that have credible mitigation plans and targets. This sub-component is expected to mobilize private capital through the estimated rollout of up to US$1.2 billion equivalent in private capital from BB's own resources to the credit line as BB broadens uptake of this approach to its wider client base. PCM eligibility under this component would relate to the status of BB as a public entity that is organized with financial and managerial autonomy that would be counted as private under the MDB PCM guidelines.

   - ***Subcomponent 1b: Pilot Climate Debt Fund (IBRD US$97 million).*** **This subcomponent seeks to establish a Climate Debt Fund to mobilize additional private capital towards sustainability-linked financing for mitigation**. The objective of the pilot debt fund is to develop a market for debt instruments of companies with credible mitigation plans. To this end, the fund would provide finance, via Brazil's debt capital market, to larger companies linked to their mitigation plans and targets. This subcomponent is expected to mobilize around US$193.5 million in private capital from private investors in the fund. The fund will offer an open investment vehicle grounded in best practices for climate investment, offer diversification to investors, operate fully on a commercial basis and apply sound governance practices. These features are expected to be appealing to potential investors and support the estimated volume of private capital mobilization.

	IBRD financing	Estimated BB/ Investors PCM
Subcomponent 1a: Sustainability-linked credit-line for mitigation.	400	1200
Subcomponent 1b: Climate Debt Fund.	97	193.5
Component 2: Technical Assistance.	2	6[81]
Total PCM (excluding the TA component)	497[82]	1393.5

Ownership

2. **Banco do Brazil is the country's largest bank, listed in Sao Paulo and New York, with 49.6 percent private shareholding in free float (20.6 percentage points of which is foreign) and 50.4 percent public holding.** BB is licensed and subject to the regulation and supervision of the Central Bank. BB is a publicly traded corporation, legal entity governed by private law and controlled by the Federal Government. The Bank's ownership is composed of more than 824 thousand shareholders, of which 98.2 percent are individuals and 1.8 percent are legal entities.

[81] Indicative.
[82] The remaining amount (US$ 1.25 million) corresponds to the cost of front-end fees of the World Bank loan in line with the selected financial conditions be Banco do Brasil.

Between January 2019 and June 2021, the number of individual shareholders grew from approximately 446 thousand to approximately 809 thousand.

Corporate Governance

3. **The corporate governance structure of BB includes a combination of collegiate bodies and senior management.** The corporate governance structure includes the Board of Directors, the Supervisory Board, the Board of Officers, and five committees, whilst the internal governance architecture is comprised by the Bylaws, the minutes of the General Shareholders' Meeting, the Internal Regulations of the governance bodies and the Board of Directors' advisory committees, as well as the policies, rules and procedures. The Board of Directors is responsible for setting the general guidelines for the Bank's businesses and performs strategic and supervisory functions. It is an independent collegiate body composed by eight members, elected by the General Shareholders Meeting. The Supervisory Board is an independent supervisory body composed by five members that is responsible for reporting to the shareholders, whose purpose is to preserve the value of the organization. The Board of Officers is composed by senior management, including the Presidents and Vice-presidents of BB. The Board of Directors is advised by specific committees including: the Audit Committee; the Human Resources, Compensation and Eligibility Committee; the Risks and Capital Committee; the IT and Innovation Committee; the Corporate Sustainability Committee which report directly to the Board of Directors.

Legal Regime

4. **BB is not a "dependent" public company; it is a "*sociedade de economia mista*", i.e. it is an entity endowed with legal personality under private law, with creation authorized by law, in the form of a company**, according to Law 6,404/76 and Law 13.303/2016, Art. 4:

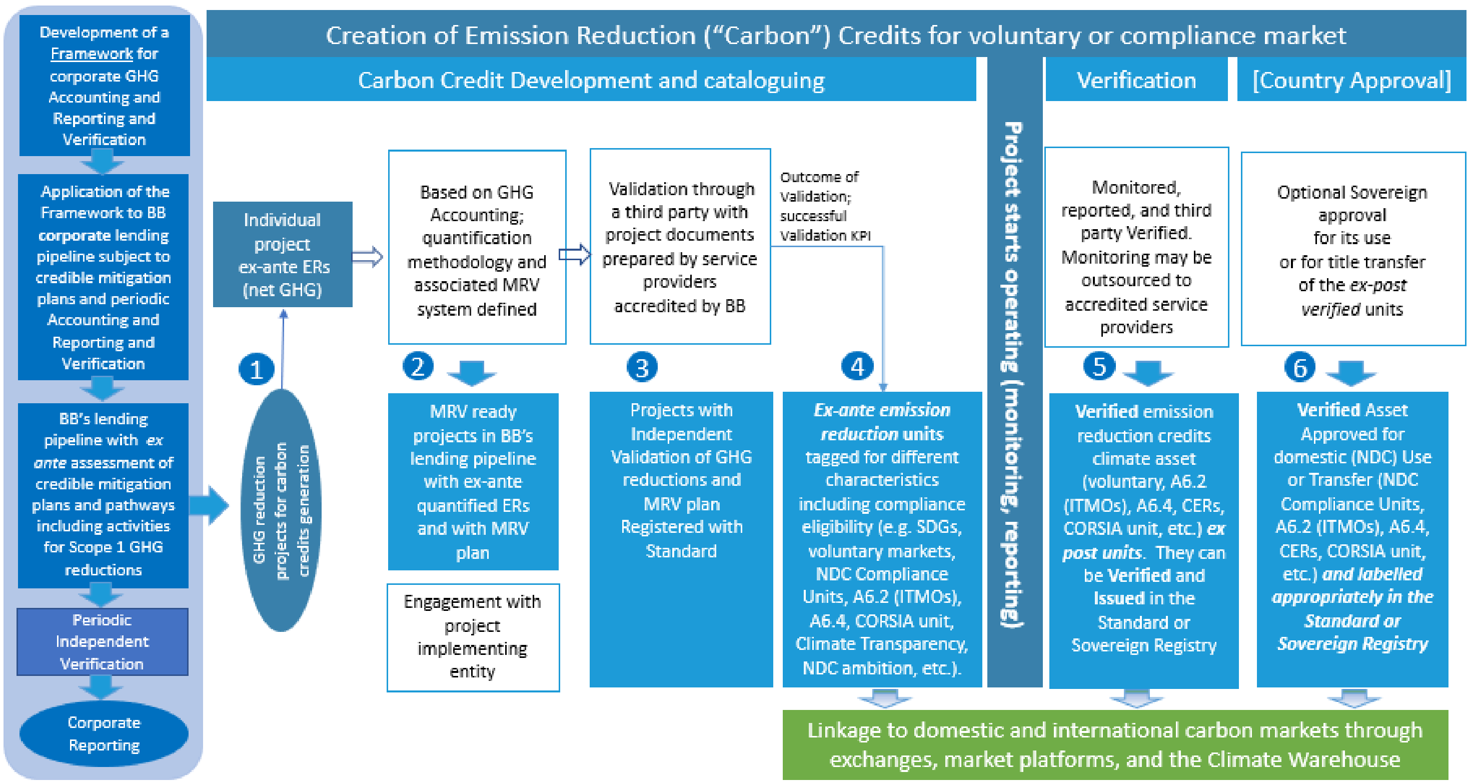
> *Art. 4: A mixed economy company is an entity with legal personality under private law, with creation authorized by law, in the form of a joint stock company, the majority of whose voting shares belong to the Union, the States, the Federal District, the Municipalities or an indirect administration entity.*
> *§ 1 The legal entity that controls the mixed economy company has the duties and responsibilities of the controlling shareholder, established in Law 6404 of December 15, 1976, and must exercise the power of control in the interests of the company, respecting the public interest that justified its creation.*
> *§ 2 Besides the rules provided for in this Law, the mixed economy company registered with the Securities and Exchange Commission is subject to the provisions of Law nº 6.385, of December 7, 1976. (free translation)*

5. **In addition, BB is a publicly-held company registered with Brazil's securities and exchange commission (CVM) under Category A and listed on B3's Novo Mercado Listing Segment (the one w/ the highest corporate governance standards**). It does not have shareholders agreements registered, which could establish extra voting powers/rights. It should be noted as well that BB shares are a part of B3's Bovespa Index (Ibovespa), the main performance indicator of the stocks traded in B3.

ANNEX 6: Proposed Integrated Platform for Measuring and Monitoring Mitigation Outcomes and Carbon Credits

1. **The project will provide technical assistance to BB to develop a Framework and processes for supporting participating firms**, including (a) measuring and monitoring climate results from participating firms' credible climate mitigation plans and (b) generating carbon credits from those firms' mitigation projects**.**

Banco do Brasil platform for measuring and monitoring climate results and carbon credits



Process for measuring and monitoring climate results

a) **Develop a framework for corporate mitigation plans, GHG accounting, reporting and verification:** The project will assist BB in developing a framework for assessing the credibility of participating firms' mitigation plans based on evolving initiatives such as the Science Based Targets Initiative's Net-Zero Standard and the UNFCCC's Race to Zero. The project will support BB in defining requirements for corporate accounting and reporting for these plans. The framework will also define the institutional process for quality assurance, including ex-ante validation of the mitigation plans (including the baseline) and verification of the achievement of targets under these plans by independent third parties.

b) **Application of the framework to BB corporate lending pipeline:** The standard will then be applied to BB's corporate lending pipeline to assess the credibility of the participating firms' mitigation plans. This will include an ex-ante assessment of the firms' activities for scope 1 GHG reduction.

c) **Periodic independent verification:** Participating firms' adherence to the standard will be periodically verified by independent third parties at intervals not exceeding three years. This project will support BB in selecting and accrediting third party verification entities to assist with verifying corporates mitigation plans.

d) **Corporate reporting:** Participating firms will then report on their progress toward achieving the commitments under their mitigation plan, including commitments to reduce company-level Scope 1 and 2 emissions.

Process for creating carbon credits

e) **Project preparation (step 1 and 2):** This project will support participating firms' in developing GHG reduction projects that are aligned with the firms' scope 1 emission reduction targets under their mitigation plan. These projects should already include ex-ante GHG estimates (see point (b) above).

f) **Validation and/or broader independent assessments (step 3)**: This project will assist BB in selecting a cadre of service providers which would validate the GHG emission reduction projects against the applicable rules and requirements of the applicable standard.

g) **Tagging of ex-ante emission reduction units (step 4):** The GHG emission reduction projects could be "tagged" based on different characteristics, including compliance eligibility (e.g., Article 6.2, Article 6.4, CORSIA)

h) **Verification (step 5):** Registered projects would undergo periodic verification by an accredited independent entity. This would include an expert determination of monitored emission reductions or removals that have occurred as a result of the registered project activity. The verification process is intended to confirm:

- Emission reductions or removals per the validated project documents
- Correct utilization of the applicable methodologies and tools
- That the project activity continues to meet the applicable rules and requirements of the standard/mechanism.

i) **Issuance (step 5):** A specified quantity of serialized units of emission reductions would then be issued to project participants' accounts in accordance with the rules and requirements of the standard.

j) **Labelling (step 6)**: Units may then be labelled to indicate their compliance with the Paris Agreement, CORSIA, or other uses, and to highlight key attributes, such as the application of a corresponding adjustment and a Letter of Endorsement/ Authorization. These labels are intended to make a distinction among different use cases by transparently listing the characteristics of units.

k) **Optional country authorization**: The written authorization (through a Letter of Authorization) may be required for units or activities that are subject to the regulatory requirements of the Paris Agreement, CORSIA, or other specified uses. The mitigation activities or units would receive a Letter of Authorization from the host country and provide a commitment by the host country to carry out corresponding adjustments as needed.

l) **Optional Country Endorsement**: If applicable, a host country may issue an optional Letter of Endorsement to indicate the recognition of a mitigation activity and its link to the host country's NDC. The optional Letter of Endorsement is expected to endorse the claim that the mitigation activity, or units, contributes to the financing or implementation of the host country's NDC. For avoidance of doubt, an endorsement does not commit the host country to corresponding adjustment.

m) **Linking with the Climate Warehouse**: The project will support BB in establishing linkages to the World Bank's Climate Warehouse, which is an effort to support the global carbon marketplace through the establishment of a public information system in which information on carbon credits will be transparently shared from linked registries and exchanges. The Climate Warehouse will help to facilitate market access and credible tracking and reporting of climate project information.

ANNEX 7: Financial Intermediary Assessment

1. **An assessment of BB took place based on the eligibility criteria in accordance with FI financing guidelines.**

(a) The bank must be duly licensed and at least two years in operation.
(b) The bank's owners and managers must be considered 'fit and proper'. It must have qualified and experienced management and adequate organization and institutional capacity for its specific risk profile.
(c) The bank must maintain capital adequacy.
(d) The bank must have adequate liquidity.
(e) The bank must have positive profitability and an acceptable risk profile. It must maintain the value of its capital.
(f) The bank must have well-defined policies and written procedures for management of all types of financial risks (liquidity, credit, currency, interest rate, and market risk, as well as risks associated with balance sheet and income statement structures) and operational risk.
(g) The bank must classify its assets and off-balance-sheet credit risk exposures (at least four times per year) and make adequate provisions. It must have adequate portfolio quality. The bank should not have more than 10 percent of criticized assets (that is, classified as doubtful and at a loss).
(h) The bank must have adequate internal audits and controls for its specific risk profile.
(i) The bank must have adequate management information systems.

Table 9: Summary of Banco do Brasil Appraisal

Criterion	Comments
1. License	BB is licensed and subject to the regulation and supervision of the Central Bank. BB is a publicly-traded corporation, legal entity governed by private law and controlled by the Federal Government.
2. Owners/managers 'fit and proper', governance quality	BB, as a state-controlled entity, may be subject to potential political interference. However, it has a strong corporate governance structure as underpinned by its listing in the Novo Mercado segment of the Brazilian stock exchange, a segment that gathers companies with a high standard of corporate governance.
3. Capital adequacy	BB complies with the minimum, plus the additional (conservation capital buffer and systemic bank capital surcharge) capital required. Total capital ratio was 17.69 percent in Q1 2022 (compared to the minimum requirement of 11%), Tier I ratio 1 was 15.47 percent (compared to the minimum requirement of 9%) and CET1 ratio was 12.71% (compared to the minimum requirement of 7.5%).
4. Good standing with supervisory authorities	BB is subordinated to the rules and regulations of the Central Bank of Brazil, Securities and Exchange Commission (CVM) and the National Monetary Council (CMN), among others. It is in good standing with all supervisory authorities.
5. Liquidity	Adequate, due to its stable and diversified funding, as well as the level of access to capital market. Comfortably complies with the minimum levels of the liquidity coverage ratio and net stable funding ratio set by the central bank.
6. Profitability	Moderate, as a consequence of its social function, yet improving. More emphasis in profitability and efficiency in recent years has

	brought profitability much closer to private banks. In 2021, a cost-cutting plan was announced which resulted in the closing of 389 branches (-8.9% of total branches) whilst increasing the more cost-effective service networks (+13.9%), third-party correspondents and promoting digital channels. The efficiency ratio in 2021 reached 35.9 percent, the best ratio of the historical series, reflecting the combination of cost control and increase in revenue in the period.
7. Policies and risk management functions	Adequate. An adequate structure for risk management is in place, with clear responsibilities. Policies and procedures for managing risks are in place.
8. Asset quality and provisions	Asset quality and provisions are high. BB has a low NPL ratio (1.9%) and high coverage ratio of provisions over NPLs (297%). The NPL ratio has gone down from 3.4 percent in 2019 to 1.9 percent in March 2022, and the level of provisions is sufficient to withstand credit losses under a stress scenario. There are risks of an increase in the share of renegotiated loans or that some of the already renegotiated loans fall into NPL category, as a result of a slower than expected recovery in activity, which may result in a deterioration of the asset quality.
9. Internal audit and controls	BB has an internal control system suited to its size and complexity, meeting regulatory requirements and in line with the best governance practices. The management of risks and controls is guided by the Lines of Defense Reference Model (MRLD) and structured around 3 different 'lines of defense'. The first line of defense implies specific departments with direct involvement in the risk exposure, the second line is composed by internal controls and risk management departments, and the third line is composed by the internal audit. The internal audit has a direct reporting line to the Board of Directors that is responsible for assessing the adequacy of internal control, the effectiveness of risk management and governance processes, and the reliability of the collection, measurement, classification, accumulation, registration and disclosure of events and transactions[83].
10. Management information systems	Several reports on performance and risk exposures are elaborated, with different frequency depending on the type of risk and topic. BB's information security policy is reviewed annually and approved by BB's Board of Directors. All the processes, products and services are created and developed based on good information security practices. Systems are in place to ensure the protection of customers' and partners' information, as well as cyber risks which are managed using advanced security tools to minimize risks and vulnerabilities.

Note: NPL = Nonperforming Loan.

2. **BB is a government-controlled listed company with a leading role in specific segments of the Brazilian financial market.** Established in 1808, BB was the first banking institution to operate in the country. The Federal Government owns 50.0 percent of BB, whilst 0.4 percent is owned by the Treasury and the remaining 49.6 percent is publicly-traded in the stock exchange[84]. BB is: (a) the largest bank in Brazil in terms of assets (BRL 2,037,602 million); (b) the

[83] Bylaws, article 36.
[84] Source: BB, Ownership Structure. Link: *https://ri.bb.com.br/en/banco-do-brasil/ownership-structure/*

largest in terms of deposits (BRL 687,715 million); (c) the third largest in loans (BRL 665,132 million); and (d) the largest lender in the agribusiness sector (54 percent agribusiness market share as of March 2022).

3. **Following modest growth of its total assets between 2016 and 2019, total assets rebounded strongly in 2020 and 2021.** After the 2015-2016 recession, BB reformulated its strategic objectives and put in place a cost-cutting plan that included cutting thousands of jobs and shutting down hundreds of branches, factors which contributed to a stagnation in the growth of assets. Whilst total assets grew by an average of 1.4 percent between 2016 and 2019, in 2020 and 2021, BB's total assets increased by 16.5 percent and 12.0 percent, respectively.

4. **Lending to the non-financial private sector has reported double figure growth across all segments since 2020, led by the agribusiness sector.** In March 2022, year-over-year (yoy) growth of the total loan portfolio was 16.4 percent (see Table 2). Loans to the agribusiness sector increased by 28.2 percent yoy (BRL 56.1 million), whilst the rest of the segments reported double figures growth, with the exception of loans to Government which declined by 9.4 percent.

Table 10: Breakdown of Loan Portfolio

Loan Portfolio	March 2022 (BRL million)	Share (%)	March 2021 (BRL million)	Year-over-year growth (%)
Individuals	268.8	31.8%	234.0	14.9%
Agribusiness	254.6	30.2%	198.5	28.2%
MSMEs	92.4	10.9%	81.1	14.0%
Corporates	175.4	20.8%	147.9	18.6%
Government	53.2	6.3%	58.7	-9.4%
Total	883.5	100%	758.9	16.4%

***Note*: The loan portfolio excludes private securities and guarantees provided.**
***Source*: BB.**

5. **The loan portfolio is well diversified between loans to individuals and loans to companies and characterized by a high exposure to agribusiness.** BB is specialized in the agribusiness sector. As of March 2022, 30.2 percent of its loan portfolio consisted of agribusiness loans and BB had a 54.4 percent of the agribusiness market share. The rest of the loan portfolio is distributed as follows: 31.8 percent of its portfolio consisted of loans to individuals (including payroll loans and non-payroll loans), 20.8 percent loans to corporates, 10.9 percent loans to small and medium enterprises (MSMEs) and 6.3 percent loans to Government. The concentration of the loan portfolio has continuously declined since 2016, with the share of the top 100 customers in the loan portfolio declining from 27.5 percent of total loans in December 2015 to 15.2 percent in March 2022.

6. **Asset quality remains high, reflecting the bank's exposure to lower risk loans with solid guarantee structures, and provisions are high.** BB's portfolio is characterized by lower risk loans, including loans for agribusiness, mortgages and payroll. It's NPL ratio has fallen from 3.3 percent in Q4 2019 to less than 2 percent over the last five quarters, reporting 1.9 percent in Q1 2022. The lower risk loans is evident since the NPL ratio is lower than the banking industry's NPL ratio, which is estimated at 2.5 percent in Q1 2022. Meanwhile, provisions remain high relative to

the banking sector, with a coverage ratio of 297 percent compared to the estimated banking industry's ratio of 232 percent in Q1 2022.

7. **The amount of high-quality liquid assets (HQLAs) as well as its diversified and stable funding reduce BB's liquidity risk.** BB's main funding sources include saving deposits, time deposits, repo transaction with its own portfolio, and other deposits. In 2020, additional liquidity cushions were built to deal with increased market volatility and a sharp increase in lending resulting from the outbreak of the COVID-19 pandemic. In the second half of 2021 and the first quarter of 2022, liquidity ratios have gradually fallen reflecting the lower uncertainty environment but continue to be comfortably above the minimum regulatory requirements. In March 2022, the Liquidity Coverage Ratio (a Basel III short-term liquidity ratio) stood at 176.7 percent, well above the minimum regulatory requirement of 100 percent. Additionally, the Net Stable Funding Ratio (a more structural Basel III liquidity ratio with a one-year time horizon) was 111.6 percent, 11.6 percent above the minimum required by BCB. BB has a liquidity framework in place that is annually reviewed, as well as specific liquidity contingency and NSFR re-composition plans. Further, in 2021, a management panel for all liquidity indicators was created to improve communication to senior management for the evaluation of liquidity.

8. **Although BB's profitability is lower than that of the large private banks due to its social role, efficiency improvements in recent years have significantly enhanced profitability.** Return on assets (ROA) and return on equity (ROE) improved to 1.3 percent and 18.3 percent respectively in Q1 2022, compared to 0.3 percent and 4.6 percent in 2016. The reduction in personnel and administrative expenses relative to revenue have contributed to narrowing the profitability gap with large private banks. The total number of employees have decreased by 20.7 percent from Q3 2016 to Q1 2021 (from 109,159 to 86,466), whilst the number of branches has declined by 26.7 percent over the same period (from 5,430 to 3,979). Other factors that helped improve the results were lower loan loss provision expenses, higher loan portfolio growth and an increase in the income generated from commissions and charges (other than the ones related to credits).

9. **BB is committed to implementing sound Environmental, Social and Governance practices and contributing to the transition of the economy into a low carbon economy, whilst expanding their operations with value creation in mind.** Its sustainability plan 'Agenda 30 BB 2021-2023' covers actions, with indicators and targets aimed to, among others, enhance sustainability governance and the management of environmental, social and climate risks, develop and offer ESG-related financial solutions and business models, adopt sustainable projects and solutions, and evaluate and measure environmental, social and economic externalities.

10. **The corporate governance structure of BB includes a combination of collegiate bodies and senior management.** The corporate governance structure includes the Board of Directors, the Supervisory Board, the Board of Officers, and five committees, whilst the internal governance architecture is comprised by the Bylaws, the minutes of the General Shareholders' Meeting, the Internal Regulations of the governance bodies and the Board of Directors' advisory committees, as well as the policies, rules and procedures. The Board of Directors is responsible for setting the general guidelines for the Bank's businesses and performs strategic and supervisory functions. It is an independent collegiate body composed by eight members, elected by the General Shareholders Meeting. The Supervisory Board is an independent supervisory body composed by five members that is responsible for reporting to the shareholders, whose purpose is to preserve the value of the organization. The Board of Officers is composed by senior management, including the Presidents and Vice-presidents of BB. The Board of Directors is advised by specific committees including: the Audit Committee; the Human Resources, Compensation and Eligibility

Committee; the Risks and Capital Committee; the IT and Innovation Committee; the Corporate Sustainability Committee which report directly to the Board of Directors.

11. **BB has adequate internal controls in place, based on the three lines of defense.** The management of risks and controls is guided by the Lines of Defense Reference Model (MRLD), which manages risks inherent to BB's operations and controls for their mitigation based on the three lines of defense approach. BB's internal controls are composed by processes and practices that ensure that actions are carried out properly, aiming to keep assets safe and adequately manage risk mitigation, whilst ensuring accuracy and reliability of managerial information and financial records, promoting operational efficiency and adhering to the organization's policies. These are defined in the audit committee internal regulation, which rules the operation of the audit committee in compliance with the bylaws, regulations and the Board of Director's decisions. The audit committee reports directly to the Board of Directors and is intended to assist that Board regarding the exercise of its audit and supervision duties.

12. **The Risks and Capital Committee is the permanent body responsible for advising the Board of Directors on risks and capital management.** At the operational level, a dedicated department is in charge of monitoring market, liquidity, operating and credit risks. The 'Specific Credit Policy' guides the management of credit risk, comprising all phases of the credit process, the management of assets subject to this risk, as well as the credit collection and recovery process, including those carried out on behalf of third parties. Credit risk management includes the counterparty's credit risk, country risk, sovereign risk, transfer risk, credit concentration risk and the effectiveness of mitigating or risk transfer instruments used in exposures that generate the aforementioned risks. The purpose of its structure is to identify, measure, assess, monitor, report, control and mitigate risks, in addition to ensuring the continuous improvement of management. It is carried out on an integrated basis with the business objectives, establishes limits and consolidates our vision, as one of the main tools for making the appropriate risk-return ratio compatible.[85]

13. **Other actors monitoring BB include the Central Bank, the Federal Court of Accounts (*Tribunal de Contas da União*), the Federal General Comptroller (*Controladoria-Geral da União*), external auditors, and credit rating agencies.** The Central Bank has defined BB as a systemic bank, and as such, it is subject to a capital surcharge and closer supervision. BB´s external auditor (Deloitte since April 2017, previously E&Y) has no major objections on its financial statements. BB is rated by the three main credit rating agencies (S&P, Fitch, and Moody's), with ratings of BB-, Ba2 and BB1, equalized Brazil's sovereign rating.

[85] BB Annual Report, 2021.

Table 11: Key Financial Indicators

	2019	2020	2021	March 2022
Assets (BRL billion)	1,481	1,726	1,933	2,038
yoy growth	*3.2%*	*16.5%*	*12.0%*	*11.4%*
Loans (BRL billion)	529	581	662	665
yoy growth	*-3.7%*	*9.9%*	*13.8%*	*11.2%*
Capital Adequacy				
CET1 ratio	10.0%	13.6%	11.9%	12.7%
Tier I ratio	13.6%	17.3%	15.2%	15.5%
Total Capital Ratio	18.6%	21.1%	17.8%	17.7%
Asset Quality				
NPL ratio (over 90 days in arrears)	3.3%	1.9%	1.8%	1.9%
Coverage ratio (provisions over NPLs)	196.1%	348.3%	325.0%	297.0%
Profitability and efficiency				
Return on Assets (ROA)	1.5%	0.7%	1.1%	1.3%
Return on Equity (ROE)	21.8%	10.5%	14.9%	18.3%
Cost-to-Income Ratio	36.1%	36.6%	35.6%	34.7%
Liquidity				
Liquidity Coverage Ratio (LCR)	337.2%	314.5%	228.9%	176.7%
Net Stable Funding Ratio (NSFR)	116.3%	123.2%	114.4%	111.6%

***Source*: BB.**

14. **Final cost of financing to beneficiaries will reflect BB's well-established credit origination framework**, based on cost of funds, administrative costs of running the program, market and credit risks and a profit margin. It is not expected that the project will incorporate subsidies in the financing terms applied to beneficiaries in any of the financing channels being considered. The project will target activities that are deemed to have potential for generating high quality carbon credits. Such potential is expected to exist in a range of sectors, which will all strive to decarbonize to remain competitive as the economy embarks on the carbon transition. This approach is not expected to entail market distortions given that BB and private partners will provide financing at prevailing market conditions regardless of instrument. Along with other financial institutions, BB is an agent of the government for the implementation of long-standing programs of the National Rural Credit System (SNCR), which provides working capital, investment financing in rural areas, particularly as concerns smallholder farms though market based and regulated interest rate. The SNCR was established in 1965. SNCR programs are available to all banks, with BB being the largest by virtue of its size, rural capillarity, and public role. The project's credit line will have market-based pricing and will not be comingled with SNCR credit line under the regulated interest rate component. This means that BB clients that are beneficiaries under the regulated SNCR may not be beneficiaries of BB under the credit line. The project will target activities that are deemed to have potential for generating emission reduction. Such potential is expected to exist in a range of sectors, which will all strive to decarbonize to remain competitive as the economy embarks on the carbon transition. This approach is not expected to entail market distortions given that BB and private partners will provide financing on market terms regardless of instrument. Along with other financial

institutions, BB is an agent of the government for the implementation of long-standing programs of the National Rural Credit System (SNCR) which provides business development services in rural areas, particularly as concerns smallholder farms. The SNCR was established in 1965. SNCR programs are available to all banks, with BB being the largest by virtue of its size, rural capillarity, and public role. BB will continue to incorporate these programs in its product offering as it currently does in competition with other SNCR-implementing banks. The project will target activities that are deemed to have potential for generating high quality carbon credits. Such potential is expected to exist in a range of sectors, which will all strive to decarbonize to remain competitive as the economy embarks on the carbon transition. This approach is not expected to entail market distortions given that BB and private partners will provide financing on market terms regardless of instrument. Due diligence will be conducted at appraisal.

ANNEX 8: Climate Debt Fund: Structure, Governance, and Management

1. **The fund will be established as a private credit fund.** It will operate under the supervision of Brazil's capital market authority, *Comissão de Valores Mobiliares* – CVM. It will be established under governance, risk management and investor protection requirements regulated by the CVM under its Instruction No 555 related toc the constitution, administration, operation and disclosure of information for investment funds, as subsequently revised by Instructions Nº 563/15, 564/15, 572/15, 582/16, 587/17, 604/18, 605/19, 606/19, 609/19, 615/19 and resolution Nº 3 of 2020.[86]

2. **The Fund will be managed by an independent, competitively selected Climate Debt Fund Manager (CDFM**), in line with applicable regulatory requirements of CVM.[87] Clear criteria will be agreed to guide CDFM selection.[88] Minimum criteria for fund manager selection would include: corporate commitment to Paris-aligned investing and familiarity with global standards of Paris-aligned investing;[89] mobilizing minimal co-investment from investors representing at least twice the amount equivalent to the original contribution of BB before opening the fund to public subscription; demonstrated experience and track record in ramping-up target investments; and capacity to manage open-ended funds commensurate with size of the envisioned CDF.

3. **The CDFM will play a central role in the production of the Fund by-laws, prospectus, Fund registration with CVM, Fund roadshow and capital raising with domestic and international private and institutional investors.** The CDFM shall reasonably and prudently examine whether each qualified investor meets the criteria as prescribed under applicable laws and regulations and collect supporting documentation of the ability to make financial contributions to the Fund. The CDFM will be responsible for compliance with World Bank environmental and social requirements and the CDFM contract shall include appropriate penalties for the CDFM in case of non-adherence (e.g. claw back of management fee or termination in case of repeated non-adherence).

Fund governance structure and processes

- The CDF will adopt a governance structure which adheres to sound global practices as incorporated in CVM regulations. It will comply with local regulations and ensure the establishment of robust risk management underpinned by clear standards and criteria for assets and investments, transparent and professional selection, as well as monitoring, reporting and information disclosure. The governance structure and processes of the Fund will be specified in detail in the Fund Investment Agreement to be signed between the CDFM and BB. The signing of the FIA will be a Withdrawal Conditions for the first disbursement under the IBRD loan for Component 1b (Debt Fund).

- As part of the governance structure, the Fund will have an Advisory Committee (AC) that will advise on

[86] CVM is a prominent member of IOSCO and has adopted and implemented IOSCO's Objectives and Principles of Securities Regulation. See most recent FSAP assessment at https://www.imf.org/-/media/Files/Publications/CR/2018/cr18358-BrazilFSAP.ashx.
[87] As set forth in CVM Instruction 555.
[88] The selection of the Fund Manager will be subject to technical review of the Terms of Reference (TOR) by the World Bank, as well as "no objections" to the short-list of candidate CDFMs and the final selection.
[89] Including but not limited to: U.N. Principles for Responsible Investment (PRI); Net Zero Asset Managers Initiative; Business Ambition for 1.5°C - Science Based Targets initiative (SBTi); Carbon Disclosure Project (CDP); Brazilian GHG Protocol Program.

the governance of the Fund, strategic direction and investment areas, approval of Fund auditors, dealing with conflict-of-interest, and executing the right to terminate the fund manager. The AC will be comprised of independent professionals with adequate experience and expertise in debt funds. The members of the Advisory Committee would be recommended based on their academic background and professional experience. No member of the Advisory Committee may be, or be closely connected to, a member of the Investment Committee.

4. **The AC would be responsible for advising on the following:**

- Establishment of the Fund's overall investment strategy and oversight of any adjustments
- Dealing with events of conflict-of-interest and associated conflict-of-interest risk mitigation procedures
- Oversight of the Fund Manager's compliance with Fund Management Agreement
- Approval on appointment and change of external auditor of the fund
- Review significant ESG events and remedial measures
- The Fund Advisory Committee would not have any role in project sourcing, investment and exit decisions of the Fund. Decisions made by the Fund Advisory Committee must include the positive vote of BB to safeguard its duties and responsibilities to IBRD.

5. **The Climate Debt Fund Manager would have sole responsibility for all investment sourcing, management and exit decisions for the Fund.** Specifically, the Fund Manager would be responsible for the following:

- Production of Fund prospectus
- Fund registration with CVM
- Execution of Fund roadshow
- Fund disclosures and reporting at the frequency regulated by CVM
- Sourcing for all Fund investments
- Pre-investment validation based on acceptable standards and protocol established in the POM
- Execution of Fund investment decisions
- Preparation and signature of subscriptions Agreements with issuers
- Monitoring of performance of invested securities and issuers compliance with mitigation targets
- Investment exit decisions
- Production of semi-annual reports (for BB and World Bank) and of the Annual Report (for approval by the Fund Advisory Committee)

6. **The CDFM will be responsible for assembling a dedicated team comprising** high and middle level workforce, as well as supported by staff with appropriate expertise. Among its responsibilities, it will ex-ante screen potential investments for the project's E&S standards and monitor ex-post adherence to the standards throughout the life of investments.

7. **The fund will invest in BRL denominated debt instruments of companies on a validated mitigation pathway.** Instruments eligible for investment by the CDF will be debt securities, including sustainability-linked instruments, of Brazilian companies with validated mitigation plans. CDF-eligible securities will include:

- BRL-denominated debt instruments issued by Brazilian companies with validated mitigation plans and targets.

- Securitized BRL-denominated loan pools originated under the quality assurance of Subcomponent 1a. Securitizations will be CDF-eligible provided that the pools are of loans to companies that with validated mitigation plans and targets.

8. **Prior to investing, the CDFM will screen investments using criteria consistent with the technical, environmental and social safeguard standards of the project**. The CDF will be mandated to divest from companies that fall off-track with regards to their mitigation plans and targets, based on periodic independent verification.[90] The divestment mandate will also apply to companies found in breach of the project's environmental and social standards. The CDF portfolio will be subject to diversification (composition, concentration) and liquidity requirements as regulated by the Brazilian capital market authority.

9. **The Project Operation Manual will set forth specific eligibility criteria, the operational modalities process for ensuring the quality assurance by 3rd party validation of issuers' mitigation pathways, and the monitoring related to the securities invested by the CDF.** They may be adjusted from lessons learned during implementation, but remain within the broad PDO, notably as concerns quality assurance.

[90] This is similar to portfolio realignments undertaken by fixed-income fund manager following downgrades/upgrades of credit ratings.

ANNEX 9: Financial Management Arrangements

1. **A Financial Management Assessment of BB was performed in accordance with Bank Policy: Investment Project Financing and Bank Directive: Investment Project Financing, the Financial Management Manual for World Bank-Financed Investment Operations and Other Operational Matters (effective March 1, 2010 and revised September 7, 2021) and the Bank Guidance on Emission Reduction Crediting Projects under Investment Project Financing, effective June 2, 2020.** The scope of the assessment[91] included: (i) an evaluation of the existing FM systems to be used for project planning and budgeting, monitoring, accounting, and reporting; (ii) a review of staffing requirements; (iii) a review of the flow of funds arrangements and disbursement methodology; (iv) a review of the internal control mechanisms in place, including internal audit; (v) format and content of Interim Financial Reports (IFRs); and (vi) a review of the external audit arrangements.

2. **The existing Public Financial Management System of Brazil has satisfactory internal rules and controls, with a clear definition of responsibilities and institutional arrangements.** The Ministry of Planning, Development and Management is responsible for budget preparation; the Secretariat of the National Treasury (STN) takes responsibility for treasury management and accounting functions, the Office of the Comptroller General of the Union (CGU) carries out internal audits overseeing the budget and is responsible for fighting acts of corruption and enhancing transparency within the federal public administration. The Federal Court of Accounts (TCU) (i.e., the supreme audit institution) has the mandate to audit all public expenditures. Both the TCU and CGU have sufficient autonomy and their recommendations are generally implemented.

3. **The conclusion is that BB has sufficient capacity to fulfill its FM responsibilities** and that with the implementation of the proposed mitigating measures and agreed actions to strengthen the FM systems, the FM systems are adequate to provide reasonable assurance, that the Project funds will be used for the intended purposes, with due attention to the principles of economy, efficiency, effectiveness, transparency and accountability. The FM risk is assessed as **Moderate.**

4. **The FM Assessment identified the following key risks to the achievement of the Project Development Objective:** The: (i) BB's need to adapt its accounting and management information system, maintain a dedicated ledger accounts to provide timely information to monitor the Project and run agreed reports; and (ii) possible delays in implementing Component 2 due to potential delays in the contract bidding processes and disbursements at the start of implementation. The proposed systems-and capacity-strengthening and/or mitigation measures, to address the above risks include: (i) the appointment/dedication of a FM consultant/staff person well conversant with the World Bank procedures for Project FM; (ii) BB corporate system to be adapted, including the creating of a ledger account to properly account for the Project and generate FM and disbursement reports; (iii) close support from the World Bank to ensure BB's understanding of the World Bank policies and procedures throughout the Project life; and (iv) the development of a detailed POM describing the roles and responsibilities between involved departments and the financial management procedures.[92]

5. **Banco do Brasil organizational arrangements and Staffing**: Banco do Brasil is Brazil's largest financial institution, listed in Sao Paulo and New York stock markets, constituted by Decree-Law 759/1969, in the form of a public

[91] The assessment will be finalized during appraisal
[92] The POM will clearly define the eligibility criteria, and how they will be fulfilled, as well as the measures to properly track any conflict-of-interest situation.

company[93] and linked to the Ministry of Finance. BB's objectives are to perform all active, passive, and accessory bank transactions, provide banking, intermediation, and financial support services in their multiple forms.

6. **As the implementing agency for the Project, BB will supervise/monitor components to ensure they follow Brazilian and World Bank requirements.** BB will provide quarterly reports including fiduciary, technical, and safeguards reports to the Ministry of Finance and the World Bank. BB will implement the program with three main functions: (i) provide selected sub loans sustainability-linked credit lines to companies committed to reduce emissions; (ii) invest, through the Climate Debt Fund (CDF), in securities and bonds issued by companies with commitments to meet mitigation targets; and (iii) manage all TA activities financed under the Project. For the day-to-day operations, at least one dedicated FM staff[94] should be identified under the current BB structure that will be responsible for the Project fiduciary aspects. This FM staff person will be responsible for: (i) all FM related aspects involved throughout project implementation; (ii) ensuring that the proper documentation is made available to the Bank's FM and disbursement staff (and auditors) for both components; (iii) preparation and submission of semester interim financial reports (IFRs) for program expenditures within 45 days of the end of the period covered; and (iv) the preparation of Project annual financial statements and making arrangement for their audit, as well as any other activities that will be described on the POM which may be additional to BB's own current procedures.

7. **Budgeting: BB will apply its own budgeting procedures which have been deemed acceptable to the bank.** The POM will describe the procedures for preparation, execution, and control of the budget applicable for the activities to be implemented.

8. **The Ministry of Economy (ME), together with other bodies and entities of the Executive Branch, is responsible for coordinating the processes of preparation, monitoring, evaluation, and review of the applicable PPA[1] and the release of methodology, guidelines, and technical support for its management (Law 13,971/2016 ruled by Decree 10,321/2020).** Banco do Brasil is inserted in the planning as executor agent of governmental public policies through financing funds (governmental), other initiatives (own funds), and realization of fixed investments aligned with the programs, objectives, and goals previously defined by the ME and by Sector Bodies (*Orgãos Setoriais* – OS), which correspond to the executor ministries of the public policies. It is worth mentioning that governmental initiatives under the PPA should maintain consistency with the targeting of the Corporate Strategy of BB (ECBB).

9. **BB's Corporate Strategy (ECBB) has a time horizon of 5 years and is reviewed annually, in the third quarter, through a structured, participatory process based on consolidated methodologies.** Its approval is carried out by the Board of Directors (CA), which strengthens the decisions on the Company's performance for the coming years. BB's management bodies are composed of Brazilian citizens with recognized knowledge, including the best Corporate Governance practices, experience, good character, unblemished reputation, and technical capacity compatible with the position: i. The Board of Directors, which is prescribed by law and in the Bylaws of BB, has strategic, guiding, elective, and auditing functions, not including operational or executive functions, whose members are elected by the General Meeting; and ii. The Board of Executive Officers, responsible for the administration of BB, is composed of the Board of Directors and the other Executive Officers, all residing in the country, as established in the Bylaws.

10. **To involve the organizational units in defining guidelines and approving proposals for BB's different businesses, the management uses strategic committees, which are activated within the Board of Executive Officers, which**

[93] Financially independent.
[94] no later than the project signing

decide on matters of corporate scope and guarantee agility and safety to the process of decision-making. The main strategic committees are the Executive Committees: Risk Management, Internal Controls, Assets, Liabilities, Liquidity, and Capital; of security; for the Prevention of Financial and Foreign Exchange Illicit; Disclosure; Governance of Related Entities; of business; Profitability and Performance; People and Organizational Culture; Administrative-Operational; Credit Limit; of Credit Operations.

11. **Corporate indicators are defined and used for each strategic objective to assess its performance and monitor its evolution.** Public information regarding the Strategic Objectives, as well as the respective indicators and targets, is available on the investor relations website. The following reports are used to monitor the agreed corporate strategic objectives, and respective budget allocation and execution. Any adjustments/revisions should follow CVM and the Central Bank of Brazil's instructions.

- Management Report - approved by the Board of Directors, the Report addresses the Corporate Strategy, the structure and practices of corporate governance and sustainability, in addition to the main highlights of the Bank's quarterly performance;
- Annual Report - addresses the main highlights of the year, the Corporate Strategy, the governance structure and practices and the main associated indicators, for example, risk management and the creation of financial, social and environmental value;
- Performance Analysis Report - the Report evaluates the Bank's quarterly performance in detail, focusing on financial indicators

Accounting: BB is incorporated under and subject to the provisions of: (i) the Brazilian Corporation Law no. 6.404/76, modified by Law no. 11.638/07; (ii) the guidelines of the Brazilian Securities Commission (CVM/SNC/SEP)[95], and the Central Bank of Brazil; and (iii) specific regulations applicable to the finance institutions, under the National Monetary Council. These regulations together with other rules, policies, and procedures issued by the National Treasury Secretariat (*Tesouro Nacional*), National Federal Accounting Council (*Conselho Federal de Contabilidade*), and Committee of Accounting Guidelines (*Comitê de Pronunciamentos Contábeis)* is aligned with international accounting standards and International Financial Reporting Standards (IFRS), which are acceptable to record the Project's transactions and produce the financial statements. BB's treasury and financial directorate will support the PMU that will be responsible to record the Project's transactions under its responsibilities using the current information management systems. BB will maintain the accounting records of the transactions under the project encompassing the related components activities. In addition, to identifying the Project under its current chart of account structure, BB will record all Project's transactions in its corporate accounting management system and will reconcile these records with a budget and procurement report figures monthly. Transactions under the Project will be accounted for on a cash basis, for disbursements, reporting and auditing purposes. BB will maintain detailed Subproject Loans and Guarantee Registers/ Records to track individual loans, guarantees, defaults/ payouts, claims and recoveries/ write-offs, and other expenditures related to the project. The Borrower (Banco do Brasil S.A.) will act through its Cayman Islands Branch for accounting purposes. Project proceeds will be disclosed in BB's consolidated Balance Sheets.

12. **Financial Reporting: BB will follow all relevant regulations and reporting requirements issued by the relevant regulatory agencies, particularly those relating to non-performing assets. BB will ensure the timely production of semiannual financial monitoring reports (IFRs), prepared in Brazilian Reais (BRL) and U.S (United States) Dollars,**

[95] The Report on the Brazilian Code of Corporate Governance became a requirement by the Brazilian Securities and Exchange Commission (CVM), in 2018, for publicly traded companies.

on a cash basis, for monitoring reasons and that these reports will be generated from BB's corporate management system and be submitted to the World Bank, within forty-five days after the end of each semester. A specific ledger account will be created in BB's accounting system to record all the Project's transactions and will be aligned with the structure of the Project's cost table to record transactions by category and component/activity. Accordingly, the format and the content of the IFRs will cover the following items:

- IFR 1A - Sources and Uses of Funds by disbursement component/category, with evidence of the World Bank's share in the financing of expenditures, (cumulative project-to-date; year-to-date and for the period), showing budgeted amounts versus actual expenditures, including a variance analysis, including a variance analysis;
- IFR 1B - Designated Account bank reconciliation - Cp;

13. **Internal Control / Internal Audit: BB's main governance administrative structure includes its Board of Directors and the Board of Executive Officers[96], supported by four committees: HR (Human Resources) and Eligibility; Risks and Capital; Strategy and Innovation; and the Audit Committee.** The Audit Committee's purpose is to advise the Board of Directors regarding the exercise of their audit and supervisory functions and to express its opinion on: (I) the quality of the financial statements; (II) the effectiveness of the internal control system; and (III) the effectiveness of the internal and independent audits. BB also adopts the ''Code of Best Corporate Governance'' issued by IBGC (Brazilian Corporate Governance Institute), which is guided by the principles of Transparency, Equity, Accountability and Corporate Responsibility.

14. **All the Project's budgeting and accounting transactions will be processed through BB's management system.** All payments will follow acquisition, verification of invoices (provisão), and payment (pagamento) routine. All transaction processing (recording annual budgets, budget commitments, and payables; authorizing payments; and internal control reviews) will be carried out by BB that will execute payments and control the segregated project bank account. These functions will be carried out by the Treasury Department of BB[97]. Other internal control mechanisms will include review and reconciliation of payments, proper access to systems, segregation of functions, and observation of internal administrative codes and procedures. The documentation underlying the sub loans under component 1 will be subject to both internal and external audit reviews.

15. **BB's internal audit unit (AUDIT) operates in line with the international standard practices issued by The Institute of Internal Auditors (IIA).** BB will apply its own internal control procedures and BB's internal audit will include in its annual audit plan, the review of the overall Project's transactions and will advise and provide recommendations for improvement on the management of respective fiduciary aspects Internal controls procedures will be detailed in the POM and, if necessary, routines will be established during project implementation.

16. **Borrower Actions to Prevent and Combat Fraud and Corruption in connection with the Use of Loan Proceeds.** In furtherance of the above-stated purpose, the Borrower will:

    i. take all appropriate measures to prevent Fraud and Corruption in connection with the use of Loan proceeds, including (but not limited to) (a) adopting appropriate fiduciary and administrative practices and institutional arrangements to ensure that the proceeds of the Loan are used only for the purposes for which the Loan was granted, and (b) ensuring that all of its representatives involved with the project, and

[96] Responsible for the administration of Banco do Brasil composed of the Board of Directors and the other Executive Officers.
[97] or any other department to be identified during appraisal

all recipients of Loan proceeds with which it enters into an agreement related to the Project, receive a copy of the Bank's IPF Anti-Corruption Guidelines and are made aware of its contents;

ii. immediately report to the Bank any allegations of Fraud and Corruption in connection with the use of Loan proceeds that come to its attention;

iii. if the Bank determines that any person or entity referred to in (i) above has engaged in Fraud and Corruption in connection with the use of Loan proceeds, take timely and appropriate action, satisfactory to the Bank, to address such practices when they occur;

iv. include such provisions in its agreements with each recipient of Loan proceeds as the Bank may require giving full effect to the Bank's IPF Anti-Corruption Guidelines;

v. cooperate fully with representatives of the Bank in any investigation into allegations of Fraud and Corruption in connection with the use of Loan proceeds; and

vi. if the Bank declares any recipient of Loan proceeds ineligible take all necessary and appropriate action to give full effect to such declaration.

17. **External audit: BB's consolidated financial statements are under the responsibility of its Board of Directors and have been prepared in accordance with International Financial Reporting Standards (IFRS), issued by the International Accounting Standards Board (IASB).** The audit firm *Deloitte Touche Tohmatsu* issued an unmodified opinion over the latest available (CY2021) consolidated Financial Statements. The auditors confirmed that these statements are fairly presented, in all material respects, in accordance with the criteria set out in applicable regulations and consistently with the accompanying individual and consolidated interim financial statements taken as a whole. As part of the national financial system, BB is subject to rules and decisions of the Federal Government's competent bodies, including the Federal Government internal and external control oversight bodies, CGU – General Controller of the Union) and the TCU (Supreme Audit Institution) policies and procedures.

18. **For the Project, the external audit of the Project's Financial Statement will be conducted by an independent private auditor.** It will follow agreed Terms of Reference (TOR) acceptable to the World Bank and will conduct the audit in accordance with International Standards on Auditing (ISAs) (issued by The International Auditing and Assurance Standards Board (IAASB) of the International Federation of Accountants (IFAC)) (or national auditing standards if, as determined by the World Bank, these do not significantly depart from international standards). The auditors will be required to issue an opinion on the Project's annual financial statements, (i.e., fiscal years' last semester IFR) prepared by BB in accordance with accounting standards acceptable to the World Bank, and produce a management letter, where any internal control weaknesses will be identified, contributing to the strengthening of the control environment. The auditor's report will be submitted to the World Bank no later than six months after the end of the fiscal year. The World Bank will review the audit report and will periodically determine whether the audit recommendations are satisfactorily implemented. The World Bank also requires that the Borrower disclose the audited Project's annual financial statements in a manner acceptable to the World Bank and following the World Bank's formal receipt of these statements from the Borrower, the World Bank will also make them available to the public in accordance with The World Bank Policy on Access to Information.

19. **Flow of funds and disbursement arrangements:** The following disbursement methods and arrangements are expected to apply:

20. **Component 1:** Reimbursements only. Eligible expenditures for component 1 will be defined in the Loan Agreement as: (i) eligible sub-loans to Sustainable-linked Credit Lines, to be managed directly by BB; and (ii) capitalization and management of the Climate Debt Fund. In all cases, the sub-loans would need to comply with eligibility criteria and

be validated ex-ante by 3rd parties that are independent of either BB or the Borrowers and accredited by the Project. The POM will specify the relevant criteria.

21. BB will request reimbursements[98] of eligible expenditures. The Bank will agree with BB on the reporting format and respective supporting documentation required for documenting the sub loans and debt securities to be treated as eligible expenditures. Reimbursements may be either in the Local Currency or the US$ equivalent amount of in the Loan Currency.

22. **Component 2:** Advance, Reimbursement and Direct Payment. Disbursements will be primary based on the use of Advances. The Bank will advance funds into a segregated Designated Account, maintained exclusively for the management of loan proceeds, opened in US$ (US$ or R$) at BB, in the name of BB. The ceiling of the Designated Account will be fixed at US$ 1,000,000. BB will report on the use of Advances and Reimbursement requests through Statement of Expenditures (SOEs). Direct Payments will be documented by Records (copy of the invoices). The disbursement deadline date will be four months after the closing date of the project.

23. **Retroactive financing:** Retroactive financing for an aggregate amount up to US$100 million for disbursement category 01 and 3 may be made for eligible expenditures incurred up to 12 months before the signing date of the Loan Agreement and Financing Agreement, provided that relevant Bank procurement guidance is followed.

24. **The General Conditions require the Borrower to retain all records (contracts, orders, invoices, bills, receipts, and other documents) evidencing eligible expenditures and to enable the World Bank's representative to examine such records.** They also require the records to be retained for at least one year following receipt by the World Bank of the final audited financial statement required in accordance with the Legal Agreement or two years after the closing date, whichever is later. The Borrower is responsible for ensuring that document retention beyond the period required by the Legal Agreement complies with its government's regulations.

Table 12: Category of Expenditures and Financing Percentages (expressed in US$)

Category	Amount of the Loan Allocated (Expressed in US$)	Percentage of Expenditures to be financed (Inclusive of Taxes)
(1) Sub-loans under subcomponent 1(a) of the Project	400,000,000	100%
(2) Capital Contribution to the Climate Debt Fund and Payment of Management Fees and Fund Operations Costs under Part 1(b) of the Project	96,750,000	100%
(3) Non-consulting services, consulting services, and Training for Part 2 of the Project	2,000,000	100%
(4) Front-end Fee	1,250,000	Amount payable pursuant to Section 2.03 of this Agreement in accordance with Section 2.07 (b) of the General Conditions
TOTAL AMOUNT	500,000,000	

[98] The borrower will ask the World Bank/WFA to pay the equivalent currency in USD of the BRL requested (to be using the exchange rate in effect at the time that the World Bank processes and approves the withdrawal request.

25. **Implementation support.** The proposed fiduciary implementation support activities include the following: (a) Monitoring the performance of fiduciary systems and audit reports, including implementation of the mitigation measures and application of the ACG; (b) Monitoring the financial statement reporting process and assisting the client as necessary; (c) Monitoring changes in fiduciary risks of the Project and, as relevant, compliance with the fiduciary provisions of legal covenants; and (d) Helping the Borrower with institutional FM capacity building.

ANNEX 10: Procurement Arrangements and Procurement Plan

1. **The procurement function at Banco do Brasil is regulated by its Bidding and Contracts Regulation (RLBB) which aims to define the procedures for bidding and contracting services, including engineering, selection of business partners, acquisition, leasing, disposal of goods and execution of works, as well as the administration of contracts within the institution, pursuant to Law No. 13,303 of 06.30.2016 (LRE) and Decree No. 8,945 of 2016**. These procedures are compatible but defer from the hiring procedures specified in the Regulations for hiring consultant firms (advertisement, expressions of interest, evaluation combining technical and financial scores and use of standard RFP), and therefore, BB will use the procedures and methods as stated in the Procurement Plan approved by the Bank to hire the consultant firms and individuals under the TA of components 1b (if needed) and 2

2. **Banco do Brasil purchases goods, materials, equipment and service contracts through the Department of Purchases Suppliers and Contracting in Brasilia and the São Paulo Supply Center under the Corporate Directorate of Supplies and Equity Management**. These units may have a limited participation in the procurement under the TA (likely advertisement, appointment of the Bidding Committee and reception of proposals). Given the limited knowledge and experience on procurement procedures for hiring consultants using the Bank's approved methods at BB, the hiring of the service contracts under the TA shall rely on guidance provided by an individual consultant or staff with knowledge of World Bank procurement procedures employed in the Sustainable Business Solutions Management Unit of BB or where the PCT is established.

3. **The procurement section of the Project's Operational Manual will provide details of the units involved and the flow of documentation to hire the consultant services under Component 2 (and Component 1b if needed)**. The Bank hired a specialized consultant to assist BB in preparing the Operational Manual whose draft shall be available by Negotiations.

4. **The hiring of consultants under the TA component is detailed in the procurement plan below**. The arrangements include hiring of consultancy firms through QCBS, QBS, CQS and Direct Selection, and a few individual consultants. The direct selection of consultancy firms and the hiring of the Fund Manager will be subject to prior review by the Bank given the strategic nature of these services; all other consultant services will be subject to ex-post review by the Bank.

PROCUREMENT PLAN AS IN STEP BY NEGOTIATIONS

Description		Type of Service	Estimated cost in USD	When
BR-BB-319472-CS-QCBS / Consulting services to support the development of the BB's Framework for Mitigation Plans.		Consulting firm	250,000	Q1 Y23
BR-BB-323469-CS-QCBS / Develop operational modalities for validating mitigation plans and tracking progress		Consulting firm	250,000	Q4 Y23
BR-BB-323470-CS-QCBS / Carbon credit marketplace -		Consulting Firm	200,000	Q2 Y24

transactions and auctions				
BR-BB-323465-CS-QBS / Independent verification of mitigation plans		Consulting firm	250,000	Q3 Y23
BR-BB-319482-CS-CQS / Support a cadre of service providers and third-party verification entities to assist companies with project design and MRV		Consulting Firm	100,000	Q3 Y23
BR-BB-323476-CS-CDS / Supporting the project's carbon credit standards		Consulting firm	250,000	Q2 Y23
BR-BB-323472-CS-CDS / Design a digital MRV and data management system to collect MRV information		Consulting Firm	300,000	Q2 Y23
BR-BB-323474-CS-CDS / Carbon credit marketplace - conversion into digital assets and blockchain		Consulting firm	100,000	Q3 Y24
BR-BB-323468-CS-INDV / Carbon credit marketplace - New financial products		Individuals	100,000	Q1 Y23
Estimated total			1,800,000	
Hiring of Fund Manager		Management or Consultant firm	3,000,000	Under review
Undefined activities		To be determined	200,000	tbd

ANNEX 11: Brief Assessment of Private Sector Procurement Practices

1. **Brazilian private sector procurement is conducive to economy and efficiency as their supply chains are effective and well managed**. Private firms in Brazil predominantly use two methods of procurement processes: (a) request for quotations, and (b) restricted bidding. The former is prevalent, and it is often used by smaller companies or in urgent purchases by large corporations. In all cases, the driving principle of private procurement is value for money. To achieve the quality requirements under quotations of restricted bidding, the private sector entities constantly research the markets to enlist suppliers and service providers that would meet the required designs, standards, and specifications.

2. **Request for Quotations (RFQ) or restricted bidding (also referred to as Request for Proposals – RFP) is generally carried out through reverse auction (electronic or face-to-face).** These processes may be limited to three participants, generally selected from a roster of registered suppliers. The Purchaser prepares a document including deadlines, selection criteria, contract conditions, penalties in case of non-compliance, and quantities and specifications. The award criteria used by the private sector include the lowest price, rated criteria of price and technical proposal and best technical proposal followed by negotiations.

3. **The private sector procurement strategy comprises: (a) one-time investment; (b) repetitive procurement and long-term contracts**. their procurement as repetitive competition or long-term contracts and those carried out through long-term contracts comprise the procuring strategy. While the purchases made through long-term contracts are adopted for supplies of regular consumption materials, valid for a predetermined period with deliveries in batches as required, the repetitive procurement consists of procedures launched as per the supply chain management.

4. **Seeking to mitigate risks, private companies' procurement strategy focuses on the quality of supplies and inputs.** To control this variable, the private sector companies track the performance of the suppliers by monitoring eight or more qualifications: (a) the supplier's time in business and its development over time; (b) the finances of the supplier in terms of cash flow and financial capacity to maintain reliable operations; (c) the supplier´s other customer´s; (d) the supplier´s logistics and supply chain, including delivery costs, fleet or performance of subcontracted carriers; (e) specific quality of good generally through review of testing and lab reports; (f) the communication channels of the supplier in terms of opportunity, efficiency and quality of the service channels; (g) the negotiation capacity – whether there is flexibility about payments, compliance of deadlines; and (h) whether the prices are competitive in the market.

5. **Obtaining specific information about the selection criteria of suppliers used by the private sector is difficult as often the criteria are the proprietary information of their supply chain**. In a survey carried out by Viana and Alencar (2012)[1], seven methodologies were identified among the most used for supplier selection, namely linear weighting – where weights are assigned to each award criterion subjectively and the supplier's evaluation is made by the sum of their performances in the given indicator multiplied by their weights, the mathematical programming - where the problem is formulated in an objective mathematical function which is later maximized or minimized, the multicriteria model - which helps the decision maker to systematically evaluate a set of alternatives against various criteria, the total cost of ownership (TCO) - which incorporates all measurable costs incurred during the life cycle of the purchased item, the data envelopment analysis (DEA) - in which alternatives are evaluated according to the benefit criteria and the cost criteria and the efficiency of a supplier is obtained through the ratio of the weighted sum of its benefits by the weighted sum of its costs, the fuzzy theory - where linguistic values are expressed in fuzzy

numbers and are used to evaluate and assign weights to criteria and Artificial Intelligence - which is based on computational systems. All these methodologies are consistent with a good market approach and value-for-value practices when applied for the intended purpose.

6. Overall, the procurement by the private sector in Brazil is economic and efficient to the extent that the local market is highly competitive, and many Brazilian manufacturers and suppliers are also competitive in international markets.

[1] *https://www.scielo.br/j/prod/a/Nsnz3b7smQDNStZKvw4sQPy/?format=pdf&lang=pt*