Global Gateway

Report

Assessment for forest financing at country level

Brazil

Photo by Neil Palmer/CIAT

December 2024

The EU-funded Forests for the Future Facility (F4) provides technical support to contribute to healthy forest ecosystems and forest-related value chains in Asia, Africa, the Caribbean and Latin America. The Facility is managed by DG International Partnerships Unit F2 – Environment, Natural Resources, Water.

F4F is working in collaboration with CIFOR-ICRAF on the EU Action "Financing for Forests".

Disclaimer
This assessment has been developed based on consultations with stakeholders and inputs from subject matter experts. It is important to note that the findings and recommendations presented herein do not necessarily reflect the official forest finance priorities or positions of Brazil. Additionally, this document does not represent the official views of the European Union. The content is intended to provide insights and support discussions in the context of forest finance but should not be interpreted as an endorsement of any specific policy or strategy.

Assessment context
This assessment of existing forest financing instruments at country level operates as the foundation for a proposed EU-funded Action 'Financing for Forest' FFF.

The Action intends to boost financing for forests at global level, by generating and sharing knowledge widely. In selected partner countries, technical assistance (TA) for the implementation of specific forest finance solutions/instruments will be provided. Prior the Action, an assessment is carried out in up to 15 countries to 1) help define which forest finance solutions will be tested and piloted and in selected countries (up to 7 countries will be selected for the Action "Financing for Forest"), 2) help EU Delegations (EUDs) and partners in other countries get a better understanding of existing financing mechanisms, and 3) generate knowledge about selected financial solutions/instruments.

As part of this assessment ahead of the Action, and to develop and implement a suitable methodology, the Center for International Forestry Research and World Agroforestry (CIFOR-ICRAF) has been tasked to conduct the current assessment on forest finance mechanisms in several countries including Brazil over the period July-October 2024; CIFOR-ICRAF support is formally delivered under a contract with the Forests for Future Facility (F4F), a technical assistance facility to the EC INTPA F2 on matters regarding sustainable forest management.

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Table of Contents

List of figures and tables

Figures

Tables

Acronyms

CRA	Certificado de Recebíveis do Agronegócio (Agribusiness Receivables Certificate)
BNDES	Banco Nacional de Desenvolvimento Econômico e Social (National Bank for Economic and Social Development)
SICOR	Sistema de Controle de Operações de Crédito Rural (System for the Control of Rural Credit Operations)
PRONAF	Programa Nacional de Fortalecimento da Agricultura Familiar (Family Farming Strengthening Programme)
LCA	Letra de Crédito do Agronegócio (Agribusiness Credit Letter)
PES	Pagamento por Serviços Ambientais (Payments for Environmental Services)
PES REDD+	Payments for Environmental Services, specifically linked to the REDD+ programme
	Fundo Amazônia – Amazon Fund
PNPSA	Política Nacional de Pagamentos por Serviços Ambientais (National Policy for Payments for Environmental Services)
VCS	Verified Carbon Standard
FSC	Forest Stewardship Council (Certification for sustainable forest management)
NTFPs	Non-Timber Forest Products
Fundo Clima	Climate Fund (Brazilian public fund for environmental projects)
Bureau Veritas	Certification body for environmental standards
Nint	Certification body (specific to the Solinftec CRA certification)
Solinftec	Company associated with green CRA issuance
RECA-Natura	Carbon Insetting Model (related to Payments for Environmental Services)
ETP	Ecological Transformation Plan
PRA	Programa de Regularização Ambiental (Environmental Regularization Program)
CAR	Cadastro Ambiental Rural (Rural Environmental Registry)
IFACC	Innovative Finance for the Amazon, Cerrado and Chaco
MDBs	Multilateral Development Banks
REDD+	Reducing Emissions from Deforestation and Forest Degradation
PSA	Pagamento por Serviços Ambientais (Payments for Environmental Services)
PLANAVEG	Plano Nacional para Recuperação da Vegetação Nativa (National Plan for the Recovery of Native Vegetation)
ABC+	Agricultura de Baixa Emissão de Carbono (Low Carbon Emission Agriculture)
NVPL	National Environmental Protection Law

FIP	Fundo de Investimento em Participações (Private Equity Fund)
FIDC	Fundo de Investimento em Direitos Creditórios (Receivables Investment Fund)
FIAGRO	Fundo de Investimento em Agroindústria (Agribusiness Investment Fund)
NDC	Nationally Determined Contribution
Plano Safra	National Program for Agricultural Financing
RenovAgro	Agricultural Recovery Program
NMC	National Monetary Council
IPLC	Indigenous Peoples and Local Communities
Mirova	Private investment fund for environmental projects Environment Acceleration Capital
Conexsus	Impact fund for sustainable projects Accelerator Fund
Bolsa Floresta	Financial compensation programme for Indigenous communities in the Amazon
RECA-Natura	Carbon insetting program by Natura for sustainable forest management Carbon Insetting Model

1 STEP 1

MAPPING OF FOREST FINANCE SOLUTIONS

1.1 Executive summary – step 1: Key findings and initial recommendations

Table 1. Key findings – step 1

Financial solution	Volume of financial flows	Targeted investment areas	Source of finance
Solution 1: CRA (Agribusiness Receivables Certificates)	USDs7.5 billion issued in 2022; expected increase with at least 17 green CRAs in 2024	Sustainable projects in agro-industrial chains (e.g., degraded forest restoration, agroforestry, biodiversity conservation)	Private (capital markets, securitization companies)
Solution 2: Fiscal reforms of the Plano Safra	USD83.7 billion allocated for corporate and family agriculture	Forest restoration, conservation, sustainable agricultural practices, environmental regularization	Public (Brazilian government initiatives under Ecological Transformation Plan)
Solution 3: PRONAF (Family Farming Strengthening Programme)	USD12.9 billion allocated for 2023/2024, and USD13.3 billion for 2024/2025, with specific funding of USD0.88 billion for PRONAF ABC+	Sustainable family farming, reforestation, agroecology, and bioeconomy in rural areas	Public (Brazilian government, agricultural credit lines)
Solution 4: Private investment in ecosystem restoration (impact f≥inance)	The private sector financed USD0.7 billion/year for the forestry sector, mainly through thematic bonds issued by corporates (agribusiness)	Reforestation, ecosystem restoration in high-biodiversity areas, and restoration of degraded lands	Mixed: Private investors and catalytic capital from public entities, MDBs, and NGOs
Solution 5: Payments for Environmental Services (PES)	Financial potential of USD1.5-3 billion per year by 2030	Reforestation, conservation of native vegetation, water quality improvement, carbon sequestration, and biodiversity conservation	Mixed: Public (national law PNPSA, international organizations) and private (carbon markets, REDD+ initiatives)

Solutions (1) CRA (Agribusiness Receivable Certificates), (2) Fiscal Reforms of the Plano Safra and (3) PRONAF promote primarily sustainable agricultural practices covering ecosystem restoration and sustainable management of agricultural land. Ecosystem restoration can imply regeneration of degraded forests and deforested areas with different means (natural forest regeneration, planting of native species).

Brazilian legislation obligates landowners or legal holders of land to have permanent preservation areas and legal reserves. Permanent preservation areas protect water sources (rivers, perennial water streams) with criteria for buffers (e.g. buffer zones around river sides and water courses). The size of legal reserves varies from 20% to 80% of the land area depending on the biome:

- 80% in rural property located in forest areas within the Legal Amazon
- 20% in rural property located in grassland areas within the Legal Amazon
- 35% in rural property located in cerrado areas within the Legal Amazon
- 20% in rural property located in forest areas or other types of native vegetation located in other regions of the country.

The current state of permanent preservation areas and legal reserves is far from the targets and comprises key areas for ecosystem restoration on private land.

These solutions help landowners to comply with these legal obligations, which are the minimum requirement for sustainable practices. Turning the farms sustainable includes efforts for forest restoration and conservation in legal reserve and permanent preservation areas.

Solutions (4) Private investment in ecosystem restoration and (5) PES can have significant impact in forest restoration, reforestation and foundations for forest-based value chains.

These solutions are also overlapped, as many impact investors (solution 4) apply PES (solution 5) – namely carbon markets or biodiversity credits – as part of their revenue generation models.

An impact investor may contribute to development of landscapes by combining commercial forest plantations, agroforestry, ecosystem restoration (regeneration of degraded natural forests) and conservation. The productive areas enable development of value-added processing. The impact investors often **target larger areas for ecosystem restoration and conservation than obliged by the law** (legal reserve and permanent preservation areas). In addition, the restored areas may offer opportunities for sustainable production, for example of non-wood products. The earning logic typically combines revenues from green products (wood, non-wood, sustainable agriculture) and carbon credits (in some cases biodiversity credits or other PES).

One example mentioned is BGT Pactual: in their model they are developing sustainable landscapes combining production, restoration and conservation as well as solid wood processing. The latter requires new regimes for planted forests favouring long rotations with mixed species, as well as production of wood products that have long life cycles (long-term carbon storage in the products). Many of their investors are primarily looking for carbon credits.

1.2 Introduction

Objective of the assessment

Brazil has a wide range of financing mechanisms for forests. In terms of volume, at least USD1.67 billion has been allocated to nature-based solutions (NbS)[1] in the country in the last 12 months (August 2023-August 2024).[2] As shown in the graph below, investments are flowing to a wide range of NbS linked to the forest sector, with food system transformation a clear priority for Brazil.

Brazil has an increasingly sophisticated financial market. This solid foundation puts the country in a good position to attract and manage large-scale investments in NbS.

Brazil offers several structured investment vehicles that allow international capital to invest in NbS. Examples include the Fundo de Investimento em Participação (FIP), Fundo de Investimento em Direitos Creditórios (FIDC) and the Investment Funds in Agro-Industrial Production Chains (FIAGRO), which build on 25 years of alternative asset development and more than 10 years of sustainability-focused products.

In addition, new innovative financial mechanisms are being developed to support financial flows to NbS, such as payments for ecosystem services, packaged agricultural credit products, green bonds, grants for technical and financial assistance, and other schemes such as purchase agreements and funding for certification efforts.

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1 Activities commonly associated with NbS are sustainable forest management and ecosystem restoration, as well as projects focused on transitioning agricultural supply chains, such as sustainable livestock management, agroforestry and regenerative agriculture.

2 https://climatechampions.unfccc.int/wp-content/uploads/2024/09/Scaling-nature-finance-now_-The-opportunity-for-investors-in-Brazil-and-beyond_final.pdf

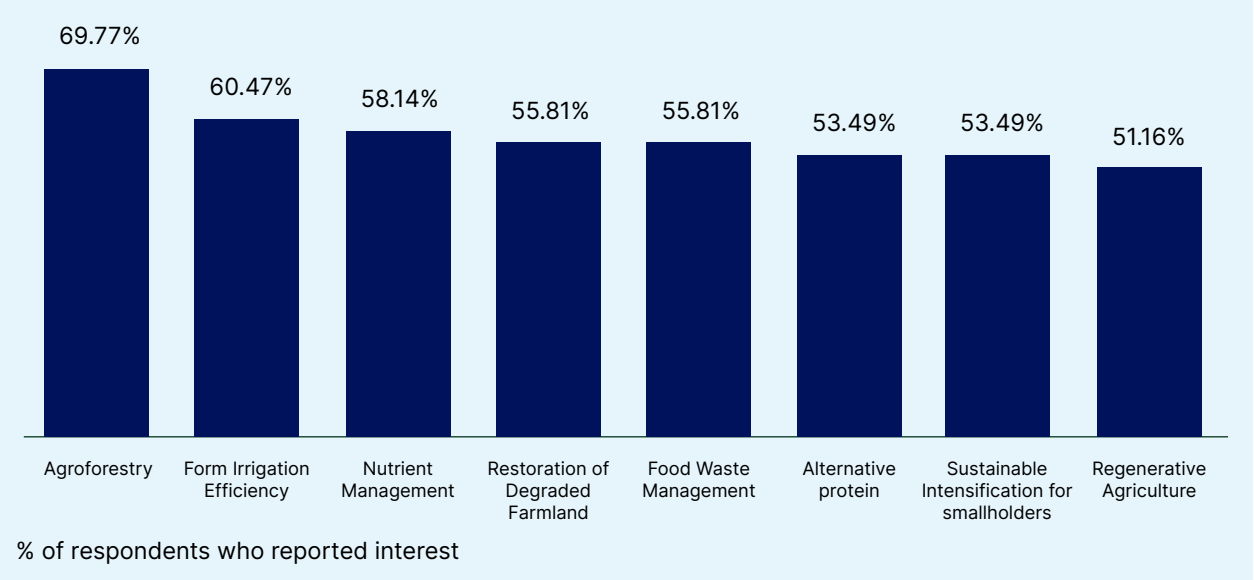

Figure 1. Brazil Market Survey – NbS project priorities (directly linked to forests*)
Source: Capital for Climate & Deloitte, NbS Risk Capital Value Chain Report, 2024

The objective of this assessment is therefore to select, from the many existing mechanisms, seven that could benefit from more resources and have good potential for scaling up.

To make this selection, discussions with the ministries have enabled us to focus on specific restoration/conservation areas to which the main financial mechanisms are applied to achieve the objectives of these areas. The aim of this first phase is to select seven specific mechanisms in Brazil, recognizing that they cannot cover the whole country.

For example, we have chosen to select certain financing mechanisms that are only effective in one region and would benefit from being extended nationally, and mechanisms that are implemented nationally but do not express their full potential.

Background on forest finance in the country

Finance needs of the forest sector

Estimation of current financing volumes for the forest sector

Brazil has a wide range of financing mechanisms for forest **conservation** and is well advanced in this area. In fact, the country has received significant funding for forest conservation, notably through the Amazon Fund, which has raised USD80 million in 2023, and the REDD+ programmes, which have raised more than USD2.2 billion between 2009 and 2023.

Specific funding for forest **restoration** in Brazil is more difficult to isolate, as many funds include both restoration and conservation initiatives. However, it can be estimated that Brazil has received around USD400-600 million in recent years for projects specifically dedicated to reforestation and ecological restoration of degraded lands, mainly through REDD+ initiatives and international commitments.

Funds also come from new capital allocations, deals, and other private funds, as well as from corporations. Indeed, there is a growing velocity of green fund formation in the country, and during the year 2024, there are four new private funds with a projected total of USD1.9 billion (Annex 1).

Analysis of sources of financing for the forestry sector in Brazil

Between 2015 and 2020, climate finance for land use in Brazil amounted to an average of USD6.6 billion/year[1]. **The forest sector received USD 1.7 billion/year (25% of climate finance).**

Climate finance for forestry focuses primarily on forest conservation and restoration activities aimed at carbon sequestration, biodiversity conservation and ecosystem protection. This funding typically includes afforestation, agroforestry and existing forest conservation projects.

Forest value chains (such as sustainable harvesting, processing and marketing of forest products) are excluded from this climate finance framework, as they are perceived to have more economic than strictly climate objectives.

Most of the finance for the forest sector with climate objectives came from **domestic** sources, which channeled USD1.5 billion/year (87%).

International finance for the forest sector originated mostly from public sources (USD221 million/year): foreign governments, climate funds and multilateral development banks, channeled mainly via grants. The Amazon Fund is the main climate fund channeling international finance for land use in Brazil (USD53 million/year).

The primary financing instrument for the forestry sector is **thematic bonds**. These bonds, which raise funds to support projects with social and environmental impacts, secured an average of USD0.68 billion per year for the forestry and land use sector, mostly through issuances by Brazilian companies in international markets.

In second position, the **public budget** channeled USD572 million/year for the implementation of policies for the forest sector. Among the activities financed, the public budget disbursed USD22 million/year for actions to prevent and control deforestation and fires, and USD16 million/year for environmental and land regularization policies and territorial planning.

Rural credit is the main instrument to finance activities aligned with climate objectives for land use, as it channeled almost half of the flows tracked between 2015 and 2020 (USD3.2 billion/year). However, the forestry sector only receives USD0.2 billion/year.

Estimated funding needs for forests

The financial requirements for forest **conservation** in Brazil are estimated at between USD1 and 2 billion per year. This includes conservation efforts, monitoring and support to local communities. Reports from the REDD+ programme and the United Nations Framework Convention on Climate Change (UNFCCC), for example, estimate these needs at USD8-12 billion over a decade.

For landscape restoration and **reforestation**, needs are estimated at USD1-4 billion per year to restore degraded lands, and USD12-36 billion in total to meet restoration targets by 2030. To achieve the goal of restoring and reforesting 12 million hectares of forest by 2030, set by the Brazilian government in its Nationally Determined Contribution (NDC) and included in the National Plan for the Recovery of Native Vegetation (PLANAVEG), a first estimate puts the needs at between USD700 million and

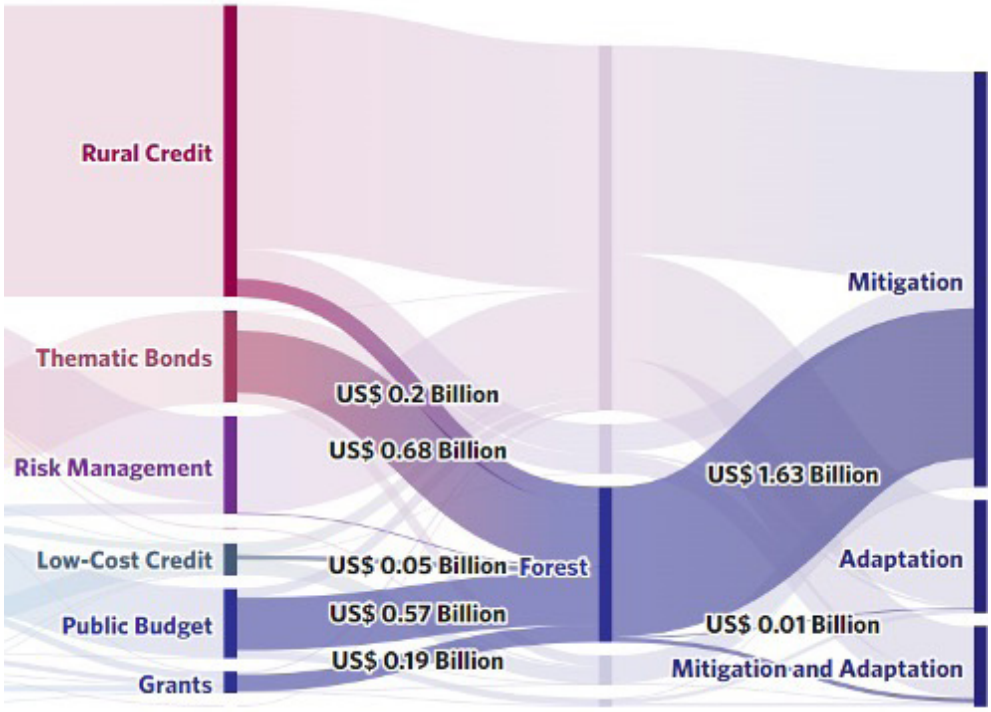

Figure 2. Landscape of Climate Finance for Land Use in Brazil – Forest sector

Source: https://www.climatepolicyinitiative.org/publication/landscape-of-climate-finance-for-land-use-in-brazil/

USD1.2 billion per year until 2030 (Brancalion et al., 2019). A second estimate by Benini and Adeodato (2017) puts the cost of this restoration at around USD3.8 billion per year for a fully supported planting programme, or around 10.8% of the annual public budget allocated to agriculture (Crouzeilles and Brancalion, 2019).

Finally, considering that in Brazil the forestry sector is directly competing with agricultural commodities (key forest-risk commodities produced and processed in Brazil are timber, cattle, soy and palm oil), the funding needs also concern the sustainability of these value chains. Research indicates that transitioning to sustainable value chains could require investments ranging from USD22-50 billion annually to effectively combat deforestation in Brazil. These funds are essential for supporting sustainable agricultural practices, improving supply chains, and developing eco-friendly economic activities. These funds will mainly come from the private sector. Finally, the transition involves elimination of harmful subsidies.

In conclusion, if we set aside the needs related to sustainable value chains, the estimated needs for the forestry sector in Brazil are between USD3-6billion per year, knowing that current funding is around USD1.7 billion per year. Despite the current strong momentum around innovative financial mechanisms for forests, the gap would be between USD2-4 billion per year to meet national restoration targets.

Constraints with access to finance

At the national level, the lack of governance and alignment of the above mechanisms is a cause for concern and hampers the synergy of existing instruments. Better governance and alignment of existing mechanisms would increase the effectiveness and impact of forest finance in Brazil, whether from the public or private sector, national fiscal sources or international cooperation.

More specifically, the constraints associated with financing the forest sector vary according to the mechanisms in place and the sources evaluated, as well as the scale at which they are applied, which can be national (Fundo Clima, ABC+ (Agricultura de Baixa Emissão de Carbono...)), but also biome (Fundo Amazônia...), state, municipal and community levels.

For example, for smallholder farmers, the main obstacle to financing forest conservation and restoration is the opportunity cost. In the context of legal reserves (mainly in the Amazon biome), landowners must maintain a minimum percentage of 'non-productive' forest land to be legal under the NVPL. This represents a direct loss of income for small-scale producers in the absence of compensation mechanisms at least equivalent to the loss of income.

More specifically, the barriers to scaling up innovative financial mechanisms are related to: in the case of 'green' rural credit, bureaucratic problems that prevent small farmers from accessing it; in the case of projects financed by investors, the lack of visibility or structuring of the impact projects that can be financed and the lack of economic viability (IRR) of these projects; in the case of forest/carbon credit, investment opportunities are faced with low financial returns in the longer term and the volatility of carbon prices, compared to an agricultural production opportunity that provides a financial return in the shorter term.

Finally, many of these smaller entities, such as cooperatives or local community groups, often face difficulties accessing financing because they do not meet the requirements of larger investment funds (the "missing middle"). But Brazil has initiatives such as the Conexsus Impact Fund, which tries to address the lack of effective financial intermediation by blending public and private financing to provide credit to cooperatives and SMEs that support sustainable practices. These initiatives, however, remain limited in scale compared to the needs of the sector (https://dai-global-developments.com/articles/financing-sustainable-land-use-three-models-from-brazil/).

Additionally, reports from sources like the World Economic Forum and the Climate Policy Initiative emphasize that while Brazil has received considerable private investment in areas like climate and sustainable agriculture, the business environment poses hurdles.

1.3 Findings

Summary of identified forest finance solutions

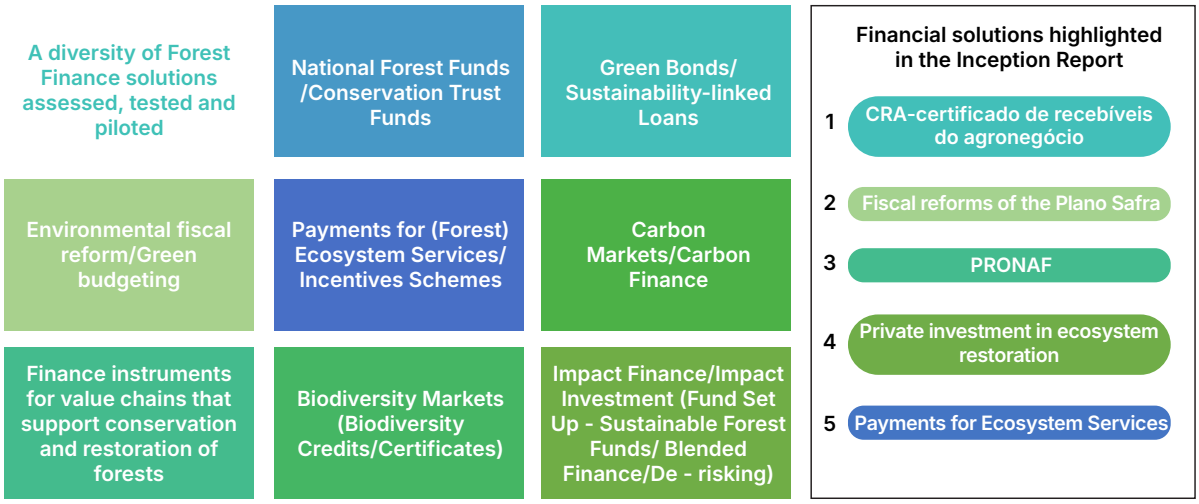

Figure 3. Summary of selected FF solutions

Description and future trends of key solutions

Solution 1: CRA – certificado de recebíveis do agronegócio (Agribusiness receivable certificates)

Description, current status

CRAs were introduced in 2004 to allow credit receivables generated from businesses in agro-industrial chains to be grouped into a security and offered to the capital market. A CRA is a nominative credit instrument. It represents the promise of a cash payment exclusively issued by a securitization company.

These are fixed income securities backed by business receivables between rural producers, their cooperatives, and third parties. Although most are not focused on sustainability, CRAs can be used to finance sustainable projects, such as the **restoration of degraded forests, agroforestry, or the preservation of biodiversity on agricultural land.**

By structuring a 'green' CRA around these projects, companies can obtain funds while committing to environmental objectives. In this case, CRAs, which are similar to green bonds, are all the more attractive because it is possible to negotiate a lower interest rate compared to the traditional CRAs since the instrument is green.

Trends for the future

In 2024, the Brazilian CRA market saw a resurgence in activity, with a growing trend and a significant increase in the number of new issues for green projects (at least 17 green CRAs have been issued to date).[3][4][5] In 2022, the volume of CRA issued was USD7.5 billion.[6]

Solution 2: Fiscal reforms of the Plano Safra

Description, current status and trends for the future

The Plano Safra 2024/2025 makes available a volume of financial resources above the historic mark of the past harvest (USD83,7 billion for corporate and family agriculture, in addition to USD19 billion via LCA – Letra de Crédito do Agronegócio). Fiscal reforms linked to Brazil's Plano Safra 2024/2025 highlight several new financing mechanisms for forest restoration and conservation as part of the Ecological Transformation Plan (ETP):

- **Financing authorization for properties with environmental embargoes**: Producers under embargo (whose agricultural activities are restricted due to non-compliance with

3 the-green-finance-market-emerging-in-brazil-oct-2020-final.pdf (giz.de)

4 https://ri.oliveiratrust.com.br/imprensa/emissoes-de-cris-e-cras-voltam-a-ganhar-forca-e-mercado-projeta-mais-crescimento-em-2024/

5 https://www.infomoney.com.br/onde-investir/cra-verde-ganha-folego-com-emissoes-de-agritechs-e-cooperativas/

6 https://www.climatebonds.net/files/reports/cbi_bra_sec_2022.pdf

environmental regulations) can now access specific credit lines (Pronaf Floresta, Pronaf Bioeconomia, RenovAgro Ambiental), provided that the funds are used to restore native vegetation. This is part of the Environmental Regularization Programme (PRA).

- **Incentives for agricultural production aligned with the sustainability journey**: Producers who validate their Rural Environmental Registry (CAR) benefit from a 0.5% reduction in interest rates on financing.
- **Reduction in the funding interest rate for enterprises aligned with the agricultural sustainability journey**: Producers certified for organic production will benefit from interest rates of 2% per annum, lower than previous rates, thus encouraging sustainable practices.[7]

Solution 3: PRONAF: Programa Nacional de Fortalecimento da Agricultura Familiar

Description

The 2024/2025 Family Farming Plano Safra (PRONAF) indicated important directions for sustainable production, productive inclusion, access to credit, and technical cooperation for family farming. PRONAF offers various types of rural credit to family farmers, ranchers, fishermen, fish farmers and foresters. In quantitative terms, PRONAF represents 14-15% of the total volume of rural credit, and the Brazilian Agricultural Plan 2023/2024 allocates USD12.9 billion to PRONAF. This meets a real need, as today only 15% of family farms have access to credit.

These rural loans have interest rates that are lower than market rates and flexible repayment terms. PRONAF has 14 different lines of credit with interest rates ranging from 0.5% to 6%, including 'green' lines linked to the ABC+ Plan (Plan for Adaptation and Low Carbon Emission in Agriculture (2020-2030)). The Sustainable Agricultural Production Systems Financing Programme (RenovAgro 2024/2025, previously called Programa ABC/ABC+) subprogrammes finance investments in sustainable production systems and technologies, such as PRONAF Agroecology, PRONAF Forestal and PRONAF Bioeconomy. Another 2024/2025 innovation is PRONAF Productive Forests, which promotes the recovery of degraded areas.[8] In this way, these rural credits, linked to sustainability commitments, could provide real leverage for conservation and reforestation.

Current status

However, to date, the use of PRONAF loans has been very uneven across regions (concentrated in the south, on large farms and by cereal producers) and there is currently a balance of funds in this programme, indicating that farmers are not taking full advantage of this loan opportunity. This can be explained by a number of factors, including lack of information, complex application procedures, collateral requirements, perceived indirect costs and the risk of being unable to repay the loans.[9]

Trends for the future

By 2030, PRONAF could play a key role in the transition to more sustainable family farming compatible with the protection of Brazil's forests. Its evolution towards green credits, its alignment with ecological restoration goals and its integration with international conservation initiatives are trends that could increase its positive impact on the conservation of forest ecosystems in Brazil.

Proposals have been made to increase funding to USD0.87 billion USD for PRONAF ABC+'s specific sustainability subprogrammes in the 2023/2024 season[10] and USD13,3 billion were announced for the Family Farming Strengthening Programme – Pronaf (2024-2025).[11] For 2024-2025, Pronaf Floresta, Semiárido, Agroecologia e Bioeconomia (except for forestry) will operate with a 3% p.a. interest rate and USD0.5 billion is available for investments in this interest rate range.

Solution 4: Private investment in ecosystem restoration – impact finance

Description

Although closely related and largely supported by the same institutional framework, forest **restoration** is conceptually and operationally distinct from avoided deforestation. Indeed, reforestation projects require large initial investments and can take years to mature

7 https://www.gov.br/fazenda/pt-br/assuntos/noticias/2024/julho/plano-de-transformacao-ecologica-fortalece-aspectos-de-sustentabilidade-no-plano-safra

8 https://www.gov.br/mda/pt-br/noticias/2024/09/balanco-plano-safra-da-agricultura-familiar-2024-2025-programa-e-lancado-em-mais-quatro-estados

9 https://www.climatepolicyinitiative.org/publication/family-farming-in-brazil-inequalities-in-credit-access/

10 https://www.climatepolicyinitiative.org/publication/contributions-to-sustainability-in-the-brazilian-agricultural-plan-2023-24/

11 https://agroicone.com.br/wp-content/uploads/2024/07/ENG-Agroicone_Breve-Analise_Plano-Safra-2024-2025.pdf

– challenges that are all the more important in Brazil, where interest rates are relatively high and exchange rate risks can deter international investors.

One way to significantly increase private funding for restoration projects is to mitigate the risks. This risk management can be achieved by providing catalytic capital, i.e. investments that accept a higher level of risk than conventional capital.

Current status and trends for the future

IFACC (Innovative Finance for the Amazon, Cerrado and Chaco) estimates that USD2 billion of catalytic capital is needed by 2030 to unlock the growth phase of Brazil's agricultural transition.[12] By providing catalytic capital, governments, multilateral development banks (MDBs) and NGOs can leverage 3-5 times more private finance.[13] Recently, IFACC signatories disbursed USD240 million in tailored financial instruments that help reduce project risk and the cost of capital.

At the same time, the Inter-American Development Bank is working with the Brazilian Ministry of Finance to offer products that protect against fluctuations in the Brazilian exchange rate and attract foreign direct investment.[14]

Solution 5: Pagamento por Serviços Ambientais – Payments for Ecosystem Services (PSA): PSAs complement regulation and control tools

Description

In Brazil, payment for environmental services (PES) schemes are being developed at both national and regional levels. These mechanisms can finance the conservation of native vegetation, the restoration of degraded lands and forests, the improvement of water quality, carbon sequestration and the conservation of biodiversity.

Current status

At national level, Law 14.119, adopted on 13 January 2021, establishes the National Policy for Payments for Environmental Services (PNPSA) in Brazil, creating a legal framework for the implementation of PES schemes in the country.[15]

Article 5(IV) of this law states that PES mechanisms should not replace the legal obligations imposed by control instruments (e.g. APPs and RLs), but rather act in a complementary manner. Thus, PES provide additional incentives to adopt practices that go beyond these minimum legal requirements.

In addition, PES, such as REDD+ initiatives, will play a fundamental role in promoting restoration activities, especially in the case of smallholders with limited access to credit and financial resources. However, land tenure regularization and land titling are fundamental to incentivizing private sector investment in long-term restoration, as landowners will be reluctant to disburse funds until their property rights are fully secured.[16]

Trends for the future

The next decade is likely to see an intensification and diversification of funding for PES in Brazil, supporting reforestation, conservation and ecological restoration projects. The outlook is driven by favourable international dynamics, the rise of carbon markets and the growing commitment of private and public actors. With potential financial flows of USD1.5-3 billion per year, PES could play a key role in financing the forest sector and its ecosystem services in Brazil.

Alignment on the Planaveg

All these mechanisms are in line with Planaveg (Brazil's national plan for the restoration of native vegetation), which aims to restore 12 million hectares by 2030. Given its importance, aligning our project with the objectives of Planaveg could be very beneficial. The government has expressed interest in this potential alignment.

12 https://thecollaborativesoyinitiative.info/storage/files/ifacc-marcela-paranhos-and-diego-ivanier-tnc-for-csi-webinar-cracking-the-hard-nut.pdf

13 https://www.eci.ox.ac.uk/news/oxford-study-signals-green-shoots-optimism-nature-finance

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2 STEP 2

ASSESSMENT OF FOREST FINANCE SOLUTIONS

2.1 Executive Summary – step 2: Key findings on evaluated solutions

The five Brazilian forest financing solutions demonstrate both potential and limitations in terms of financial viability, environmental and social sustainability, as well as contributions to biodiversity and climate goals:

1. **CRA (Agribusiness Receivables Certificate)**: This financial product is gaining interest, having raised USD17.5 billion by the end of 2023. Green CRAs support Goals 2 and 10 of the Global Biodiversity Framework (GBF) by financing sustainable agricultural practices, thereby promoting GHG emissions reductions. However, reliance on the volatility of agricultural receivables and exchange rate risks limits access for foreign investors.
2. **Fiscal reforms of the Plano Safra**: Allocated USD82,89 billion for 2024/2025, this programme supports sustainable agricultural practices with incentives such as reduced rates for certified producers. By aligning financing rates with environmentally friendly practices, Plano Safra contributes to Brazil's NDCs and GBF objectives. However, concerns remain about Indigenous and women's access to natural resources, requiring increased inclusion of these groups in implementing solutions.
3. **PRONAF**: With a budget of USD13.22 billion for 2024/2025, this programme is vital for the resilience of small family farms. It supports biodiversity and carbon emissions reduction, particularly through credits for agroecology and agroforestry. Its financial viability depends on public guarantees, promoting private sector involvement. The program is also socially inclusive, with credit lines for women and youth.
4. **Private investments in ecosystem restoration**: Impact funds such as BlackRock Global finance reforestation and regenerative agriculture projects aligned with climate and biodiversity goals. However, these projects require a stable regulatory framework to sustainably attract investors, along with strengthened land rights for Indigenous communities.
5. **Payments for Environmental Services (PES)**: With a market reaching USD450 million in 2020, Brazilian PES incentivizes natural resource protection. In addition to reducing habitat loss and sequestering carbon, it enhances local populations' access to economic benefits. However, improvements are needed to ensure equitable distribution, particularly for women and IPLC.

These solutions show strong potential for achieving climate and biodiversity goals but require enabling conditions for maximum effectiveness, including political stability, strengthened land rights, and increased involvement of local stakeholders.

2.2 Detailed analysis of forest finance solutions

Solution 1: CRA – certificado de recebíveis do agronegócio (Agribusiness receivable certificates)

Financial assessment – For the quarter ending September 2023, the cumulative volume of CRAs was USD17.5 billion,[17] while the amounts for 2019, 2020

17 https://www.gov.br/cvm/pt-br/centrais-de-conteudo/publicacoes/boletins/boletim-cvm-agronegocio/boletim-cvm-agronegocio-ed4-set2023.pdf

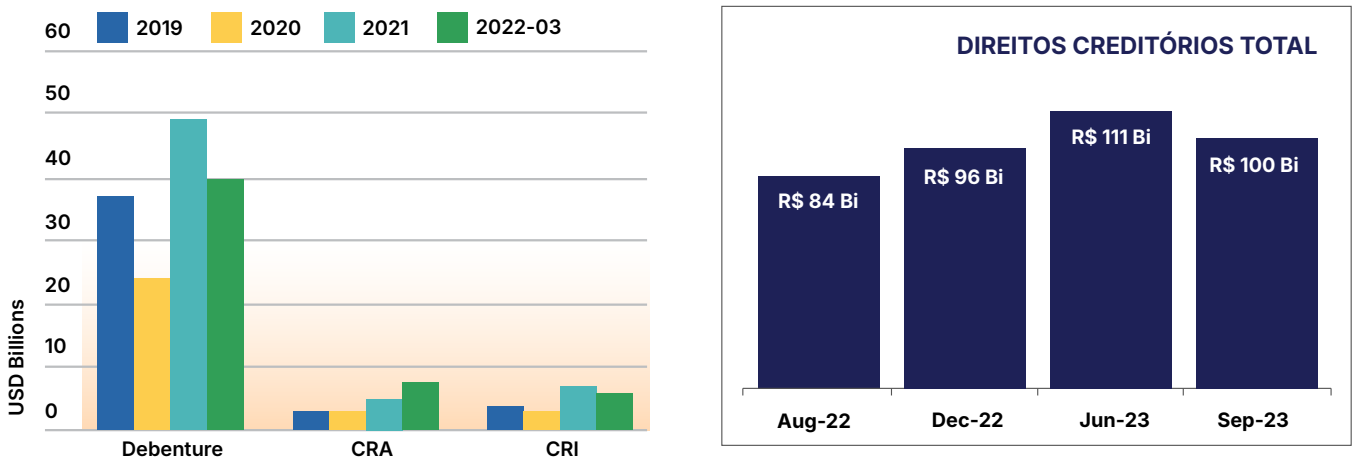

Figure 4. Volume of CRAs (USD and R$) from 2019 to 2023
Source: Boletim Economico CVM 2022, 2023

and 2021 did not exceed USD5 billion.[18] This illustrates the strong demand for this type of investment and the growing trend is expected to continue in the coming years. CRAs offer significant potential for forest restoration and agroforestry, with lower interest rates due to their 'green' nature.

As fixed-income instruments, CRAs offer stable long-term funding. However, foreign exchange risks and risks associated with agricultural receivables (market volatility, climatic conditions) remain a challenge for foreign investors.

Assessment of contributions to biodiversity and climate goals, other environmental benefits – Green CRAs support Goals 2 and 10 of the GBF by financing the restoration of ecosystems and the sustainable management of agricultural land. They also contribute to Brazil's NDCs under the Paris Agreement by financing sustainable agricultural projects that reduce greenhouse gas emissions. Examples include regenerative agriculture (e.g. CRA Produzindo Certo – Green, ***Annex 1***), agroforestry, energy efficiency in agriculture (e.g. CRA Solinftec – Green, ***Annex 2***) and sustainable soil management practices.

Assessment of social impacts – Rural producers are the main beneficiaries (59%, Annex 3). By their very nature, CRAs facilitate access to finance for small producers, strengthen agricultural value chains and support sustainable practices, thereby stabilizing local economies in rural areas.

Analysis of the prerequisites in terms of enabling environment, regulatory framework and capacities needed – The successful implementation of green CRAs in Brazil depends on political and economic stability, as well as government commitment to strengthening the regulatory framework. In terms of capacity, technological tools to measure the impact of projects and rigorous portfolio management are needed. Finally, the centralization of data through platforms such as Monitor de Investimentos[19] can facilitate the expansion of green credit rating agencies by ensuring transparency and attractiveness to investors.

Stakeholders mapping: Ministry of Agriculture and Ministry of Environment/Financial institutions, agro-industrial companies, rural agricultural producers.

<u>Solution 2: Fiscal reforms of the Plano Safra</u>

Financial assessment – The Plano Safra 2024/2025 makes available a volume of financial resources above the historic mark of the past harvest (USD82.9 billion for corporate and family agriculture, in addition to USD18.78 billion via LCA – Letra de Crédito do Agronegócio), an increase of 10% on the previous year.[20] The financial resources made available will largely come from financial institutions' own funds directed to corporate agriculture, from BNDES (Brazilian Development Bank).

18 https://www.climatebonds.net/files/reports/cbi_bra_sec_2022.pdf

19 In Brazil, the platform Monitor de Investimentos, launched in 2022, can be further explored to centralize data on small projects across multiple sectors of the economy.

20 https://www.gov.br/agricultura/pt-br/assuntos/noticias/governo-federal-lanca-plano-safra-24-25-com-r-400-59-bilhoes-para-agricultura-empresarial

Plano Safra 2024/2025 brought mechanisms that aim to stimulate agricultural production aligned with sustainability and reinsert properties prevented from taking out credit through incentives for legalizing them. This encourages the continued adoption of sustainable practices, but it is essential to monitor the effective use of funds and the continuity of funding programs.

Assessment of contributions to biodiversity, climate goals, other environmental benefits – In the 2023/2024 reforms of the Plano Safra, there is a real expansion of social, environmental and climatic impediments, which are already in force.[21] The ABC+ Program for medium and large producers was changed to 'RenovAgro'. The main news aligned with the agricultural sustainability journey is not only the record volume of financial resources made available for RenovAgro[22] (Figure 2), but also the possibility of financing the required investments for **recovering the native vegetation on properties with environmental embargoes** that are preventing them from being able to contract rural credit for their main activity. RenovAgro includes, as recovery of degraded pasture areas, the conversion to other uses (RenovAgro Recovery and Conversion) in order to stimulate the expansion of agriculture over degraded pasture areas.

Also, differentiating the funding interest rate for producers who prove sustainable attributes in their production underscores the interventions aimed at fostering rural credit aligned with sustainable production principles.

Assessment of social impacts – It is crucial to assess how these measures affect land rights and access to natural resources for IPLCs and women. The involvement of these groups in the planning and implementation of solutions needs to be strengthened to ensure equitable benefits.

Analysis of the prerequisites in terms of enabling environment, regulatory framework and capacities needed – For Plano Safra to be implemented, the regulatory environment must encourage banks and financial institutions to collect environmental and climate information through tools such as SICOR (Rural Credit System) in order to manage climate and socio-environmental risks. At the policy level, there needs to be strong alignment between the national agricultural policy, the ABC+ (low carbon agriculture) plan and Brazil's international climate commitments. Collaboration between different actors in the value chain is also essential to share transaction costs and risks.

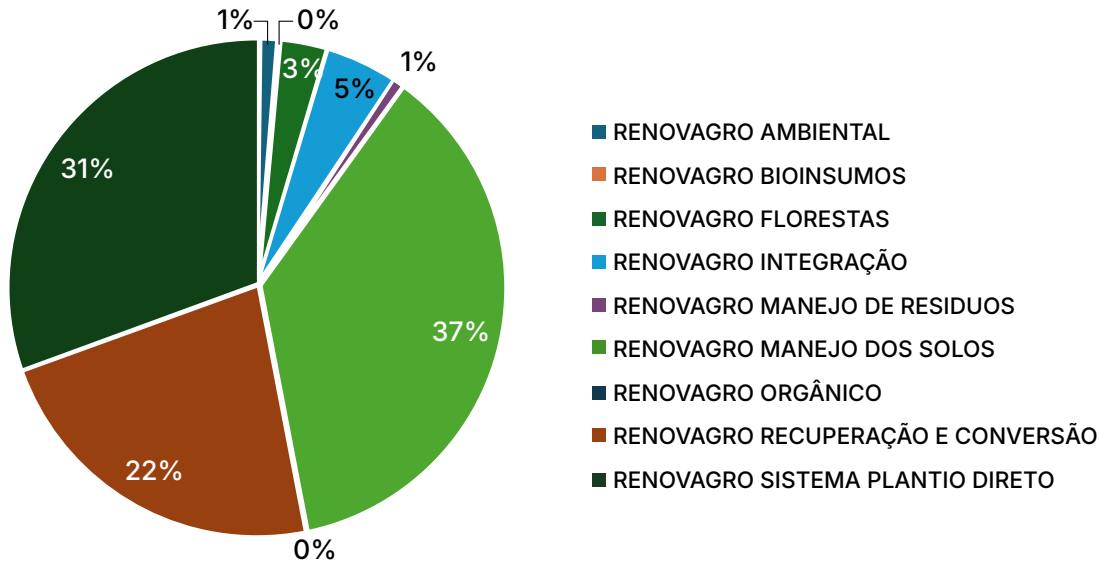

Figure 5. Allocation for RenovAgro financial resources by subprogramme in the 2023/2024 harvest

21 https://agroicone.com.br/wp-content/uploads/2023/07/ENG_Agroicone_Analysis_Plano-Safra-2023-24_site.pdf

22 Programme spécifique de financement agricole: modernisation des exploitations rurales, notamment pour les investissements dans des technologies durables et l'amélioration des pratiques agricoles.

Stakeholder mapping – The National Monetary Council (NMC) (the institution that adopts resolutions regulating the financing conditions for the restoration of native vegetation), the financial institutions (granting and managing sustainable agricultural credit), the beneficiaries (rural producers, family farmers), the Ministry of Agriculture and Livestock, the Central Bank of Brazil, and the BNDES (National Bank for Economic and Social Development).

Solution 3: PRONAF: Programa Nacional de Fortalecimento da Agricultura Familiar

Financial assessment – PRONAF (or newly 2024/2025 Family Farming Plano Safra) is a group of specific credit lines within Plano Safra, with a focus on small family farms.[23] PRONAF has a budget of USD9.32 billion from the Brazilian government for 2023-2024, and **USD13.22 billion was announced for the Family Farming Strengthening Program – Pronaf (2024-2025**).[24]

The financial sustainability of PRONAF is based on the political will to maintain support for family farming. The credit mechanisms offered reduce the risk for smallholders, encouraging the private sector to make long-term, sustainable investments.

Assessment of contributions to biodiversity and climate goals and other environmental benefits – The 2024/2025 Family Farming Plano Safra continued the incentives in the financing conditions for staple food basket and agroecological, organic, and socio-biodiversity products, with emphasis on strengthening financing for the family farming rice and milk chains. **Pronaf Florestal** provides technical assistance and rural extension actions, credit and financing for agroforestry systems, and structuring seed houses and networks, community nurseries, and other instruments that offer inputs for the degraded and altered areas recovery chain. Also, the 2024/2025 reforms for Pronaf Floresta make it possible to finance the implementation of fruit tree species from the region's biome as part of the agroforestry system, and USD1.68 billion for actions targeting, among other agricultural policy instruments, the minimum price guarantee policy for **biodiversity products** (PGPM-Bio). In this way, PRONAF supports sustainable agriculture and agroecology, contributing to the goals of the CBD, particularly those related to biodiversity-friendly agriculture. It also aligns with the Paris Agreement by promoting low-carbon agricultural practices. The programme finances practices such as the restoration of degraded soils and the introduction of integrated crop-livestock-forest systems, which contribute to better management of soil and water resources.

Assessment of social impacts – PRONAF includes specific credit lines for women and young people (Pronaf Mulher, Pronaf Jovem),[25] and Indigenous and traditional communities. These groups will benefit from increased access to finance and technical assistance, which will strengthen their economic resilience and access to land rights. In addition, for the 2024/2025 harvest, access and productive inclusion lines were strengthened, such as microcredit, Pronaf Mulher and Pronaf Jovem.

Analysis of the prerequisites in terms of enabling environment, regulatory framework and capacities needed – PRONAF is supported by a strong legal framework in Brazil, which is aligned with national rural development and sustainability policies. To ensure its effectiveness, the programme requires effective institutional management with a focus on agro-ecology and strengthened technical capacities, including monitoring the use of these financial resources and in formalizing and operationalizing the announced guarantee funds.

Stakeholder mapping: This includes the Ministry of Agriculture and Livestock (MAPA) and the National Monetary Council (CMN), which set the financial and regulatory frameworks for PRONAF credit lines; family farmers, the primary beneficiaries; BNDES (National Bank for Economic and Social Development); financial institutions (banks and cooperatives that manage and disburse the rural credit lines), and family farming organizations.

Solution 4: Private investment in ecosystem restoration – impact finance

Financial assessment – Private investment in Brazil shows a high potential for financing, thanks to the diversity of capital sources, such as impact funds,

23 https://www.gov.br/mda/pt-br/noticias/2024/07/comida-no-prato-com-reducao-de-juros-para-a-producao-de-alimentos-basicos-psaf-chega-ao-recorde-de-r-76-bilhoes-no-credito-rural/resumo-plano-safra-pronaf-2024-2025-v7.pdf

24 https://agroicone.com.br/wp-content/uploads/2024/07/ENG-Agroicone_Breve-Analise_Plano-Safra-2024-2025.pdf

25 https://www.gov.br/mda/pt-br/noticias/2024/07/comida-no-prato-com-reducao-de-juros-para-a-producao-de-alimentos-basicos-psaf-chega-ao-recorde-de-r-76-bilhoes-no-credito-rural/resumo-plano-safra-pronaf-2024-2025-v7.pdf

institutional investors and equity. In fact, in addition to new capital allocations and deals, there is a growing velocity of fund formation in the country, as shown in the figure below:

For example, projects backed by funds such as Mirova Environment Acceleration Capital or the BlackRock Global Impact Fund are attracting hundreds of millions of dollars for sustainable restoration projects, particularly in agroforestry and regenerative agriculture. Another example is the Conexsus Accelerator Fund, which invests in projects in their preliminary stages, opening up access to other credit lines as the project matures. The Conexsus Fund is the only blended finance fund dedicated specifically to greening existing Brazilian government credit lines.[26]Financial sustainability is based on the ability of projects to generate sustainable cash flow through resilient agricultural practices, sustainable timber or NTFP production, or the generation of carbon credits. The growing demand for certified products can strengthen this long-term sustainability.

Assessment of contributions to biodiversity and climate goals, other environmental benefits – Given the nature of the projects financed, these investments are aligned with the GBF and the Paris Agreement objectives, which can be (and generally are) linked as follows:

- Carbon: Carbon sequestration through plantations and forest regeneration
- Biodiversity: Increased biodiversity in agroforestry systems
- Ecosystem restoration: Improving soil fertility and reducing erosion, as well as sustainable watershed management.

Assessment of social impacts – Restoration projects can have a positive social impact by integrating IPLC groups and creating economic opportunities through sustainable land management. Women and local communities can benefit from improved access to natural resources and economic empowerment through active participation in reforestation and agroforestry projects. Some initiatives provide legal support to help these groups secure their land rights.

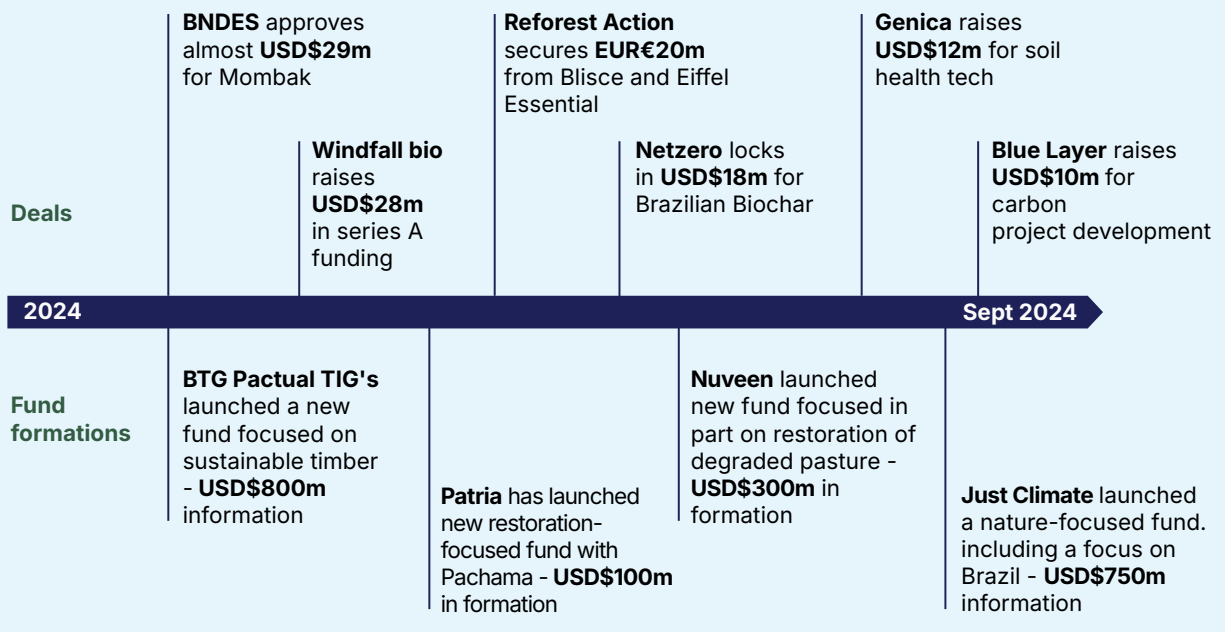

Figure 6. Deal flow and fund formation in Brazil in 2024
source: Capital for Climate, 2024)

26 https://dai-global-developments.com/articles/financing-sustainable-land-use-three-models-from-brazil/

Analysis of prerequisites in terms of enabling environment, regulatory framework and capacities needed – A stable political environment and clear regulations are essential to attract private investors. Private initiatives must comply with the Brazilian Forest Code, which provides a framework for sustainable land use and forest protection. Brazil is also committed to restoring 12 million hectares of forest by 2030. Private projects aligned with this goal are contributing to the national reforestation effort. Finally, the involvement of local communities and Indigenous peoples in restoration projects is essential, as is the recognition of their land rights.

Stakeholder mapping: This includes ministries (environment, agriculture), SMEs, cooperatives, private sector companies with supply chains linked to the forest sector (for insetting), buyers of carbon credits (for offsetting), financial sector (impact funds, development banks such as BNDES), smallholders and IPLCs.

Solution 5: Pagamento por Serviços Ambientais (PSA) – Payments for Ecosystem Services: PSAs complement regulation and control tools.

Financial assessment – The market for environmental services, including PES, is growing in Brazil and is expected to reach around USD450 million by 2020. The scalability potential is high. For example, the voluntary carbon market is growing at an annual rate of 34%.[27] In the case of the sale of carbon credits, these can be considered in this analysis as private sector investment in ecosystem restoration, such as payment for 'climate' services in the context of a reforestation or conservation project. There is therefore an overlap between solutions 4 and 5 at this level. PES schemes exist for carbon (dealt with separately) and other ecosystem services, but in Brazil, the most developed PES schemes are those for water resources.[28]The long-term success of PES depends on a combination of public funding (subsidies, environmental taxes) and private funding (investment in carbon credits, green funds). Based on an evaluation of 76 projects in Brazil, the sources of funding for PES vary, with all programmes receiving funding from at least one public institution, 91% receiving funds from municipal governments, 76% from the ANA, 50% from State Governments, and 42% from NGOs. Private companies fund 32% of the respondent programmes (*Annex 4*).[29]

In addition, PES models such as **RECA-Natura Carbon** can be highlighted. Natura is a Brazilian-owned multinational that produces cosmetics, and sources its ingredients from RECA, a cooperative that has well-established agroforestry systems combining planting and conservation. Since 2017, Natura has paid RECA annually for the environmental services its farmers provide by not depleting the legal forest reserves with funds from carbon credits then sold. Its scale is constrained by the order book and the amount of forest land managed by the community. It is, however, relatively easy to replicate so long as the demand for

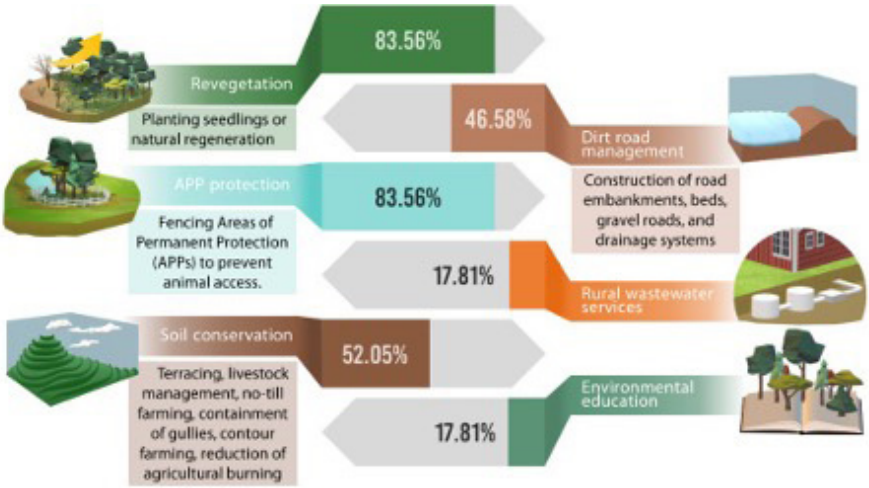

Figure 7. Ecosystem services programme activities in Brazil

27 Ecosystem Marketplace, 2023

28 2019_UNDP_BFP_Lista de soluções existentes e potenciais consolidado_SES_0.pdf

29 https://www.sciencedirect.com/science/article/pii/S2095633923000011

certified deforestation-free organic produce continues to grow. One limitation of the carbon insetting model is the need for farmers to hold formal land ownership documents.

Assessment of contributions to biodiversity and climate goals – An in-depth analysis of 80 PES programs[30] shows that PES are poorly distributed across the country, mainly concentrated in the Atlantic Forest (56%) and savannah (36%) biomes in south-eastern Brazil (Annex 5). The majority of programmes focus on improving water quality and quantity. Consequently, reforestation, protection of native vegetation and soil and water conservation are the main practices proposed.

As the aim of PES is to restore ecosystems, depending on the service paid for, PES supports biodiversity and climate goals and the Paris targets. For example, the RECA-Natura Carbon Insetting Model has direct climate and nature benefits.

Assessment of other environmental benefits: PES linked to forest protection helps to regulate water regimes, such as the PES initiative in Extrema, which has improved water availability for 1.5 million people.[31] Forest PES also helps to reduce soil erosion and improve soil fertility. For example, improvements in soil productivity of up to 30% have been observed in restored regions of Brazil.[32]**Assessment of social impacts** – Around 44% of the land managed by IPLCs contributes to conservation and restoration efforts.[33] IPLC groups actively participate in PES schemes, receiving payments in return for protecting forests. For example, under the Bolsa Floresta program in Amazonia, 15,000 Indigenous families receive financial compensation for protecting forests.[34] However, a REDD+ report notes that only 25% of women participate in the governance committees of PES projects.[35]**Analysis of the prerequisites in terms of enabling environment, regulatory framework and capacities needed –** Brazil has a strong regulatory framework based on the Brazilian Law on Payments for Environmental Services (2021). The country needs to further strengthen the institutions responsible for regulating and monitoring PES projects. For example, digital platforms have been used to monitor and verify the impact of PES projects, but access to these technologies remains limited in some rural areas.[36] PES is integrated into national policies such as PLANAVEG (National Plan for the Recovery of Native Vegetation) and Brazil's NDCs under the Paris Agreement.

Stakeholder mapping: This includes the Ministry of the Environment; Ministry of Agriculture; financial sector: banks (BNDES, World Bank); private investors; IPLC groups; NGOs and international oorganizations (e.g. ***TNC Brazil***, ***WWF Brazil***, ***Fundação Amazonas Sustentável*** for project coordination and implementation); smallholders and SMEs; companies that have an impact on deforestation; landowners or other agents controlling land use; water regulatory agencies, public services, and other water users.[37]

2.3 Summary table of FF solutions assessment

2.4 References

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30 https://www.sciencedirect.com/science/article/pii/S2095633923000011

31 TNC Brazil, 2020

32 Brancalion et al., 2021

33 Indigenous Peoples and Climate Change Report, 2021

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37 2019_UNDP_BFP_Lista de soluções existentes e potenciais consolidado_SES_0.pdf

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CPI Brazil Report, 2020

Table 2. Summary table of FF solutions assessment

	1	2	3	4	5
FF solution	CRA (Agribusiness Receivables Certificate)	Fiscal reforms of the Plano Safra	PRONAF	Private investment in ecosystem restoration	Payments for Environmental Services (PES)
Financial potential	Cumulative volume of CRAs reached USD17.5 billion in 2023, with strong projected growth	Over USD82.89 billion available for sustainable agriculture through the Plano Safra 2024-2025, including USD18.78 billion via LCA	USD13.22 billion for PRONAF 2024-2025, expanding access to rural credit for small farmers	High potential through impact funds, equity, e.g., Conexsus, Mirova, BlackRock	Growing PES market, reaching USD450 million in 2020. Scalability potential through combined public and private funding
Value chains development contribution	Strengthens value chains for agroforestry and sustainable agricultural systems with certified green products[a]	Supports sustainable production and reforestation, promoting restoration value chains and low-carbon certified products	Develops family farm value chains by supporting agroecological and socio-biodiverse products (e.g., rice, dairy)	Strengthens value chains of non-timber forest products (NTFPs) and certified green products (covering non-timber, timber and agricultural products) through regenerative agriculture and agroforestry projects	Improves local value chains by providing income to IPLC and producers via sustainable management and reforestation, facilitating access to carbon credit and certified product markets
Contribution to biodiversity goals: Conservation and restoration of biodiversity	Supports ecosystem restoration and sustainable land management, aligned with Targets 2 and 10 of the Global Biodiversity Framework (GBF)	Aligns sustainable agriculture financing with GBF biodiversity goals. Supports ecosystem conservation in agricultural areas, for example with 'Renovagro forestas / manejo dos solos/ organico / Sistema plantio directo'	USD1.68 billion for actions targeting, among other agricultural policy instruments, the minimum price guarantee policy for biodiversity products (PGPM-Bio) PRONAF Floresta finances agroforestry systems that enhance biodiversity	Supports biodiversity through increased diversity in agroforestry systems, promoting ecosystem-based sustainable management practices	Achieves biodiversity goals by restoring ecosystems and protecting native vegetation, positively impacting soil fertility and water cycles

continued on next page

a Green products are commodities that are produced in a sustainable way, going beyond existing regulations in terms of environmental protection, deforestation, social issues and biodiversity. These products are certified (e.g. sustainability, carbon, social) to highlight their sustainable production.

Table 2. Continued

	1	2	3	4	5
Contribution to climate goals: conservation of carbon stocks and increased carbon storage	Finances sustainable, low-GHG emission agricultural practices (e.g., Suzano Papel e Celulose's USD295 million green CRA to finance low-carbon agriculture and forestry)	Aligns rural credits with climate goals by differentiating interest rates for sustainable practices (e.g., RenovAgro Ambiental / Forestas)	Supports Brazil's climate commitments through low-emission integrated crop-livestock-forestry systems	Low-carbon agricultural practices and reforestation. Generates carbon credits by financing carbon projects and developing impact carbon funds (offsetting model)	Paying for the 'carbon' service of forests by restoring ecosystems, within the value chain (insetting model)
Other environmental considerations	Impact measurement and transparency through platforms like the Monitor de Investimentos	Challenges in collecting socio-environmental information; need for alignment between Plano Safra and Plan ABC+ for sustainable management	Reinforces agroecology and degraded land recovery. Resource monitoring required to ensure effectiveness	Compliance with Brazil's Forest Code regulations and restoration of 12 million hectares of forests	Contributes to water protection and soil erosion reduction policies, improving productivity in restored areas (e.g., Extrema project)
Social considerations, incl. for IPLC groups	Inclusive financing for small farmers, stabilizes local rural economies	Ensure impact on access to IPLC and women's resources. Need to integrate these groups into planning for equitable benefits	Offers special credit lines for women, youth, and IPLC, strengthening productive inclusion and economic resilience	Economic support for IPLC through integration of women and local communities, strengthening land rights for sustainable management and economic benefits	Partnerships with IPLC (e.g., Bolsa Floresta) with compensation for conservation. Need to improve women's participation in project governance committees
Key enabling environment elements	Requires political stability and commitment to green regulation. Impact measurement tools and portfolio monitoring required	Align the regulatory framework of the ABC+ Plan with Brazil's agricultural policies and international commitments (e.g., SICOR for climate risk tracking)	Need for increased technical capacity for agroecology and fund usage monitoring, with a robust regulatory framework	Stable political environment, compliance with Forest Code. Local community participation to ensure recognition of land rights and project sustainability	Strong regulatory framework (2021 PES law). Need to strengthen institutions in charge of PES regulation and monitoring, and ensure access to monitoring technologies for rural areas

3 STEP 3

PRIORITIZATION AND RANKING OF FF SOLUTIONS

Objective: Identify the most promising forest finance solutions based on their financial potential and their contributions to climate and biodiversity goals.

3.1 Executive Summary – step 3: Key prioritized solutions

The main results of the prioritization of the five solutions targeted in this report are as follows:

1. **Payments for Environmental Services (PES)**
   - **Total score:** 4.2 (highest)
   - **Strengths:** Excellent contribution to biodiversity (5/5) and strong climate impact (4.5/5)
   - **Recommendation:** Prioritize this solution to maximize environmental benefits while incentivizing ecosystem preservation through payments.
2. **Private investments for restoration**
   - **Total score**: **4.113**
   - **Strengths**: Very high operational feasibility (**4.75/5**) and climate impact (**4.5/5**
   - **Recommendation**: Encourage these initiatives to combine ecological restoration with investment opportunities.
3. **Plano Safra**
   - **Total score**: **3.95**
   - **Strengths**: Solid operational feasibility (**4.5/5**) and notable socioeconomic impact (**3.75/5**
   - **Recommendation**: Strengthen support for **Plano Safra**, which already has a robust structure and is attractive to investors.
4. **PRONAF (National Program for Family Agriculture)**
   - **Total score**: **3.825**.
   - **Strengths**: Provides significant social and economic co-benefits (**4.25/5**)
   - **Recommendation**: Deepen investments by linking the program to conservation objectives to enhance its environmental impact.
5. **Green CRA (Green Receivables Certificate)**
   - **Total score**: **3.75**.
   - **Strengths**: Very good financial potential (**4.5/5**)
   - **Weakness**: Limited impact on biodiversity (**2/5**)
   - **Recommendation**: A useful complement for projects focused on financial returns but requiring better alignment with ecological goals.

Conclusion

PES and **private investments for restoration** are the most strategic solutions for significant environmental and climate impacts. **Plano Safra** and **PRONAF** provide strong socioeconomic benefits and should be reinforced with sustainability-focused programs. Lastly, **Green CRA** can mobilize capital effectively but should target projects that improve its environmental impact.

3.2 Prioritization criteria and methodology

Weighting scale

Each solution can be rated on a scale of 1 to 5 for each criterion, where: **1 = Very weak; 2 = Weak; 3 = Moderate; 4 = Good; 5 = Excellent.**

Prioritization criteria and weightings

Table 3. Prioritization criteria and weightings

Prioritization criteria	weightings	Scale of 1 to 5
Financial potential	**(25%)**	**Scalability:** can it raise significant funds? (/5) Long-term **economic** and sustainable **viability:** potential for return on investment (returns on investment is also considered from an environmental and social returns perspective) (/5)
Attractiveness to investors from public and/or private sources	**(15%)**	**The solution is perceived as risky** (political, market, operational, etc) or risk reduction measures are in place (/5) The solution offers products that **comply with an international standards** (e.g. certification, carbon credit, aligned with an international market, rating agency, etc.) (/5)
Operational feasibility	**(15%)**	**Ease of implementation:** The solution is technically feasible and can be deployed within a reasonable timeframe (/5) **Legal and regulatory framework**: compatible with existing legal frameworks in Brazil (/5)
Social and economic co-benefits	**(15%)**	**Community development:** The solution benefits local communities (income, jobs, improved living conditions) (/5) **Social equity:** promotes inclusion and social justice (/5)
Climate impact	**(15%)**	**Mitigation / Adaptation:** The solution helps reduce GHG emissions and promotes climate resilience (/5)
Impact on biodiversity	**(15%)**	**Conservation / Restoration** of vulnerable or ecologically important ecosystems (/5)

3.3 Scoring and ranking of forest finance solutions

Green CRA (Agribusiness Receivables Certificate)

Although agriculture is traditionally primarily funded by public capital through credit lines supported by Plano Safra, capital markets can offer an alternative source of funding, especially given prevailing market conditions and associated inflation-driven increases in production costs.

CRAs are being used as a debt facility to finance corporate operations, working capital, and flow agreements within the sector to supplement and diversify financing sources.

CRAs can offer stakeholders an alternative source of financing off their balance sheets and at equal or lower interest rates compared to traditional sources, including banking lending sourced by the federal government.

1. Financial potential (25%)

Scalability: **4.5/5**. For the quarter ending September 2023, the cumulative volume of CRAs was USD17.5 billion, while the amounts for 2019, 2020 and 2021 did not exceed USD5 billion. In 2024, the Brazilian CRA market see a resurgence in activity, with a growing trend and a significant increase in the number of new issues for green projects (at least 17 green CRAs issued to date). International investors are keen to buy sustainable debt instruments from a variety of sources. Combining securitized structures with climate-aligned and social benefits could attract external capital to fund various small-scale activities in the Brazilian economy.

Long-term economic and sustainable viability: **4.5/5**. Green CRAs, which are similar to green bonds, are all the more attractive because it is possible to negotiate a lower interest rate compared to the traditional CRAs. Green CRAs also open up access to debt capital markets. For example, small projects can be aggregated, combining different maturities and credit ratings, and the resulting instruments can meet demands for longer tenors and improved creditworthiness.

2. **Attractiveness to investors** from public and/or private sources **(15%)**

The solution is perceived as risky or risk reduction measures are in place: **4/5**. Adding a green label on CRA encourage issuers to adhere to sustainable practices and diminish investors' risk perception, thus generating a positive snowball effect. Risks are reduced because CRA production involves a securitization company that operates as the intermediary between the creditor and investor, guaranteeing the convergence of their interests. It reinforces the capacity of the securitization mechanism in mobilizing wealth, mitigating risks, and financial disintermediation.

The solution offers products that **comply with international standards: 4/5** Identifying green assets according to international green standards helps investors to understand sustainable practices. CRAs are validated by an external review. For example, green CRAs from Produzindo Certo have been certified by Bureau Veritas for climate bond certification, and Solinftec by Nint.

3. **Operational feasibility (15%)**

Ease of implementation: **3.5/5:** Green CRAs are instruments that promote financing for 'green' activities, so this condition can be applied to any credit for agriculture, with a subsidized rate. In addition, structuring green CRAs requires securing forestry assets (forests, reforested land, etc.), which is feasible but can take some time, especially in remote areas or where land tenure is complex. However, large farms and structured reforestation areas facilitate this step.

Legal and regulatory framework in Brazil 5/5: CRAs are already well regulated by Brazilian law, with guidelines established for the agricultural and forestry sectors. Since 2021, the regulation of green CRAs has been clarified to ensure that funds are invested in environmental projects, including conservation, reforestation and sustainable forest management initiatives.

4. **Social and economic co-benefits (15%)**

Community development: **4/5:** The aim being to develop sustainable agricultural projects, they support living conditions and facilitate credit for these projects that benefit the forest. By promoting sustainable practices, these projects help to preserve the environment, ensuring a better quality of life.

Social equity: **2.5/5:** Access to CRAs is not evenly distributed across the country, and benefits those with the most land and the biggest agribusinesses. Indeed, while corporate CRAs account for 90% of the structured agribusiness debt (corporate), the remaining 10% are dispersed instruments, which shows that CRAs still have an untapped potential to provide financing at scale to small producers.

5. **Climate impact (15%)**

Mitigation / Adaptation: 4/5: Green CRAs directly finance projects that reduce GHG emissions and move towards a carbon transition. In fact, some are certified 'climate bonds'.

6. **Impact on biodiversity (15%)**

Conservation/restoration: 2/5: Depending on the project, CRAs may finance conservation or restoration, but for the time being are rarely focused on biodiversity; rather, on climate transition.

Scores and justification.

Fiscal reforms of the Plano Safra

1. **Financial potential (25%)**

Scalability: **4.5/5**. Agriculture is traditionally primarily funded by public capital through credit lines supported by Plano Safra in Brazil. The Plano Safra 2024/2025 makes available a volume of financial resources above the historic mark of the past harvest (USD82.9 billion for corporate and family agriculture, in addition to USD18.78 billion via LCA – Letra de Crédito do Agronegócio), an increase of 10% on the previous year. By applying conditionalities to access more and more credit lines, it has real potential to mobilize significant funds for reforestation or conservation. Indeed, in 2024, around USD3.5 billion was earmarked for sustainable agricultural practices, a significant proportion of which is aimed at restoring and preserving forests by encouraging low-carbon practices and supporting regenerative agriculture.

Economic viability and long-term sustainability: **4/5** Plano Safra supports the sustainable preservation and development of forests, mainly through lines of credit. However, its sustainability depends directly on the country's political will to move towards a green transition by applying conditionalities to these lines of credit.

2. **Attractiveness to investors** from public and/or private sources **(15%)**

Funding for Plano Safra comes from a number of sources: Banco do Brasil and other public banks: 40-50%; National Bank for Economic and Social Development (BNDES): 20-30%; National Treasury: 15-25%; private financial institutions: 5-10%; and foreign investment and development agencies: less than 5%.

The solution is perceived as risky, **or risk reduction measures are in place 4/5**: Plano Safra credit lines are generally perceived as moderately risky by investors. A large proportion of Plano Safra credit lines benefit from subsidized interest rates and state guarantees. This intervention reduces the risk for investors, as the government shares part of the risk of non-repayment.

The solution offers products that **comply with international standards N/A:** Plano Safra and its recent reforms are directly aligned with national directives (environmental embargoes, Rural Environmental Registry), and since 95% of its financing is domestic, there is no need for it to be aligned with an international standard.

3. **Operational feasibility (15%)**

Ease of implementation: **4/5**: The reforms are based on the Plano Safra, established in Brazil in 2003 to structure and coordinate financing for agriculture and rural development. These reforms, which fall within an established framework, are technically easy to implement, but require close monitoring and transparent reporting tools to measure their impact on the forestry sector.

Legal and regulatory framework: **5/5:** By its very nature, Plano Safra is compatible with the legal framework in force in Brazil.

4. **Social and economic co-benefits (15%)**

Community development: **4/5:** For producers to contract rural credit, they must comply with social, environmental and climate requirements set out in CMN Resolution No. 5081/2023. In particular, funds such as the Ecoforte program, financed by partnerships with institutions such as BNDES and the Banco de Brazil Foundation, support sustainable, community-based production projects.

Social equity: **3.5/5:** Plano Safra seeks to reduce rural inequalities by financing small producers and family farmers through programs such as PRONAF (around 30-35% of funding). However, a portion of the funds is also earmarked for larger-scale producers (receiving around 65-70% of funding), particularly for export and large-scale production projects. The Plano Safra 2024-2025 reforms promote inclusion and social justice, in particular by targeting small-scale producers under embargo.

5. **Climate impact (15%)**

Mitigation / Adaptation: 4/5: Low-emission technologies are increasingly integrated into projects supported by Plano Safra. Financial institutions need to capture information and share it in SICOR, both to grant incentives and for their own management of climate and socio-environmental risks

6. **Impact on biodiversity (15%)**

Conservation / restoration: 3/5: Plano Safra 2024-2025 includes credit lines for producers who adopt sustainable/agroecological farming practices, as well as credits are allocated to projects that include agroforestry practices.

PRONAF

1. **Financial potential (25%)**

Scalability: **3.5/5** PRONAF has a budget of USD9.32 billion from the Brazilian government for 2023-2024, and USD13.22 billion was announced for the Family Farming Strengthening Program – Pronaf (2024-2025). However, the program remains limited by the public budget and conditional on national political decisions.

Long-term economic viability and sustainability: 4/5: PRONAF contributes to reforestation and forest conservation in Brazil, mainly through specific financing lines for sustainable agriculture and agroforestry. However, its sustainability depends

directly on the country's political will to move towards a green transition by applying conditionalities to these credit lines.

2. **Attractiveness to investors** from public and/or private sources **(15%)**

PRONAF's funding comes mainly from public sources, with a significant contribution from the Brazilian federal government, but also from public banks such as Banco do Brasil.

The solution is perceived as risky: **4/5:** Family farmers have a lower creditworthiness than large agricultural producers. However, the default rate of borrowers is relatively low thanks to the interest subsidies and guarantees offered by the Brazilian government. In addition, PRONAF is largely financed by interest subsidies and public funding, which reduces the direct risk for private investors. However, this entails dependence on public funding, which can pose risks in the event of changes in the Brazilian government's agricultural policy or budget cuts.

The solution offers products in **compliance with an international benchmark: Not rated because not relevant**, given that 95% of its financing is domestic.

3. Operational feasibility (15%)

Ease of implementation: **3/5:** PRONAF was created in 1996 to meet specific needs in Brazil, to support family farming and foster rural development by providing low-interest loans. It is technically feasible, but requires political will and a specific national context.

Legal and regulatory framework: 5/5: By its very nature, PRONAF, which is part of the Plano Safra, is compatible with the legal framework in force in Brazil.

4. Social and economic co-benefits (15%)

Community development: 4/5: In 2024, there was a reduction in interest rates for lines labeled 'Pronaf ABC+' and for Pronaf Jovem and Pronaf Mulher, compared to other investment credit lines, and the Plan also included access to credit for family farming for Indigenous people and quilombolas

Social equity: **4.5/5**: PRONAF is a group of specific credit lines within Plano Safra, with a focus on small family farms. By its very nature, therefore, it aims to promote inclusion and social justice in terms of access to credit in the face of the 'big' agricultural exporters.

5. Climate impact (15%)

Mitigation / Adaptation: The solution contributes to the reduction of GHG emissions and promotes climate resilience: 4/5: PRONAF is aligned with the Paris Agreement by promoting low-carbon agricultural practices. The programme finances practices such as the restoration of degraded soils and the introduction of integrated crop-livestock-forest systems, which contribute to better management of soil and water resources.

6. Impact on biodiversity (15%)

Conservation / restoration: 3/5: For PRONAF, the lowest interest rate for working capital of 3% per annum included the cultivation of socio-biodiversity products, products inserted in agroecologically based production systems or in transition to these systems, and organic production systems.

Private investments in ecosystem restoration

1. Financial potential (25%)

Scalability: 4.5/5: Private investment in Brazil shows a high potential for financing, thanks to the diversity of capital sources, such as impact funds, institutional investors and equity. There is a growing velocity of fund formation in the country

Long-term economic viability and sustainability: 3.5/5: Private investment in reforestation projects in Brazil offers the potential for long-term economic viability and sustainability, particularly when environmental and social returns are considered. Financial returns can come from the sale of carbon credits, or from the sale of sustainable wood products or NTFPs. Indeed, the value of carbon credits makes it possible to develop sustainable forest management projects (conservation or reforestation) that were not previously profitable. However, fluctuations in the carbon market, volatility in timber prices, and changes in government policies (subsidies or regulations) can affect profitability.

2. **Attractiveness to investors** from public and/or private sources **(15%)**

The solution is perceived as risky: 3/5: Reforestation and restoration projects are often perceived as risky, given the potentially changing political context, the need to secure land tenure, the longer payback period for reforestation projects and the climate risk that affects all nature-related projects. However, these risks can be mitigated by several mechanisms, as described below:

- The Arco de Restauração programme of the Brazilian National Bank for Economic and Social Development (BNDES) aims to restore millions of hectares in the Amazon. It offers guarantees and mixed financing to support large-scale reforestation initiatives. This includes mechanisms to reduce the financial risk for investors, in particular through public-private co-financing.
- Brazilian Forestry Code: Laws require private landowners to maintain a certain proportion of native forest through 'legal reserves' and 'permanent protection areas' (APP). For companies, this can create investment opportunities, particularly through environmental compensation, which reduces regulatory risks.
- CAR (Cadastro Ambiental Rural): This system of environmental registration of rural property promotes land regularization, an important condition for access to public funding and carbon credits.

The solution offers products that comply with an international standard: 4/5: Investment products for reforestation projects aimed at the private sector are generally certified by an international label that gives them credibility on the international market, such as a carbon certification (e.g. VCS), a sustainable forest management label (e.g. FSC) or an agricultural label (e.g. Rainforest Alliance). However, these international certifications represent a substantial investment, both financially and in terms of monitoring and technical knowledge of the standards.

3. **Operational feasibility (15%)**

Ease of implementation: **4.5/5:** Investment in reforestation projects in Brazil depends on several bills and is facilitated by the fact that Brazil has a solid base of expertise in forestry, environment, and sustainable agricultural management, as well as that there are already proven techniques, such as native species planting, restoration by natural regeneration, and agroforestry, which are well developed and adapted to Brazil's different biomes. Lastly, Brazil has a great deal of land available for reforestation, particularly in regions that have undergone deforestation. However, securing land tenure (obtaining clear title deeds) can take time and requires advance planning.

Legal and regulatory framework in Brazil: 4/5: The federal government legislated to leverage private investments in the sector in 2020. This not only broadens guarantee mechanisms but also allows competitive interest rates for capital market agriculture deals. In addition, the legal framework, notably the Forestry Code, encourages the restoration of degraded land, and initiatives such as the Cadastro Ambiental Rural (CAR) help to clarify land rights. However, the land regularization process can be lengthy in some regions.

4. **Social and economic co-benefits (15%)**

Community development: **4/5:** Community development must be at the heart of private investment in forests if it is to be sustainable. The social aspect is a condition for the success of private investment. Moreover, projects that fail to integrate this social dimension will not be validated by international certifications.

Social equity: **4/5:** Projects that share equitable benefits with local communities foster inclusion and social justice.

5. **Climate impact (15%)**

Mitigation / Adaptation: 4.5/5: Reforestation and restoration projects contribute directly to the reduction of GHG emissions and promote the climate resilience and adaptive capacity of ecosystems and local communities.

6. **Impact on biodiversity (15%)**

Conservation / restoration: 4/5: International certification increasingly requires biodiversity monitoring of reforestation or ecosystem restoration investment projects. What's more, when projects generate biodiversity credits, they focus on their positive impacts on biodiversity.

The climate and biodiversity criteria were based on the assumption of private investment in a high-quality, holistic project.

Payments for Environmental Services (PES)

1. Financial potential (25%)

Scalability: **4.5/5:** Brazil's PES schemes can attract and mobilize significant funds, for example in carbon credit markets and international financing for conservation and climate (REDD+). Bundling environmental services for joint marketing – that is, combining the benefits of water protection with carbon capture, biodiversity protection and others – increases the potential for raising funds for projects.[38]**Long-term economic viability and sustainability: 4.5/5:** Multinational companies that want to meet their sustainability objectives are willing to invest in PES. Brazilian companies, particularly in the agricultural and natural resources sectors, are also increasingly involved in PES initiatives. PES schemes generate multiple benefits, such as the protection of biodiversity, improved water quality and the development of local communities, making them attractive to investors who focus on ESG criteria. This source of funding is considered stable (i.e. it does not depend on donations or the political will of governments).[39]

2. Attractiveness to investors from public and/or private sources (15%)

The solution is perceived as risky: 3.5/5: Brazil has mechanisms such as the Fundo Amazônia and public funds from the BNDES (National Bank for Economic and Social Development), which provide financial support for PES projects. This public funding enables projects to get off the ground on a larger scale and reduces initial financial risks.

The solution offers products that comply with international standards: 4/5: The PSE product enables a national or international company to ensure which service it is paying for, and to guarantee transparency and monitoring with international benchmarks.

3. Operational feasibility (15%)

Ease of implementation: **3.5/5** The implementation of a PES is feasible, with around 80 PES systems (excluding carbon projects) in Brazil in 2023. However, technical skills are needed to evaluate the price of the ecosystem service, and a major concertation effort is required to involve all stakeholders with an impact on the targeted ecosystem service(s). Partnerships between government, business and local communities facilitate the creation of large-scale PES projects. For example, some Brazilian states, such as Mato Grosso and Pará, have programs that integrate private partners into conservation initiatives, thereby increasing the funds available.

Legal and regulatory framework in Brazil: 4.5/5: At national level, Law 14.119, adopted on 13 January 2021, establishes the National Policy for Payments for Environmental Services (PNPSA) in Brazil, creating a legal framework for the implementation of PES schemes in the country.

4. Social and economic co-benefits (15%)

4/5: PES, such as REDD+ initiatives, will play a fundamental role in promoting restoration activities, especially in the case of smallholders with limited access to credit and financial resources. However, land tenure regularization and land titling are fundamental to incentivizing private sector investment in long-term restoration, as landowners will be reluctant to disburse funds until their property rights are fully secured

Social equity: 2.5/5: An in-depth analysis of 80 PES programs[40] shows that PES are poorly distributed across the country, mainly concentrated in the Atlantic Forest (56%) and savannah (36%) biomes in south-eastern Brazil. IPLC groups actively participate in PES schemes, receiving payments in return for protecting forests. For example, under the Bolsa Floresta program in Amazonia, 15,000 Indigenous families receive financial compensation for protecting forests. However, a REDD+ report notes that only 25% of women participate in the governance committees of PES projects.

38 https://www.biofin.org/sites/default/files/content/knowledge_products/2019_UNDP_BFP_Lista%20de%20soluc%CC%A7o%CC%83es%20existentes%20e%20potenciais%20consolidado_SES_0.pdf

39 https://www.biofin.org/sites/default/files/content/knowledge_products/2019_UNDP_BFP_Lista%20de%20soluc%CC%A7o%CC%83es%20existentes%20e%20potenciais%20consolidado_SES_0.pdf

40 https://www.sciencedirect.com/science/article/pii/S2095633923000011

5. Climate impact (15%)

Mitigation / Adaptation: The solution helps reduce GHG emissions and promotes climate resilience: **4.5/5:** The majority of programs focus on improving water quality and quantity. Consequently, reforestation, protection of native vegetation and soil and water conservation are the main practices proposed.

6. Impact on biodiversity (15%)

Conservation / restoration: 5/5: As the aim of PES is to restore ecosystems, depending on the service paid for, PES supports biodiversity and climate goals and the Paris targets. For example, the RECA-Natura Carbon Insetting Model has direct climate and nature benefits. By their very nature, PES exist to pay for services provided by nature, which are not monetized by the conventional capitalist system. For the vast majority, these services help to preserve biodiversity and climate, by restoring or maintaining healthy ecosystems.

Table 4. Scoring table for the long list of FF solutions

		Green CRA		Plano Safra		PRONAF		Private investment for restoration		PSE	
Prioritization criteria	**% weighting**	Score	With %	Score	With %	Score	With %	Score	With %	Score	With %
Financial potential	25%	4.5	1.125	4.25	1.063	3.75	0.938	4	1	4.5	1.125
Attractiveness for investors	15%	4	0.6	4	0.6	4	0.6	3.5	0.525	3.75	0.563
Operational feasibility	15%	4.25	0.638	4.5	0.675	4	0.6	4.75	0.713	4	0.6
Social and economic co-benefits	15%	3.25	0.488	3.75	0.563	4.25	0.638	4	0.6	3.25	0.488
Climate impact	15%	4	0.6	4	0.6	4	0.6	4.5	0.675	4.5	0.675
Impact on biodiversity	15%	2	0.3	3	0.45	3	0.45	4	0.6	5	0.75
TOTAL	100%		3.75		3.95		3.825		4.113		4.2

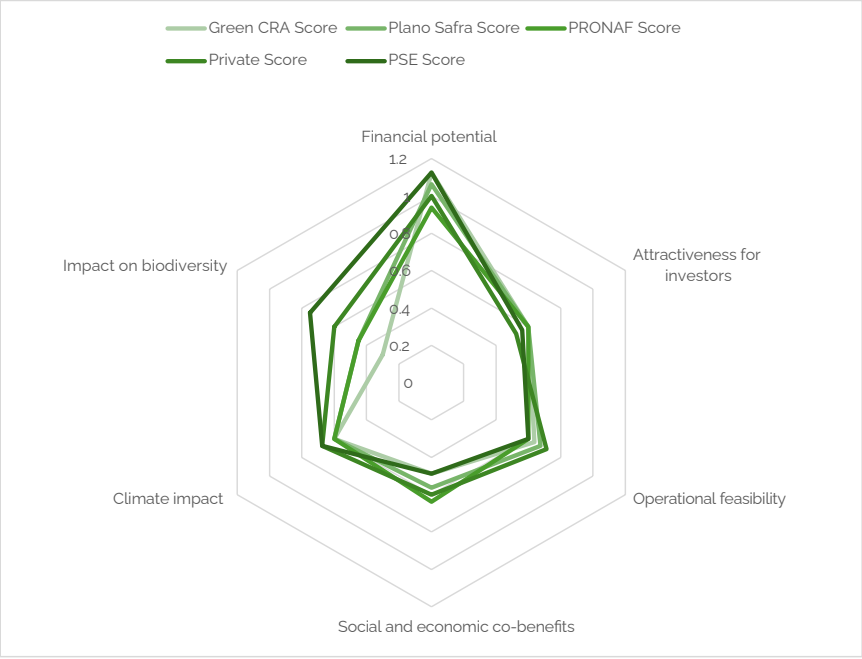


Figure 8. Summary of FF scores per criteria

Table 5. Scoring table for the long list of FF solutions

FF solution	Criteria 1: Financial viability	Criteria 2: Attractiveness for investors	Criteria 3: Operational feasibility	Social and economic co-benefits	Climate impact	Impact on biodiversity	RANKING
Green CRAs	1.125	0.6	0.638	0.488	0.6	0.3	3.75
Plano Safra reforms	1.0625	0.6	0.675	0.563	0.6	0.45	3.95
PRONAF	0.938	0.6	0.6	0.638	0.6	0.45	3.825
Private investments for restoration	1	0.525	0.713	0.6	0.675	0.6	4.113
PSE	1.125	0.563	0.6	0.488	0.675	0.75	4.2

Annexes

Annex 1. CRA Produzindo Certo – Green

CRA Produzindo Certo – Green

In March 2021, Gaia Securitizadora, in partnership with Traive Finance, issued the first dispersed green CRA from **Produzindo Certo**, a company that provides environmental and social solutions for agrifood companies, producers and their supply chain. The USD12m (BRL63.3m) deal was backed by 17 CPRs issued by small rural producers. This innovative aggregation mechanism enabled small rural producers to access large investors directly.

Issuer: Produzindo Certo

Securitisation vehicle: Gaia Securitizadora

Instrument type: CRA

Underlying assets: 17 CPRs from small rural producers

Use of proceeds: Sustainable agriculture

External reviewer: Bureau Veritas

External review type: Climate Bonds Certification

Legal advice: VBSO Advogados

In addition to having their financial and productivity obligations monitored, the 17 producers have to qualify the environmental aspects of their crops by meeting Climate Bonds' Criteria as well as Produzindo Certo requirements. They are responsible for preserving and restoring environmentally sensitive areas, while Produzindo Certo monitors them and provides environmental advisory services.

Source: cbi_bra_sec_2022.pdf

Annex 2. CRA Solinftec – Green

CRA Solinftec - Green

Solinftec is an agricultural technology company that deploys automation services for sustainable crop production. The company developed a one-of-a-kind platform combining artificial intelligence, algorithms, and hardware that allows the real-time connection of machinery and equipment to coordinate production and reduce input and fuel intake. This technology also includes a direct link with weather stations. The company guides clients on effectively applying agrochemicals to avoid over-use and spill-over.

Issuer: Solinftec

Securitisation vehicle: Gaia Securitizadora

Instrument type: CRA

Underlying assets: Agribusiness Credit Rights Certificates (CDCA) from contracts between Solinftec and its clients, who hire the company's smart automated solution.

Use of proceeds: Sustainable agriculture

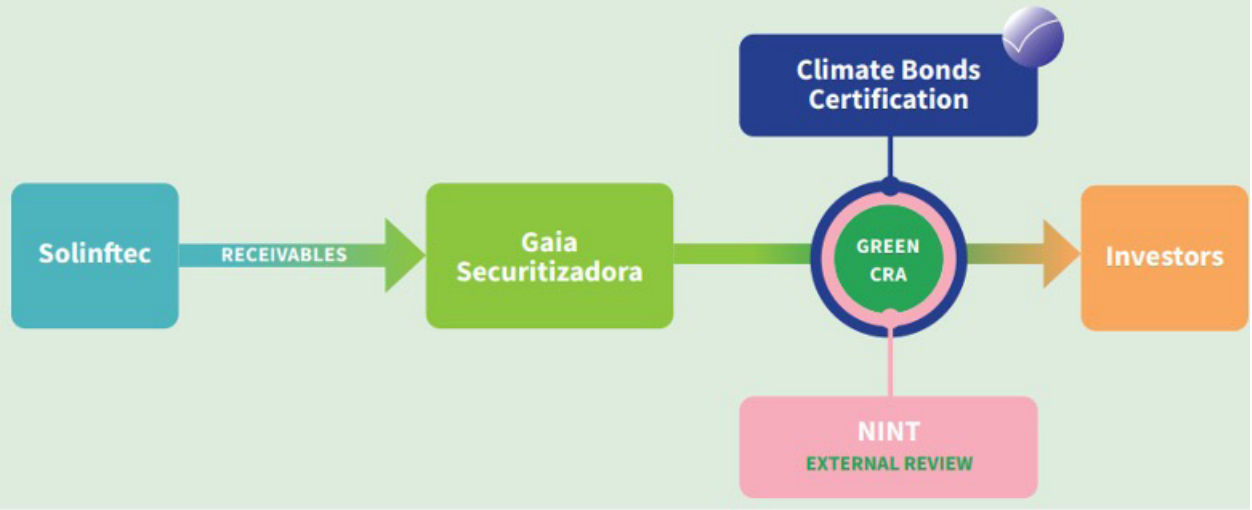
External reviewer: NINT

External review type: Climate Bonds Certification

Underwriter: Itaú BBA

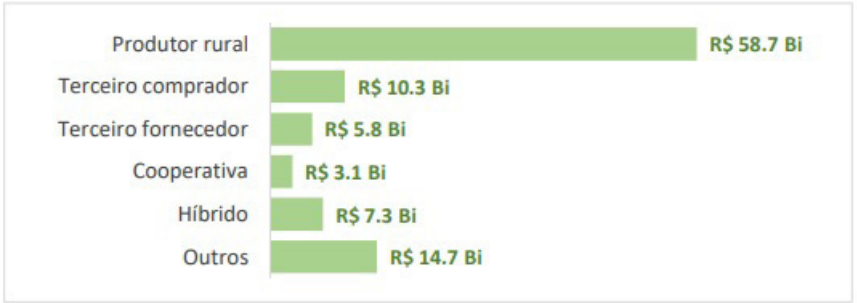
Legal advice: VBSO Advogados

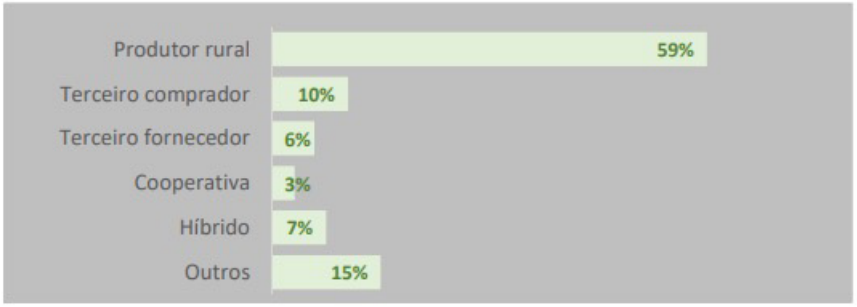
Solinftec raised approximately USD27m (BRL140m) through Gaia Securitizadora's CRA to finance its activities and meet growing capital market demands. The deal was backed by Solinftec's Agribusiness Credit Rights Certificates (CDCA) originated from contracts with clients. The proceeds were earmarked for operational expenses and smart solutions to increase agriculture production and promote environmental preservation.



Source: cbi_bra_sec_2022.pdf

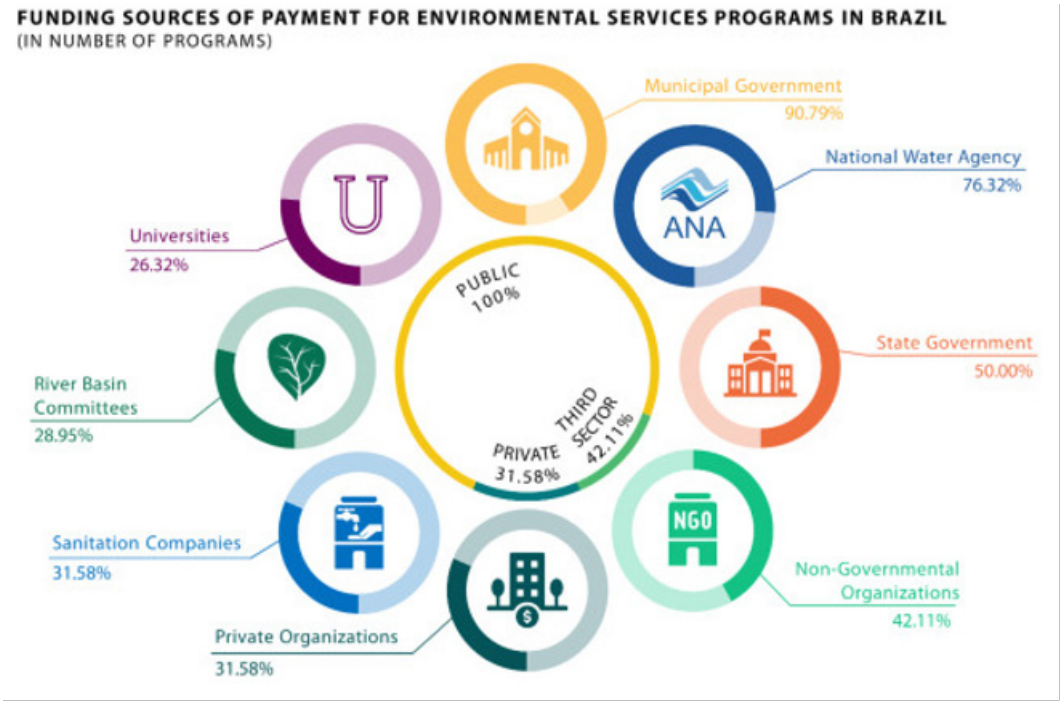
Annex 3. Certificado de Recebíveis do Agronegócio (CRA)





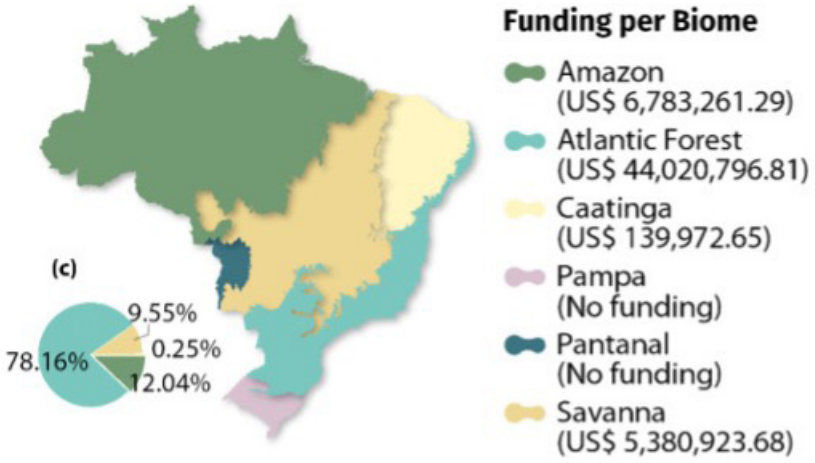
Source: boletim-cvm-agronegocio-ed4-set2023.pdf

Annex 4. Funding sources of payment for environmental services programs in Brazil



Source : https://www.sciencedirect.com/science/article/pii/S2095633923000011

Annex 5. Funding per biome



Source: https://www.sciencedirect.com/science/article/pii/S2095633923000011

CIFOR-ICRAF

The Center for International Forestry Research and World Agroforestry (CIFOR-ICRAF) harnesses the power of trees, forests and agroforestry landscapes to shift the trajectories of three global issues – biodiversity, climate change and food security – supported by our work on equity and value chains. CIFOR and ICRAF are CGIAR Research Centers.