

Annual report

Crop Season 2022:2023

Supporting the supply of deforestation
and conversion-free soy

Designed and operated by:



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Executive summary

The Responsible Commodities Facility (RCF) is an initiative to support the production of deforestation and conversion-free (DCF) soy in the Brazilian Cerrado.

Its approach is to provide financial incentives, in the form of low interest credit lines, for farmers that commit to the objectives of the programme.

The RCF Cerrado Programme 1 was a pilot phase for the RCF, launched in 2022 with investment from UK retailers Tesco, Sainsbury's and Waitrose. Funds raised were loaned to farmers, soy was planted and harvested, and this report summarises the impacts of the Facility during this first crop cycle.



Global demand for soy production is driving significant deforestation,” said Susan Gardner, Director, Ecosystems Division at UN Environment Programme. “Practical financial solutions like the Responsible Commodities Facility incentivise farmers to decouple commodity production from deforestation and land conversion practices, leading to enhanced landscape restoration, climate mitigation, adaptation and biodiversity protection in line with the United Nations Sustainable Development Goals and the UN Decade on Ecosystem Restoration. A great example of how farmers can be effectively incentivized would be for all the companies that have signed up to the Cerrado Manifesto Statement of Support to materialise this commitment through funding this facility.”

Overview of impacts for year 1



32
farms



8,541 ha
of native vegetation
conserved in
the Cerrado



2,145 ha
of native vegetation
conserved in excess
of legal reserve
requirement



Zero
deforestation or
conversion of any
native vegetation



2.90 MtCO₂
carbon stocks in
native vegetation
protected by the RCF



0 t CO₂
emitted from land
use change (0 t CO₂/
t soy produced)



42,400 tonnes
of vDCF soy
produced in the
main crop season



27,000 tonnes
of DCF maize and 3,200
tonnes of DCF cotton
produced in the winter
crop ("safrinha") preceding
the soy planting season



Zero
financial default
on repayment
of loans

2

The Responsible Commodities Facility





2.1 Context

Growing demand for soy globally is resulting in a continuous expansion of the area under cultivation in Brazil. This expansion has been identified as a major driver of deforestation, resulting in substantial destruction of natural habitats, loss of biodiversity and greenhouse gas emissions. The Amazon Soy Moratorium has significantly reduced deforestation in the Amazon, but this has resulted in leakage of deforestation and conversion activities to a species rich tropical savanna known as the Cerrado¹. More than 50% of the native vegetation in the Cerrado has now been cleared and over the last decade in the Matopiba region, 0.5–0.8 Mha of soy has been planted on recently converted land each year².

Demand-side calls to action such as the 2017 Cerrado Manifesto³ have raised the profile of the Cerrado amongst food retailers, food manufacturers and food service companies that have soy embedded in their products, and more recent initiatives such as the Innovative Finance for the Amazon, Cerrado and Chaco (IFACC)⁴, Forest Positive Coalition of the Consumer Goods Forum⁵ and the UK and French Soy Manifestos, all share the objective of driving deforestation – and conversion-free (DCF) soy production in the region. Alongside this, in December 2022, the EU reached an agreement on a new law to prevent companies from placing commodities linked with deforestation and forest degradation onto the EU market, or exporting them from the EU, known as the EU Deforestation Regulation (EUDR). While the regulation initially only includes forests, thereby excluding much of the Cerrado, it is widely expected that ‘other forested land’ will be included in the first update, and that this will bring the Cerrado under the regulation.

¹ Gibbs et al., 2015: Brazil's Soy Moratorium. Supply-chain governance is needed to avoid deforestation. *Science* 347:6220.

² Ermgassen, Erasmus KHJ, et al. (2020) "Using supply chain data to monitor zero deforestation commitments: an assessment of progress in the Brazilian soy sector." *Environmental Research Letters* 15:3 (2020): 035003.

³ https://d3nehc6yl9qzo4.cloudfront.net/downloads/cerradomanifesto_september2017_atualizadooutubro.pdf

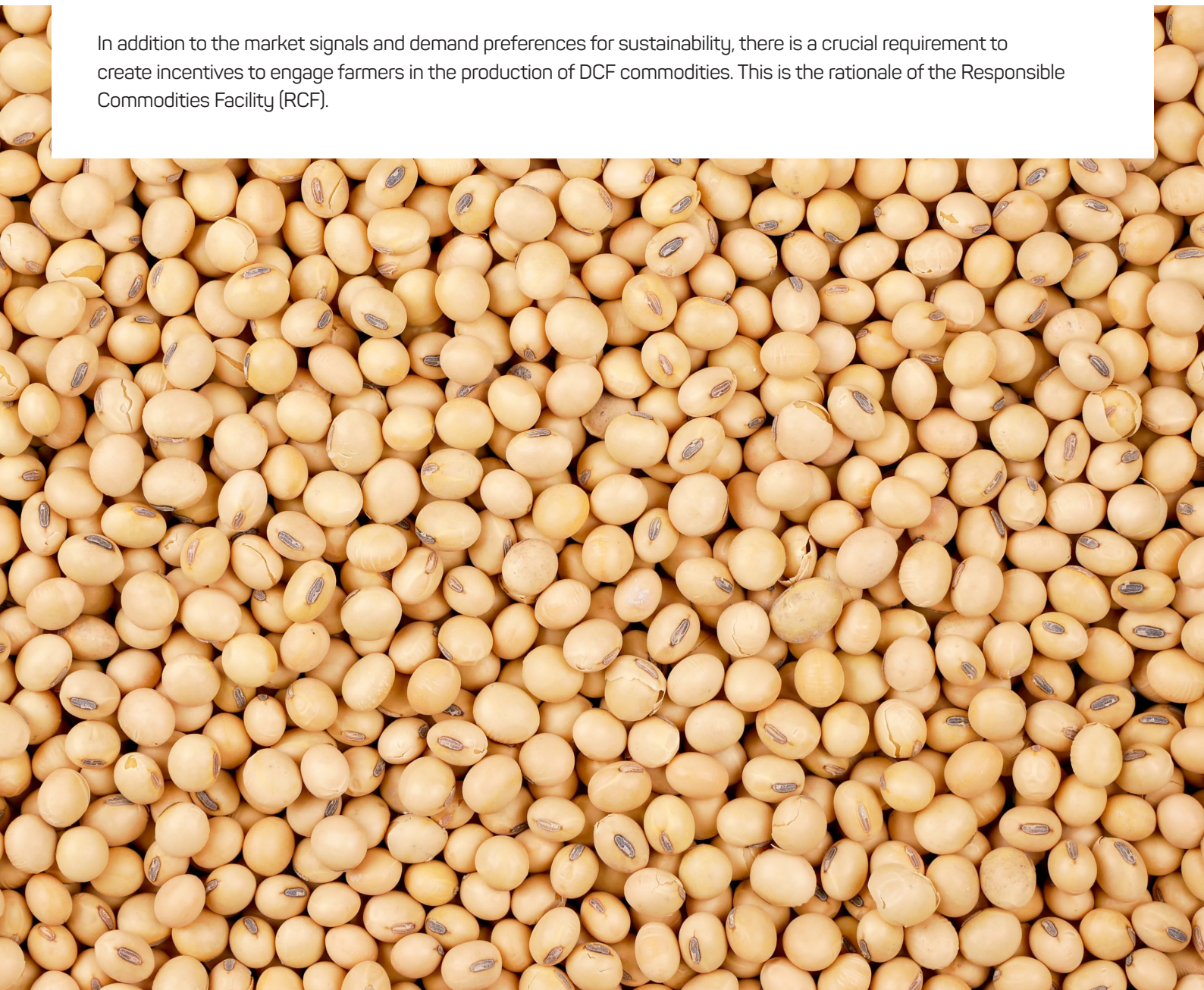
⁴ <https://www.tropicalforestalliance.org/en/collective-action-agenda/finance/ifacc/>

⁵ <https://www.theconsumergoodsforum.com/environmental-sustainability/forest-positive/>

Other recent initiatives focus on reducing the carbon emissions of agricultural production. The Science Based Targets Initiative⁶ mobilizes the private sector to take urgent climate action by setting targets to reduce their carbon emissions. This includes a target for Scope 3 emissions, that is, emissions that a company is indirectly responsible for, up and down its value chain. For companies with soy embedded in their products, their Scope 3 emissions include those from land use change, crop production, transport and processing. Soy produced in the Cerrado biome has an average carbon footprint of 1.00 t t^{-1} (CO₂ equivalent per tonnes of soy equivalent) with around half the emissions coming from land use change. Soy produced specifically in the Matopiba states (Maranhão, Tocantins, Piauí and Bahia) has an average carbon footprint of 2.32 t t^{-1} , with over two-thirds of this due to land use change emissions⁷. When food sector companies come to including these emission factors in their Scope 3 calculations, the source of the soy becomes very significant.

While there is growing demand for land to expand agricultural production, it is widely recognised that the expansion of agricultural production can happen without further clearing of native vegetation in the Cerrado⁸.

In addition to the market signals and demand preferences for sustainability, there is a crucial requirement to create incentives to engage farmers in the production of DCF commodities. This is the rationale of the Responsible Commodities Facility (RCF).



⁶ <https://sciencebasedtargets.org/>

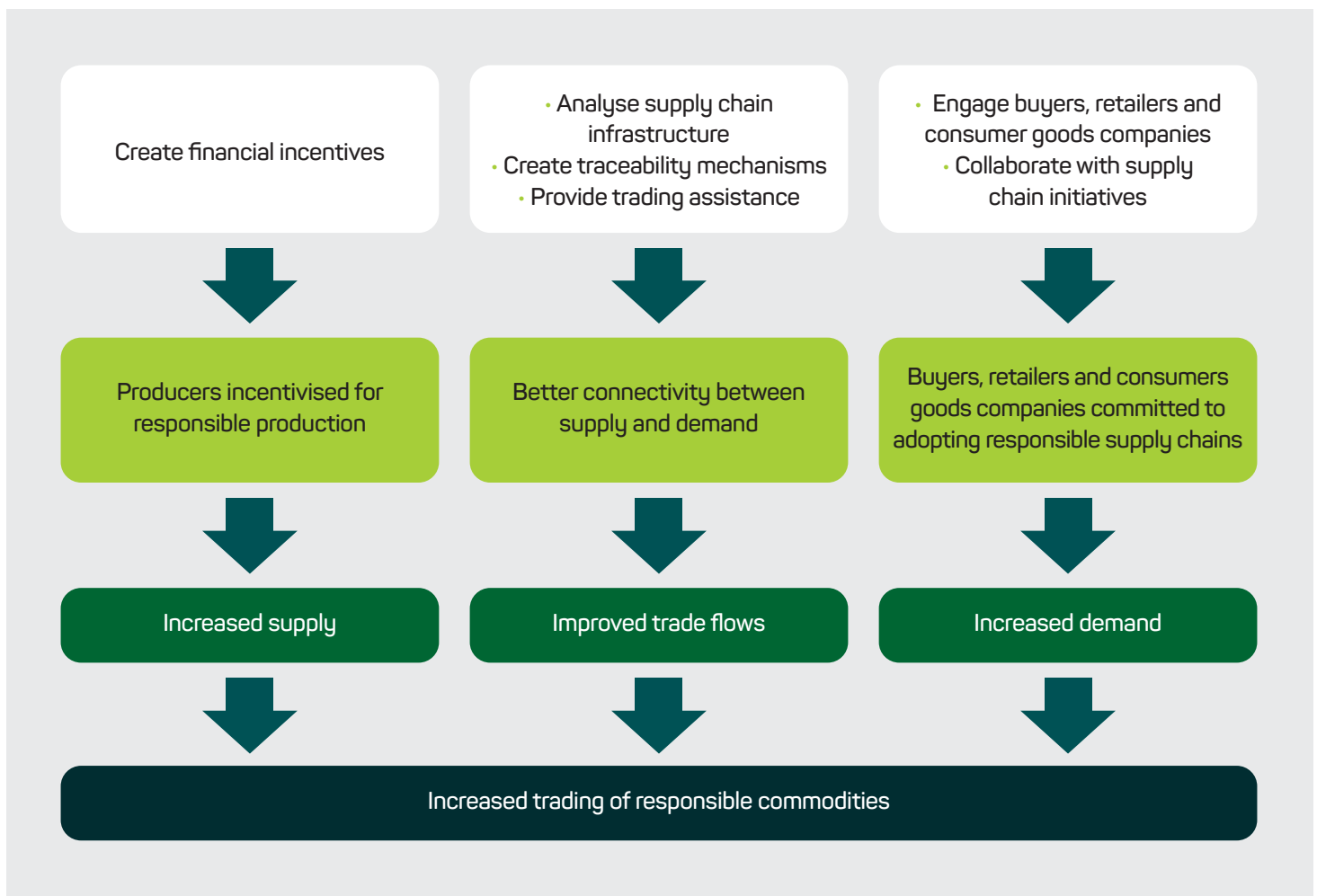
⁷ Escobar, N., Tizado, E. J., zu Ermgassen, E. K. H. J., Löfgren, P., Börner, J. and Godar, J. (2020). Spatially-explicit footprints of agricultural commodities: Mapping carbon emissions embodied in Brazil's soy exports. *Global Environmental Change*, 62. 102067. <https://doi.org/10.1016/j.gloenvcha.2020.102067>

⁸ Strassburg, B. et al (2014). When enough should be enough: Improving the use of current agricultural lands could meet production demands and spare natural habitats in Brazil. *Global Environmental Change*. Elsevier, v. 28, pp. 84–97. DOI: 10.1016/j.gloenvcha.2014.06.001.

2.2 The theory of change

The overall outcome of the Responsible Commodities Facility is an increased trading of responsible commodities. By responsible we mean produced without deforestation or land conversion, in respect of human rights and landownership rights, and with wise use of agrichemicals. This is achieved through three main activities:

- **Creation of supply**, engaging producers committed to responsible production by provision of financial and trade incentives. This involves direct engagement with producers and the provision of incentives for responsible production – in the case of the RCF Cerrado Programme 1, in the form of low interest credit lines;
- **Creation of demand**, by engaging a coalition of buyers, retailers and consumer goods companies committed to adopting responsible supply chains. This is done by engaging soy buyers in investing in the RCF, and collaborating with initiatives such as the Innovative Finance for the Amazon, Cerrado and Chaco (IFACC), Forest Positive Coalition of the Consumer Goods Forum and the UK and French Soy Manifestos, and the UK Soy Retail Group;
- **Improvement of trading flows** of responsible commodities, by improving the connectivity between supply and demand and providing trading assistance. This is done by analysing soy supply chain infrastructure to better understand the trade flows of soy globally and by creating traceability mechanism to allow DCF soy to be tracked from farm to end user.



2.3 The RCF Cerrado Programme Approach

The first fund developed by the Responsible Commodities Facility, RCF Cerrado Programme 1, was designed to support the production of DCF soy by providing financial incentives to farmers that commit to zero deforestation and conversion in the Brazilian Cerrado. By engaging a wide coalition of actors promoting these markets, the objective of the RCF is to drive a significant increase in the demand and supply of responsible, legally-compliant commodities. This, in turn, should result in the reduction of deforestation and conversion, with resultant benefits in terms of carbon storage and biodiversity conservation.

Incentives are given in the form of revolving low interest credit lines for crop finance: i.e. acquisition of agricultural inputs (seeds, fertilizers, chemicals) for soy cultivation. Loans are collateralised by soy production and once soy is harvested, they are repaid to investors and loans are renewed.

The Facility is capitalized through the issuance of Green CRAs⁹ (a green bond-like instrument), issued in Brazil and subscribed by investors concerned with the impacts of soy deforestation and conversion on their supply chains.

Producers involved with the Facility are screened based on the RCF's eligibility criteria (Section 4.3). The operations of the Facility are reviewed by an Environmental Committee which provides advice on potential improvements to the Programme to maximize the environmental benefits of the Facility (Section 4.4).

The combination of these measures should help accelerate the growth of responsible commodity production and trading, to reach the scale required to meet market demands and halt current environmental impacts.

Given that implementation of this model is based on provision of debt finance, it has the potential to drive a sustained transformation of the sector on a landscape level, without long-term reliance on public and philanthropic resources.



⁹ CRAs stand for Certificados de Recebíveis Agrícolas (Certificates of Receivables of the Agribusiness), a type of security widely used to finance the Brazilian agribusiness.

3

Results of the 2022-2023 crop season



3.1 Investors and capital raised

Investors

The Responsible Commodities Facility (RCF) Cerrado Programme 1 was launched in August 2022. Through investment by UK retailers Tesco, Sainsbury's and Waitrose, the RCF raised USD 11 million in the form of "Green CRAs" registered in the Vienna Stock Exchange.



Ken Murphy, Tesco Group CEO said:

"We've been driving industry action on tackling deforestation for a number of years, including playing a leading role in the formation of the UK Soy Manifesto last year. We've also made a commitment that by 2025 we will only source soy from whole areas verified as deforestation-free. To help us meet this goal it's vital we provide practical, financial support to farmers in Brazil committed to the production of zero deforestation soy and the conservation of native vegetation. This initiative highlights the need for the whole food industry to come together and support the protection of critical ecosystems like the Cerrado. We urge more businesses and organisations to join us in providing funding for the RCF, to aid its roll-out in future years."

Sainsbury's

Simon Roberts, CEO at Sainsburys, said:

"During COP26, where Sainsbury's was a principal supermarket partner, we signed the WWF Retailers' Commitment for Nature, with a collective aim to halve the environmental impact of UK shopping baskets by 2030 and tackle deforestation, supporting our commitment to achieve 100% deforestation and conversion free supply chains by 2025. To limit global warming to 1.5 degrees and achieve the goals set out in the Paris Climate Change Agreement, it is vital that we protect and restore forests and ecosystems such as the Cerrado in Brazil. It's why we are proud to join forces with others to help fund the Responsible Commodities Facility, investing in the sustainable production of soy, using green finance to reward farmers for protecting wildlife and biodiversity in the Cerrado."



James Bailey, Executive Director, Waitrose, said:

"We're delighted to be one of the leading investors supporting this inaugural fund alongside Tesco and Sainsbury's. Waitrose is committed to doing our part to protect and restore nature, and we have set a bold commitment to source all our key raw materials responsibly by 2025, including deforestation and conversion-free soy. The scale of the challenge to halt the loss of biodiverse ecosystems like the Brazilian Cerrado requires innovative new approaches. We hope this pilot fund will demonstrate the huge opportunity for green finance to incentivise responsible farming practices in a way that's sustainable and scaleable, and which delivers tangible benefits to nature and farmers. However, to achieve this potential and protect whole biomes will require broader uptake, and I'd therefore appeal to fellow food sector businesses and to financial investors to join us in supporting this extremely important initiative."



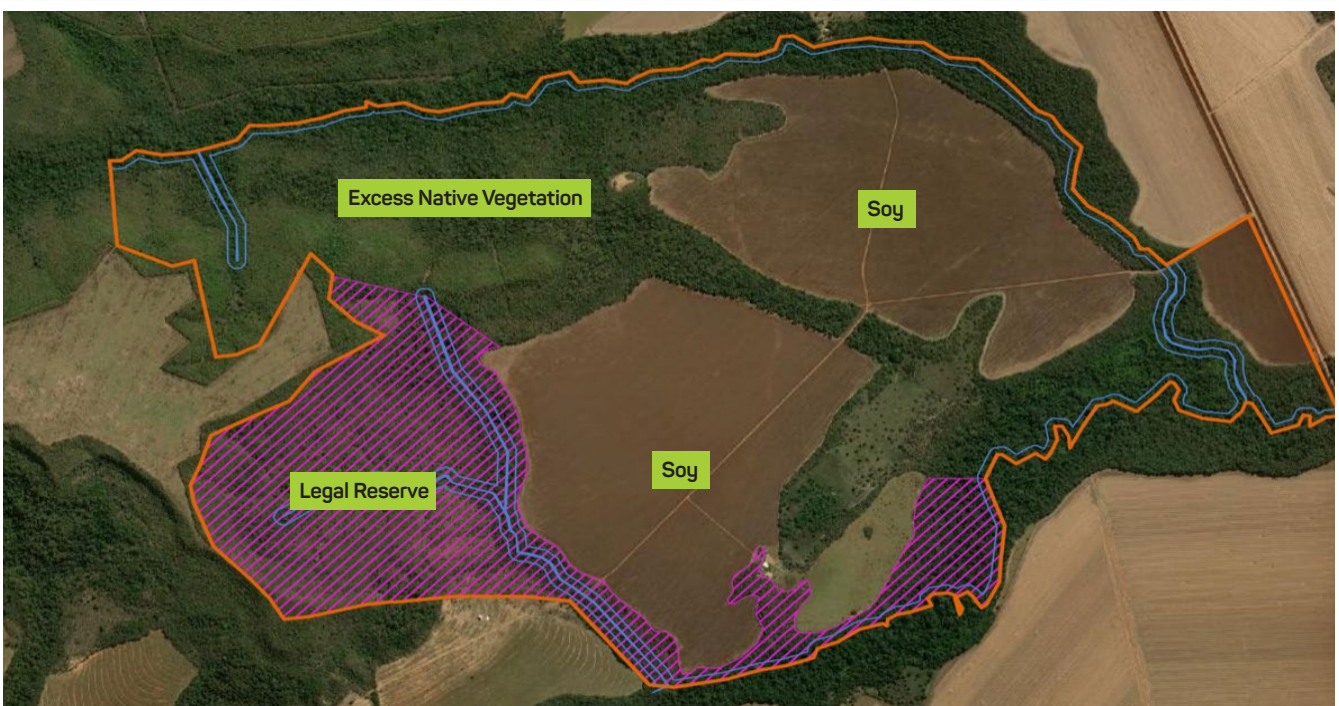
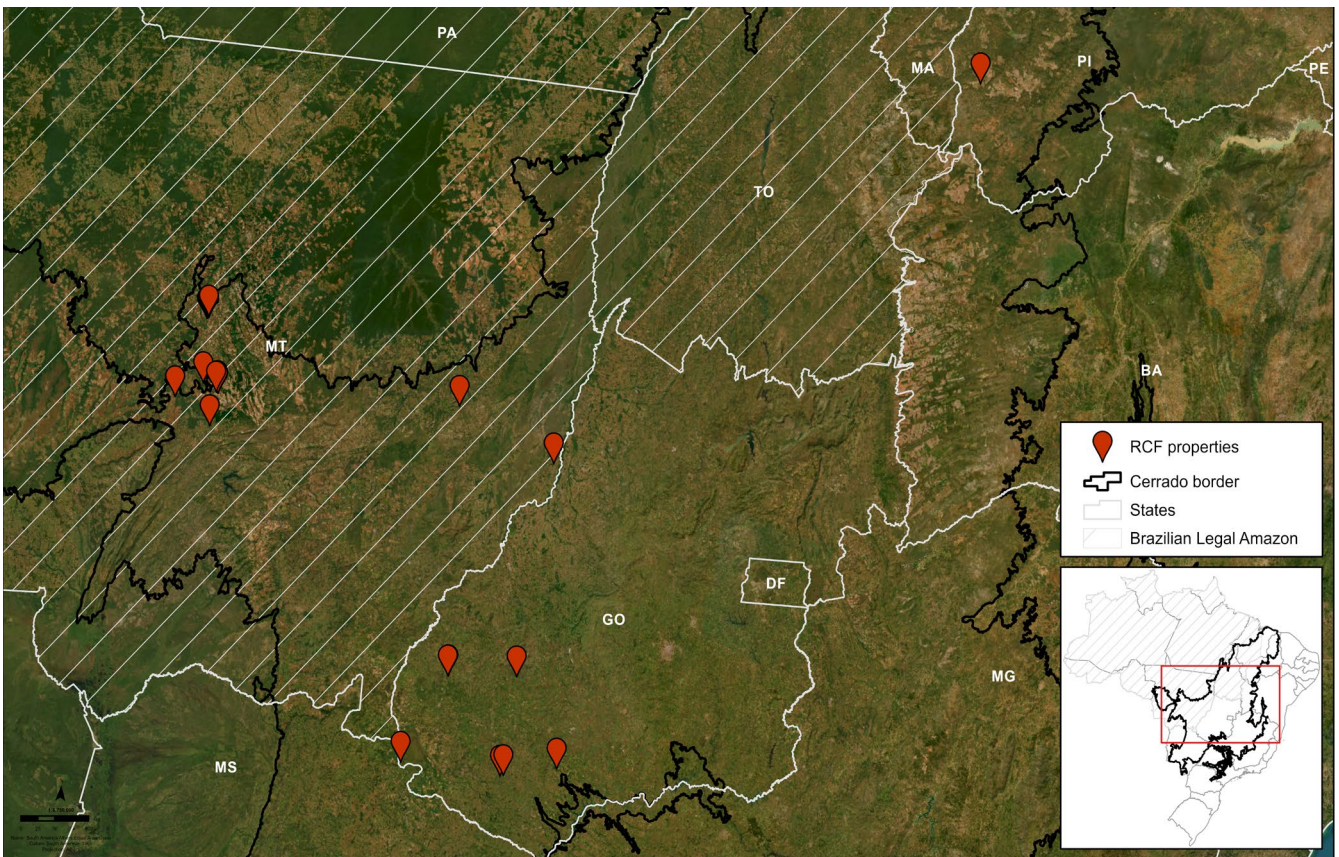
Grants and sponsorship

RCF also received funding through sponsorship grants from the Good Energies Foundation, Barry Callebaut, as well as Tesco and Sainsbury's as part of their involvement with the Forest Positive Coalition of the Consumer Goods Forum.



3.2 Location of farms selected

The RCF Cerrado Programme 1 financed 32 farms from 8 farming groups located in 13 municipalities in 3 states in the Cerrado. One farming group was located in the Amazon biome, as opposed to the Cerrado, and their environmental impacts were not included in this report. Most of the farms (80%) were located in priority municipalities identified by TNC (see table of results).



3.3 DCF soy crop yield and financial results

Capital raised was used to acquire agricultural inputs to plant the 2022-2023 crop season. Harvesting took place in February-March 2023, yielding 42,400 tonnes of DCF soy. All loans were repaid with no financial default on loan obligations. Loans were renewed in April 2023 for farmers to plant the 2023-2024 crop season.

Farmers were initially identified by Traive, based on their professional networks. Loans provided had interest rates ca. 25% lower than the rates these farmers would obtain from other sources of finance.

Farm group	Municipalities	State	Total area of farms (ha)	Native vegetation conserved (ha)	Native vegetation in excess of legal requirement (ha)	Protection: Production Ratio (%)	Tonnes of DCF soy produced
1	Nova Mutum, Nobres	Mato Grosso	2,838	1,663	551	59%	4,230
2	Cocalinho	Mato Grosso	1,410	670	91	47%	2,530
3	Lucas do Rio Verde, Diamantino	Mato Grosso	6,848	3,081	623	45%	12,430
4	Santa Filomena	Piauí	1,149	384	106	33%	2,570
5	Água Boa, Jataí	Mato Grosso, Goiás	2,351	761	126	32%	5,440
6	Caiapônia, Doverlândia, Quirinópolis	Goiás	1,943	1,096	633	56%	2,545
7	Mineiros	Goiás	4,133	888	15	21%	12,655
Total			20,673	8,541	2,145	42%	42,400

Note 1: Brazilian legislation requires the conservation of native vegetation in at least 35% of a farm area in all the municipalities listed above, except for those in the Piauí and Goiás states, where the requirement is for 20% of the farm land.

Note 2: Native vegetation in excess of legal requirement is calculated taking into account whether the CARs have sufficient native vegetation to cover both legal reserves and APPs, as per article 15 of the Forest Code.

Note 3: Protection: Production Area is the ratio between area protected and total area of the farms of a given farming group.

3.4 Environmental impact

No deforestation or conversion of native vegetation was observed in any of the farms included in the RCF Cerrado Programme 1.

Given that the main objective of the RCF is to provide financial incentives for farmers not to convert native vegetation (illegally or legally) for the expansion of soy cultivation areas. To achieve this objective, the portfolio of farm selected by the RCF had, in aggregate, a Protection:Production Ratio of 42%, i.e., 42% of their area covered with native vegetation – ca. 10.4% more than the forest cover legally required by Brazilian legislation.

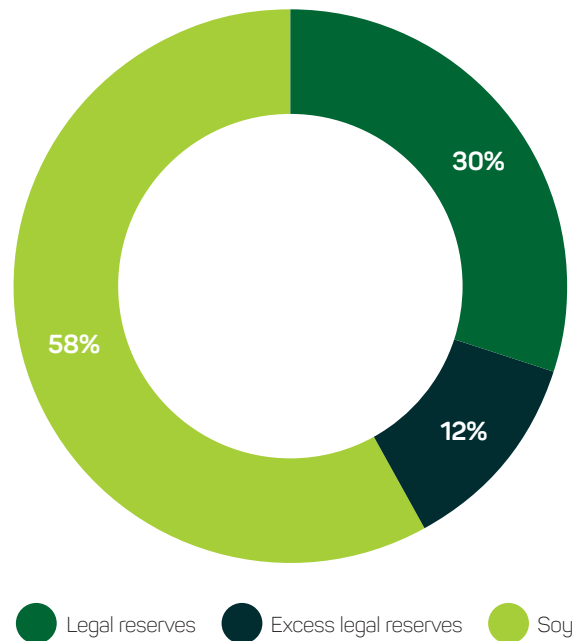
In order to participate in the RCF programme, landowners committed to forego their right to legally convert the remaining vegetation in their farms (in excess of legal minimum requirements). Participants in the programme were also required to adhere to other social and environmental requirements, as defined in RCF’s Eligibility Criteria¹⁰ (Section 4.3).

Monitoring of environmental obligations and impacts was conducted by SIM and BVRio’s teams, and independently verified by EarthDaily Agro (Section 4.2).

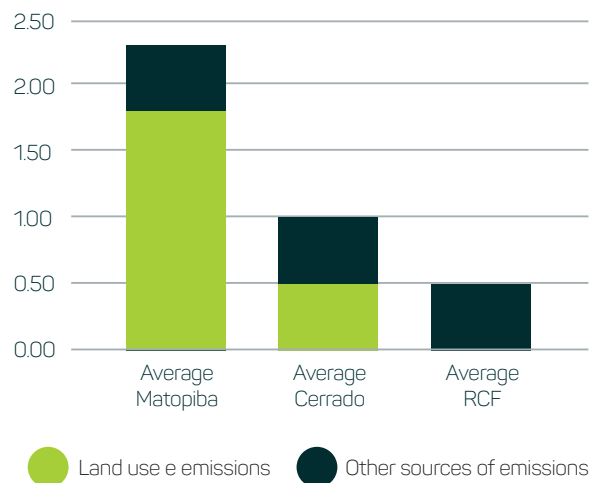
There was no conversion of native vegetation in any of the areas, and consequently there were no greenhouse gas emissions associated with land conversion in any of the farms included. All areas selected appeared to be in compliance with the Brazilian Forest Code and other relevant legislation. Our monitoring also found no use of excluded pesticides, no infringements of labour legislation, and no embargoes or infractions of environmental legislation in these farms since they joined the RCF. See Annex 1 for the monitoring methodology used.

Soy from RCF producers meets the legality requirements of the EU Deforestation Regulation (EUDR)¹² and contributes very little to the Scope 3 emissions of its buyers (0t t-1 CO2 emissions from land use change). Once RCF farms are connected to the supply chains of its investors, they will be able to demonstrate deforestation and conversion free supply chains in compliance with the EUDR and reduce their Scope 3 emissions.

Average areas of native vegetation in RCF farms



Average GHG emissions Brazilian soy (tCO2/t soy)



Note: According to Escobar et al. 2020¹², most soy shipped to the EU comes from the Matopiba region, where emissions are in average 2.3 tCO2/tonne of soy, compared with the RCF producers that have an estimated 0.5 tCO2 / tonne soy. Emission-data for a given year.

¹⁰ <https://sim.finance/responsible-commodities-facility/#eligibility-criteria-modal>

¹¹ With relation to the upcoming EU Deforestation Regulation (EUDR), this still excludes most of the Cerrado from its scope, as the majority of vegetation in this biome is not classified as “forests”. However, even if the scope of this regulation is expanded to include all Cerrado vegetation, soy from RCF producers is expected to be in compliance with the regulation’s requirements.

¹² Escobar, N., Tizado, E. J., zu Ermgassen, E. K. H. J., Löfgren, P., Börner, J. and Godar, J. (2020). Spatially-explicit footprints of agricultural commodities: Mapping carbon emissions embodied in Brazil’s soy exports. *Global Environmental Change*, 62, 102067.



3.5 Environmental impact statements

Results of the monitoring and verification activities were reported to the RCF Environmental Committee (Section 4.4) that reviewed and assessed whether the methodologies used by the RCF Cerrado Programme 1 activities are appropriate. The Environmental Committee did not audit the impacts reported, but reviewed the information provided.

An Environmental Impact Statement for the RCF Cerrado Programme as a whole is shown on page 17. Individual Environmental Impact Statements will be issued to each investor in the RCF, attributing the production and impacts generated by the Cerrado Programme pro rata to their financial contributions.



Responsible Commodities Facility

Environmental impact statement

Crop season: 2022-2023

Harvest: Jan-Mar 2023

Amount invested	US\$ 11,000,000
Impact	Quantum
Amount of vDCF soy produced in the main crop season	42,400 tonnes
Number of farms involved	32 farms
Area of native vegetation conserved	8,541 ha
Area of native vegetation conserved in excess of legal requirement	2,145 ha of
Protection ratio (% area protected/total area financed)	42.1%
Area of native vegetation deforested or converted to other uses	0 ha
Carbon stocks maintained in forests protected by the RCF	2.9 MtCO ₂
GHG emissions from land use change (tCO ₂ e / t soy produced)	0 tCO ₂ e

Data monitored by:

Independently monitored by:



The impacts listed above occurred during the crop season 2022 – 2023 and were monitored by SIM and Traive, and independently analysed by EarthDaily Agro.

Methodologies used for impact assessment are reviewed by an Environmental Committee with the participation of The Nature Conservancy, UN Environment, WWF Brasil, Conservation International, Proforest, IPAM, and BVRio (secretariat). The Environmental Committee is not responsible for auditing impacts, but reviewing the information provided.



The RCF is a member of the Innovative Finance for the Amazon, Cerrado and Chaco initiative, and a landscape initiative of the Forest Positive Coalition of the Consumer Goods Forum

4

RCF structure and operational routine

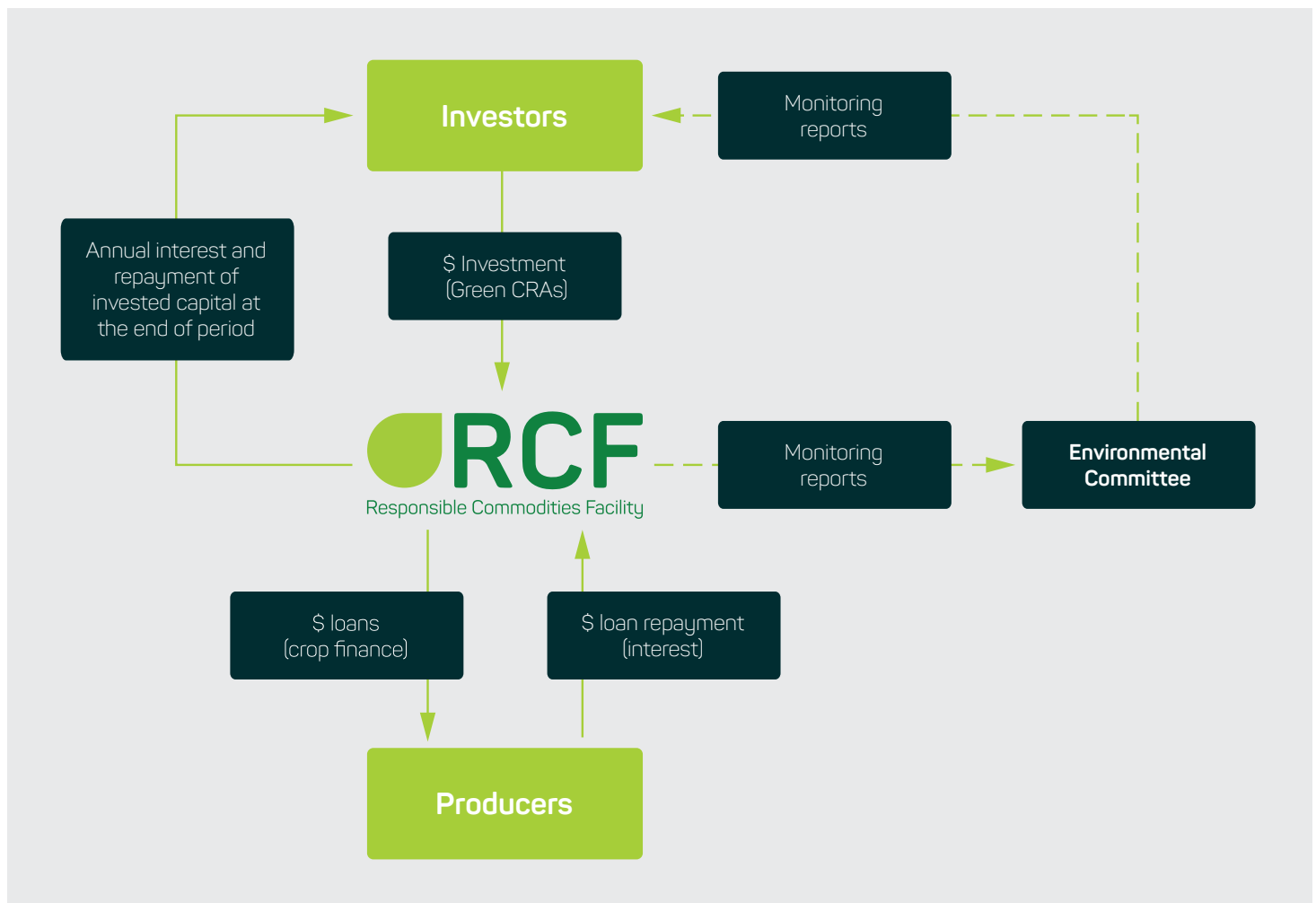


4.1 Source of funds: Green CRAs

The Facility was funded through the sale of USD-denominated green CRAs¹³, issued in Brazil and registered in the Vienna Stock Exchange. The CRAs were subscribed by investors (Tesco, Sainsbury's, and Waitrose) and capital raised was sent to Brazil to be loaned to RCF farmers. Every loan was collateralized by Financial CPRs¹⁴ worth 110% of the loan value.

At the end of the harvest, loans were repaid, interest was paid to investors, and loans were renewed for the next crop season. All environmental impacts are monitored, independently verified, and reported to an Environmental Committee and investors.

The financial flows of the Facility are as shown below, and details of each operational steps described in the following sections:

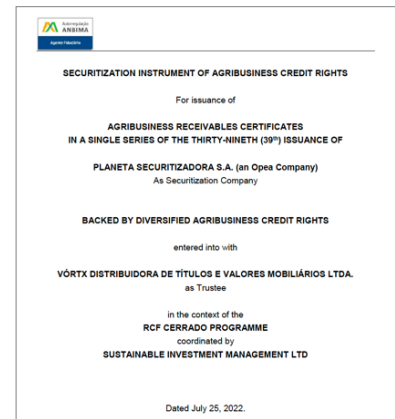


¹³ CRAs stand for Certificados de Recebíveis Agrícolas (Certificates of Receivables of the Agribusiness), a type of security widely used to finance the Brazilian agribusiness.

¹⁴ CPR stands for Cédula de Produto Rural (Certificate of Agricultural Production), a type of promissory note widely used to document agribusiness credit transactions in Brazil. It includes a lien on the future production, and can result in physical (CPR Física) or financial (CPR Financeira) settlement.

4.2 Operational routine

Implementation of the RCF Cerrado Programme 1 involves a number of organisations (see section 4.6) that specialize in different activities in the process, involving both financial and environmental streams. Sustainable Investment Management (SIM) plays the role of 'RCF Cerrado Programme Coordinator', to ensure the adequate integration of both these streams, while management of the CRA issuance is done by Opea Securitizadora S.A (the Securitization Company). The operational routine of the RCF is described in the Securitization Instrument issued by Opea.



4.2.1. Environmental screening

Prior to their inclusion in the RCF, farms and producers interested in participating in the programme are assessed by SIM for compliance with the RCF's Eligibility Criteria (see Section 4.3 and Annex 1).

In parallel, an independent analysis is conducted by EarthDaily Agro, a firm specialised in monitoring the agricultural sector.

The initial screening looks for farming groups that have native vegetation in excess of legal requirements (called "excess legal reserves") and have not converted any native vegetation since 1st January 2020.

Other requirements are listed in the eligibility criteria.

A list of farmers that meet these requirements, and have adequate credit rating, is submitted to the Environmental Committee, prior to inclusion in the RCF programme.



4.2.2. Credit analysis

Prior to their inclusion in the programme, all participating producers and farms are screened by Traive (the Credit and Monitoring Agent) using their credit analysis methodology. This includes analyses of indebtedness and debtors, receivables, pledges, total assets, revenue forecast, and historic performance.

Based on the results of the credit analyses, a final portfolio allocation is defined ensuring geographic diversification, credit limits for each farmer, as well as average and maximum loan concentration parameters established by the Securitization Agreement.

Once a final portfolio is defined, it is recommended to the Credit Committee, prior to proceeding with contracting for inclusion in the RCF programme.



4.2.3. Collection of guarantees and contracting

Once confirmation is secured from the Credit Committee, the loan is documented in the form of a Financial CPR¹⁵. Each CPR includes a lien (in the form of a fiduciary alienation¹⁶) on the soy to be produced, for a value corresponding to 110% of the full amount due by the producer at maturity. The CPRs also include the environmental obligations of farmers.

Each CPR is registered in the public notary of the farm's municipality and deposited in the B3 Stock Exchange in Brazil. The collection of the CPRs and the formalization process is conducted by the Formalization Agent (Ace – Agriculture Collateral Experts Ltda).



4.2.4. CRA issuance and registration in Vienna Stock Exchange

Once all CPRs and the respective guarantees are duly formalised, Opea Securitizadora issues the CRAs and register them in the Vienna Stock Exchange.

Investors subscribe the CRAs and deposit the funds in a bank account managed by the Paying Agent (TMF).

Farmers enter into offtake agreement with traders, for delivery of soy at harvest, and assign these agreements to the RCF to receive payment directly from the traders.

Funds are transferred to Brazil and paid into the bank accounts of farmers.

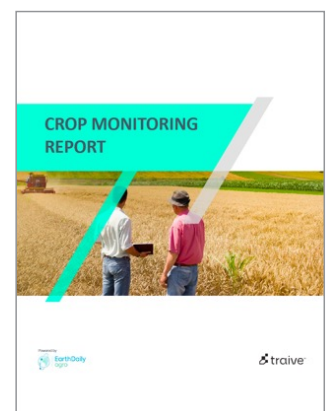


4.2.5. Monitoring and verification

During the crop season, farms are continuously monitored for crop development and deforestation and land conversion by both SIM and the third-party EarthDaily Agro (the Independent Monitoring Firm). See methodologies used by SIM and Earth Daily in Annex 1.

SIM's analyses focus only on detecting any sign of conversion of native vegetation, using Landsat images taken at different times in the crop season. EarthDaily conducts an independent analysis of crop development and deforestation and land conversion activity using satellite images with 10 m resolution. Any sign of deforestation and land conversion and/or crop failure is reported immediately to the RCF (Opea), to determine ways of mitigating risks of environmental or financial underperformance.

SIM also monitors farms and farmers for infractions of other environmental legislation associated with their tax IDs (CNPJ/CPF), using BVRio's Due Diligence & Risk Assessment System¹⁷ that continuously monitor 20 databases of compliance with different legislation.



¹⁵ CPR stands for Cédula de Produto Rural (Certificate of Agricultural Production), a type of promissory note widely used to document agrobusiness credit transactions in Brazil. It can result in physical (CPR Física) or financial (CPR Financeira) settlement.

¹⁶ "Alienação Fiduciária", a modality of lien that allows for an expeditious execution process widely adopted to guarantee agrobusiness credit transactions in Brazil.

¹⁷ <https://www.bvr.io/madeira/analise/cadeiaCustodia/dashboardDueDiligence.do>



This system uses advanced analytics on a combination of real-time production data, consultation to external databases (SICAR, IBAMA, state environmental agencies, Ministry of Labour, etc.), documental and satellite imagery analyses (MapBiomas). This internal due diligence system was adapted from BVRio's Due Diligence and Risk Assessment tools¹⁸ developed for the timber sector, which uses big data analysis and blockchain encryption¹⁹.



Infringements of labour legislation are monitored by SIM using the Brazilian Ministry of Labour and Social Security database of employers who breach legal requirements, including subjecting workers to conditions analogous to slavery²⁰. With relation to agrochemicals, the agronomist responsible for each farm sends a list of the types of chemicals used, and a declaration that the products banned by the RCF were not used.

Monitoring reports are made available to the Environmental Committee to review and assess compliance with the eligibility criteria and the environmental performance of the Programme and provide advice on potential improvements to maximise environmental benefits.

4.2.6. Harvesting, loan repayment and renewal

At the end of the crop cycle, soy is harvested and delivered at the location defined in the offtake agreements with soy traders. Traders pay directly to the RCF for the soy delivered.

RCF uses proceeds to repay interest and/or principal back to investors and the balance is returned to producers.

Loans are renewed for farmers that continue to comply with the requirements of the RCF.

¹⁸ www.bvrio.org/timber.

¹⁹ See BVRio, 2016: Using big data to detect illegality in the tropical timber sector. www.bvrio.org/publicacoes/

²⁰ https://www.gov.br/trabalho-e-previdencia/pt-br/composicao/orgaos-especificos/secretaria-de-trabalho/inspecao/areas-de-atuacao/cadastro_de_empregadores.pdf

4.3 RCF eligibility criteria

Farmers must meet the RCF Eligibility Criteria to be able to join the programme. Eligibility Criteria for the RCF Cerrado Programme 1 are:

a) Criteria related to the area of cultivation:

Land use – the area of cultivation must comply with the following conditions:

- i) The cultivated area to be financed must have been deforested before January 1, 2020; and
- ii) as long as the Producer participates in the Programme, there should be no opening of new areas of native vegetation in the Programme Area.

Compliance with the Forest Code:

- i) Farmland must be registered with the Cadastro Ambiental Rural (CAR)
- ii) The farm area must not overlap with conservation units, indigenous reservations, and community lands (including quilombos)
- iii) The farm must contain and maintain the required areas of Legal Reserve, Areas of Permanent Protection (APPs) and any excess of native vegetation, determined by the Forest Code or have formally adhered to a Programme of Environmental Regularization (PRA) established by the state environmental agency.

b) Criteria related to the Farmer

Land title: Farmers must have unquestionable right to use the land, be it as land title, land lease agreement or another legally recognised form of land tenure (e.g., 'posse').

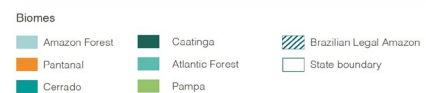
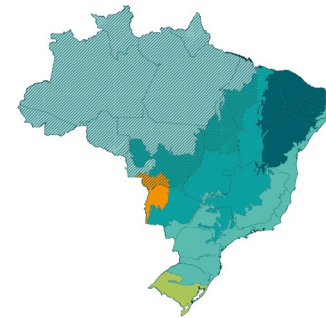
Legal compliance: Farmers must demonstrate that they and their farms do not contravene any environmental or legal requirements, such as:

- i) environmental embargoes,
- ii) labour legislation (including slave and child labour),
- iii) Soy Moratorium (if applicable), and
- iv) internationally accepted rules for the use of agrochemicals.

In addition, farmers must follow the Environmental & Social Framework developed with UN Environment Programme to ensure that they support the objectives of the Facility, and also contribute to a number of the Sustainable Development Goals (SDGs), Brazil's National Biodiversity Strategy and Action Plan (NBSAP), Brazil's National Determined Contribution (NDC) to Paris Agreement of the United Nations Framework Convention on Climate Change (UNFCCC), as well as several relevant industry initiatives²¹.

Percentage of Legal Reserve required by the Forest Code

Type of vegetation	Legal Amazon			Rest of Brazil
	Forest	Cerrado	Grasslands	
Legal reserve	80%	35%	20%	20%



²¹ I.e., Soy Working Group (Grupo de Trabalho da Soja – GTS); Cerrado Working Group (Grupo de Trabalho do Cerrado – GTC); Cerrado Manifesto (including the Statement of Support); Collaboration for Forests and Agriculture (CFA); Tropical Forest Alliance 2020 (TFA 2020); Consumer Goods Forum (CGF); Amsterdam Declaration Partnership.

4.4 Environmental Committee

The Environmental Committee plays an advisory role to the RCF, reviewing and assessing whether the operations of the Facility comply with the Eligibility Criteria, using internal monitoring reports and independent audits, and identifying potential improvements to the Facility to enhance environmental impact.

The following organisations participate in the committee, and the secretariat is conducted by BVRio.



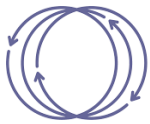
The Nature Conservancy's Director of Agriculture Finance, Greg Fishbein:



RCF will create tangible climate and biodiversity impacts by offering farmers who can legally clear their forests a clear financial incentive not to do so. This is exactly the type of mechanism we envisioned when we created IFACC – one that can leverage commercial finance to support farmers in their transition to climate-friendly production models.”

4.5 Partnerships and endorsements

The development and implementation of the RCF counted with the support of many organisations, as follows:



GOOD
GROWTH
PARTNERSHIP



ROBECO
The Investment Engineers



IFACC - Innovative Finance for the Amazon, Cerrado and Chaco



FINANCING
SUSTAINABLE
LAND USE



The RCF is proud to have been selected as Green Bond of the Year by Environmental Finance Magazine.



4.6 Management team and service providers

The following organisations were involved in the implementation of the RCF Cerrado Programme 1:

Programme Coordinator



Securitisation Company



Credit and Risk Managers



Trustee (Fiduciary Agent)



Legal Counsel



Legal Opinion



Custodian



Judicial Collection



Independent Verification



Secretariat of Environmental Committee



Registration Agent



Paying Agents



Annex A

Monitoring methodologies used by SIM, BVRio and Earth Daily

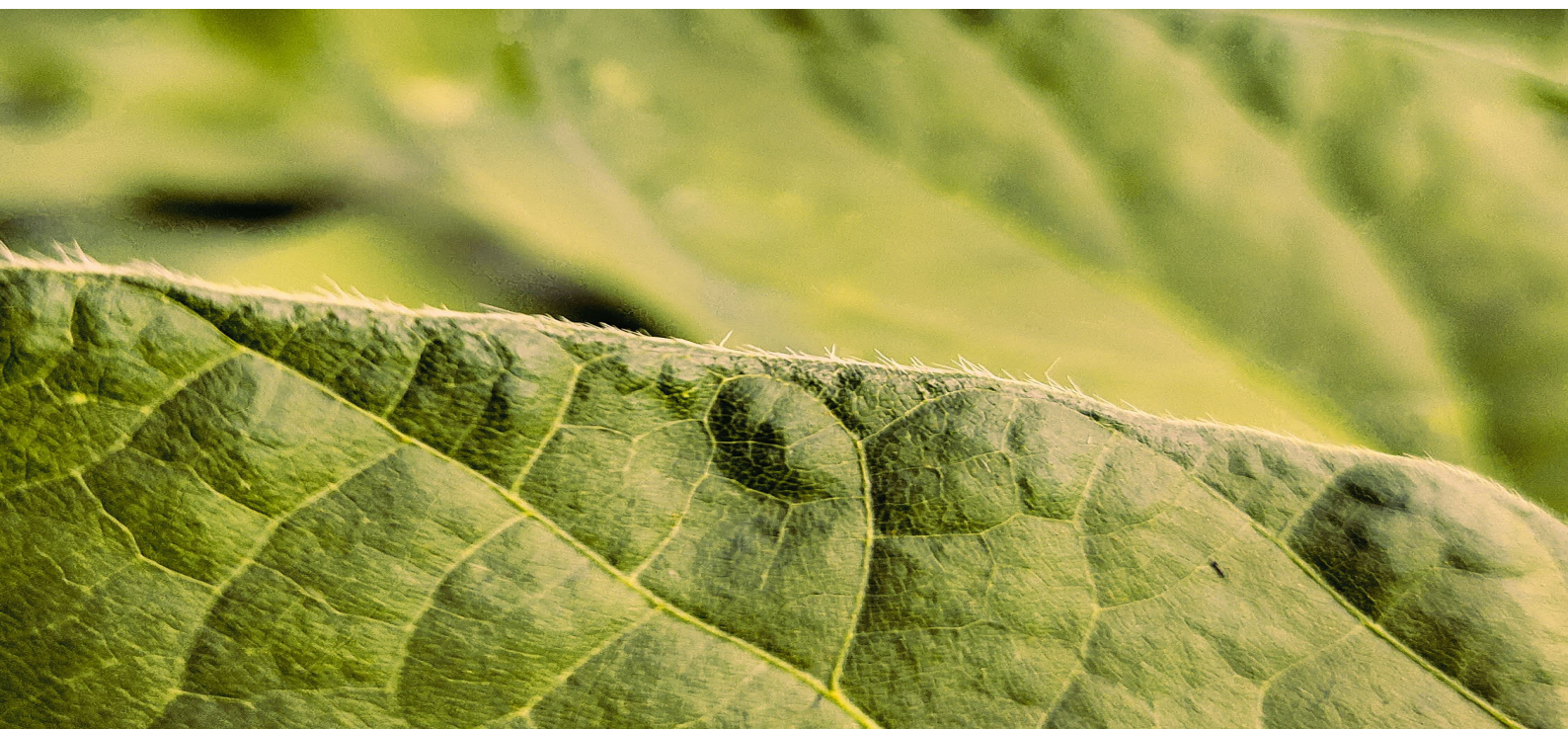


A.1 Internal monitoring conducted by SIM and BVRio

The teams of SIM and BVRio are responsible for screening farmers and farms for compliance with the eligibility criteria throughout the programme cycle.

At the pre-contract stage, SIM-BVRio conduct the following analysis:

- spatial analysis of farms selected to identify deforestation or conversion of native vegetation since 2008 and after 2020 using ArcGIS and Landsat images taken at different times in the crop season;
- location of the farm with relation to vegetation type and biome;
- determination of areas of native vegetation, cleared areas and areas of crop cultivation;
- potential overlaps with indigenous, community or quilombola lands;
- potential overlaps with conservation areas;
- verification of possible infractions of other environmental legislation associated with farmer's tax IDs (CNPJ/CPF), using BVRio's Due Diligence & Risk Assessment System²² that continuously monitor 20 databases of compliance with different legislation. This system uses advanced analytics on a combination of real-time production data, consultation to external databases (SICAR, IBAMA, state environmental agencies, Ministry of Labour, etc.), documental and satellite imagery analyses (MapBiomias). This internal due diligence system was adapted from BVRio's Due Diligence and Risk Assessment tools²³ developed for the timber sector, which uses big data analysis and blockchain encryption²⁴.
- Infringements of labour legislation are monitored by SIM using the Brazilian Ministry of Labour and Social Security database of employers who breach legal requirements, including subjecting workers to conditions analogous to slavery²⁵.



²² <https://www.bvrio.com/madeira/analise/cadeiaCustodia/dashboardDueDiligence.do>

²³ www.bvrio.org/timber.

²⁴ See BVRio, 2016: Using big data to detect illegality in the tropical timber sector. www.bvrio.org/publicacoes/

²⁵ https://www.gov.br/trabalho-e-previdencia/pt-br/composicao/orgaos-especificos/secretaria-de-trabalho/inspecao/areas-de-atuacao/cadastro_de_empregadores.pdf



Determination of compliance with the Forest Code is a particularly challenging task, given that there is no official confirmation provided by government authorities and the data reported in the CAR is self-declared and not validated by the relevant environmental agencies.

For this reason, SIM conducts its own analyses to determine likelihood of compliance, based on the amount of native vegetation observed in the CARs and whether this satisfies the theoretical requirements of the law. All this analysis is conducted using satellite imagery.

SIM's analysis takes into account the data self-declared in SICAR. However, the quality of declarations is highly varied, and it is often the case that the numbers declared do not match the areas in the polygons drawn in SICAR, or the boundaries and locations of legal reserves and APPs are incorrect or inappropriate, requiring case by case interpretation.

The process of determination of legal reserve compliance starts with the area of native vegetation observed within the polygon declared in SICAR. If this area is sufficient for the requirements of the law for the Legal Reserve (20% or 35%, for the Cerrado areas of the RCF), the farm is considered preliminary compliant with this requirement, pending analysis of APPs.

For the calculation of APPs, SIM used the number self-declared in the CARs, both in figures and in the polygons drawn in the CARs. The area declared and the area drawn in the map are often different. In case of discrepancies, when the visual and GIS analysis provided a clear delineation of the APP area, these results were used. Otherwise, we considered the highest figures.

If farms contain sufficient area of native vegetation to include both legal reserves and APPs, compliance with these two categories is considered satisfied and any remaining native vegetation is considered "excess legal reserve". If farms do not contain native vegetation to include both legal reserves and APPs, the APPs are considered part of the legal reserves, as per Article 15 of the Code.

The analysis of native vegetation was based on groups of CARs that, in aggregate, satisfied the spatial requirements of the Forest Code. This is particularly relevant as, in many cases, these CARs were originally part of a single farm in an estate that was segmented during generational transfers. In some cases, this may create situations where the individual CAR is not in compliance with the vegetation requirements of the Code, and the landowner has to enter into a PRA to rectify it. In these cases, considering that during the rectification process the native vegetation of the farm would be below the legal requirements, SIM requires the farmer to submit additional areas of native vegetation to the protection of the RCF. So, without prejudice to the correction measures to be taken under the Forest Code requirements, the total area of native vegetation protected by the RCF is not affected.

Throughout the crop season, SIM relies on Earth Daily's monitoring reports that provide early warning of any factor that could potentially affect the financial and environmental objectives of the Cerrado Programme (see next section).

At the end of the crop season, BVRio repeats some of the analyses listed above to define whether farmers remain eligible for participation with the RCF Cerrado Programme and whether there were any indication of deforestation or infringement of other eligibility criteria.

With relation to agrochemicals, the agronomist responsible for each farm sends a list of the types of chemicals used (receituários agrônômicos), and a declaration that the products banned by the RCF were not used.

A final crop season monitoring report is prepared for appreciation by the Environmental Committee. The Environmental Committee is not responsible for auditing impacts, but reviewing the information provided.

A.2 Independent monitoring conducted by Earth Daily

In parallel to the monitoring conducted by SIM-BVRio, a separate analysis is conducted by Earth Daily Agro (<https://earthdaily.com>), a data and analytics company providing data services, satellite processing, machine learning and actionable insights to customers to track long-term trends, monitor change, and take guided, strategic actions. From 2024, EarthDaily will offer to RCF the world's first earth observation system designed from the ground-up to produce scientific-quality imagery of the entire earth every day, based on its own constellation of satellites.

At the pre-contract stage, Earth Daily is given a list of CARs of potential participants in the RCF and provide the following analysis:

- Spatial analysis of farms selected to identify deforestation and conversion of native vegetation since 2008 and after 2020;
- satellite images of each individual farm selected;
- location of the farm with relation to vegetation type and biome;
- areas of native vegetation, cleared areas and areas of crop cultivation;
- potential overlaps with indigenous, community or quilombola lands;
- potential overlaps with conservation areas;
- verification of possible infractions of Brazilian legislation (environmental, social, criminal) associated with each farming company and/or individual, based on analysis of governmental databases;
- historic series of crop performance and crop failure, going back at least 5 years;
- a risk assessment of future crop performance.

Throughout the crop season, Earth Daily continuously monitors the development of the crop and provide bi-weekly reports on:

- emergence of planted crops and comparison with historic performance;
- development of the crop and comparison with historic performance;
- any indications of factors affecting crop development and yield, including droughts, pests, diseases, or fire;
- expected harvesting date;
- evolution of harvesting activity;
- real time deforestation and conversion alerts.

The objective of this monitoring activity is to provide early warning of any factor that could potentially affect the financial and environmental objectives of the RCF Cerrado Programme.

At the end of the crop season, Earth Daily provides a report with the following information:

- recent satellite images of each individual farm selected;
- spatial analysis of indications of deforestation or conversion of native vegetation since the previous analyses, when farms joined the RCF Cerrado Programme;
- location of the farm with relation to vegetation type and biome;
- estimates of soy harvested;
- repeated verification of possible infractions of Brazilian legislation (environmental, social, criminal) associated with each farming company and/or individual, based on analysis of governmental databases.

Once the winter crop ("safrinha") is planted, the same analysis of crop development, harvesting and deforestation/ conversion alerts are repeated.



Annex B

Management Team





Implementation of the RCF Cerrado Programme involves a number of organisations (see section 4.6) that specialize in different activities in the process, involving both financial and environmental streams. Sustainable Investment Management (SIM) plays the role of 'RCF Cerrado Programme Coordinator', to ensure the adequate integration of both these streams. The management of the CRA issuance is done by Opea Securitizadora S.A (the Securitization Company). Traive is responsible for the credit risk analysis of the producers and subsequent credit risk monitoring.

B.1 Sustainable Investment Management (coordinator)



Sustainable Investment Management Ltd (SIM) is a boutique environmental finance advisory firm incorporated in 2018. SIM's objective is to promote the financing of activities that result in positive environmental impacts worldwide.

At SIM, we have witnessed first-hand the immense potential of combining private and public capital toward achieving targeted environmental goals. We also know from experience that pursuing "green" investments and seeking attractive financial returns are not mutually exclusive.

Our vision is to create a double bottom-line global investment firm to mobilize capital for actionable sustainable development. We do this by connecting investors seeking positive environmental change with credible businesses and implementable projects that have a direct and immediate environmental impact.

Our aim is that our financial mechanisms can have a disruptive effect at scale, helping to inflict change at sector or landscape level.

SIM works in four different sectors:

- Sustainable agriculture
- Sustainable forest and conservation finance
- Greenhouse gases (GHG)
- Waste management and the circular economy

SIM's senior management team is:**Pedro Moura Costa, Founder and CEO, UK**

Pedro has over 25 years' experience in the forestry, climate and environment sector. As well as co-founding SIM, he is also co-founder and director of BVRio Environmental Exchange, and co-founder and former President of EcoSecurities Group Plc., the world leader in greenhouse gas mitigation and carbon trading. Pedro has authored over 100 publications including the Intergovernmental Panel on Climate Change (IPCC) reports that were awarded the 2007 Nobel Peace Prize. He has a PhD from University of London.

**Mauricio Moura Costa, Founder and COO, Brazil**

Mauricio has over 25 years' experience in commercial and financial law, M&A, banking and finance, capital markets and general contracting. He is co-founder and director of BVRio Environmental Exchange and was formerly country director of EcoSecurities Group Plc. Brazil and managing partner of international law firms in Brazil (São Paulo) and Portugal (Lisbon). Mauricio has a doctorate in Economic Law from Université de Paris II (Panthéon-Sorbonne).

**Grace Blackham, Head of ESG and Compliance**

Grace has over 15 years' experience in tropical ecology, project management, sustainable land use practices and policy, and financial and environmental compliance. Grace has a MSc from Oxford Brookes University and a PhD in Tropical Forest Ecology from the National University of Singapore. She has worked on a variety of land use and forestry projects in Southeast Asia, Africa and Latin America.

**Arnaldo Carneiro, VP Environment**

Arnaldo has over 30 years' experience in land use dynamics. He led the creation of the Territorial Intelligence Nucleus of the Brazilian Presidency, is a former director of Agroicone and was senior researcher at the Amazon Research Institute (INPA). He also coordinated strategy on soy supply chain for Global Canopy and Trase (trase.earth). Arnaldo is a PhD from the University of Strasbourg, France and a post-doctorate at the University of Wageningen, (Netherlands).

**Steven Ripley, Director, Investment Engagement**

Steven has spent his entire professional career (20+ years) working towards creating value for forests. He's held positions with the United Nations, Global Canopy, IDH Sustainable Trade Initiative and Tesco, as well as a decade working for software firms developing commodity traceability systems. Steven holds a Masters in International Environmental Law and a Bachelors in Environmental Science.



B.2 OPEA Securitizadora (Securitization Company)



Opea is a pioneering securitization platform in Brazil. It provides, in an agile and transparent manner, services within the regulated securitization market, such as: Issuance of securities, portfolio management, billing process, paying agent, etc. Opea's solutions and services have supported companies within a variety of industries, especially real estate and agribusiness, to access alternative sources of funds in the Brazilian capital markets.

With 22 years of experience, Opea has issued more than 600 series of receivables certificates (CRI – Real Estate and CRA – Agribusiness), financial debentures and receivables investment funds, totaling more than R\$102 billion.

Opea works closely with the main agents in the Brazilian capital markets, such as investment banks, institutional investors, independent originators, paying agents, regulator, clearing house, etc., in order to coordinate the issuance process and its closing.

Since 2021, Opea has become an independent company, been part of Jaguar Growth Partners (JGP) investment's portfolio. JGP is an American private equity's firm.

Opea senior management team:

Flavia Palacios – CEO

More than 25 years of experience within the financial sector, Palacios holds a degree in Economics from the Federal University of Rio de Janeiro and an MBA in Finance from IBMEC Business School. As the CEO of Opea, she is responsible for leading the company's strategy, developing partnerships, and overseeing the day-to-day operations. Under her leadership, Opea has become a leading player in the securitization market, with a proven track record of delivering innovative solutions to its clients.



Marcelo Leitão – CSO

Marcelo Leitão is a financial expert and the head of securitization at Opea Capital. With over 20 years of experience in the finance industry, Marcelo oversees the securitization of various types of assets, including real estate, receivables, and infrastructure projects. His expertise in structuring complex financial transactions has led to the successful closing of numerous deals, making Opea Capital one of the top players in the securitization market in Brazil.



Renato Barros – Head of agribusiness

Renato Barros is a seasoned executive with over two decades of experience in agribusiness. He currently serves as the Head of Agribusiness at Opea Capital, an investment firm focused on the agricultural sector. Renato has a deep understanding of the challenges facing farmers and ag-related businesses, and his expertise is critical to the firm's success.



Thiago Faria Silveira – Head of Fiduciary Management

Thiago Faria is the Head of Fiduciary Management at Opea who has a remarkable track record of managing and analyzing portfolios. He is known for his keen analytical skills and in-depth knowledge of the financial markets. Thiago has a vast experience in the financial industry and has held key positions in several organizations before joining Opea.



Rodrigo Shyton – Head of Credit Services

Rodrigo Shyton is the Head of Credit Services at Opea Capital, a finance professional with a focus on credit. He is known for his expertise in credit analysis and risk management. Prior to joining Opea Capital, he worked at several other financial institutions, honing his skills in credit analysis and underwriting.



Anderson Pereira - Services Coordinator

As a Services Coordinator, Anderson is responsible for overseeing the day-to-day operations of the company's service department. Anderson has a strong background in customer service and operations management, with experience working in various industries prior to joining Opea Capital.



B.3 Traive (Credit and risk manager)



Traive™ is an open financial platform that connects the entire agricultural chain to the capital market using data and an innovative financial solution, eliminating uncertainties, increasing operational efficiency, and lowering costs in a timely and sustainable manner. Traive provides all agricultural credit management services and connections in one place, from order to payment.

Traive's vision is to create financial solutions for both lenders and borrowers so that everyone in the agricultural sector can prosper.

Traive's mission is to revolutionize the Brazilian agricultural financial sector through data technologies and financial connections.

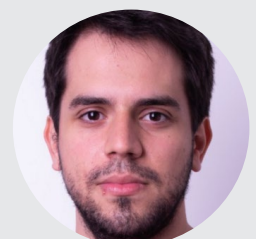
Traive senior management team:

Fabricio Pezente is a co-founder and the CEO of Traive. He worked for 12 years in investment banking, where he led a quantitative modeling group as an expert in financial asset pricing. Fabricio attended Escola Politécnica da USP in Brazil for his Bachelor's degree and the MIT Sloan School of Management for his MBA. At Traive, he is bringing the technologies that are disrupting financial services to the agriculture industry.

Luis Lapo is the Risk Chief Officer of Traive. He has 15 years of experience in financial markets and risk management. Luis Lapo attended Universidade Estadual de Campinas (UNICAMP) for his Bachelor's degree in agricultural engineering. At Traive he offers a unique, fair, and live credit risk assessment to farmers, cooperatives, input suppliers and agricultural industries.

Rafael Arruda is Credit Risk Coordinator at Traive. Rafael attended UNICAMP for his Bachelor's degree in agricultural engineering. Worked in Agribusiness Credit in inputs distributors, structured operations, credit policy structuring, implementation of systems for credit assessment and portfolio management. At Traive, he has been working with Structured Finance and credit assessment. Actively collaborated with the first Green CRA operation in Brazil certified by CBI. Also, working on the relationship with clients, partners and product development SME.

Antonio Hildenberg is Credit Risk and Structure Finance Coordinator at Traive. Antonio attended Brasilia Federal University (UNB) for his Bachelor's degree in Civil Engineering. Since the beginning of his career, his experience was dedicated to credit risk assessments, securitization and credit facilities structuring, working in the past 4 years at Santander Wholesale Credit Risk department and at Traive, both experience covered agriculture companies and farmers in the Brazilian market.



B.4 BVRio (Secretariat Environmental Committee)



Founded in 2011, BVRio (Bolsa Verde do Rio de Janeiro – Environmental Exchange of Rio de Janeiro) is a non-profit organization working at the intersection of economic, environmental and social sustainability. BVRio was originally created with the objective of developing market mechanisms to facilitate compliance with Brazilian environmental laws. The models and approaches developed there have now been adapted to develop market mechanisms, economic tools, and support the development and implementation of environmental initiatives and markets in different countries and regions worldwide.

BVRio's operations are overseen by a board of directors and an audit committee made up of members from business, NGOs and academia and individuals.

BVRio works to deliver positive impacts for the economy, environment and people through work focusing on:

- Sustainable land-use, agriculture, and forests
- Waste management in support of the circular economy
- Climate change and the bioeconomy

BVRio acts as the Secretariat of the Responsible Commodities Facility Environmental Committee and is involved in the processes of monitoring farmer compliance with the eligibility criteria of the fund.

BVRio is represented by:

Beto Mesquita, an experienced forest engineer, Beto is Doctor of Environmental and Forestry Sciences and Director of Policies and Institutional Relations for BVRio. He is responsible for liaising with partners and representing institutions in various forums and managing projects and initiatives in the areas of forest, sustainable production and public policies.

Theresa Rocco Pereira Barbosa, Theresa is experienced in Spatial Data Analytics and Mapping – Modelling of Tropical Natural Resources and Land Cover. She is a geologist, and has a MSc from Santa Maria Federal University in Soil Science and a MBA in Progress in Data Science and Analytics from Esalq-USP.

Lucy Cox, Lucy has over 20 years corporate communications and Public Relations experience latterly within the environment sector. Lucy is responsible for SIM communication channels and activities and is the media contact.





Responsible Commodities Facility

sim.finance/responsible-commodities-facility

