

RCF Cerrado Programme 1

Monitoring and reporting methodologies used by SIM, BVRio, Earth Daily and ERM-NINT

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1. Introduction

The impacts of the RCF are monitored, verified and independently verified by different parties, to ensure consistence, independence and transparency of results.

The teams of SIM and BVRio are responsible for screening farmers and areas for compliance with the eligibility criteria throughout the programme cycle. Analyses are conducted before contracting with a farmer, at the onboarding stage, and at the end of each crop cycle, prior to renewal of loans.

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.

The results of monitoring activities are compiled and submitted for independent verification by ERM-NINT, who will submit a final report of compliance with the eligibility criteria.

SIM will submit this report to the Environmental Advisory Board and investors at the end of the each crop cycle.

2. Scope and limitations of the applicability of Environmental Criteria

With relation to any analysis, it is important to recognise that RCF Eligibility Criteria apply to the RCF Programme Area. For the purposes of the RCF, a Programme Area is the collection of Rural Properties ("Properties")¹ where are located: (i) the production areas financed by the RCF, and (ii) the areas of Native Vegetation to be protected by the Producers in the context of the RCF. A Property is defined as a continuous extension of land affected to the agricultural production and operated by the same group of Producers, and may include many CARs. An area cut by a road, a river or other natural obstacles is still considered as a continuous extension of land for the purpose of this definition². For the purposes of the RCF each CAR is assumed to be a farm (but not a Property).

¹ Property, for the purposes of the RCF, is the "imóvel rural" (rural property) as defined by Law 4.505/1964, and complemented by the Normative Rule of INCRA nr. 82/2015. A Property may include many CARs and, for the purposes of the RCF, each CAR is assumed to be a farm (but not a Property).

² Given the unprecise definition of what constitutes a Property, which may include several different CARs, the RCF will need to rely on information self-declared by Producers, and may not always be complete or accurate. This is particularly the case when the areas financed are sub-plots (individual CARs) leased from Properties owned by third parties. In these cases, the RCF will not be able to impose some of its criteria on areas not directly financed by the Programme.

A Property may contain other areas of production in addition to the ones financed by the RCF. In case the RCF finances the production in one of the areas of a Property, the whole Property shall be considered to be included in the Programme Area for the purposes of the Eligibility Criteria, even if there are other areas, in the same Property, that are not financed by the RCF. Determination of what constitutes a given Property, however, is dependent on information provided by the Producer to the RCF, and may not always be complete or accurate.

It is common practice that farmers produce in more than one Property, on their own or together with other members of their family (a Producers Group). These Groups are often informal, and the collection of Properties operated by a Producers Group may vary from time to time (including both owned and leased from third parties). The RCF does not require Producers Groups to include in the RCF Programme all the Properties they operate. Participation in the Programme is voluntary and farmers are allowed to include one or more of the Group's Properties.

As referred above, once a Property is included in the RCF Programme, the Eligibility Criteria applies to the whole area of the Property where the financed area is located. On the other hand, the RCF Eligibility Criteria do not apply to Properties operated by the same Group but not financed by the RCF. The RCF provides financial incentives for farmers to forego their legal right to deforest the Properties they include in the RCF Programme. Therefore, Properties not included in the RCF Programme (Properties that are not receiving financial incentives of the RCF) are not obliged to comply with the RCF Eligibility Criteria (and the RCF cannot appropriate itself of any environmental impacts, positive or negative, occurring on farms outside of the Programme Area).

Consequently, a deforestation or an embargo occurring in a Property not participating in the RCF shall not, per se, prevent other Properties of the same Group to participate in the RCF. However, depending on the context and gravity of facts, the RCF may reject the participation of a producer and all its Properties.

3. Internal monitoring conducted by SIM and BVRio

3.1 Initial onboarding analysis

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

- spatial analysis of Rural Properties 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 System³ 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

³ <https://www.bvrio.com/madeira/analise/cadeiaCustodia/dashboardDueDiligence.do>

BVRio's Due Diligence and Risk Assessment tools⁴ developed for the timber sector, which uses big data analysis and blockchain encryption⁵.

- 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 slavery⁶.

3.2 Monitoring of native vegetation, conversion and deforestation

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, as explained above.

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 Rural Property 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 Rural Properties 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 Rural Properties 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.

⁴ www.bvrio.org/timber.

⁵ See BVRio, 2016: Using big data to detect illegality in the tropical timber sector. www.bvrio.org/publicacoes/

⁶ https://www.gov.br/trabalho-e-previdencia/pt-br/composicao/orgaos-especificos/secretaria-de-trabalho/inspecao/areas-de-atuacao/cadastro_de_empregadores.pdf

For the determination of what constitutes “deforestation and conversion of native vegetation”, the RCF adopts the definition of “fallow areas” established in the Brazilian Forest Code (article 3, item XXIV), according to which an area can remain fallow for a maximum period of 5 years. So, if a fallow area is left without productive use (e.g., agriculture, pasture land) for more than 5 years, it will be considered to be under natural regeneration and to have reached ‘native vegetation’ status. On the other hand, any further clearance of fallow areas within the 5 years period (i.e., prior to having reached ‘native vegetation status’), are not considered “deforestation or conversion of native vegetation” for the purposes of this criterion.

For the assessment of deforestation and conversion, the RCF adopts the concept of Minimal level (of deforestation or conversion) as defined by the Accountability Framework Initiative (Afi) ⁷.

3.3 Monitoring of other aspects, including legal compliance

Determination of environmental infringements, including embargoes, are done in two different and complementary ways:

- (i) search of databases indexed by the tax ID of the individual farmer or company (CPF or CNPJ, respectively); and
- (ii) geolocated search of infringements associated with the Programme Areas, using the SICAR database.

The RCF shall not provide loans to Rural Properties with embargoes or recent deforestation. However, an embargo or a deforestation event pre-2020 in a Rural Property that is not participating in the Programme shall not preclude other Rural Properties of the group to participate in the Programme (provided that they comply with the RCF criteria).

Depending on the context and gravity of the environmental infringements taking place outside the Programme Area, however, the RCF may refuse the participation of a Producer and all its Properties if it deems, at its discretion, that accepting said farm would contradict the objectives or values of the RCF.

The RCF shall not finance any Producer involved with slave labour in any of its Properties. For the verification of this criteria, the RCF refers to the list of employers accused of using slave labour published by the Ministry of Labor.

⁷ “Minor level (of deforestation or conversion): A small amount of deforestation or conversion that is negligible in the context of a given site because of its small area and because it does not significantly affect the conservation values of natural ecosystems or the services and values they provide to people. Minimal levels of deforestation or conversion at the site scale do not necessarily violate no-deforestation or no-conversion commitments. However, this provision does not sanction substantial conversion of forests or natural ecosystems to enlarge commodity production areas. To be considered consistent with no-deforestation or no-conversion commitments, minimal levels must generally meet the following conditions: Not exceed cumulative thresholds that are small both in absolute terms (e.g., no more than a few hectares) and relative to the area in question (e.g., no more than a small proportion of the site). Levels of conversion or deforestation should be assessed cumulatively over space and time; multiple small instances of conversion may lead to a producer being considered non-compliant with commitments. (...)” (“Accountability Framework, Terms and Definitions, June 2019, page 15).

3.4 Monitoring of crop performance and agronomic practices

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).

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

3.5 Process for dealing with infringements occurring during the RCF loan period

SIM uses its proprietary Due Diligence and Risk Assessment system mentioned above to continuously monitor national registries of environmental, social and criminal infringements related to producers (these may or may not have led to an embargo). This automated system cross references our list of participating farmers with the list of infringements listed in governmental datasets, and red-flags any farms which match.

When an RCF participant farmer group has been red-flagged in this way, BVRio's GIS and Remote Sensing Manager notifies SIM's Soy Platform Manager (SPM). The SPM then carries out a manual verification to check that the infringements listed on the government databases are associated with one of the farmer groups and specific CARs in the RCF programme, and checks whether an environmental infringement has been confirmed by our third party Independent Monitoring Firm, EarthDaily. If this is confirmed, the issue is escalated to one of SIM's Directors.

The Director will then initiate further checks and verifications on the details of the case which led to the infringement. This includes but is not limited to, additional checks with our service providers Traive and Earth daily, directly; discussion with the farmer or farm group which owns the farm involved; and third party confirmations with our environmental committee members, to ascertain if the issue has already been identified, investigated and/or rectified. An assessment of the materiality of the case is also conducted.

In the case where the infringement is confirmed to relate to a Rural Property involved in the RCF programme, the Director will then take action, in discussion with Traive and our investors to decide on what action to take in relation to the Producer involved (which may or may not necessarily result in exclusion of the programme and/or other punitive measures).

At the end of the season, when the farmer harvests and sells the soy to a trader, RCF funds are reimbursed and the farmer will be informed whether they continue to participate in the RCF programme and whether there will be a fine to be charged (if material deforestation is observed in a CAR financed by the RCF, during the loan period, there a fine of 15% of loan value will be charged to the producer). Depending on the nature of the case for the infringement, it is also likely that the Producer would not be eligible to participate in the RCF at any point in the future.

3.6 Investor Reporting Process

Where cases of infringements have been positively identified and confirmed, with subsequent checks as described above, SIM will notify Investors of the case within 10 working days, providing details of the case and our initial research confirming such. SIM will also detail the next steps which may include: additional checks with our service providers Traive and EarthDaily, directly; discussion with the farmer

or farm group which owns the farms involved; and third party confirmations with our environmental committee members such as TNC, to ascertain if the issue has already been identified and investigated.

3.6 Monitoring and Reporting cycle

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.

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

4. 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.