

# **BASELINE AND ADDITIONALITY**

## **BCR TOOL**

**BCR projects generate verified carbon credits (VCC)  
that represent emissions reductions, avoidance, or  
removals that are additional**

**BIOCARBON REGISTRY<sup>®</sup>**

Version 1.0 | February 17, 2023

BIOCARBON REGISTRY

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## 1 Introduction

BCR STANDARD define that the issuance of VCC shall be based on a realistic and credible baseline. In addition, the rule related with the VCC quantification includes the demonstration that the project holder applies a reasonable, justifiable, and conservative baseline estimation of emissions.

In consequence, GHG project holders shall establish a baseline or reference scenario, meaning the situation representing the GHG emissions that would occur in the absence of a GHG project, fulfilling with the methodology applicable to the GHG emission reductions or removal activities.

The baseline is the scenario for the GHG mitigation project that reasonably represents the anthropogenic emissions by sources of GHGs that would occur in the absence of the GHG mitigation project activity<sup>1</sup>. The baseline shall be described assuming a conservative “business as usual” emissions level.

The additionality is the effect of the GHG project activity to reduce anthropogenic GHG emissions below the level that would have occurred in the absence of the GHG project activity. Considerations of additionality and details on the demonstration of additionality are in BCR methodological documents.

On the other hand, GHG project holders shall demonstrate that emission reductions (or removals) do not correspond to emission reductions attributable to the implementation of legally required actions.

## 2 Objectives

The objectives of this tool are:

- (a) establish the requirements applicable to the GHG projects, to baseline identification;
- (b) provide the requirements to demonstrate additionality of the mitigation activities and results;
- (c) require the necessary conditions to ensure quality in the quantification of the GHG emission reductions;

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<sup>1</sup> Adapted from Glossary CDM terms. Version 10.0

- (d) support projects conformity within the rules and application procedures for the demonstrate additionality of the GHG projects.

### **3 Version**

This document constitutes Version 1.0. February 17, 2023.

This version of the document may be adjusted periodically. Intended users should ensure that they are using the updated version.

### **4 General terms**

The following general terms apply for this Tool:

- (a) "Shall" is used to indicate that the requirement shall be met;
- (b) "Should" is used to suggest that, among several possibilities, a course of action recommended as particularly appropriate;
- (c) "May" is used to indicate that it is permitted.

### **5 Scope**

This document provides the set of requirements necessary for the baseline identification and demonstration of additionality of GHG projects, ensuring that they comply with the conditions established in the BCR STANDARD.

In this sense, additionality signifies that the verified carbon credits represent GHG emissions reductions or carbon sequestration or removals that exceed any GHG reduction or removals: (a) required by law, regulation, or legally binding mandate, and (b) that exceed any GHG reductions or removals that would then occur in a conservative manner in the absence of the project activities.

The scope of this tool is limited to:

- (a) GHG projects using a methodology developed or accepted by BIOCARBON REGISTRY, applicable to GHG emissions reductions or GHG emissions removals;
- (b) GHG projects using a methodology developed or accepted by BIOCARBON REGISTRY, applicable to activities in the AFOLU, energy, transportation, and waste handling and disposal sectors.

This tool presents the requirements for the baseline identification and demonstration of additionality of projects that aim to reduce GHG emissions and/or increase removals, in the context of the BCR STANDARD.

This tool includes only additional or also referred information. The project holder shall apply the rules and protocols that constitute the methodologies<sup>2</sup> for the quantification of GHG emission reductions and removals, defined by sector and/or type of project (See section 8 of BCR STANDARD).

## **6 Baseline or reference scenario**

GHG project holders shall establish a baseline or reference scenario, meaning the situation representing the GHG emissions that would occur in the absence of a GHG project, and they comply with the methodology applicable to the GHG emission reductions or removal activities.

Definition of the reference scenario shall follow the provisions contained in the BIOCARBON REGISTRY methodological documents and the other methodologies applicable to projects, in their most recent version and:

- (a) transparently regarding assumptions, methods, parameters, data sources, and factors;
- (b) considering uncertainty and using prudential assumptions;
- (c) specifically, for each GHG project activity;
- (d) considering relevant national as also when applicable to sectoral policies and circumstances;
- (e) maintaining consistency with the emission factors, activity data, projection variables of GHG emissions, and the other parameters used for the construction of the reference scenario;
- (f) implementing procedures to ensure data quality under ISO 14064-2 and the requirements of the selected methodology;
- (g) in such a way that no GHG reductions or removals can obtain, due to decreases in an activity outside the project business;

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<sup>2</sup> Methodological documents or guidance

- (h) covering emissions and removals of all gases, defined in the applied methodologies, included in the project boundary under consideration.

## **7 Additionality**

The project holders should clearly demonstrate that the project consider procedures to demonstrate additionality. The criteria for the additionality demonstration are publicly disclosed and conservative. BCR STANDARD does not include activities that are automatically additional. That mean, in BCR STANDARD are not considered “positive list” of eligible project types.

The basis, data, assumptions, and information related for demonstrate additionality and baseline setting shall be assessed by an accredited and independent third-party verification entity (Conformity Assessment Body) and reviewed by the technical committee of BioCarbon Registry, including the criterion that requires procedures for ensuring legal additionality.

BIOCARBON REGISTRY requires the application of the CDM Tool, which provide a reasonable assurance that the emissions reductions would not have occurred in the absence of the project activities. For AFOLU projects, BCR STANDARD provide an adapted application of the Tool in the methodological documents. In consequence, for the activities for which BIOCARBON REGISTRY has prepared methodological documents, the description in these documents shall be applied. For projects in the energy, transport and waste sectors, the use of the Clean Development Mechanism Tool is required. Methodological tool.

## **8 Identification of the baseline scenario and additionality for AFOLU projects**

### **8.1 Baseline scenario**

The Project holders shall identify the baseline scenario to demonstrate that the Project is additional.

Under the UNFCCC, when selecting the Methodology to determine the baseline scenario of a project in the AFOLU sector, the project holder shall select the most appropriate among the criteria listed below, justifying this choice's convenience.

- (a) Existing or historical changes, as appropriate, in carbon stocks at project boundaries;

- (b) Changes in carbon stocks, within the project boundary, due to land use that represents an attractive course of action considering barriers to investment;
- (c) Changes in carbon stocks within the project boundaries, identifying the most likely land use at the beginning of the Project.

For this methodology's application, it is recommended to use what is stated in literal (c) above. However, the project's holder may select (a) or (b) approaches if he or she presents appropriate explanation and justification.

The holder of the project shall reliably demonstrate that all the assumptions, justifications, and documentation considered are adequate to identify the baseline scenario.

The project holder shall identify the baseline scenario through the following steps<sup>3</sup>:

**STEP 0. Project start date**

The start date of GHG projects is when effective GHG emission reductions begin.

The project holder shall determine the project start date, describe that choice, and present evidence that proves its date. That evidence shall demonstrate that the start date is defined within the five (5) years before project validation starts.

**STEP 1. Identification of alternative land-use scenarios**

This step consists of identifying the most probable land-use scenarios, which could be the baseline scenario, through the following sub-steps:

*Sub-step 1a. Identification of probable land use alternatives in the project areas*

Identify realistic and credible land use alternatives in the project areas in the absence of the proposed project activity. The alternatives shall be feasible considering the relevant national or sectoral circumstances and policies, considering historical land uses in the Project's area of influence, economic practices, and economic tendencies in the region. These alternatives shall include at least the following activities:

- (a) Continuation of previous land use (prior to Project);
- (b) Forestry or palm crops.

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<sup>3</sup> Adapted of "Combined tool to identify the baseline scenario and demonstrate additionality" (Report EB35, Annex 19).

In this case, the project holders shall demonstrate that the Project increases the rate of establishing crops due to the direct intervention of the project activities<sup>4</sup>.

- (c) Other plausible and credible land-use alternatives for location, size, funding, experience requirements, among others, may include alternatives that represent common land-use practices in the region where the Project is located.

Result of sub-step 1a. List of possible land-use alternatives can occur in the project area in the absence of the GHG mitigation sector's activities.

*Sub-step 1b. Consistency of land use alternatives with applicable laws and regulations*

National and sectoral policies related to natural resources and activities in the AFOLU sector provide applicable laws and regulations. The project holders shall demonstrate all land-use alternatives identified in sub-step 1a comply with all applicable statutory and mandatory regulatory requirements. If some do not, the holder shall demonstrate that, based on a careful analysis of current practice in the region where the law is mandatory, or regulation applies, non-compliance with those requirements is widespread, that is, prevails in at least 30% of the area of the smallest administrative unit that encompasses the project area.

Remove from the land-use scenarios identified in sub-step 1a any land use alternatives that do not comply with applicable mandatory laws and regulations unless you can demonstrate that such alternatives result from systematic failure to comply with the mandatory laws and regulations.

Result of sub-step 1b. List possible land use alternatives that comply with the legislation and mandatory norms and regulations, considering their compliance in the region or country, for national or sectoral policies.

If the list resulting from sub-step 1b is empty or contains only one land-use scenario, the Project is not additional.

## **8.2 Additionality analysis**

Once you have obtained a list of likely land-use alternatives, go to Step 2 (Investment Analysis) or Step 3 (Barrier Analysis), as at least one of these two steps needs to be done to demonstrate the additionality of the Project.

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<sup>4</sup> If the proposed project activity does not lead to an increase in this level, the project is not additional.

## ***STEP 2. Investment analysis***

This step serves the project holder to determine the investment analysis of the possible land-use alternatives identified in the sub-step 1b.

The holder shall determine whether the project activity, without the revenues derived from Verified Carbon Credits (VCC) sale, is economically or finance less attractive than other alternatives. The investment analysis may be carried out like an independent additionality analysis or ensemble with the barrier analysis (Step 3). To perform investment analysis, use the following sub-steps:

### ***Sub-step 2a. Determine the appropriate analysis method***

Determine whether to apply simple cost analysis, investment comparison analysis, or benchmark analysis (Sub-step 2b).

If the project activity and the alternatives identified in Step 1 generate no financial or economic benefits other than carbon credits sale-related income, apply the simple cost analysis (Option I). Otherwise, use the investment comparison analysis (Option II) or the benchmark analysis (Option III). Please note those options I, II, and III are mutually exclusive. Therefore, only one of them shall apply.

### ***Sub-step 2b. – Option I. Apply simple cost analysis***

Document the costs associated with the project activities and show that the Project does not produce financial benefits other than CCV sale income.

If the conclusion is that the Project does not produce any financial benefit, go to Step 4 (Impact of project registration).

### ***Sub-step 2b. – Option II. Investment comparison analysis***

Identify the financial indicator most suitable for the project type and decision-making contexts, such as IRR, NPV, payback period, or cost-benefit ratio.

### ***Sub-step 2b – Option III. Benchmark analysis***

Identify the financial indicator most suitable for the project type and decision context, such as IRR, NPV, payback period, cost-benefit ratio, or other. For example, the required return rate (RRR) is a suitable indicator for agriculture or forestry investments. Another example is the bank deposit interest rate corrected by the Project's inherent risk or opportunity costs of land, like any expected income from land speculation.

Identify the relevant benchmark value, such as the required rate of return (RRR) on equity. The benchmark represents standard returns in the market, considering the specific risk of the project type, but not linked to the subjective profitability expectation or risk profile of a particular project developer. Benchmarks can be derived from:

- Government bond rates, increased by a suitable risk premium to reflect the private investment or the project type, as substantiated by an independent (financial) expert;
- Estimates of the cost of financing and required return on capital (e.g., commercial lending rates and guarantees required for the country and the type of project activity concerned), based on banker views and private equity investors or funds' required return on comparable projects;
- A company internal benchmark that means a weighted average capital cost of the company is only one potential project developer. E.g., a single entity, physical person, or a company, who is also the project developer, owns or controls the proposed project land. The project developers shall demonstrate that this benchmark has been consistently used in the past, i.e., that project activities under similar conditions developed by the same company used the same benchmark.
- Beta rates of forestry or agricultural industry adjusted with the EMBI (Emerging Markets Bonds Index) of the country in which the Project is developed.

*Sub-step 2c. Calculation and comparison of financial indicators (only applicable to options II and III)*

Calculate the suitable financial indicator for the project activity, without the financial benefits from the sale of VCC and, in the case of Option II above, for the other alternatives. Include all relevant costs, for example, investment cost, operations and maintenance costs, and all revenues, excluding VCC revenues but including subsidies or fiscal incentives where applicable. In the case of public investors and as appropriate, also include non-market costs and benefits.

Present the investment analysis transparently and provide all the relevant assumptions. Present also the critical economic parameters and assumptions, such as capital costs, lifetimes, discount rate, or capital cost. Justify assumptions in a manner that the VVB can validate them. In calculating the financial indicator, the Project's risks can be included through the cash flow pattern, subject to project-specific expectations and assumptions, e.g., project holders may use insurance premiums to calculate and reflect specific risk equivalents.

Assumptions and input data for the investment analysis shall not differ across the project activity and its alternatives unless differences can be well substantiated.

Present a precise comparison of financial metric for the Project, without the financial benefits from VCC.

**Option II** (investment comparison analysis): if one of the other alternatives has the best indicator (for example, a higher IRR), the Project cannot be considered financially attractive.

**Option III** (benchmark analysis): if the project activity has a less favorable indicator, for example, a lower IRR than the reference, then the Project cannot be considered financially attractive.

If the investment analysis concludes that the Project is not financially attractive without the financial benefits derived from Verified Carbon Credits' sale, proceed to sub-step 2d (Sensitivity Analysis).

#### *Sub-step 2d. Sensitivity analysis*

Include a sensitivity analysis to assess whether the initial conclusion regarding the baseline scenario's financial attractiveness is robust to reasonable variations in the critical assumptions. The investment analysis only provides a valid argument in identifying the baseline scenario and demonstrating additionality if it consistently supports (for a realistic range of assumptions) the initial conclusion that the Project, without the financial benefits from the sale of VCC, is financially attractive.

If, after sensitivity analysis, the Project is unlikely to produce an economic benefit (Option I) or be financially attractive (Option II and Option III), then proceed directly to Step 4 (Impact of project registration).

If, after the sensitivity analysis, the Project is likely to produce economic benefits (Option I) or be financially attractive (Option II and Option III), then the Project cannot be considered additional using financial analysis. Optionally, continue with Step 3 (Barrier Analysis) to demonstrate that the proposed project activities face barriers preventing other probable land use alternatives.

### **STEP 3. Barrier analysis**

The project holder may complete a barrier analysis as a separate additionality analysis or an investment analysis extension.

If this step is used, determine if the GHG project faces barriers that:

- (a) prevents or limits the implementation of this kind of GHG project; and,
- (b) do not prevent the implementation of at least one of the possible land-use alternatives.

Apply the following sub-steps:

*Sub-step 3a. Identify the barriers that would prevent the project implementation*

Identify real and credible barriers that prevent the Project's realization if it does not contemplate participation in the carbon market. The barriers should not be specific for the project participants but should apply to the project activity. Such barriers may include, among others:

Investment barriers, *inter alia*:

- Debt funding is not available for this type of Project;
- No private capital is available due to real or perceived risks associated with national or foreign direct investment in the country where the Project is to be implemented;
- Lack of access to credit;

Institutional barriers, *inter alia*:

- Risk related to changes in government policies or laws;
- Lack of enforcement of land-use-related legislation.

Technological barriers, *inter alia*:

- Lack of access to necessary materials, for example, planting materials;
- Lack of infrastructure for implementation of the technology;

Barriers related to local tradition, *inter alia*:

- Traditional knowledge or lack thereof, laws and customs, market conditions and practices;
- Traditional equipment and technology;

Barriers due to local ecological conditions, *inter alia*:

- Degraded soil (e.g., water or wind erosion, salination);
- Catastrophic natural or human-induced events (e.g., landslides, fire);
- Unfavorable meteorological conditions (e.g., early or late frost, drought);
- Invasive species that prevent the regeneration of trees (e.g., grasses, weeds);

- Lack of favorable ecological conditions for the growth of the crop;
- Presence of pests and diseases in a generalized pathway on the project area;
- Biotic pressure such as grazing or fodder collection.

Barriers due to social conditions, *inter alia*:

- Demographic pressure on the land (e.g., increased demand on land due to population growth);
- Social conflict among interest groups in the region where the Project takes place;
- Widespread illegal practices (e.g., illegal grazing, illicit crops, non-timber product extraction, and tree felling);
- Lack of skilled or adequately trained labor force;
- Public order situation;
- Lack of organization of local communities.

Barriers relating to land tenure, ownership, inheritance, and property rights, *inter alia*:

- Communal land ownership with a hierarchy of rights for different stakeholders that limits the incentives to undertake the land-use scenarios;
- Lack of suitable land tenure legislation and regulation to support the security of tenure;
- Absence of clearly defined and regulated property rights concerning natural resource products and services;
- Formal and informal tenure systems, increasing risks of land holdings' fragmentation.

Barriers relating to market, transportation, and storage, *inter alia*:

- Unregulated and informal markets for timber, non-timber products and services prevent the transmission of sufficient information to project participants;
- The remoteness of land area and undeveloped roads and infrastructure incur large transportation expenditures, thus eroding the competitiveness and profitability of products from the land use;
- Possibilities of considerable price risk due to the fluctuations in the prices of products over the project period in the absence of efficient markets and insurance mechanisms;
- The absence of facilities to convert, store and add value to products resulting from land-use limits the possibilities to capture rents from the land-use scenario.

The barriers identified constitute sufficient evidence to demonstrate the project additionality, only if they prevent the project's possible holders from carrying out the Project if their participation in the carbon market is not expected.

The GHG project holder shall provide transparent and documented evidence and offer conservative interpretations of how it demonstrates the identified barriers' existence and significance. The type of evidence to be provided may include:

- (a) Relevant legislation, regulatory information or environmental/natural resource management norms, acts, or rules;
- (b) Relevant (sectoral) studies or surveys (e.g., market surveys, technology studies) undertaken by universities, research institutions, associations, companies, bilateral/multilateral institutions, among others;
- (c) Relevant statistical data from national or international statistics;
- (d) Documentation of relevant market data (e.g., market prices, tariffs, rules);
- (e) Written documentation from the company or institution developing or implementing the Project, such as minutes from board meetings, correspondence, feasibility studies, financial or budgetary information;
- (f) Documents prepared by the project developer, contractors, or project partners in the context of the proposed project activity or similar previous project implementations;
- (g) Independent experts' judgements' documentation. These experts come from agriculture, forestry, and other land-use related Government or Non-Government bodies or individual experts and educational institutions (e.g., universities, technical schools, training centers), professional associations, and others.

*Sub-step 3 b. Demonstrate that the identified barriers would not prevent the implementation of at least one of the identified land use alternatives (except the project activity):*

If the identified barriers also affect other identified alternatives, the project holder shall explain how the identified barriers do not prevent the implementation of at least one land-use alternatives. Any alternative prevented by barriers identified in Sub-step 3a is not a viable alternative and shall be removed from the analysis. At least one viable alternative, other than the Project, should be identified.

If one of Sub-steps 3a or 3b is not fulfilled, the Project cannot be considered additional through the barrier analysis.

If both Sub-steps (3a and 3b) are satisfied, proceed to Step 4 (Impact of project registration).

#### **STEP 4. Impact of Project registration**

Explain how certification and registration of the Project, and the associated benefits and incentives derived from this, would lessen the impact of economic and financial barriers (Step 2) or other identified barriers (Step 3) and enable the Project to proceed. The benefits and incentives can be of various types, such as:

- Net anthropogenic greenhouse gas removals by sinks;
- Revenue's financial benefit from the sale of VCCs, including its certainty and predefined timing;
- Attracting new stakeholders who are not exposed to the same barriers or can accept a lower IRR (e.g., because they have access to cheaper capital);
- Attracting new stakeholders that provide the ability to implement new technology or practice; and
- Reduction of inflation or exchange rate risk that affects expected revenues and is attractive to investors.

If Step 4 is met, the Project does not correspond to the baseline scenario and is therefore additional.

If Step 4 is not met, the Project is not additional.

## **9 Methodological documents**

The BIOCARBON REGISTRY projects shall comply with the methodologies developed or approved by BCR, as well as with the other relevant documents under the BCR Program, considering that the BCR Standard includes methodological documents for quantifying GHG emission reductions or removals, at the project level.

The methodological documents contain the applicability criteria and detailed steps for quantifying and monitoring results against design and implementation of GHG projects, by a given project type.

Although the methodological documents contain specific guidance for each type of GHG project, what describes these documents adheres to the general principles and requirements in this Standard.

All methodological documents developed by BIOCARBON REGISTRY and approved by the BIOCARBON REGISTRY Technical Committee are available on [www.biocarbonregistry.com](http://www.biocarbonregistry.com).

The current versions of the methodological documents are the following:

(a) METHODOLOGICAL DOCUMENT. AFOLU SECTOR. Quantification of GHG Emission Reductions. GHG REMOVAL ACTIVITIES. Version 3.0 April 13, 2022. In: <https://biocarbonregistry.com/methodologies/BCR-Methodological-Document-AFOLU-HME.pdf>

(b) METHODOLOGICAL DOCUMENT AFOLU SECTOR. Quantification of GHG Emission Reductions. REDD+ Projects. Version 3.1. September 15, 2022. In: <https://biocarbonregistry.com/methodologies/BCR0002 Methodological-document-REDD-projects.pdf>

Methodological Document AFOLU SECTOR. BCR0003 Quantification of GHG Emissions Reduction. Activities that prevent land use change and improve management practices for peatlands and other wetlands in high mountain ecosystems. Version 3.0. August 31, 2022. In: <https://biocarbonregistry.com/methodologies/BCR Methodological-Document-Continental-Wetlands.pdf>

(c) METHODOLOGICAL DOCUMENT SECTOR AFOLU. BCR0004. Quantification Emission Reduction and GHG removal. Activities that avoid land use change in Continental Wetlands. Version 2.0. June 23, 2022. In: <https://biocarbonregistry.com/methodologies/BCR-Methodological-Document-AFOLU-HME.pdf>

(d) Methodological Document AFOLU SECTOR. Quantification of GHG Emissions Reduction. Activities that prevent land use change in natural savannas. BCR0005. Version 1.0. October 21, 2022. In: <https://biocarbonregistry.com/methodologies/BCR0005 Methodological-document-savannas.pdf>

Project holders in the energy sector, transport, and waste, shall use methodologies approved by the Executive Board of the Clean Development Mechanism (CDM – UNFCCC). Specifically, the Tool for the demonstration and assessment of additionality (am-tool-01-v7.0.o.o.pdf)<sup>5</sup>, or that which modifies or updates it. Available in: <https://cdm.unfccc.int/methodologies/index.html>

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<sup>5</sup> Available in <https://cdm.unfccc.int/methodologies/PAMethodologies/tools/am-tool-01-v7.0.o.o.pdf>

*History of document*

**Type of document**

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