I. INTRODUCTION

This tool outlines the procedures and criteria for determining the appropriate baseline scenario and assessing additionality for Forest Carbon Offset (FCO) projects implemented under FCO Program.

The objective is to guide Project Proponents through a transparent, robust, and conservative process to identify the most plausible baseline scenario – the land use or activity that would occur in the absence of the proposed project. It also ensures that the project is not the result of common practice and would not be financially or institutionally viable without carbon credit revenue.

For clarification of terminology used in this document :

- Baseline Scenario refers to the most plausible land use or activity that would occur without the proposed FCO project. It serves as the counterfactual reference for assessing additionality and estimating emission reductions.
- Baseline Determination is the structured process used to identify and justify the baseline scenario. It involves evaluating alternative land use scenarios, assessing barriers, and conducting financial or cost analyses to ensure the selected scenario is realistic, evidence-based, and conservative.

This document integrates the concept of additionality alongside baseline determination. Additionality ensures that the proposed FCO project results in emission reductions or removals that are additional to any that would occur in the absence of the project activity. This alignment is essential to uphold the environmental integrity of the project.

This tool applies to all forest carbon project types and must be used during project design and validation stages. It complements other methodological components, including GHG quantification, leakage assessment, monitoring, and buffer contribution requirements.

To ensure consistency and credibility across all FCO methodologies, this tool guides Project Proponents through a structured sequence of steps : identifying alternative land use scenarios, evaluating implementation barriers, and conducting investment or cost analyses. Each step supports the selection of a baseline scenario that is realistic, evidence-based, and conservative, in line with program requirements and international best practices.

This tool must be used in conjunction with the relevant FCO Methodology to support transparent and defensible project design, validation, and crediting.

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1 Identification of Alternative Land Use ("ALU") Scenario

1.1 Purpose and Overview

Identifying Alternative Land Use (ALU) scenarios is the first and foundational step in determining the baseline scenario for an FCO project. It involves evaluating all realistic and credible land use options that could occur within the project boundary in the absence of the proposed project. This step ensures that the selected baseline scenario reflects a plausible business-as-usual (BAU) condition and provides a sound basis for assessing additionality and estimating emission reductions.

Project Proponents must identify ALU scenarios that are feasible and justifiable alternatives to the proposed project. These scenarios must meet the following criteria:

Table 1: Criteria for the Identification of ALU

Criteria	Description
Feasibility	• Scenarios must be feasible for the Project Proponents or similar developers. • Feasibility should consider national and/or sectoral policies, historical land uses, practices and economic trends).
Minimum ALUs	At minimum, the following scenarios must be considered : • **Continuation of Pre-Project Land Use**: No restoration, forestation or prevention activities. • **Proposed Project Activity Without FCO Registration**: Activities occur but are not registered under FCO project • **Proposed Project Activity Due to Legal Requirements or Extrapolated Practices**: • Activities occur due to legal obligations or observed practices in similar socio-economic and ecological contexts.

Evidentiary Support and Justification	• ALUs identification must be supported by credible evidence (e.g. land use records, field surveys, stakeholder feedback, and other reliable data sources)
	• Justification must show that the scenario :
	  • Exist currently
	  • Aligns with spatial planning information (if applicable).
	  • Complies with legal requirements.
	  • Economically feasible.

Legal Compliance	• ALU scenarios must comply with applicable laws and regulatory. • If non-compliant, they may still be valid if the proponent can demonstrate that the legal requirements are systematically unenforced and non-compliance is widespread.

Outcome of Step 1: A list of realistic and credible ALU scenarios that are either legally compliant or demonstrably subject to systematic non-enforcement in the region. Feasibility must be assessed based on relevant national and/or sectoral policies, historical land uses, existing practices, and economic trends.

2 Barrier Analysis

Barrier Analysis is a critical step in baseline determination. It identifies the obstacles that prevent the implementation of alternative land use (ALU) scenarios identified in Step 1. By evaluating these barriers, project proponents can eliminate infeasible scenarios and narrow down the realistic options for baseline selection.

This step also supports the demonstration of additionality—if an ALU scenario cannot proceed without the FCO project due to barriers, it reinforces that the project activity would not occur otherwise.

2.1 Identification of Barriers

Project Proponents must identify realistic and credible barriers that apply broadly to the ALU scenarios – not just to the specific project. These barriers may be financial, institutional, technological, social or ecological in nature, such as:

Table 2: List and Examples of Barriers

Barrier	Examples
Investment *(Refers to financial feasibility or access to funding—not profitability)*	• Similar activities rely on grants or non-commercial funding (e.g., international donors, government subsidies) • No private or public financing is available • Debt financing is unavailable Note : Note: In the context of Barrier Analysis, the term Investment refers to financial feasibility or the ability to access other financial resources. This is distinct from project-level investment metrics and should be interpreted as a constraint on the implementation of ALU scenarios due to limited financial access.
Institutional	• Evolving regulatory framework • Weak enforcement of land-use regulations
Technological	• Lack of access to suitable materials • Inadequate infrastructure for technology deployment
Local Tradition	• Traditional knowledge, customs and practices • Use of outdated equipment or methods
Prevailing Practice	• No similar activity concurrently operational in region

Barrier	Examples
Ecological Conditions	• **Degraded Soil** (e.g. erosion from wind or water, salination, or nutrient loss.) • **Catastrophic Events** (e.g. landslides, floods, wildfires). • **Invasive Species** (e.g. rapid growth of grasses or weeds that prevent other land uses) • **Biotic Pressure** (e.g. overgrazing by livestock, excessive collection of fodder or other plant materials.)
Social Conditions	• **Social Conflicts** e.g. land use conflicts • **Illegal Practices** e.g. unauthorised logging • **Lack of Skilled Labour** e.g. limited access to trained workers • **Weak Community Organisation** e.g. weak or absent local institutions to coordinate land use
Land Tenure, Ownership, Inheritance, and Property Rights	• **Unclear Property Rights**: No clear regulations on access to natural resources or products. • **Fragmented Land Holdings**: Land is divided among many owners, making coordinated management difficult. • **Market Risks**: Large fluctuations in product prices without adequate market or insurance support. • **Market Barriers**: Limited access to markets, high transport costs, and poor infrastructure.

Note : In the context of Barrier Analysis, investment refers to financial feasibility or the ability to access financial resources. This is distinct from project-level investment metrics (e.g., IRR or NPV), which are addressed in Step 3. Here, investment barriers are interpreted as constraints that prevent ALU scenarios from being implemented due to limited financial access.

2.2 Barrier Assessment for ALU Scenarios

This step involves reviewing each ALU scenario identified in Step 1 to determine whether it is prevented by one or more of the barriers outlined in Section 2.1. The assessment helps eliminate infeasible scenarios and supports the selection of a realistic baseline.

Table 3: Criteria for Barrier Assessment

Criteria	Description
Considerations	Assess the availability and accessibility of information, technology, and skilled labor within the region where the FCO project is located.

Criteria	Description
Previous Land Condition	• If the land within the project boundary was previously restored/forested, identify the enabling factors (e.g., incentives, regulations, funding) • Demonstrate that current legal, financial, ecological, or socio-economic conditions have changed, making similar activities unlikely without FCO registration
Evidentiary Support	• Provide clear and verifiable evidence to substantiate the existence and significance of the identified barriers. • Acceptable sources include : o Relevant laws, regulations, or resource management rules. o Studies or surveys by universities, research institutions, or international organizations. o Statistical data from national or international sources. o Market data (e.g., prices, tariffs, rules). o Documentation from similar projects or partners o Feasibility studies, meeting minutes, financial reports o Documents from contractors, project partners, or similar previous projects. o Expert judgments from recognised institutions related to the land-use (e.g., universities, government bodies, professional associations).

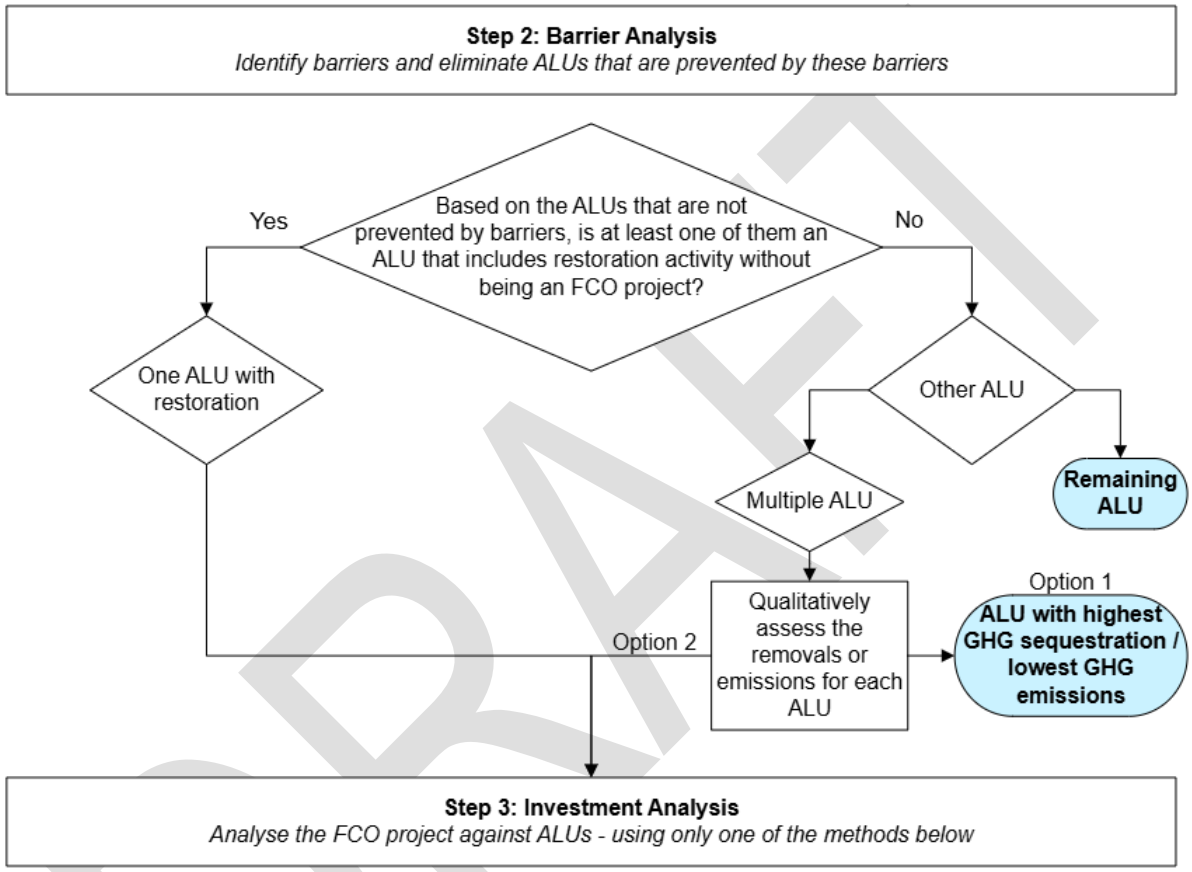
Outcome of Step 2.1 and 2.2: A refined list of ALU scenarios that are not prevented by identified barriers. These viable scenarios form the basis for determining the baseline scenario, subject to further financial analysis in Step 3.

Common Practice Analysis should be conducted alongside Barrier Analysis to assess whether the identified ALU scenarios are already widely implemented in the region. If a scenario is considered common practice, it may not qualify as additional. This analysis strengthens the demonstration of additionality by confirming that the proposed project activity is not business-as-usual.

2.3 Determination of Baseline Scenario

This step finalizes the outcome of the Barrier Analysis by identifying which ALU scenarios remain viable after excluding those prevented by barriers. These remaining scenarios are considered candidates for the baseline scenario.

Figure 1: Baseline Determination under Barrier Analysis



If only one ALU scenario remains viable, it is selected as the baseline scenario. If multiple scenarios are still feasible, project proponents must proceed to Step 3 (Investment Analysis) to evaluate their financial attractiveness and determine the most appropriate baseline.

Outcome of Step 2.3: A refined set of ALU scenarios that are not prevented by barriers. For some projects, this step may directly identify the baseline scenario. For others, further financial analysis is required to finalize the selection.

3 Investment Analysis

Investment Analysis supports baseline determination by evaluating the financial attractiveness of the remaining ALU scenarios. The scenario that is most economically or financially viable, excluding FCO-related income, is selected as the baseline scenario.

In this context, Investment Analysis refers to project-level financial metrics such as Internal Rate of Return (IRR), Net Present Value (NPV), or payback period. This is distinct from the financial feasibility discussed in Barrier Analysis, which focuses on access to funding rather than profitability.

Project Proponents must choose one of the following three approaches based on the nature of the project:

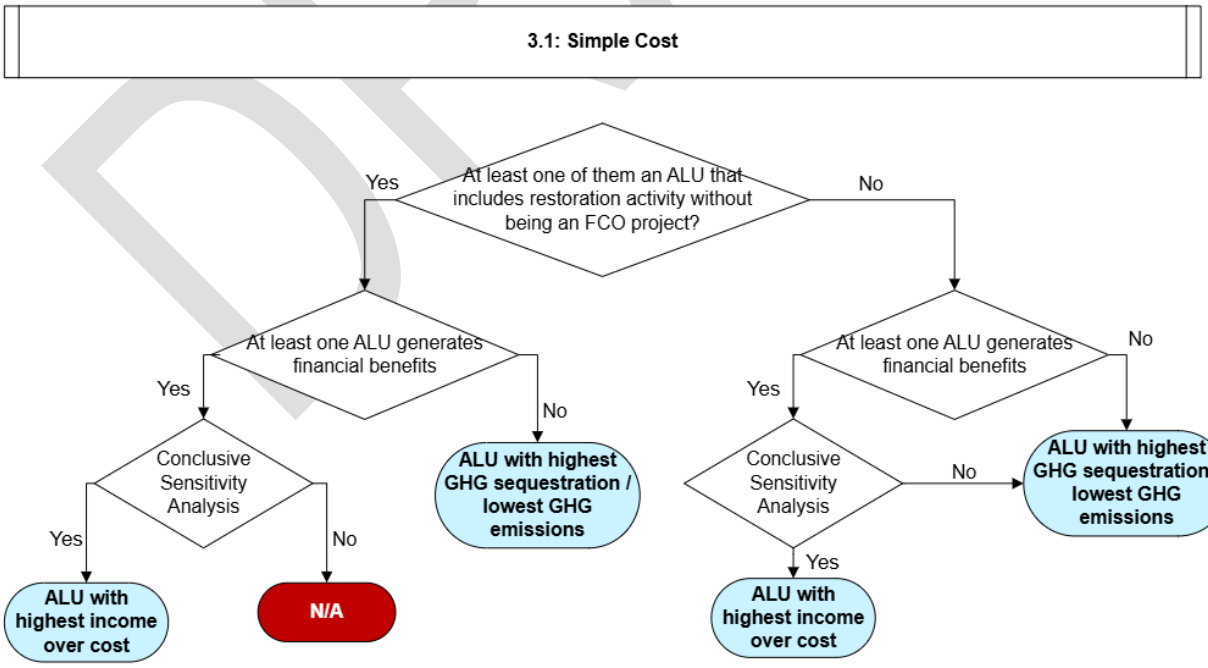
- **Simple Cost Analysis**: Use when the project does not generate any financial or economic benefits beyond FCO-related income.
- **Investment Comparison Analysis** or **Benchmark Analysis**: Use when the project generates additional financial or economic benefits.

A sensitivity analysis should be conducted, where applicable, to test whether the financial attractiveness of the baseline scenario remains valid under reasonable variations in key assumptions.

3.1 Simple Cost Analysis

Evaluate the costs and incomes of each ALU scenarios. Select the scenario with the lowest cost (excluding FCO-related income) as the baseline.

Figure 2: Baseline Determination under Simple Cost Analysis



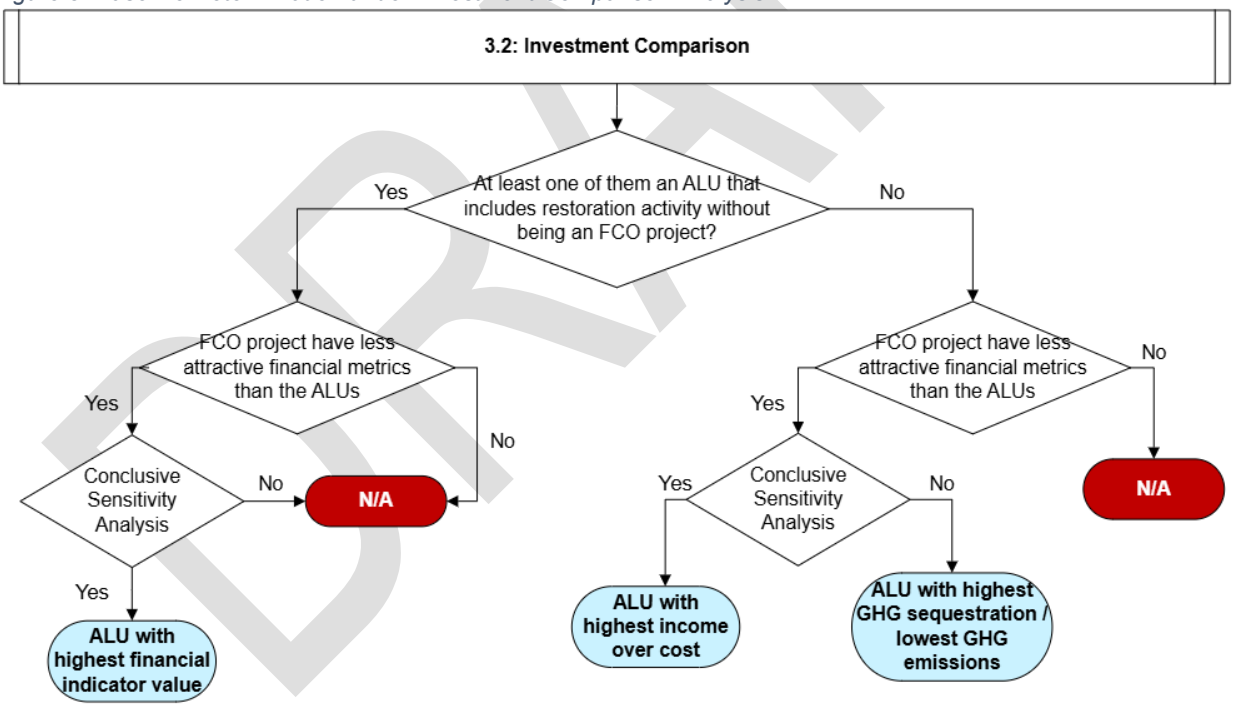
3.2 Investment Comparison Analysis

Compare financial indicators across the FCO project and ALU scenarios using consistent assumptions and input data (unless justified otherwise).

Table 4: Criteria for Investment Comparison Analysis

Criteria	Description
Financial Indicators	• Identify appropriate metrics (e.g. Project or equity IRR, NPV, payback period, cost-benefit ratio
Calculation of Suitable Financial Indicators	• Exclude any FCO-related income • Include relevant costs (e.g., investment cost, operations, maintenance), revenues (e.g., subsidies, fiscal incentives), and non-market costs and benefits (only for public investors). • Reflect project's risks in cash flow assumptions
Documentation	• Present assumptions transparently. • Clearly state economic parameters (e.g., capital costs, lifetimes, discount rate, cost of capital) and justify all inputs

Figure 3: Baseline Determination under Investment Comparison Analysis



3.3 Benchmark Analysis

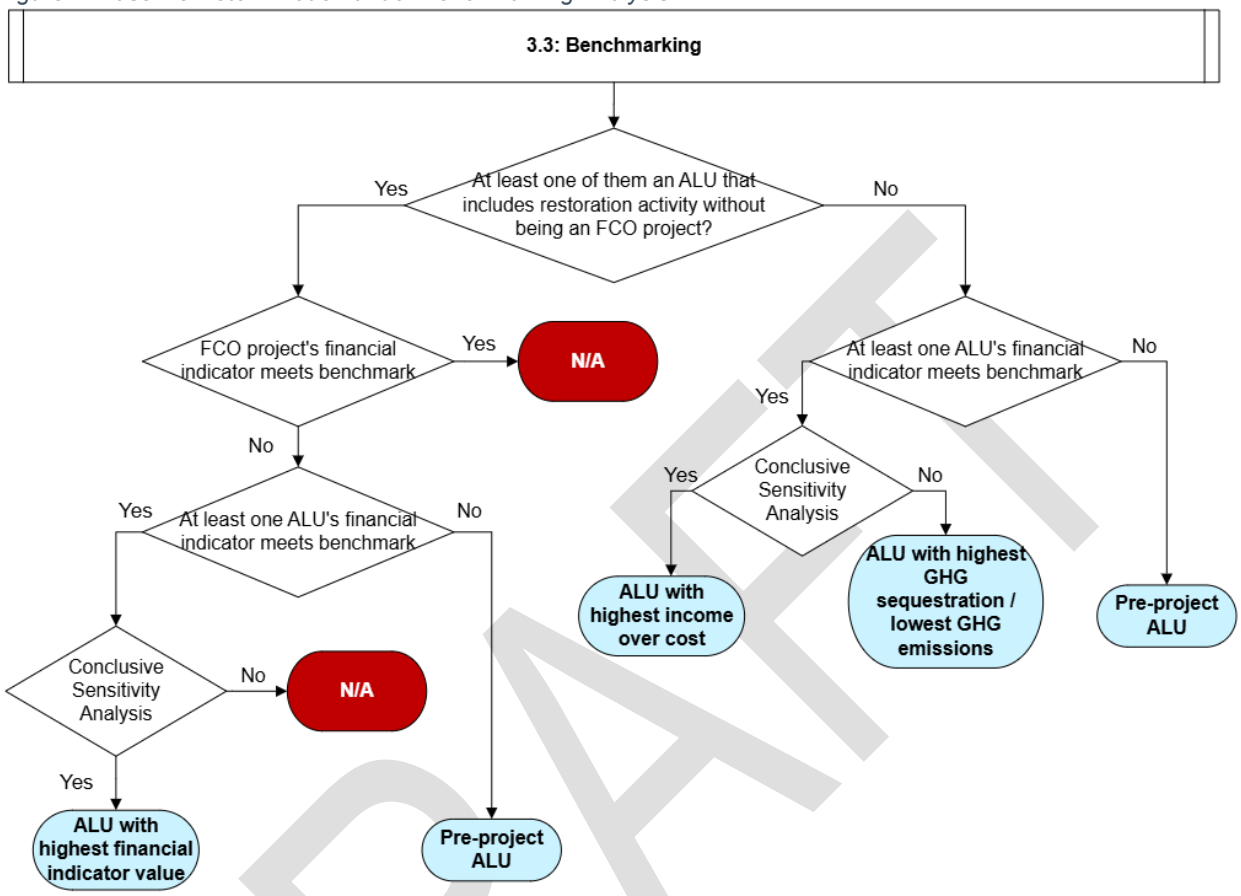
Compare project financial indicators against standard market benchmarks that reflect the risk profile of the project type.

Table 5: Criteria for Benchmark Analysis

Criteria	Description
Financial Indicators	• Identify suitable metrics such as project IRR, NPV, payback period, cost-benefit ratio, opportunity cost of land
Benchmark Value *Represent 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**: Adjusted by a risk premium to account for private investment risks or project-specific risks, as validated by an independent financial expert. • **Cost of Financing Estimates**: Calculated using commercial lending rates, guarantees, and required return on capital for the country and project type, based on views from bankers, equity investors, or funds investing in similar projects. • **Internal Company Benchmark** (weighted average capital cost of the company): Applicable if the project is developed by a single entity that has consistently used the same benchmark in past projects under similar conditions. This must be demonstrated with evidence.
Calculation of Suitable Financial Indicators	• Exclude any FCO-related income • Include all relevant costs (e.g., investment cost, operations, maintenance) and revenues (e.g., subsidies, fiscal incentives)Reflect risks in cash flow assumptions
Documentation	• Present the investment analysis transparently, with clear and reproducible assumptions. • Clearly present critical economic parameters (e.g., capital costs, lifetimes, discount rate, cost of capital). • Justify and/or cite assumptions in a manner that can be validated

Evaluate these scenarios based on their financial outcomes following the decision pathway below.

Figure 4: Baseline Determination under Benchmarking Analysis



Outcome of Step 3: The most economically or financially attractive ALU scenario—based on the selected analysis approach and sensitivity testing—is identified as the baseline scenario.

Investment Analysis also supports the demonstration of additionality. If the FCO project is not the most financially attractive option, it indicates that the project would not proceed without carbon finance, reinforcing its additionality.

In parallel, Common Practice Analysis should be used to assess whether similar projects are already widely implemented without external support. If the proposed project differs significantly from common practice, it further strengthens the case for additionality.

4 Principles for Conservativeness

To ensure environmental integrity and credibility of the FCO project, project proponents are encouraged to apply the principle of conservativeness throughout the baseline and additionality assessment process.

Conservativeness refers to the practice of using assumptions, values, and methodologies that do not overestimate the benefits or underestimate the risks of the project.

Guidelines for applying conservativeness include:

- Use conservative default values when project-specific data is uncertain or unavailable.
- Apply conservative assumptions in financial and barrier analyses to avoid overstatement of additionality.
- When multiple methodological options are available, select the one that results in lower estimated emission reductions or removals.
- Clearly document the rationale for each conservative choice made.

The definition and application of conservativeness should be determined by the project proponent, based on the specific context and data availability of the project. This approach ensures that the claimed climate benefits are credible and robust under scrutiny.

5 Reference

UNFCCC. (2007). *A/R Methodological Tool: Tool for the Demonstration and Assessment of Additionality in A/R CDM Project Activities*. CDM. Retrieved from CDM website: https://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-01-v2.pdf