



TERO.001 - REDD+ VERSION 2.1 METHODOLOGY, AFOLU, REDD+

TERO CARBON AVALIAÇÕES E CERTIFICAÇÕES S.A.





IDENTIFICATION

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SOLUTION	Nature-Based Solutions (NBS)	
SECTOR	Agriculture, Forestry and Other Land Use (AFOLU)	
ТҮРЕ	Reducing Emissions from Deforestation and Forest Degradation, including the conservation and enhancement of carbon stocks (REDD+)	
ASSET GENERATED	Verified Carbon Unit (VCU) - Carbon Credit Asset	
PROJECT ACTIVITIES	 Avoided planned deforestation (APD); and Degraded area restoration (DAR). 	
GHG MITIGATION	Reduction/Avoidance; andRemoval.	





LIST OF ACRONYMS

AFOLU	Agriculture, Forestry and Other Land Use	
AGB	Above-Ground Biomass	
APD	Avoided Planned Deforestation	
BAU	Business as usual	
BGB	Below-Ground Biomass	
ВР	Buffer Pool	
СІМ	Inter-ministerial Committee on Climate Change (of the SBCE)	
CONAREDD+	National Commission for REDD+ (or successor/designated body for the purposes of Art. 43 of Law No. 15,042/2024)	
CORSIA	Carbon Offsetting and Reduction Scheme for International Aviation	
CRVE	Verified Emission Reduction or Removal Certificate (from the SBCE)	
cs	Carbon Stock	
DAR	Degraded Area Restoration	
DBH	Diameter at Breast Height	
DDW	Down Dead Wood	
ER	External Reviewer	
EUC	Emissions Unit Criteria	
FI	Fractional Issuance	
GHG	Greenhouse Gas	
НСА	Host Country Attestation	
ICAO	International Civil Aviation Organization	
ICROA	International Carbon Reduction and Offsetting Alliance	
IPCC	Intergovernmental Panel on Climate Change	
ITMOs	Internationally Transferable Mitigation Outcomes	
KPI	Key Performance Indicator	



LB	Leakage Belt	
LRA	Legal Reserve Area	
MRV	Measurement, Reporting, and Verification	
MUA	Multiple-Use Area	
NBS	Nature-based Solutions	
NDC	Nationally Determined Contribution	
NPR	Non-Permanence Risk	
PA	Project Area	
РВ	Property Boundary	
PDD	Project Design Document	
PPA	Permanent Preservation Area	
QA/QC	Quality Assurance /Quality Control	
REDD+	Reducing Emissions from Deforestation and Forest Degradation, including the conservation and enhancement of carbon stocks	
RR	Reference Region	
SBCE	Brazilian Greenhouse Gas Emissions Trading System (Sistema Brasileiro de Comércio de Emissões de Gases de Efeito Estufa	
SDG	Sustainable Development Goals	
soc	Soil Organic Carbon	
TAC	Term of Conduct Adjustment (Termo de Ajustamento de Conduta)	
UNFCCC	United Nations Framework Convention on Climate Change	
VCU	Verified Carbon Unit - Carbon Credit Asset	
VVB	Validation/Verification Body	





LIST OF PROGRAMS

ID	NAME	
DC.CER.001	Certification Program	
DC.MET.001	Methodologies Program	
DC.REG.001	Asset Program	



LIST OF SUPPORTING DOCUMENTS

ID	NAME	SOLUTION
DC.COM.001	Definitions	All
DC.COM.003	3 Stakeholder Consultation Procedure	
DC.GOV.001	Tero Carbon Governance Structure	All
DC.GOV.004	Grievance Management Procedure	All
DC.CER.002	Land Tenure Compliance Manual and Tero Carbon Seals for NBS Projects	NBS
DC.CER.003	Technical Guidelines for Carbon Quantification in AFOLU Projects	NBS
DC.CER.004	Procedure for Communication of Non-Participation in Jurisdictional REDD+ Scheme and Request for Exclusion	NBS
FR.CER.001	Project Scale Analysis Tool	All
FR.CER.002	Social and Environmental Safeguards Analysis Tool	All
FR.CER.003	Project Additionality Demonstration Tool	All
FR.CER.004	FR.CER.004 Non-Permanence Risk Analysis and Guarantee Mechanism Tool	
FR.CER.005	Leakage Assessment and Management Tool for NBS VCU Projects	NBS
FR.CER.007	ER.007 Acceptance Criteria Analysis Tool for Project Verification	
TP.CER.004	[Template] Zero Deforestation Declaration	NBS
TP.CER.005	CER.005 [Template] Leakage Risk Assessment and Negligibility Justification Form for Small-Scale NBS VCU Projects	
TP.CER.006	[Template] Communication of Non-Participation in Jurisdictional REDD+ Scheme and Request for Exclusion	NBS



- 1	Establishes the Brazilian Greenhouse Gas Emissions Trading System (SBCE)	All
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1. INTRODUCTION

This methodology establishes guidelines and requirements for the measurement, reporting, and verification (MRV) of Greenhouse Gas (GHG) emission reductions and removals in Nature-Based Solutions (NBS) projects in the AFOLU (Agriculture, Forestry, and Other Land Use) sector, with a focus on forests.

The methodology was developed in line with the principles of integrity and best practices recognized internationally, including those established by the Intergovernmental Panel on Climate Change (IPCC) and aiming for alignment with the criteria of high-quality accreditation programs, such as the International Carbon Reduction and Offsetting Alliance (ICROA) Code of Best Practice and the Emissions Unit Criteria (EUCs) of the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA).

Additionally, this methodology was prepared considering Law No. 15,042, of December 11, 2024, which establishes the Brazilian Greenhouse Gas Emissions Trading System (SBCE). The aim is thus to provide a technical framework that is not only robust for the voluntary market but can also facilitate the eventual accreditation of this methodology and the recognition of the Verified Emission Reduction or Removal Certificates (CRVEs) generated by projects that use it within the scope of the SBCE, as per Art. 25 and Art. 44 of the said Law.

Projects submitted under this methodology cover REDD+ (Reducing Emissions from Deforestation and Forest Degradation, including the conservation and enhancement of carbon stocks) initiatives. These initiatives can occur through Avoided Planned Deforestation (APD) and Degraded Area Restoration (DAR). For APD-type projects, it is assumed that forgoing the legal prerogative to carry out alternative land use, through the suppression of vegetation and replacement by any other use outside the limits of the property's Legal Reserve Areas (LRA) and Permanent Preservation Areas (PPA), constitutes the project's baseline.

The objective of this methodology is to guide the development of projects eligible for the generation of Verified Carbon Units (VCUs), classified as Reductions/Avoidances or Removals of emissions. The document provides technical criteria for calculating the climate impact of projects, ensuring integrity, additionality, permanence, and compliance with the best applicable international practices for the Carbon Market.

This methodology is the intellectual property of Hdom Engenharia e Projetos Ambientais Ltda and was developed and registered under the Tero Carbon "Methodologies Program (DC.MET.001)". It **MUST** be used in conjunction with the Tero Programs ("Certification Program (DC.CER.001)", "Methodologies Program (DC.MET.001)", "Asset Program (DC.REG.001)") and their complementary



documents (Tools, Policies, Manuals, Procedures, and Templates). These documents provide mandatory and detailed requirements for crucial aspects such as additionality (FR.CER.003), land tenure compliance (DC.CER.002), non-permanence risk analysis and guarantee mechanisms (FR.CER.004), leakage assessment (FR.CER.005), application of social and environmental safeguards (FR.CER.002), stakeholder consultation (DC.COM.003), and the validation and verification processes. This document and its application operate under the principles of the "Tero Carbon Governance Structure (DC.GOV.001)", aiming to ensure the environmental integrity and credibility of the generated VCUs.

2. SCOPE, ACCEPTANCE CRITERIA, AND ACTIVITIES

2.1. Scope

This methodology applies to REDD+ (Reducing Emissions from Deforestation and Forest Degradation, including the conservation and enhancement of carbon stocks) projects, generating VCUs (carbon credits).

2.2. Acceptance Criteria

This methodology applies to projects that meet the following acceptance criteria:

- i. **Land Tenure Compliance:** The project must be implemented on rural properties with proven land tenure regularity, according to the "Land Tenure Compliance Manual and Tero Carbon Seals for NBS Projects (DC.CER.002)", and may be privately or publicly owned.
- ii. **Territorial Configuration:** The area can be contiguous or composed of multiple parcels, as long as it forms an ecological mosaic that ensures the connectivity and integrity of the biome.
- iii. **Additional Social and Environmental Impacts:** In addition to direct carbon removal, the project must demonstrate, through clear indicators, the occurrence of at least two additional social and environmental benefits.
- iv. **Compliance with Social and Environmental Safeguards:** The project must fully comply with the social and environmental safeguards established by the "Social and Environmental Safeguards Analysis Tool (FR.CER.002)".
- v. Clear Identification of Key Roles: The project must explicitly present the identification of the main parties responsible for its implementation. It is mandatory to indicate, at a minimum, a Lead Proponent, a Developer, a Generator, and an Implementer. Each role must be clearly defined, detailing the respective responsibilities and contributions to the project's execution.



- vi. **Project Voluntariness:** The activities cannot result from legal requirements, court orders, or formal commitments, such as TACs or mandatory environmental compensations.
- vii. **(APD, only) Project Area Location and Additionality:** The Project Area (PA) for Avoided Planned Deforestation (APD) activities must be located in the Multiple-Use Area (MUA) of the property, i.e., outside of Permanent Preservation Areas (PPAs) and Legal Reserve Areas (LRAs), since the baseline for APD is based on the legal prerogative of converting the MUA. The additionality of non-conversion must be demonstrated according to FR.CER.003.
- viii. **(DAR, only) Area Eligibility and Land Use History:** The area designated for Degraded Area Restoration (DAR) must prove, through verifiable remote sensing analysis and other robust evidence as per the "Certification Program (DC.CER.001)", a minimum period of five years between the conversion—characterized by the suppression of original vegetation—and the start of restoration activities, ensuring adequate ecological conditions for the establishment of new vegetation cover. According to Art. 46 of Law No. 15,042/2024, activities for the recomposition, maintenance, and conservation of PPAs and Legal Reserves are eligible for the generation of carbon credits (CRVEs), provided they meet additionality criteria and are not pre-existing obligations.
 - ix. Compliance with SBCE Jurisdictional Requirements: For REDD+ projects developed in private areas or under concession/usufruct of third parties in Brazil, the Developer must demonstrate compliance with the "Procedure for Communication of Non-Participation in Jurisdictional REDD+ Scheme and Request for Exclusion (DC.CER.004)", presenting in the PDD the formal communication of exclusion of the area from the accounting of state jurisdictional REDD+ programs, duly submitted to CONAREDD+ (or designated body), as provided for in Art. 43 of Law No. 15,042/2024. This criterion is essential to ensure the uniqueness of the credits and avoid double counting in the context of the SBCE.

2.3. Activities

This methodology provides for the generation of carbon credits (reduction/avoidance and removal) through the following activities:

I. Avoided planned deforestation (APD): This activity consists of forgoing the right to deforest the multiple-use area (MUA), ensuring that the forest remains standing and that carbon stocks are preserved. This guarantees the maintenance of forest cover, preventing the release of carbon into the atmosphere, without the need to establish a sustainable forest management plan.



II. **Degraded area restoration (DAR):** This involves restoring forest cover in areas previously occupied by native vegetation that was converted to other uses, such as agriculture or pasture. To ensure eligibility, the methodology establishes a minimum period from the vegetation conversion to the start of the project. Reforestation contributes to GHG removal, the recovery of ecological functionality, and the regeneration of natural resources.

3. BASELINE

3.1. Selection of Project Activity Implementation Areas

The implementation area for the project activities, the Project Area (PA), must be geographically identified (**Figure 1**), along with the main geographical polygons of the rural property: Hydrography, Property Boundary (PB), Permanent Protection Area (PPA); Multiple-Use Area (MUA), and Legal Reserve Area (LRA).



Figure 1. Map identifying the main geographical polygons of the project: Hydrography, Property Boundary (PB), Project Area (PA), Permanent Protection Area (PPA); Multiple-Use Area (MUA), and Legal Reserve Area (LRA).



3.2. Selection of Carbon Pools Used in Carbon Stock Accounting

The project must indicate which carbon pools were used in the accounting of carbon stocks. **Table 1** presents the types of pools accepted by this methodology.

Table 1. Types of carbon pools accepted by the methodology.

POOL	ACRONYM	MANDATORY
Above-Ground Biomass	AGB	Yes
Below-Ground Biomass	BGB	Yes
Litter	Litter	No
Down Dead Wood	DDW	Optional
Soil Organic Carbon	SOC	Optional

3.2.1. Carbon Pools for the APD Activity

The greenhouse gas (GHG) emissions considered in the APD activity result from the avoidance of vegetation or forest suppression and are detailed in **Table 2**.

Table 2. Emission sources and avoided GHGs considered from vegetation/forest suppression.

GAS	USED	JUSTIFICATION	
CO ₂	Yes	The quantification of emissions in CO_2 is conservative, considering that once cut and felled, the entire carbon stock stored in the tree or plant is immediately emitted in the form of CO_2 e.	
CH ₄	No	Conservatively excluded, due to the lack of specific studies	
N_2O proving the decomposition rate of dead emission flux of these gases.		proving the decomposition rate of dead matter and the emission flux of these gases.	

3.2.2. Carbon Pools for the DAR Activity

The emission sources and greenhouse gases (GHG) considered in the accounting for degraded area restoration are described in **Table 3**.



Table 3. Emission sources and GHGs considered in the accounting of the degraded area restoration activity.

STAGE	SOURCE	GAS	USED	JUSTIFICATION
Pre-project (BAU)	Emissions from the use of nitrogen fertilizers	CO ₂	No	Conservatively excluded due to limitations of MRV tools.
		CH ₄	No	
		N ₂ O	No	
	Fossil fuel	CO ₂	No	
	combustion	CH ₄	No	
		N ₂ O	No	
Project Implementation	Burning of plant biomass	CO ₂	Yes	If the project includes the burning of woody biomass as part of land clearing for planting, the resulting emissions must be accounted for.
		CH ₄	No	Conservatively excluded due to limitations of MRV tools.
		N ₂ O	No	Conservatively excluded due to limitations of MRV tools.
	Emissions from the use of nitrogen fertilizers	CO ₂	No	Conservatively excluded due to limitations of MRV tools.
		CH ₄	No	Conservatively excluded due to limitations of MRV tools.
		N ₂ O	Yes	May represent a significant emission and, therefore, must be accounted for.
	Fossil fuel combustion	CO ₂	Yes	If the project involves harvesting products resulting from revegetation, the emissions generated by

STAGE	SOURCE	GAS	USED	JUSTIFICATION
1 7 1	Fossil fuel combustion			the use of vehicles and machinery in this activity must be accounted for.
		CH ₄	No	Conservatively excluded due to limitations of MRV tools.
		N ₂ O	No	Conservatively excluded due to limitations of MRV tools.

3.3. Baseline Selection and Additionality Demonstration

The demonstration of additionality is a central pillar of carbon credit integrity, as required by standards like ICROA and CORSIA, and is a fundamental criterion for the accreditation of methodologies and projects under the SBCE (Art. 25, II and Art. 44 of Law No. 15,042/2024). Every rural property in Brazil has the constitutional right to alter the landscape of its property, within the limits of the Multiple-Use Area (MUA), for the implementation of alternative use, whether productive or not.

- I. For avoided planned deforestation (APD) projects, the total suppression of the MUA can be considered.
- II. The forest restoration activity, if any:
 - a. cannot be associated with a judicial imposition, i.e., it must be voluntary.
 - b. can occur for sustainable development purposes, i.e., involve agroforestry crops for commercial purposes.

To demonstrate additionality, the Project Developer **MUST** fully apply the Tero Carbon "Project Additionality Demonstration Tool (FR.CER.003)", following the appropriate flow and tests for the project's scale and type. The analysis must be particularly robust for projects aiming for recognition in the **SBCE**, considering that additionality is a key requirement for the generation of CRVEs. The complete analysis, including all justifications and evidence, **MUST** be presented in the Project Design Document (PDD).



3.4. Baseline for GHG Emissions Accounting

3.4.1. Baseline for Reduced/Avoided Emissions from the APD Activity

For the avoided planned deforestation (APD) activity, when applicable, the calculation of reduced/avoided GHG emissions in the project's baseline is performed using equation (1):

$$E_{BSL\,APD\,n} = \frac{CS_{APD\,0}}{Pc_{APD}} \times \Delta t_n - CI_{BSL\,APD\,n} \tag{1}$$

Where:

E_BSL_ APD_n		of avoided emissions in verification period "n" by the APD activity.
CS_APD_0		oon stock in the Project Area (PA) at the project (in tCO ₂ e).
Pc_APD	= Commitm project (ye	nent Period of the APD component of the ears).
Δt_n	t_n-1, wh	of verification period "n" (years). (E.g., t_n - nere t_n is the end of period "n" and t_n-1 is f the previous period).
CI_BSL_ APD_n	90% or 95	te Interval margin (e.g., half the width of the $\%$ CI) associated with the estimate of D_n (tCO ₂ e), applied to ensure conservatism.

3.4.2. Baseline for Emissions Removed by Natural Restoration

To account for the natural restoration of the property's vegetation or the maintenance of the degraded state (NAT), when applicable, the calculation of removed Greenhouse Gas (GHG) emissions in the project's baseline must consider the scenario where the project is not implemented, reflecting the natural or stagnant dynamics of the carbon stock over time.

The baseline must be constructed from the initial carbon stock (CS₀) present in the degraded area and from well-founded projections of its possible evolution (or lack thereof) in the long term, considering environmental, historical, and socioeconomic factors that influence land use.

The developer must present technical evidence supporting the adopted model, and may use historical series of satellite images and local data to demonstrate whether the area has potential for natural regeneration or will



remain in a degraded state without direct intervention. This reference scenario is essential for the correct quantification of the project's climate benefits, ensuring the credibility and accuracy of the carbon credits generated through the effective removal of GHG. Equation (2) shows how the baseline should be presented.

$$CS_{BSL NAT n} = \left(CS_{NAT 0} + fCS(t)_{NAT n}\right) - CI_{BSL NAT n}$$
(2)

Where:

CS_BSL_ = Baseline of the carbon stock removed/maintained by natural restoration (NAT) in period "n" (in tCO₂e).
 CS_NAT_0 = Initial carbon stock in the NAT/DAR area at the project start (t₀) (in tCO₂e). (May be zero if the area was completely degraded).
 fCS_NAT_ = Function representing the natural variation of the carbon stock in the NAT area during period "n" (in tCO₂e).
 CI_BSL_ = Confidence Interval applied to ensure conservatism.
 NAT_n

3.5. Leakage

The assessment and accounting of leakage (LK_n) are mandatory for all projects seeking to generate VCUs using this methodology. The Project Developer **MUST** fully apply the procedures and requirements established in the Tero Carbon "Leakage Assessment and Management Tool for NBS VCU Projects (FR.CER.005)".

The result of this analysis will be a Net Leakage (LK_n) value for each verification period "n", which will be used to adjust the project's net reductions/removals. The entire leakage assessment approach, along with assumptions, data sources, calculations, and results, **MUST** be fully presented, justified, and documented in the Project Design Document (PDD) for evaluation by the VVB. The continuous monitoring of leakage throughout the crediting period must follow the specifications in Section 6 of FR.CER.005.

As detailed in the aforementioned Tool:

- Projects classified as Small-Scale (according to the "Project Scale Analysis Tool (FR.CER.001)") must use the "[Template] Leakage Risk Assessment and Negligibility Justification Form for Small-Scale NBS VCU Projects" (TP.CER.005).
 - If, based on this form and robust evidence, leakage is justified as negligible and this justification is deemed acceptable by the VVB and



Tero Carbon, the net leakage (\texttt{LK}_n) may be considered zero for VCU calculation purposes.

 Otherwise (i.e., if the negligibility justification is not presented, not considered robust, or if the leakage risk is identified as non-negligible), a standard discount factor of 15% will be applied to the gross VCUs generated before considering permanence:

LK n = NR net PROJ n * 0,15.

As detailed in the said Tool, for Small-Scale projects that do not justify negligible leakage, LK_n will be **15%** of $NR_net_PROJ_n$ (Total Project Net Reductions/Removals Before Leakage, as per Section 3.7.3 of this methodology).

Projects classified as Large-Scale (or Small-Scale projects that opt for this path) MUST conduct a quantitative leakage analysis, following the procedures for identifying sources, defining the leakage belt and reference region, and quantification, as detailed in the "Leakage Assessment and Management Tool for NBS VCU Projects (FR.CER.005)". The value of LK_n to be used in the calculation of net VCUs (Section 3.7) will be the net leakage resulting from this quantitative analysis.

The entire leakage assessment approach (including the project scale classification, the negligibility justification for small scale, or the quantitative analysis for large scale), along with assumptions, data sources, calculations, and results, **MUST** be fully presented, justified, and documented in the Project Design Document (PDD) for evaluation by the VVB. The continuous monitoring of leakage (or the validity of the negligibility justification for small scale) throughout the crediting period must follow the specifications in Section 6 of the "Leakage Assessment and Management Tool for NBS VCU Projects (FR.CER.005)".

Additionally, the assessment and mitigation of leakage is a fundamental integrity requirement for programs like ICROA (Criterion 5.5.2.b) and CORSIA (EUC 3.6), and an important principle for the credibility of CRVEs in the SBCE (Art. 2, XXXV of Law No. 15,042/2024 defines leakage).

3.6. Quantification of the Current Carbon Stock in the Project Area

The quantification of the current carbon stock in the project area must be presented with a known confidence interval (CI), ensuring the precision and methodological robustness of the calculation. This methodology **requires** the use of the document "Technical Guidelines for Carbon Quantification in AFOLU Projects (DC.CER.003)" as the primary technical reference, providing standardized guidelines for estimating carbon stocks in AFOLU sector projects. However, each developer **HAS** the freedom to present their own complementary quantification method or site-specific adaptations, provided they are technically and scientifically valid, transparently documented in the PDD, demonstrate equivalence or superiority in precision and conservatism compared to the



methods of the Tero Methodological Base, and are approved by the VVB and Tero Carbon during the validation process.

3.7. Calculation of Net GHG Reductions/Avoidances and Removals by the Project

The net reductions from the APD activity are the avoided baseline emissions, minus any direct project emissions associated with this activity:

3.7.1. Net Reductions from the APD Activity (NR_APD_n)

$$NR_{APD\,n} = E_{BSL\,APD\,n} - E_{PROJ\,APD\,n} \tag{3}$$

Where:

NR_APD_n	= Net reductions of avoided emissions by the APD activity in period "n" (in tCO₂e).
E_BSL_ APD_n	= Baseline of avoided emissions in period "n" by the APD activity (calculated according to Equation 1 of this methodology) (in tCO ₂ e).
E_PROJ_ APD_n	= GHG emissions within the PA that are a direct result of the management activities of the APD component of the project during period "n" (in tCO₂e). Often zero for pure APD.

3.7.2. Net Removals from the DAR Activity (NR_DAR_n)

The net removals from the DAR activity are the increase in carbon stock in the restored area relative to the baseline of the restoration area, minus any direct project emissions associated with this activity:

$$NR_{DAR\,n} = \left(CS_{PROI\,DAR\,n} - CS_{BSL\,NAT\,n}\right) - E_{PROI\,DAR\,n} \tag{4}$$

Where:





NR_DAR_n = Net GHG removals by the DAR activity in period "n" (in tCO₂e).
 CS_PROJ_ = Verified carbon stock in the DAR area at the end of period "n" (in tCO₂e), as per Section 3.6.
 CS_BSL_ = Baseline carbon stock in the DAR area at the end of period "n" (calculated according to Equation 2 of this methodology) (in tCO₂e).
 E_PROJ_ = GHG emissions within the PA that are a direct result of restoration activities (e.g., soil preparation, fertilization, if applicable) during period "n" (in tCO₂e).

3.7.3. Total Project Net Reductions/Removals Before Leakage (NR_net_PROJ_n)

$$NR_{net\ PROJ\ n} = NR_{APD\ n} + NR_{DAR\ n} \tag{5}$$

Where:

 $NR_net_PROJ_=$ = Total net reductions/removals of the project in period "n", before consideration of leakage (tCO₂e). NR_APD_n = As per Eq. 3 (tCO₂e). NR_DAR_n = As per Eq. 4 (tCO₂e).

Confidence Interval (CI): All estimates of carbon stock and emissions/removals must be accompanied by their respective confidence intervals. Uncertainty propagation must be performed to determine the final CI, and the most conservative value (lower bound of the CI for removals/reductions, upper bound for emissions) must be used for crediting.

3.7.4. Calculation of Net Reductions/Removals Adjusted for Leakage and Allocation to Components

After calculating the Total Project Net Reductions/Removals Before Leakage ($NR_net_PROJ_n$, as per Equation 5) and determining the total project Net Leakage (LK_n) according to the procedures in the "Leakage Assessment and Management Tool for NBS VCU Projects (FR.CER.005)", it is necessary to adjust the removals/reductions of each component (APD and DAR) to reflect the impact of leakage.



The Total Project Net Reductions/Removals Adjusted for Leakage ($VCU\ adj\ LK\ n$) are calculated as:

$$VCU_{adj\,LK\,n} = MAX(0; NR_{net\,PROJ\,n} - LK_n)$$
(5a)

Where:

VCU_adj_ = Total Project Net Reductions/Removals in period "n", adjusted for leakage (tCO₂e). This value represents the total climate benefit of the project eligible for the application of permanence mechanisms. If

NR_net_PROJ_n - LK_n is negative, it is considered zero.

NR_net_PROJ_ = Total net reductions/removals of the project in period "n", before consideration of leakage, as per Equation 5 (tCO₂e).

LK_n = Total net leakage of the project in period "n", quantified as per FR.CER.005 (tCO₂e).

The $VCU_adj_LK_n$ is then allocated to the APD and DAR components to determine the calculation basis for applying the respective permanence guarantee mechanisms. The standard allocation is proportional to the contribution of each component to the total net reductions/removals of the project ($NR_net_PROJ_n$).

$$VCU_{adj \, LK \, APD \, n} = NR_{APD \, n} - \left(LK_n \times \left(\frac{NR_{APD \, n}}{NR_{PROJ \, n}}\right)\right) \tag{5b}$$

$$VCU_{adj\ LK\ DAR\ n} = NR_{DAR\ n} - \left(LK_n \times \left(\frac{NR_{DAR\ n}}{NR_{PROJ\ n}}\right)\right) \tag{5c}$$

Where:

VCU_adj_
 LK_APD_n
 = Net reductions from the APD activity in period "n", adjusted for leakage (tCO₂e), which cannot be less than zero. This value will be used as VCU_base_FI_APD_n in Section 3.9.1.
 VCU_adj_
 LK_DAR_n
 = Net removals from the DAR activity in period "n", adjusted for leakage (tCO₂e), which cannot be less than zero. This value will be the basis for calculating the increment and the buffer in Section 3.9.2.



NR_APD_n = Net reductions of avoided emissions by the APD activity in period "n", as per Equation 3 (tCO₂e).

NR_DAR_n = Net GHG removals by the DAR activity in period "n", as per Equation 4 (tCO₂e).

If NR_net_PROJ_n is zero or negative, then VCU_adj_LK_APD_n = 0 and VCU adj LK DAR n = 0.

The Project Developer must clearly present these calculations in the PDD. If a leakage allocation approach other than proportional is used (e.g., if leakage can be unequivocally attributed to only one of the components), it must be robustly justified and approved by the VVB and Tero Carbon.

3.8. Non-Permanence Risk and Guarantee Mechanisms

The Project Developer **MUST** fully apply the procedures and requirements of the Tero Carbon "Non-Permanence Risk Analysis and Guarantee Mechanism Tool (FR.CER.004)".

- 1. **Non-Permanence Risk Assessment (NPR_total):** For the project as a whole, or separately for the APD and DAR components if the risks are very distinct, the Developer **MUST** assess the NPR_total using one of the options described in Section 4 of FR.CER.004 (Simplified or Detailed Approach).
- 2. uarantee Mechanism for the Avoided Planned Deforestation (APD) Activity:
 - The standard mechanism is Fractional Issuance (FI). The Developer **MUST** follow the procedures in Section 6 of FR.CER.004. The base value for FI (VCU_base_FI_n) will be the portion of VCU_adj_LK_n attributable to the APD component.
 - Large-Scale APD projects may, exceptionally and with Tero Carbon's approval, opt for the Buffer Pool (BP).

3. Guarantee Mechanism for the Degraded Area Restoration (DAR) Activity:

• The mandatory mechanism is the Buffer Pool (BP). The Developer **MUST** follow the procedures in Section 7 of FR.CER.004. The base value for BP (VCU_adj_LK_n for the DAR component) will be used to calculate the contribution to the buffer (Buffer_n) and the permanent VCUs (pVCU_BP_n), using the NPR_buffer derived from the NPR_total assessed for the DAR component.

The entire Non-Permanence Risk analysis, the choice and justification of guarantee mechanisms, assumptions, calculations, and the risk monitoring plan must be fully presented and documented in the PDD.



Additionally, programs like ICROA (Criterion 5.3) and CORSIA (EUC 3.5) require mechanisms to address non-permanence risk (reversal). The SBCE, through Art. 21, § 1°, V of Law No. 15,042/2024, also provides for mechanisms to protect against the reversal of removals.

3.9. Calculation of Generated Permanent Carbon Credits

The permanent carbon credits ($pVCU_n$) generated by the project in verification period "n" are the sum of the permanent VCUs from each activity, calculated according to the "Non-Permanence Risk Analysis and Guarantee Mechanism Tool (FR.CER.004)", after the leakage adjustment.

3.9.1. Permanent VCUs from the APD Activity (pVCU_APD_n)

Using the Fractional Issuance (FI) approach, as per Equation 3 of FR.CER.004:

$$pVCU_{APD\,n} = VCU_{adj\,LK\,APD\,n} \times Ef_{APD} \times \Delta t_n \tag{6}$$

Where:

PVCU_APD_n = Permanent VCUs issued for the APD component in period "n" (tCO₂e).
 VCU_adj_LK_ = Net reductions from the APD activity in period "n", adjusted for leakage, as per Equation 5b (tCO₂e). This is the VCU_base_FI_APD_n referenced in FR.CER.004.
 Ef_APD = Equivalence Factor for the APD component, calculated as 1 / Pc_APD (year⁻¹), where Pc_APD is the Commitment Period of the APD component.
 Δt_n = Duration of verification period "n", in years.

Note: If a Large-Scale APD uses BP, apply Equation 7 below for the APD component.

3.9.2. Permanent VCUs from the DAR Activity (pVCU_DAR_n)

To avoid double counting of removals, the calculation is based on the net increment since the last crediting, following the logic of FR.CER.004.



First, the net increment of DAR removals in period "n" eligible for crediting is calculated:

$$\Delta NR_{DARn} = MAX(0; VCU_{adj\ LK\ DAR\ n}) - CTOT_{REM\ DAR\ max\ (n-1)}$$
(7a)

Where:

ΔNR_DAR_n = Net increment of removals from the DAR component in period "n" eligible for crediting (tCO₂e).
 VCU_adj_ = Net removals from the DAR activity in period "n", adjusted for leakage, as per Equation 5c (tCO₂e).

CTOT_REM_DA = Highest value of net DAR removals (already adjusted for leakage and before the buffer) for which VCUs were issued in any previous verification period. For the

first verification, CTOT_REM_DAR_max_n-1 = 0.

If $\Delta NR_DAR_n \le 0$, then $pVCU_DAR_n = 0$ and $Buffer_DAR_n = 0$ for period "n". Otherwise:

Otherwise:

$$pVCU_{DAR\,n} = \Delta NR_{DAR\,n} \times \alpha_{DAR} \tag{7b}$$

$$Buffer_{DAR\,n} = \Delta NR_{DAR\,n} \times \left(1 - \alpha_{DAR}\right) \tag{7c}$$

Where:

pVCU_DAR_n = Permanent VCUs issued for the DAR component in period "n" (tCO₂e).

Buffer_DAR_ = Contribution to the Buffer Pool of the DAR component in period "n" (tCO₂e).

α_DAR = Permanent fraction for the DAR component, calculated as (1 - NPR_buffer_DAR), where NPR_buffer_DAR is the Non-Permanence Risk applicable to the buffer of the DAR component, determined as per FR.CER.004.



After issuance, the new value of $CTOT_REM_DAR_max$ for the next verification will be updated to $VCU_adj_LK_DAR_n$.

3.9.3. Total Permanent VCUs of the Project (pVCU_PROJ_n)

$$pVCU_{PROJn} = pVCU_{APDn} + pVCU_{DARn}$$
 (8)

Where:

 $pVCU_PROJ_n$ = Total permanent VCUs of the project issued in period "n" (tCO2e).

pvcu APD n = As per Eq. 6 (tCO₂e).

pvcu dar n = As per Eq. 7b (tCO₂e).

3.10. Definition of Project Scale

The project's scale (Small or Large-Scale) **MUST** be determined using the Tero Carbon "Project Scale Analysis Tool (FR.CER.001)", based on the annual estimate of $pVCU_PROJ_n$ generation. The scale classification and its justification **MUST** be presented in the PDD.

3.11. Project Start Date and Retroactivity

The Project Start Date (t_0) is defined by the Project Developer in the Project Design Document (PDD). Projects using this **TERO.001 – REDD+** methodology may have a retroactive t_0 .

The ability to credit retroactive reductions/removals is a feature of some carbon programs. However, for compliance with schemes like CORSIA, there may be restrictions on the eligibility of very old vintages. Developers should be aware of the specific requirements of the markets their credits are intended for. Within the SBCE, the regulation may establish specific rules on retroactivity for CRVEs.

For VCUs to be issued for periods prior to the project's validation date, the Developer **MUST** fully comply with the Measurement, Reporting, and Verification (MRV) evidence requirements for the entire claimed retroactive period. These requirements are detailed in the Tero Carbon "Certification Program (DC.CER.001)"



and include, but are not limited to, the presentation of robust and auditable evidence for:

- The performance of an initial forest inventory (or equivalent, as per Section 3.6 of this methodology and the "Technical Guidelines for Carbon Quantification in AFOLU Projects (DC.CER.003)") before or at the to date.
- The maintenance of the project area's conditions (for both APD and DAR, if applicable) and the implementation of project activities since to.
- Effective governance over the project area by the proponent since to.
- The demonstration of project additionality, valid for the entire period since to, according to the "Project Additionality Demonstration Tool (FR.CER.003)".
- Continuous compliance with social and environmental safeguards (as per the "Social and Environmental Safeguards Analysis Tool (FR.CER.002)") since to.
- Valid and uninterrupted land tenure compliance since t_0 (as per the "Land Tenure Compliance Manual and Tero Carbon Seals for NBS Projects (DC.CER.002)").

The maximum retroactivity period allowed for the first issuance of VCUs is defined in the "Certification Program (DC.CER.001)" (currently <u>15 years</u> prior to the PDD submission date for validation). The absence of robust and verifiable evidence for any of the requirements for the retroactive period will result in the inability to issue VCUs for that period. The final decision on the acceptance of the retroactive period and the presented evidence rests with Tero Carbon, based on the VVB's assessment.

4.MONITORING PROCEDURE

4.1. Monitoring Plan

The Project Developer **MUST** prepare and implement a detailed Monitoring Plan, which will be an integral part of the Project Design Document (PDD). This plan is fundamental to ensure the quality, traceability, transparency, and integrity of the project's results over time, to verify continued compliance with the requirements of this methodology and the Tero Programs, and to meet the Measurement, Reporting, and Verification (MRV) standards required by high-integrity markets and the SBCE (Art. 2, XVIII of Law No. 15,042/2024).

The Monitoring Plan **MUST** cover, at a minimum, the following components, with explicit references to the applicable Tero tools and procedures:





1. Maintenance of Project Acceptance Criteria:

• Procedures to continuously verify that all project eligibility criteria (defined in Section 2.2 of this methodology) and commitments made (e.g., "[Template] Zero Deforestation Declaration" (TP.CER.004)) remain valid during the crediting period.

2. Monitoring of Carbon Stock in the Project Area (CS ACTUAL n):

- Parameters to be monitored for the APD component (e.g., forest cover, integrity of the MUA) and for the DAR component (e.g., effectively restored area, survival and growth of planted species, DBH, height).
- Forest or biomass inventory methodology (according to the "Technical Guidelines for Carbon Quantification in AFOLU Projects (DC.CER.003)"), including sampling design, plot size and shape, measurement frequency, and data QA/QC procedures.
- Procedures for the periodic recalculation of carbon stocks for each component.

3. Monitoring of Project Emissions (PE n):

 Identification and quantification of any GHG emission sources within the project boundaries that result directly from project activities (e.g., fuel combustion for area preparation or planting in DAR, use of nitrogen fertilizers in DAR). Quantification methodologies as per IPCC or other approved sources.

4. Monitoring of Leakage (LK n):

- Application of the monitoring requirements of the "Leakage Assessment and Management Tool for NBS VCU Projects (FR.CER.005)", according to the project's scale.
 - For Small-Scale (Option A justified negligibility): Procedures for the periodic reconfirmation (at each verification) of the conditions supporting the negligibility justification, including remote sensing analysis of the leakage belt and statements/evidence from local stakeholders.
 - For Large-Scale (or Small-Scale with a discount factor/quantitative analysis): Monitoring of the defined parameters (e.g., land use, deforestation rates) in the Leakage Belt (LB) and, if applicable, in the Reference Region (RR).



5. Monitoring of Non-Permanence Risk (NPR) and the Guarantee Mechanism:

- Continuous monitoring of the risk factors identified in the NPR analysis (conducted according to the "Non-Permanence Risk Analysis and Guarantee Mechanism Tool (FR.CER.004)").
- Procedures for the detection, recording, and immediate reporting to Tero Carbon of any reversal events (intentional or unintentional) affecting the credited or committed carbon stocks. Reversal compensation mechanisms must be triggered as per FR.CER.004 and aligned with SBCE requirements for protection against reversal of removals.
- For the DAR component (with Buffer Pool): Monitoring the integrity of the areas contributing to the buffer.
- For the APD component (with Fractional Issuance): Monitoring the maintenance of the carbon stock in the MUA, which is the basis for fractional issuance.

6. Monitoring of Social and Environmental Safeguards and Co-benefits:

- Implementation and monitoring of the effectiveness of the mitigation measures for identified social and environmental risks.
- Monitoring of the Key Performance Indicators (KPIs) for the mandatory minimum of two co-benefits (SDGs, excluding SDG 13) and any other co-benefits claimed by the project. The MRV methodology for each KPI (baseline, data source, frequency) must be detailed, according to the "Social and Environmental Safeguards Analysis Tool" (FR.CER.002).

7. Monitoring of Land Tenure Compliance:

• Procedures to ensure the maintenance of the land tenure regularity of the project area(s) throughout the crediting period, according to the requirements of the "Land Tenure Compliance Manual and Tero Carbon Seals for NBS Projects (DC.CER.002)".

8. Monitoring of Stakeholder Engagement:

 Maintenance of communication channels with local stakeholders and recording of any concerns or grievances received, according to the "Stakeholder Consultation Procedure (DC.COM.003)" and the "Grievance Management Procedure (DC.GOV.004)".

For each monitored parameter, the Monitoring Plan must specify: the exact variable to be measured/observed; the unit of measurement; the collection/calculation methodology (with reference to Tero documents whenever applicable); the monitoring frequency; the party responsible for collection,



analysis, and reporting; and the quality assurance and quality control (QA/QC) procedures for the data.

The PDD must clearly indicate which sections of the Monitoring Plan are mandatory for validation and what data and results are expected for each subsequent verification in the Monitoring Report.

4.2. Monitoring Methodology and Quality

As part of the monitoring procedure, the project developer must establish a clear and replicable methodology for data collection, analysis, and reporting, ensuring that the processes are auditable and consistent across verification cycles. The plan should describe the tools, technologies, and frequencies used for monitoring, as well as identify the responsibilities of the involved parties. It is also necessary for the developer to adopt measures to ensure data quality, including internal audits, control procedures, and detailed records of all monitored activities.

4.3. Period Between Verifications

The period between verifications must be defined by the developer in the Monitoring Plan, considering the nature of the project and the frequency required to ensure the quality and traceability of the results. However, this interval must not exceed three years, to ensure that the collected data remains up-to-date and consistent with the project's reality. Ideally, it is recommended that verifications be conducted annually, allowing for continuous monitoring of the project's performance, rapid identification of deviations, and implementation of corrective actions when necessary. In the event of the publication of a new major version of the TERO.001 methodology (e.g., v2.X to v3.0), the project must undergo re-validation before the next scheduled periodic verification, as established in the Tero Carbon "Certification Program (DC.CER.001)".

4.4. Monitoring Report

For each monitoring period, when requesting a verification, the project developer must submit a comprehensive Monitoring Report. This report must present the quantified results of net emissions, clearly indicating the carbon credits requested for the crediting period. In addition to the written document, the developer must also provide spreadsheets and supporting information available in the "Acceptance Criteria Analysis Tool for Project Verification (FR.CER.007)". This documentation ensures that all data and calculations are



transparent, auditable, and consistent with the project's monitoring and verification requirements.

5. REVIEW OF THIS METHODOLOGY

This methodology (**TERO.001 – REDD+**) will be periodically reviewed by Tero Carbon in collaboration with the methodology author (Hdom Engenharia e Projetos Ambientais Ltda) or at the initiative of Tero Carbon, according to the procedures established in the "Methodologies Program (DC.MET.001)". Reviews may occur, at a minimum, every 5 (five) years, or sooner if necessary, to:

- a. Incorporate relevant scientific and technical advances for REDD+ activities (APD and DAR), including new approaches for estimating carbon stocks, monitoring, or risk assessment.
- b. Reflect significant changes in national policies, regulations (such as the evolution of the SBCE regulation) or international ones, or in market requirements, including those of accreditation schemes like ICROA and CORSIA, for which Tero Carbon seeks alignment and eventual eligibility.
- c. Accommodate consistent and constructive feedback from Project Developers, Validation/Verification Bodies (VVBs), experts, and other stakeholders, obtained through Tero Carbon's formal channels (e.g., "Stakeholder Consultation Procedure (DC.COM.003)", "Grievance Management Procedure (DC.GOV.004)").
- d. Correct any inconsistencies, ambiguities, or errors identified that could compromise the clarity, applicability, or environmental integrity of the VCUs generated under this methodology.
- e. Ensure continuous alignment with the latest versions of the Tero Programs and their complementary documents.

Revisions considered substantial by Tero Carbon (that significantly alter the scope, eligibility criteria, additionality, baseline, GHG quantification equations, or monitoring procedures) will follow the full methodological review process of the "Methodologies Program (DC.MET.001)", which may include review by an External Reviewer (ER) and public consultation.

Minor revisions (e.g., editorial corrections, clarifications that do not alter the substance of the requirements, updates to references to Tero documents) may follow a simplified internal approval and publication process.

Tero Carbon reserves the right to suspend or deactivate this methodology if it becomes obsolete, demonstrably flawed, or misaligned with the principles and requirements of the Tero Programs, as detailed in the "Methodologies Program (DC.MET.001)".





VERSION HISTORY

VERSION	DATE	NOTES
2.1	06/16/2025	Complete alignment with Tero Programs v2.1. Leakage and Non-Permanence Risk (NPR) become mandatory, with defined mechanisms (FI for APD, BP for DAR), referencing Tero Tools. Detailed and integrated Monitoring Plan. Retroactivity section added. Mandatory references to Tero Tools for Additionality, Stock Estimation, Scale, Safeguards, and Land Tenure Compliance. Focus on integrity and preparation for ICROA/CORSIA and SBCE.
2.0	04/02/2025	Version with substantial updates to the methodology structure, including the removal of the sustainable forest management activity.
1.0	02/10/2023	Initial version approved by the Directorate and launched for public consultation.