

Cercarbono Guidelines for the Management of Permanence and Reversal Risk in Climate Change Mitigation Initiatives in the Land- Use Sector



Carbon programme

Version 2.0

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Acronyms and abbreviations

CCMP	Climate Change Mitigation Programme or Project
CO₂	Carbon dioxide
GHG	Greenhouse Gas(es)
PDD	Project Description Document
REDD+	Reducing Emissions from Deforestation and Forest Degradation and other actions in this sector
VVB	Validation and Verification Body

Terms and definitions

The terms and definitions contained in the document *Terms and Definitions of the Voluntary Certification Programme of Cercarbono*, available at www.cercarbono.com, section: Documentation, shall apply.

For the purposes of these guidelines, the following terms shall apply in particular:

- **Carbon pool:** compartment or system within the boundaries of the CCMP in which carbon is stored, whose change in stocks can be quantified in accordance with its definition and delineation in the applicable methodology, and which may be eligible for the issuance of carbon credits.
- **Carbon stocks:** total amount of carbon stored in a given carbon pool.
- **CCMP duration** (day.month.year to day.month.year): period (in years) between the start of project activities and their completion. The CCMP duration must be established in accordance with the provisions set out in **Section 7.7** of the *Cercarbono's Protocol for Voluntary Carbon Certification, v.4.5.1* (hereinafter, the "*Cercarbono Protocol*")¹.
- **Crediting period:** period during which the CCMP may request verification of its contribution to climate change mitigation for the issuance of carbon credits based on its environmental outcomes.
- **Individual buffer reserve:** variable percentage determined *ex ante* based on the structured assessment of the CCMP's non-permanence risk. It is established through the retention by the Cercarbono Certification Programme of a fraction of the credits issued at each CCMP verification event, in addition to those allocated to the Pooled buffer reserve, and its release shall be gradual and conditional in accordance with the criteria set out in these guidelines.
- **Negligible risk of reversal:** risk level at which it can be reasonably demonstrated that the carbon stocks associated with emission reductions and/or net removals achieved by the CCMP during its active crediting period will remain stable, without a material probability of reversal, over a time horizon of one hundred (100) years, counted from the end of the last active crediting period.
- **Non-permanence:** risk of partial or total loss of previously credited mitigation outcomes over a given time horizon.
- **Permanence:** capacity of credited mitigation outcomes to be maintained over time without material reversal over a given time horizon.
- **Pooled buffer reserve:** fixed percentage of credits issued at each verification event and retained by the Cercarbono Certification Programme as a collective risk management mechanism for non-permanence risk. This reserve is intended to safeguard the

¹ Or any version that replaces it with respect to the subject addressed in that section, "Useful Life."

environmental integrity of the system against aggregated, systemic, or correlated risks that may simultaneously affect one or multiple CCMPs.

- **Residual risk:** level of exposure to reversal that remains after considering mitigation measures and jurisdictional or collective risk-management mechanisms.
- **Reversal:** verifiable net loss of previously credited mitigation outcomes. A reversal shall be deemed to occur when, at any time during the implementation of the CCMP or during the applicable additional monitoring period, a net loss of previously credited mitigation outcomes within the boundaries of the CCMP is determined (based on monitored data and independent verification), expressed as:
 - A decrease in carbon stocks in one or more carbon pools included in the CCMP accounting, or
 - A net increase in emissions relative to the previous monitoring period.

The quantification of reversal shall be based on the net variation in carbon stocks or emissions between consecutive monitoring periods, in accordance with the applicable quantification methodology and considering the period covered by the corresponding monitoring report.

The identification of signals or events that may indicate a potential carbon loss prior to formal verification shall constitute an indicator of material risk; however, it shall not be considered a reversal until its magnitude has been quantified and its environmental results for the relevant monitoring period have been verified in accordance with these guidelines.

- **Systemic or correlated risk:** risk that may simultaneously affect multiple CCMPs within the same region or jurisdiction due to shared factors.

Summary

Climate change mitigation requires the implementation of actions aimed at reducing greenhouse gas (GHG) emissions and removing carbon dioxide (CO₂) from the atmosphere. In the land-use sector, these actions are achieved through the increase and conservation of carbon stocks in biological carbon pools, such as forests, forest plantations, agroforestry and silvopastoral systems, as well as coastal and inland wetland ecosystems.

The carbon stocks stored in these systems may be affected by natural or anthropogenic events that lead to their release into the atmosphere, resulting in reversals of previously credited mitigation outcomes. For this reason, carbon certification programmes require mechanisms to manage non-permanence risk and ensure the environmental integrity of issued carbon credits.

These guidelines establish the technical framework for assessing non-permanence risk and determining carbon reserves applicable to Climate Change Mitigation Programmes or Projects (CCMPs) in the land-use sector under the Cercarbono Voluntary Certification Programme. This document defines the criteria for identifying, assessing, and monitoring of reversal risks, as well as the mechanisms for establishing, managing, and releasing carbon reserves intended to support credited mitigation outcomes.

The assessment of non-permanence risk is carried out using the ***Tool for the Assessment of Non-Permanence Risk and Determination of Carbon Buffer in Land-Use Sector Initiatives***, which determines the individual buffer reserve percentage applicable to each CCMP according to its risk profile. This reserve system operates in conjunction with the programme's pooled buffer reserve, in order to manage both project-specific risks and systemic or correlated risks.

These guidelines may be applied to initiatives implemented at the project level as well as to integrated or nested schemes within jurisdictional or national land-use frameworks, ensuring coherence in emissions accounting, the prevention of double counting, and consistency in the management of non-permanence risk across different implementation levels.

1 Introduction

Climate change represents a global challenge that requires the implementation of effective mitigation and adaptation measures. In the context of mitigation, actions are aimed at reducing, avoiding, or removing GHG emissions originating in different economic sectors.

In the land-use sector, CCMPs contribute by reducing emissions and by removing and storing carbon in natural carbon pools. These initiatives may also generate additional benefits in terms of biodiversity conservation, ecosystem restoration, water regulation, and social strengthening.

However, activities based on biological carbon storage are exposed to the risk of non-permanence. This risk materializes when a reversal of previously credited mitigation outcomes occurs as a result of natural, anthropogenic, regulatory, or systemic events. Proper management of permanence and reversal risk therefore constitutes an essential element for ensuring the environmental integrity of certified environmental outcomes.

In this context, Cercarbono establishes these guidelines for the structured management of non-permanence risk in land-use sector initiatives, through the identification, assessment, mitigation, monitoring, and compensation of potential reversals. The approach adopted combines the estimation of long-term net mitigation with the implementation of risk mitigation measures and the establishment of individual and pooled reserves intended to back-stop credited outcomes against reversal events, under a conservative principle designed to avoid the underestimation of risk.

The framework established is applicable to stand-alone initiatives, jurisdictional programmes, and nested approaches, ensuring accounting consistency, the prevention of double counting, and consistent risk management across different levels of implementation.

This version incorporates improvements derived from experience gained during the implementation of these guidelines, strengthening traceability, independent review, and the periodic updating of risk analysis, in alignment with international best practices for implementing and upholding the principles of integrity, transparency, and environmental responsibility.

2 Scope

This document applies to CCMPs implemented as independent project-level initiatives, as well as to those developed under jurisdictional REDD+ (Reducing Emissions from Deforestation and Forest Degradation and other actions in this sector) approaches, or integrated or nested within jurisdictional or national programs in the land-use sector.

The implementation of these guidelines shall be carried out through the application of the ***Tool for the Assessment of Non-Permanence Risk and Determination of Carbon Buffer in Land-Use Sector Initiatives***² (hereinafter referred to as the ***Buffer Reserve Tool***).

This tool establishes the technical criteria for the identification, assessment, mitigation, and updating of non-permanence risk, as well as for the determination of the applicable buffer reserve percentage, the implementation of risk mitigation measures, and the monitoring, compensation, and management of verified reversals.

These guidelines apply to both GHG removal activities and GHG emission reduction activities, where the application of the ***Buffer Reserve Tool*** is required to support the permanence of mitigation outcomes, including the following:

A) GHG removal activities

- **Forestry:** Reforestation, forest restoration, forest plantations, and REDD+ activities aimed at GHG removals.
- **Agricultural:** Woody plantations (shrubs or trees) that do not meet the definition of forest.
- **Grasslands:** Silvopastoral systems (herbaceous, shrub, and tree-based) that do not meet the definition of forest.
- **Wetlands:** Revegetation of mangroves, salt marshes, and seagrass meadows.

B) GHG emission reduction activities³

- **Forestry:** Forest management and REDD+ activities aimed at reducing deforestation and forest degradation.
- **Wetlands:** Restoration of mangroves, salt marshes, and seagrass meadows.

When activities are implemented in contexts where jurisdictional or national frameworks applicable to the land-use sector exist, the application of the ***Buffer Reserve Tool*** shall be harmonized with such frameworks, ensuring:

- Consistency with applicable reference levels.
- Consistency in emissions accounting.
- Prevention of double counting or double coverage of non-permanence risk.
- Proper allocation of mitigation outcomes across implementation levels.

The application of these guidelines shall not exempt the CCMP from complying with other requirements established under the normative framework of the Cercarbono Voluntary Certification Programme.

² This constitutes a binding and mandatory technical instrument through which these Guidelines are operationalized, enabling the identification, assessment, objective quantification, and monitoring of residual non-permanence risk, as well as the determination of the carbon buffer reserve.

³ Although this type of activity normally generates outcomes that do not affect the permanence of GHG emissions, programme or project activities that involve carbon accumulated in carbon pools are included, as they may present a risk of GHG reversal.

2.1 General conditions for permanence

CCMP holders and developers shall ensure that the duration of the initiative is consistent with the provisions set out in **Cercarbono Protocol**, as a condition of eligibility within the programme, thereby ensuring the permanence of mitigation outcomes through the conservation of carbon stocks in the pools included in the CCMP accounting.

For the purposes of assessing non-permanence risk and the stability of carbon stocks, a long-term time horizon consistent with international carbon accounting principles shall be considered. This time horizon is used exclusively to evaluate the stability of carbon stocks and the potential risk of reversal and does not imply a mandatory extension of the operational duration of the CCMP. This long-term time horizon is used to ensure that credited mitigation outcomes represent durable climate benefits consistent with internationally recognized carbon accounting principles.

In the absence of specific provisions to this effect under the carbon crediting scheme in which the CCMP participates, provided that this circumstance is duly demonstrated, the reference time horizon used for the assessment of permanence shall not be less than one hundred (100) years.

When the operational duration of the CCMP is shorter than this horizon, a temporal equivalence factor shall be applied to project the stability of carbon stocks toward the required permanence horizon.

$$F_{perm} = \frac{H_{perm}}{D_{CCMP}} \quad \text{Equation 1}$$

Variable	Description	Units
F_{perm}	Permanence Equivalence Factor.	Dimensionless
H_{perm}	Required permanence time horizon (100 years), CCMP duration.	Years
D_{CCMP}	Permanence expected duration of the CCMP.	Years

Note: This factor shall be used as a conceptual reference for the assessment of non-permanence risk and for the design of buffer reserve mechanisms intended to support the permanence of mitigation outcomes.

In this context, the buffer reserve system of the Cercarbono Carbon Programme is designed to manage reversal risk affecting mitigation outcomes throughout the applicable permanence horizon, through a combination of a structured non-permanence risk assessment, continuous monitoring, and buffer reserve mechanisms intended to compensate for potential reversals.

3 Technical and programme compliance

The following documents of the Cercarbono normative framework⁴, in their current versions, are complementary to the application of these guidelines:

- Cercarbono's Protocol for Voluntary Carbon Certification.
- Procedures of Cercarbono's Certification Programme.
- Terms and Definitions of the Voluntary Certification Programme of Cercarbono.
- Safeguarding Principles and Procedures of Cercarbono's Certification Programme.

4 Non-permanence risk analysis

The CCMP shall conduct a structured analysis of non-permanence risk in order to identify, assess, and rate the potential risks that may affect the implementation of the programme or project and the permanence of credited mitigation outcomes, whether derived from GHG removal activities or GHG emission reduction activities.

The outcome of this analysis shall constitute the technical basis for determining the individual buffer reserve percentage required by the CCMP, intended to support these outcomes against potential reversal events.

The analysis described in this section is specifically aimed at assessing the risk of loss of previously credited mitigation outcomes and is complementary to (but does not replace) the risk analysis required under the ***Safeguarding Principles and Procedures of Cercarbono's Certification Programme***.

Where applicable, the outcomes of the safeguards risk analysis shall be considered as inputs for identifying factors that may influence non-permanence risk.

Both analyses shall be consistent with each other where they share common risk factors. In particular:

- Risks identified in the safeguards analysis that may affect the permanence of mitigation outcomes shall be evaluated within the non-permanence risk analysis.
- The rating of non-permanence risk shall be supported by technical criteria established under these guidelines; the categorization of risks carried out under the safeguards framework shall not automatically determine the applicable buffer reserve percentage.
- In the event of discrepancies between both analyses regarding the same risk factor, the CCMP shall provide a technical and documented justification for the observed differences.

The application of these guidelines shall not exempt the CCMP from full compliance with the obligations derived from the safeguards framework, nor shall compliance with that

⁴ Documents available at www.cercarbono.com, section: Documentation. In addition, the CCMP shall incorporate new technical tools developed by Cercarbono for the land-use sector that are not listed above and that become available in subsequent CCMP verification events.

framework replace the determination and management of carbon reserves in accordance with these guidelines.

The certification programme shall assess the reversal risk associated with the mitigation activities included within its scope. Where the analysis identifies the existence of a material risk of reversal, the CCMP shall implement technical and operational measures aimed at mitigating such risk (including its prevention and reduction), as well as mechanisms to compensate for potential reversals, including monitoring systems, adaptive management, and the establishment of carbon reserves in accordance with these guidelines.

4.1 Applicable principles

The analysis and management of reversal risk shall be applied in accordance with the following principles:

- **Conservativeness:** where significant uncertainty exists, assumptions or parameters shall be applied that avoid the overestimation of mitigation outcomes or the underestimation of risk.
- **Consistency:** comparable criteria shall be applied under similar circumstances and over time.
- **Accuracy:** biases and uncertainties shall be minimized in the identification, assessment, and rating of risk.
- **Integrity and completeness:** all relevant carbon pools and sources shall be considered in accordance with the applicable methodology.
- **Relevance:** only data and assumptions that materially influence the risk profile of the CCMP shall be included.
- **Transparency:** all data, assumptions, parameters, and methods used, shall be sufficient documented, ensuring their traceability and reproducibility.

The analysis shall follow a conservative approach, avoiding the underestimation of risk and considering associated sources of uncertainty.

4.2 General requirements of the analysis

The CCMP shall:

- a) Conduct the non-permanence risk analysis based on the specific characteristics, conditions, and circumstances of the programme or project.
- b) Document, justify, and support the analysis with verifiable evidence, ensuring the traceability and reproducibility of the data, assumptions, and methods used.
- c) Submit to the Validation and Verification Body (VVB) a technical report clearly describing the assumptions, criteria, data used, methodology applied, and outcomes obtained, including the determination of the risk level and the corresponding individual buffer reserve percentage.
- d) Consider both the implementer's own resources and those of third parties available for the implementation, monitoring, and risk management.

The analysis shall be subject to independent review by the VVB and approval by Cercarbono, which may request adjustments when inconsistencies or underestimations of risk are identified.

The analysis shall be conducted initially during validation and updated at each subsequent verification event, considering changes in operational, environmental, regulatory, institutional, or socio-economic conditions that may modify the previously assessed risk profile.

4.3 Identification of applicable carbon pools

The CCMP shall identify all eligible carbon pools in accordance with the applicable methodology and within the boundaries of the programme or project, which shall be considered in the accounting of mitigation outcomes.

Where permitted by the methodology, the CCMP may exclude non-significant carbon pools, provided that such exclusion is duly justified and documented in accordance with the corresponding methodological criteria.

The risk analysis shall be applied to each carbon pool included in the credit accounting. The level of risk exposure may differ between carbon pools, which shall be considered in the risk assessment and in the determination of the individual buffer reserve percentage applicable to the CCMP.

The establishment of buffer reserves, both individual and collective, shall be carried out proportionally on credits issued by the CCMP in each verification period, in accordance with the percentages determined by the programme.

Depending on the type of activity, the following carbon pools, among others, may be considered:

- Aboveground biomass.
- Belowground biomass.
- Dead wood.
- Litter.
- Soil organic carbon.
- Products or materials with carbon storage, where eligible.

4.4 Risk assessment

The CCMP shall identify, assess, and rate non-permanence risks, considering at least the following elements:

- The probability of occurrence of the reversal event.
- The potential magnitude of the impact on carbon stocks or credited mitigation outcomes.
- The time horizon within which the risk could materialize.
- The capacity of the holder to mitigate, control, or respond to such risk.

The analysis shall consider, among others, the following types of risk:

- CCMP-specific risks, associated with the technical, operational, or territorial characteristics of the initiative.
- External risks beyond the direct control of the implementer.
- Systemic or correlated risks that may simultaneously affect multiple initiatives within the same region or jurisdiction.
- Climatic, regulatory, institutional, economic, and social factors that may affect the permanence of mitigation outcomes.

The assessment shall be carried out through the application of the **Buffer Reserve Tool**, using a structured and quantified risk factor methodology. The outcome of this assessment shall determine the residual risk level of the CCMP and the corresponding individual buffer reserve percentage.

The evaluation of non-permanence risk shall consider the reference permanence time horizon established in **Section 2.1**. When the operational duration of the CCMP is shorter than this horizon, the analysis may rely on the temporal equivalence factor defined in that section to relate the duration of the CCMP to the permanence horizon considered in the risk assessment.

4.5 Treatment of conservativeness and uncertainty

The non-permanence risk analysis and the determination of carbon reserves shall be applied under a conservative approach that avoids the underestimation of reversal risk.

Where significant uncertainties exist regarding the estimation of carbon stocks, the parameters used, or the conditions that may affect the permanence of mitigation outcomes, such uncertainties shall be explicitly considered in the risk assessment and conservatively reflected in the determination of the individual buffer reserve percentage applicable to the CCMP.

Where uncertainty cannot be reduced through additional information or more precise methods, conservative assumptions consistent with the applicable methodology and with these guidelines shall be applied.

4.6 Additional module for jurisdictional or nested programs (REDD+)

When the CCMP is implemented under a jurisdictional REDD+ program or is integrated or nested within a jurisdictional or national framework, the risk analysis shall incorporate, in addition to the general factors, the following additional elements:

- a) Institutional and regulatory risk, including regulatory stability, territorial enforcement capacity, and the strength of the forest governance framework.
- b) Regional or systemic correlation risk, particularly extreme climate events, large-scale fires, structural land-use changes, or socio-economic dynamics that may simultaneously affect multiple areas within the jurisdiction.

- c) Existence and adequacy of jurisdictional response and financing mechanisms for reversals, including risk management instruments, financing mechanisms, or buffers and reserves established at the jurisdictional or national level.
- d) Interaction between the local risk of the CCMP and aggregated risk at the jurisdictional level, considering potential correlation effects among multiple initiatives within the same territory.

Where official risk assessments at the jurisdictional or national level exist, the CCMP shall demonstrate that its analysis is consistent with those assessments and apply conservative adjustments in the event of significant discrepancies.

The individual buffer reserve of the CCMP may be adjusted where residual risk not covered by jurisdictional or national reversal risk management mechanisms is identified.

4.7 Updating the analysis

The update of the non-permanence risk analysis shall consider, among others, the following elements:

- Regulatory or institutional changes that may affect the implementation or management of the CCMP.
- Modifications to applicable jurisdictional or national reference levels.
- Relevant climatic or socio-economic events that may affect the permanence of mitigation outcomes.
- Accumulated outcomes of CCMP monitoring.
- Previously verified reversals.

In the case of jurisdictional REDD+ programs, the update shall be conducted at least every five (5) years, or more frequently where significant structural changes occur that may alter the previously assessed risk profile.

4.8 Monitoring during the crediting period

The non-permanence risk analysis shall be periodically updated during the crediting period of the CCMP, in accordance with the following provisions:

- During the initial validation of the CCMP.
- At each verification event.
- At a frequency of at least once every three (3) years, except for jurisdictional programmes, for which the frequency shall be determined in accordance with the applicable jurisdictional framework or methodology.
- More frequently when significant changes occur in the operational, environmental, regulatory, or institutional context that may modify the previously assessed risk profile.

Each update shall consider the evolution of risk factors, the effectiveness of mitigation measures implemented, and any observed events that may affect the permanence of the credited mitigation outcomes.

4.9 Monitoring after the crediting period

Once the crediting period has ended, the CCMP shall continue monitoring the carbon pools included in the accounting of credited mitigation outcomes for the minimum period established by the Cercarbono Carbon Programme, which shall not be less than forty (40) years from the activity start date, in order to detect and manage potential reversal risks.

Cercarbono maintains its own monitoring tools and early warning systems designed to identify potential events or conditions that may affect the permanence of mitigation outcomes. When relevant alerts or events are recorded, Cercarbono shall issue the corresponding communications to the CCMP holder through the EcoRegistry platform in order to support the monitoring and management of reversal risk by the holder.

Once the minimum monitoring period established under these guidelines has been fulfilled, monitoring may cease once it is demonstrated, through verifiable technical evidence, that the risk of reversal is negligible.

A negligible risk of reversal shall be considered to exist when it can be reasonably demonstrated that the carbon stocks in the pools included in the CCMP accounting have reached a condition of net stability, characterized by:

- Absence of significant decreasing trends in carbon stocks,
- Structural and ecological consolidation of the system supporting carbon storage, and
- A remote probability of future carbon release under plausible risk scenarios.

Under such conditions, it may be concluded that these carbon stocks can be maintained, with a reasonable level of certainty, throughout the one hundred (100)-year reference horizon used for the assessment of permanence.

The demonstration shall be based on verifiable technical evidence and shall be subject to independent review.

4.10 Monitoring period and reversal compensation

The CCMP holder shall maintain monitoring of the carbon pools included in the accounting of credited mitigation outcomes during the crediting period and during the minimum monitoring period required by the Cercarbono Certification Programme, which shall not be less than forty (40) years from the activity start date, in accordance with **Sections 4.8** and **4.9** of these guidelines.

Where applicable carbon crediting schemes establish specific requirements regarding the monitoring period or the period of liability for reversals, such requirements shall prevail, provided that they are consistent with the principles and provisions established in these guidelines.

The obligation to compensate verified reversals shall remain in force throughout the monitoring period and until it can be demonstrated that the risk of reversal is negligible, in accordance with the criteria established in **Section 4.8**.

During this period, the CCMP holder shall identify, report, and manage any reversal affecting the credited mitigation outcomes, in accordance with the procedures established by the programme and consistent with the non-permanence risk analysis described in **Section 4**.

Where it is demonstrated, through verifiable technical evidence and independent review, that the risk of reversal has reached a negligible level, the Cercarbono Certification Programme may determine that the monitoring period may be closed and the associated obligations for reversal compensation.

5 Determination of the carbon buffer reserve

As an outcome of the structured analysis of non-permanence risk and through the application of the **Buffer Reserve Tool**, the CCMP shall establish two components to support the permanence of credited mitigation outcomes:

1. **Pooled carbon buffer reserve**, fixed in nature, applied as a uniform percentage to the credits issued at each verification event.
2. **Individual carbon buffer reserve**, variable in nature, determined according to the level of residual risk identified for the CCMP.

Both components operate in a complementary and distinct manner to ensure the environmental integrity of credited mitigation outcomes, covering both CCMP-specific risks and systemic or correlated risks at an aggregated level.

The determination of the individual buffer reserve shall reflect the non-permanence risk level identified for the mitigation outcomes, considering the permanence horizon defined in **Section 2.1**.

5.1 Pooled carbon buffer reserve

The Pooled carbon buffer reserve corresponds to five percent (5%) of the net credits issued at each verification event.

This reserve has a preventive and permanent nature and is intended to support the integrity of the permanence of mitigation outcomes generated by CCMPs in the land-use activities indicated in **Section 2**.

The fixed 5% percentage is established as a common mechanism for managing systemic or correlated non-permanence risk, covering internal, external, systemic, or correlated risks that may simultaneously affect multiple CCMPs within the programme.

The Pooled buffer reserve shall be administered by Cercarbono as a common risk management mechanism and shall not be returned to CCMPs under any circumstances.

Cercarbono shall conduct periodic evaluations (**Section 9**) of the sufficiency of the Pooled fund, considering the aggregated performance of the portfolio and the evolution of the systemic risk profile, and may adopt regulatory adjustments when accumulated exposures that could compromise the environmental integrity of the system are identified.

In integrated or nested schemes at the jurisdictional or national level, contributions to the Pooled buffer reserve shall be harmonized with the risk management mechanisms in place at those levels, avoiding duplication of coverage for the same risk and ensuring consistency in the compensation of potential reversals.

5.2 Individual carbon buffer reserve

The individual reserve shall correspond to a variable percentage ranging from zero percent (0%) to forty-three percent (43%) of the net credits issued to the CCMP at each verification event, as determined through the structured analysis of non-permanence risk and the application of the **Buffer Reserve Tool**.

The assigned percentage shall reflect the total level of risk identified through the **Buffer Reserve Tool** and shall be:

- Assessed by the VVB during validation and at each verification event.
- Recorded in the corresponding audit report.
- Reviewed by Cercarbono as a condition for the issuance of credits.
- Adjusted when underestimations of risk are identified, when material changes in the risk profile occur, or when modifications in operational, regulatory, or jurisdictional conditions that may affect the permanence of mitigation outcomes are observed.

CCMPs whose individual reserve is equal to or greater than twenty percent (20%) shall not be eligible to continue in the programme unless corrective measures are implemented to reduce the identified risk and a new risk assessment demonstrates a substantial reduction in the level of exposure.

In such cases, the CCMP holder shall submit a risk mitigation plan aimed at reducing the level of exposure below the established threshold. Such plan shall be validated and verified by a VVB and authorized by Cercarbono.

Where a CCMP forms part of a jurisdictional or national scheme, the determination of the individual reserve shall be consistent with the aggregated risk levels observed at that scale, applying conservative adjustments where relevant discrepancies are identified.

The determination and application of the individual reserve shall be coherent with the programme's pooled buffer reserve mechanisms and, where applicable, with buffers or reserves established at the jurisdictional or national level, avoiding double coverage of the same risk and ensuring that each level addresses differentiated components of the risk or residual risk not covered by mechanisms established at higher levels.

5.3 *Ex ante* calculation of average net mitigation

For the validation of the CCMP, the holder shall estimate *ex ante* the annual GHG removals or emission reductions during the duration of the programme or project, applying methodologies approved by Cercarbono and under a conservative approach that avoids the over-estimation of mitigation outcomes. The estimation shall:

- Be based on explicit assumptions that are technically justified and verifiable.

- Incorporate technical parameters and data sources that are properly documented.
- Identify the estimated year in which the projected average net mitigation is expected to be reached.

Where an officially recognized jurisdictional or national baseline exists, the estimation shall be consistent with that reference or incorporate conservative adjustments where relevant differences are identified.

The estimated year in which the projected average net mitigation is reached shall serve as a technical reference for the potential proportional release of the individual buffer reserve. Such release may occur in the verification event in which the achievement of the projected average net mitigation is demonstrated, or in a subsequent verification event, and shall be subject to independent verification in accordance with the procedures of the programme.

5.4 *Ex post* calculation and reassessment

Prior to each verification, the CCMP shall submit a monitoring report supporting the GHG removals or reductions effectively achieved during the corresponding period.

Where the difference between *ex post* outcomes and *ex ante* estimates exceeds ten percent (10%), the CCMP shall conduct a formal reassessment of both the baseline scenario and the project scenario, including:

- The updating of historical outcomes.
- The re-estimation of future outcomes.
- The updating of the projected year in which the average net mitigation is expected to be reached.

Reassessment shall be mandatory when the spatial boundaries of the CCMP or the composition of its eligible areas are modified, when areas previously considered are added or excluded, or when methodological or regulatory changes occur that may affect the consistency of the baseline scenario or the project scenario.

In jurisdictional or nested contexts, calculations shall be consistent with the applicable official references and consider any adjustments required to maintain accounting coherence and prevent double recognition of mitigation outcomes.

Credits generated in areas that are subsequently permanently excluded from the CCMP shall be compensated through the CCMP's own reserve, in accordance with the provisions set out in the **Section 8 “Carbon buffer management”** of the *Procedures of Cercarbono's Certification Programme*.

Where monitoring data on carbon stocks or on the parameters required for their estimation are not available for certain periods or carbon pools, conservative estimation approaches consistent with the selected methodology may be used, provided that they do not lead to an overestimation of the credited removals or reductions. GHG emissions shall be monitored on a continuous basis to ensure their proper consideration in subsequent reassessments.

At each verification event, the CCMP shall:

- Apply the **Buffer Reserve Tool** to determine the updated individual buffer reserve percentage, considering changes in operational, environmental, regulatory, institutional, or socio-economic conditions that may modify its level of risk exposure.
- Allocate five percent (5%) of the net credits issued to the Pooled buffer reserve.
- Allocate the percentage determined by the risk analysis to the individual buffer reserve.

Both reserves shall be identified through distinct serial numbers and linked to the corresponding CCMP.

From the second verification onwards, the CCMP shall report the measures implemented to manage previously identified risks with the aim of mitigating them and shall conduct an assessment on the effectiveness of the measures adopted to reduce residual risk.

Once the CCMP effectively has effectively reached the projected average net mitigation, it may request the gradual release of the accumulated individual buffer reserve, in accordance with the rules established in the corresponding section.

6 Mechanism for the release of the individual buffer reserve

The CCMP may request the partial release of the individual reserve only once it has effectively achieved the projected average net mitigation level, as demonstrated by the results verified in a subsequent verification event.

The release of the individual buffer reserve shall not be automatic and shall be subject to full compliance with these guidelines and with the **Procedures of Cercarbono's Certification Programme**.

For each release request, it shall be verified that:

1. Accumulated net removals or reductions are not below the projected long-term net average.
2. There are no uncompensated reversals.
3. The updated non-permanence risk analysis does not indicate material increases in the risk profile.
4. Independent verification confirms the stability of the mitigation outcomes achieved.

In integrated or nested schemes within jurisdictional or national frameworks, the release shall be consistent with the allocation and accounting rules applicable at that scale, ensuring that double recognition of mitigation outcomes does not occur.

If the CCMP ceases its implementation or fails to conduct subsequent verification events, the accumulated individual buffer reserve shall not be released and shall permanently become part of the programme's pooled buffer reserve.

If the CCMP ceases implementation or fails to conduct subsequent verification events in accordance with the timeline established in **Section 9.4.1 "Timing of verification events"**

of the **Cercarbono Protocol**, the accumulated individual reserve shall not be released and shall be permanently transferred to the programme's pooled buffer reserve.

6.1 Determination of compliance with the average net mitigation

The CCMP shall be considered to have achieved the projected average net mitigation when the annual verified accumulated average net mitigation is equal to or greater than the *ex ante* projected average for the duration of the CCMP.

$$ANM_{ver,t} = \frac{\sum_{i=1}^t VNM_i}{t} \quad \text{Equation 2}$$

Variable	Description	Units
$ANM_{ver,t}$	Verified accumulated average net mitigation up to year t .	tCO ₂ e
VNM_i	Net mitigation verified in year i .	tCO ₂ e
t	Number of years elapsed from the beginning of the crediting period to the verification event.	Years

Note: The CCMP shall be considered to have achieved the projected average net mitigation when: $ANM_{ver,t} \geq ANM_{CCMP}$, where ANM_{CCMP} corresponds to the *ex ante* projected average net mitigation for the duration of the CCMP. When this condition is fulfilled for the first time, the following is defined: $Y_{ANM} = t$ where Y_{ANM} is the year in which the average net mitigation is achieved.

6.2 Gradual release of the individual buffer reserve

The individual buffer reserve shall be *ex ante* in nature, and its release shall be gradual, conditional, and subject to verification, in accordance with the criteria established in this section.

Once the conditions established in **Section 7.1** have been fulfilled, the release of the individual buffer reserve shall be carried out proportionally to the time elapsed since the verification event in which it is demonstrated that the CCMP has reached or exceeded the projected average net mitigation, considering the remaining period of the CCMP duration.

The number of credits from the individual buffer reserve to be released at each verification event shall be calculated using the following equation:

$$C_{release} = \frac{(Y_{Ver} - Y_{ANM})}{(C_{Completed} - Y_{ANM})} * C_{AccumInd} - C_{Ind,prev} \quad \text{Equation 3}$$

Variable	Description	Units
$C_{release}$	Credits from the individual buffer reserve to be released at the verification event.	tCO ₂ e
Y_{Ver}	Year of the verification event in which the release is requested.	Año
Y_{ANM}	Year in which the CCMP achieved the verified average net mitigation.	Año
$C_{Completed}$	Year in which the maximum release of the individual buffer reserve is completed.	Año
$C_{AccumInd}$	Total accumulated individual buffer reserve of the CCMP.	tCO ₂ e

Variable	Description	Units
$C_{Ind,prev}$	Individual carbon buffer reserve previously released.	tCO ₂ e

Note: $\frac{Y_{Ver}-Y_{ANM}}{Y_{Completed}-Y_{ANM}}$, shall not be less than 0 nor greater than 1. If $Y_{Ver} \geq Y_{Completed}$ the fraction shall be considered equal to 1. The variable $C_{release}$ represents exclusively the additional quantity of credits to be released at the corresponding verification event.

The total individual buffer reserve may be progressively released up to a maximum of ninety percent (90%) before the end of the CCMP duration, provided that the conditions established in these guidelines are maintained.

The remaining percentage shall be retained as a backstop mechanism until the conclusion of the monitoring period following the crediting period, or until it is demonstrated that the risk of reversal is negligible, in accordance with these guidelines.

6.3 Procedure for the release of credits

The release of credits retained in the individual buffer reserve shall be formalized through a verification event.

Once the release is approved:

- A new serial code shall be issued for the released credits.
- These credits shall retain the conditions, restrictions, and attributes under which they were originally audited.
- The serial numbers shall reflect their origin in the individual buffer reserve.

The conversion of serial numbers shall not alter the historical traceability of the credit nor its linkage to the CCMP that generated it.

The release of the individual buffer reserve shall not compromise the system's capacity to respond to systemic risks or correlated events that may affect the Pooled permanence of mitigation outcomes.

6.4 Additional considerations

The release calculation shall be performed using the “Individual Buffer Reserve Release” worksheet included in the **Buffer Reserve Tool**.

When the CCMP forms part of a jurisdictional or national scheme, the release calculation shall be applied consistently with the limits and conditions established at that scale, applying conservative criteria where discrepancies are identified.

If, following a partial release, a reversal is verified, it shall be compensated in accordance with the applicable rules governing the management of the individual and Pooled buffer reserves.

In jurisdictional or nested contexts, the compensation of reversals shall be coordinated with the mechanisms established at the aggregated level, avoiding double compensation across levels.

7 Management of reversals and replenishment of buffer reserves

7.1 Identification and quantification of reversals

A reversal shall be considered to occur when, during any monitoring period subsequent to the first, a net loss of previously credited carbon stocks is verified in one or more carbon pools included within the boundaries of the CCMP.

The quantification of the reversal shall:

- Be based on verifiable data.
- Be applied consistently across monitoring periods.
- Exclude emissions already accounted for outside the carbon pools included in the CCMP accounting.
- Be documented in the corresponding monitoring report.

Where ambiguity exists regarding the occurrence of a reversal, the CCMP shall submit a technical report enabling its evaluation by the VVB.

The CCMP holder, or the VVB where applicable, shall notify Cercarbono of any identified reversal event that constitutes a material reversal within a maximum period of ten (10) calendar days from the moment they become aware of it. Such notification shall be made through an official communication and shall include a description of the event and the actions planned to mitigate the risk of future occurrence.

If Cercarbono determines that this obligation has not been fulfilled within the specified timeframe, it may impose the corresponding disciplinary measures on the responsible party, in accordance with the decision of a committee established for this purpose, taking into account the circumstances and the magnitude of the specific event.

7.1.1 Classification of reversals

For the purposes of management of non-permanence risk, reversals shall be classified as follows:

a) Unintentional reversals (unavoidable)

These correspond to reversals resulting from natural events or circumstances beyond the reasonable control of the CCMP holder, including, among others:

- Natural fires.
- Extreme natural events.
- Forest pests or diseases.
- Illegal acts by third parties beyond the reasonable control of the holder.
- Armed conflicts or force majeure situations.

- Regulatory changes that objectively prevent the implementation of the CCMP.

These reversals may be compensated through the carbon buffer reserves established under these guidelines.

b) Reversals attributable to negligence or non-compliance

These correspond to reversals resulting from actions or omissions by the CCMP holder that imply non-compliance with the obligations related to the management, protection, or monitoring of carbon pools included in the accounting of the programme or project, including:

- Poor management or negligence in the implementation of the CCMP.
- Failure to implement previously identified risk mitigation measures.
- Intentional actions resulting in the loss of carbon stocks.
- Regulatory non-compliance attributable to the implementer.
- Failure to submit mandatory reports or comply with monitoring requirements.

Reversals attributable to negligence or non-compliance shall be directly compensated by the CCMP holder, in accordance with the provisions of the ***Procedures of Cercarbono's Certification Programme***.

The classification of the reversal shall be assessed by the VVB and reviewed by Cercarbono.

Where a reversal of certified removals or emission reductions is identified, no new carbon credits shall be issued for the CCMP until the reversal has been fully compensated, either through the cancellation of the corresponding credits or through the use of the applicable carbon buffer reserves, in accordance with these guidelines and the programme procedures.

7.2 Use of the buffer reserve in case of reversal

Where a reversal is verified in accordance with **Section 7.1**, compensation for the loss of mitigation outcomes shall follow the following order of precedence described below:

1. **Individual buffer reserve of the CCMP:** credits retained in the individual buffer reserve of the CCMP shall be used as the primary mechanism to compensate the verified loss of carbon stocks.
2. **Pooled buffer reserve of the programme:** where the reversal exceeds the number of credits available in the individual buffer reserve of the CCMP, the Pooled buffer reserve of the programme may be activated in accordance with the provisions established in the ***Procedures of Cercarbono's Certification Programme***.
3. **Replenishment by the CCMP holder:** where the reversal exceeds the compensation capacity available through the individual buffer reserve and, where applicable, the Pooled buffer reserve, the CCMP holder shall replenish the corresponding credits in accordance with the ***Procedures of Cercarbono's Certification Programme***, including the applicable conditions, timelines, and compliance mechanisms.

In jurisdictional or nested schemes, the activation of the Pooled buffer reserve shall be coordinated with the compensation mechanisms established at the aggregated level, ensuring coherence across implementation levels and avoiding double compensation of the same reversal event.

7.3 Mitigation deficit and replenishment

Where the total number of credits cancelled to compensate a verified reversal exceeds the compensation capacity available through the buffer reserves applicable to the CCMP, a replenishment deficit shall arise.

In such cases:

- The CCMP holder shall replenish the deficit of carbon credits in accordance with the provisions of the *Procedures of Cercarbono's Certification Programme*, through the retention or cancellation of credits generated in future verification events or through other mechanisms authorized by the programme.
- The replenishment of the deficit shall be completed prior to any additional release of the individual buffer reserve.
- Cercarbono may require additional risk management or guarantee measures where a recurring reversal risk or a significant deterioration in the risk profile of the CCMP is identified.

7.4 Temporal adjustment of the buffer reserve percentage (Post-reversal tightening)

When a reversal is verified in accordance with **Section 7.1**, Cercarbono may require a temporary adjustment of the individual buffer reserve percentage applicable to the CCMP, in order to reflect the increased non-permanence risk identified. In such cases:

- The individual buffer reserve percentage applicable to the CCMP may be temporarily increased based on the magnitude of the reversal and the updated risk assessment.
- The adjustment shall remain in place for a minimum period of five (5) years, or until at least one additional verification cycle has been completed, allowing the effectiveness of the implemented mitigation measures to be assessed.
- The increase in the buffer reserve percentage may be more significant when the reversal is attributable to negligence or non-compliance by the CCMP holder, in accordance with the classification established in **Section 7.1.1**.

This mechanism aims to strengthen the robustness of the buffer reserve system in the presence of recurring exposures to non-permanence risk.

7.5 Interaction with jurisdictional or national schemes

When the CCMP is integrated or nested within a jurisdictional or national program, the management of reversals shall be coordinated with the compensation mechanisms established at that scale:

- The compensation of reversals shall be coordinated with the applicable jurisdictional buffer or reserve, where such mechanisms exist.
- Double compensation of the same reversal event across different implementation levels shall not be permitted.
- The CCMP shall demonstrate, through verifiable documentation, the correct allocation of responsibilities between the project level and the jurisdictional or national level.

Where the jurisdictional scheme only partially covers the reversal, the individual buffer reserve shall cover the residual risk not covered at the aggregated level.

7.6 Monitoring after the crediting period

During the monitoring period following the crediting period of the CCMP:

- Any reversal shall be identified, quantified, and compensated in accordance with the provisions established in **Sections 7.1 to 7.4** of these guidelines.
- Monitoring shall continue until it can be demonstrated that the risk of reversal is negligible.
- Such demonstration shall provide evidence of the stability of carbon stocks in the carbon pools included in the CCMP accounting over a minimum time horizon of one hundred (100) years, in accordance with the provisions established in **Section 2.1**.

7.7 Responsibility for the Compensation of Reversals

The CCMP holder shall be responsible for ensuring the full compensation of any verified reversal affecting previously credited mitigation outcomes within the boundaries of the CCMP.

Where a reversal is identified and quantified in accordance with the applicable methodology and verified by the VVB, the CCMP holder shall ensure that the equivalent quantity of GHG emissions is compensated through the mechanisms established in these guidelines.

The compensation of reversals shall follow the order of precedence established in **Section 7.2**, through the use of the individual buffer reserve and, where applicable, the Pooled buffer reserve of the programme.

Where these reserves are insufficient to fully cover the verified reversal, the CCMP holder shall replenish the deficit through the cancellation of equivalent credits expressed in tonnes of CO₂ equivalent (tCO₂e), in accordance with the provisions established in **Section 6.3** and in the *Procedures of Cercarbono's Certification Programme*.

8 Monitoring of risk indicators

Starting from the second verification, CCMPs shall periodically monitor non-permanence risk indicators that may be subject to change, in order to evaluate the evolution of the previously identified risk profile.

For each monitoring period, the CCMP holder shall report concisely:

- Changes observed in the risk factors identified during the initial analysis.
- Actions implemented to mitigate or manage such risks.
- Verifiable evidence supporting the measures adopted.

The monitoring shall consider both CCMP-specific risks and external, systemic, or correlated risks that may modify the previously assessed risk profile, including changes in regulatory, institutional, environmental, climatic, or socio-economic conditions that may affect the permanence of mitigation outcomes.

The monitoring report shall be recorded in the “Monitoring” worksheet of the **Buffer Reserve Tool**, in which the observed changes, adopted measures, and corresponding evidence shall be documented.

As part of the verification process, the Validation and Verification Body (VVB) shall assess whether the reported information is consistent with the situation observed in the CCMP and whether the evidence provided is adequate and verifiable.

Where monitoring reveals significant changes in the previously assessed risk level, the individual buffer reserve percentage may be adjusted through a reassessment conducted using the **Buffer Reserve Tool**, subject to independent verification.

The outcomes of risk monitoring may be considered by Cercarbono in the periodic evaluation of the aggregated performance of the system, potentially leading to adjustments in Pooled risk management mechanisms where systemic trends that may affect the environmental integrity of the programme are identified.

9 Periodic evaluation of the performance of buffer reserves under the Cercarbono programme

Cercarbono shall maintain a carbon buffer reserve mechanism intended to collectively support the permanence of mitigation outcomes certified under the programme.

Carbon buffer reserves are established through the retention of credits during CCMP verification events, in accordance with the provisions established in the previous sections of these guidelines, distinguishing between:

- Individual buffer reserve, associated with each CCMP and recorded with serial numbers that enable traceability.
- Pooled buffer reserve, administered by the programme as a backstop mechanism against systemic or correlated risks.

Where it is necessary to compensate a reversal that exceeds the capacity of the CCMP's individual buffer reserve, the Pooled buffer reserve may be used in accordance with the provisions established in the **Procedures of Cercarbono's Certification Programme**.

In order to ensure the environmental integrity of the system, Cercarbono shall conduct periodic evaluations of the performance and adequacy of the buffer reserve mechanism.

These evaluations shall be conducted periodically, at least every two (2) years beginning in the sixth year of implementation of the buffer reserve mechanism, and shall consider, among other elements:

- The total number of CCMPs contributing to the buffer reserve system.
- The number of credits issued during the period and cumulatively.
- The size of the Pooled buffer reserve and the sum of individual buffer reserves.
- The frequency and magnitude of verified reversals.
- The performance of CCMPs in relation to projected mitigation and the mitigation actually achieved.
- The incidence of CCMPs with delayed verification processes or that have been abandoned before the end of their crediting period.
- The evolution of the systemic or correlated risk profile.
- Changes in climatic, regulatory, or institutional conditions that may affect the aggregated risk profile.

The outcomes of these evaluations may be used by Cercarbono to adjust future versions of the **Buffer Reserve Tool**, the weighting of risk indicators, and the buffer reserve percentages required for new CCMPs.

Adjustments adopted as an outcome of these evaluations shall not have retroactive effect. However, when a CCMP renews its crediting period, it shall apply the current version of the **Buffer Reserve Tool** and the corresponding guidelines.

The aggregated outcomes of these evaluations may be made public for transparency and system improvement purposes, without disclosing specific information about individual CCMPs.

10 References

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11 Document history

Version	Date	Comments or changes
1.0	01.10.2021	Initial version of the document published for public consultation from 01.10.2021 to 31.10.2021 .
1.1	24.11.2021	Final version incorporating comments from the public consultation, duly addressed.
1.2	10.08.2022	Improvements in drafting, inclusion of a paragraph linking the Buffer Reserve Tool with the section on reversal management in the <i>Procedures of Cercarbono's Certification Programme</i> document.
2.0	03.08.2026	Strengthening of the conceptual and operational framework for managing non-permanence risk and ensuring the permanence of mitigation outcomes in land-use sector initiatives. The update incorporates more precise definitions, technical principles for risk assessment, and provisions for the periodic monitoring of risk indicators during the implementation of the CCMP and during the post-crediting period. It also strengthens mechanisms for the management and compensation of reversals, the interaction between the individual buffer reserve and the Pooled buffer reserve, and the consistency with jurisdictional or nested schemes. The version also improves the traceability of risk analysis, independent verification, and the articulation with other normative instruments of Cercarbono.