CERCARBONO
Certified Carbon Standard

Cercarbono's Guidelines to Estimate the Carbon Buffer in Climate Change Mitigation Initiatives in the Land Use Sector

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CERCARBONO

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Acronyms and abbreviations

CCMP   Climate Change Mitigation Programme or Project
CO₂e   Carbon dioxide equivalent
GHG   Greenhouse Gases
PDD   Project Description Document
REDD+   Reduction of Emissions from Deforestation and Forest Degradation and other actions in this sector
UNFCCC United Nations Framework Convention on Climate Change
VVB   Validation and Verification Body

Terms and definitions

Terms relevant to these guidelines and to the Risk Tool are listed below. To see their definition, see the document *Terms and Definitions of the Voluntary Certification Programme of Cercarbono*, available at www.cercarbono.com, section: Documentation.

- agricultural land
- anthropogenic
- avoidance of greenhouse gas emissions
- baseline scenario
- carbon buffer
- carbon credit
- carbon dioxide equivalent
- carbon market
- carbon offset
- carbon pool
- carbon stock
- Carboncer
- CCMP developer
- CCMP holder
- CCMP lifespan
- climate change mitigation
- climate change mitigation programme
- climate change mitigation programme or project
- climate change mitigation project
- co-benefit
- deforestation
- destruction of greenhouse gas emissions
- displacement of greenhouse gas emissions
- forest
- forest degradation
- forest land
- grassland
- greenhouse gas
- greenhouse gas emissions

- greenhouse gas removal
- grouped programme
- grouped project
- individual carbon buffer
- instance
- land use
- mangrove
- methodology
- monitoring
- monitoring report
- non-permanence
- pooled carbon buffer
- programme activity
- project activity
- Project Description Document
- project scenario
- reduction of greenhouse gas emissions
- reforestation
- restoration
- reversal
- risk factor
- risk mitigation
- silvopastoral system
- sink
- source of greenhouse gas emissions
- validation
- Validation and Verification Body
- verification
- verification period
- wetland
- woody crop

The removal of atmospheric Greenhouse Gases (GHG), specifically carbon dioxide (CO_2), by plants through the photosynthetic processes is one of many natural phenomena utilised worldwide to address the problem of Climate Change.

The land use sector can contribute to reducing this problem through the GHG removal by leaving and protecting natural carbon pools such as forest lands, agricultural lands, grasslands, and wetlands. Living Carbon Sinks such as these play a very important role in converting atmospheric carbon into natural storage and preventing carbon from being re-released back into the atmosphere. Other natural occurrences that do not reach the definition of forest also aid in carbon removals, such as forest plantations, natural forests, herbaceous, shrub and tree covers, woody crops, silvopastoral systems, mangroves, marshes, seagrass meadows, and artificial wetlands. However, by their nature, the carbon stocks found in these sinks can be reverted to the atmosphere by natural or anthropogenic causes.

This guide outlines the elements required to estimate the carbon buffer that supports the permanent GHG removal or reduction of GHG emissions from Climate Change Mitigation Programmes or Projects (CCMP). CCMPs are found in a range of different categories of land use under Cercarbono's voluntary certification programme. The risk analysis to be submitted by CCMPs holders or developers will be defined, which allocates the number of individual carbon buffers required to support the carbon credits obtained.

The guide will also present the mechanism for releasing the individual carbon buffer.

Foreword

Cercarbono is a standard with a voluntary carbon certification programme, whose mission is to facilitate and guarantee to individuals, companies, and the public the registration of Climate Change Mitigation Programmes or Projects (CCMPs), the certification of emissions and the registration of carbon credits obtained by these CCMPs.

The ***Cercarbono's Tool to Estimate Carbon Buffer in Initiatives to Mitigate Climate Change in the Land Use Sector*** and its respective guidelines has been developed by Cercarbono's technical team and endorsed by its Board of Directors and CEO.

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This document will be updated when its scope needs to be broadened or adapted to national and international circumstances.

A draft of this tool was made available for public consultation on the Cercarbono website and through invitations to individuals and public and private companies. Their contributions have been considered in the elaboration of the final version.

1 Introduction

To address the global problem of climate change, different measures have been put in place aimed at generating results to minimise, remove and prevent GHG emission into the atmosphere. Among these measures, the most prominent are those for mitigation and adaptation to climate change. Mitigation focuses on the causes that originate the problem, such as generating GHG emissions from activities from different economic sectors.

Urgent and coordinated action by all economic sectors is needed to address the environmental challenges of climate change, biodiversity and wetland loss and desertification. CCMPs can contribute to solve these problems by the GHG removal and reduction of GHG emissions. Some types of CCMPs extend beyond the mitigation of climate change and frequently contribute to the conservation and restoration of habitats, biodiversity, and soil quality, while regulating the hydrological cycle and aiding in the improvement of social conditions.

One challenge with using carbon offsets to neutralise GHG emissions is that the effects of the emissions can be long-lasting. While most emissions eventually be removed from the atmosphere over time, a significant amount remain for hundreds or thousands of years. Globally, climate change mitigation measures focus on the development of CCMPs that integrate activities focused on the reduction, avoidance, displacement, or destruction of GHG emissions by emission sources or activities focused on the removal of GHG by natural carbon pools, which differ from the former, as they present non-permanence risks for such removal.

Although specific issues on the removal and storage of atmospheric carbon dioxide and the reduction of emissions in land use have not been resolved, there are technical and conceptual frameworks in place that can already be applied. GHG accounting in this type of programme or project activity has been much debated, and different approaches such as discounting, annual tonne of carbon dioxide (CO_2) and permanent or temporary credits have been established.

In this regard, Cercarbono, through the ***Cercarbono's Tool to Estimate Carbon Buffer in Initiatives to Mitigate Climate Change in the Land Use Sector*** (hereafter, the **Buffer Tool**), presents a mixed approach in which a long-term average net removal estimate (in the case of GHG removal activities) or a long-term average net reduction estimate (as for example in the case of REDD+ activities for deforestation or forest degradation), and a buffer of the mitigation gained by such activities are set to support the permanence of removals and reductions, against the inherent risk of reversal in the future. Therefore, a certain amount of GHG removals or GHG emission reductions are allocated to the pool in proportion to the mitigation outcomes of each CCMP and the period over which the carbon is stored, reasonably ensuring its long-term storage.

Guidelines to estimate a carbon buffer in initiatives to mitigate climate change in the land use sector are also presented. Procedures for establishing the pooled and the individual

carbon buffer, the guide to the Buffer Tool and the individual carbon buffer release mechanism are included.

2   Scope

This document is intended for CCMP holders and developers, and Validation and Verification Bodies (VVBs) concerning initiatives in the land use sector in which GHG removal activities are implemented that require the application of the Buffer Tool for activities in land categories:

- **Forestry:** reforestation and forest restoration are implemented, under CCMPs that include forest plantations and REDD+ removal activities.
- **Agricultural**: woody crops (shrubs and trees) are implemented without reaching the definition of forest.
- **Grasslands:** silvopastoral (herbaceous, shrub and arboreal) systems are implemented without reaching the definition of forest.
- **Wetlands:** actions to restore mangroves, marshes, seagrass meadows and artificial wetlands are implemented.

Programme or project activities reducing[1] GHG emissions are also included and require the application of the Buffer Tool for activities in land categories:

- **Forestry:** actions for forest conservation and REDD+ activities for deforestation and forest degradation are implemented.
- **Wetlands:** conservation actions are implemented for mangroves, marshes, seagrass meadows and artificial wetlands.

The holders and developers of the CCMPs must guarantee a minimum lifespan of 30 years of the initiative to ensure the permanence of mitigation of GHG emissions.

Guidelines required for the formulation and development of this type of CCMP under Cercarbono's voluntary carbon certification programme are also presented, to determine the individual and the pooled carbon buffer to support the permanent GHG removal or reduction of GHG emissions achieved by the CCMPs, as well as the mechanism for release of the individual buffer.

For the calculation of the individual buffer, the CCMP must analyse, report, and justify the risk associated with the carbon temporarily accumulated by the carbon pools through supporting documentation. This helps determine the percentage of the individual carbon buffer that will support the mitigation achieved.

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[1] Although this type of activity normally generates results that do not affect the permanence of GHG emissions, programme or project activities that consider the carbon accumulated by carbon pools are included as they may present a risk of GHG reversal.

3   Risk analysis of non-permanence

The CCMP must conduct a non-permanence risk analysis to identify potential risks that may affect the implementation and permanence of GHG removal or reduction of GHG emissions. This analysis provides the elements to transparently estimate the percentage of the individual carbon buffer to be allocated to the CCMP, as discussed below.

The analysis should be performed as part of the validation of the CCMP and performed again at each verification.

The risk analysis of non-permanence is carried out using the Buffer Tool, based on an evaluation of the sum of risk factors to determine the total risk of non-permanence of carbon pools. Therefore, the CCMP must:

- Carry out the risk analysis on the GHG removal or reduction of GHG emissions based on the characteristics and circumstances of the CCMP.
- Document and substantiate the analysis.
- Submit a risk analysis assessment report to the VVB, who scrutinises the rationale, assumptions, justifications, and documentation supporting the non-permanence risk rating.

The assessment of the tool's indicators should be done on those implementing the CCMP, regardless of who is its designer or owner.

The total Carboncer buffer percentage determined by the CCMP to support non-permanence is based on the analysis of its implementation risks. This analysis, and the resulting percentage, are evaluated and verified by the VVB and presented in the audit reports of the CCMP in the categories mentioned in *Section 2*.

In addition to these guidelines, CCMPs requiring a carbon buffer must comply with all requirements outlining and integrating the Cercarbono voluntary carbon certification programme. The CCMP must comply with this Protocol (available at www.cercarbono.com, section: Documentation) and the selected methodology for quantifying GHG removals and reductions of GHG emissions.

4 Determination of the carbon buffer

As a result of the risk analysis of the CCMP, through the application of the Buffer Tool, two different types of carbon pools will result. A **pooled carbon buffer** of a fixed percentage of the net mitigations achieved during the verification periods, and an **individual carbon buffer** of a variable percentage (depending on risk) of the net mitigations.

4.1 Pooled carbon buffer

The pooled carbon buffer corresponds to 5 % of net credits earned and is intended to support the integrity of the collective permanence of GHG removals (including activities that effectively implement or project them as in some cases in REDD+ activities) or GHG emission reductions (as in other cases of REDD+ activities) achieved by CCMPs in the land use categories outlined in *Section 2* under the Cercarbono certification scheme.

The pooled carbon buffer is never released to the CCMPs, however, Cercarbono periodically reviews the overall performance of the portfolio as detailed in *Section 6*.

4.2 Individual carbon buffer

The percentage of the individual carbon buffer can vary between 0 % and 43 % of the total carbon credits obtained by the programme or project activity. The allocation of this percentage depends on the risk analysis of non-permanence carried out by the CCMP through the Buffer Tool. This percentage may be released through verifications once the CCMP reaches or exceeds the average net removal or reduction, depending on the type of activity, during the lifespan of the CCMP. During the verification process, a risk matrix, and an updated projection of such removal and reduction are created, however, CCMPs that obtain individual buffer scores equal to or greater than 20 % at any stage are not eligible to participate or continue in the Cercarbono certification programme.

The release of the individual carbon buffer is gradual, against verification and in proportion to the remainder of the CCMP lifespan. It begins after the CCMP reaches the projected average net removal or reduction and is in proportion to the years that have elapsed since the value was reached, provided that the risk percentage of the CCMP has not increased compared to its previous assessment. The total individual carbon buffer may be withdrawn only when the CCMP reaches 80 % of its lifespan. More details in this regard are presented in *Section 5.1*.

4.3 *Ex-ante* calculation of average net removal or reduction over the lifespan of the CCMP

For validation of the CCMP, the developer or operator must make an *ex-ante* estimate of the annual GHG removals or reductions of GHG emissions over the lifetime of the CCMP, together with an estimate of the year in which the CCMP will achieve the projected average net removal or reduction. Below, *Figure 1* shows the case of GHG removal **for CCMPs in categories such as forests (reforestation, forest restoration and REDD+), agriculture (woody crops), grasslands and wetlands**. *Figure 2* shows the reduction of GHG emissions

for CCMPs in categories such as forests (especially REDD+ activities for reducing defor-estation and forest degradation) and wetlands.

As can be seen in both figures, the point of intersection between the total amount of net carbon stored in pools and the time required to reach a long-term average will determine the moment verifications can be made for the proportional release of the individual carbon buffer.

Figure 1. Estimate of the average net carbon accumulated in pools throughout the lifespan of a GHG removal CCMP.
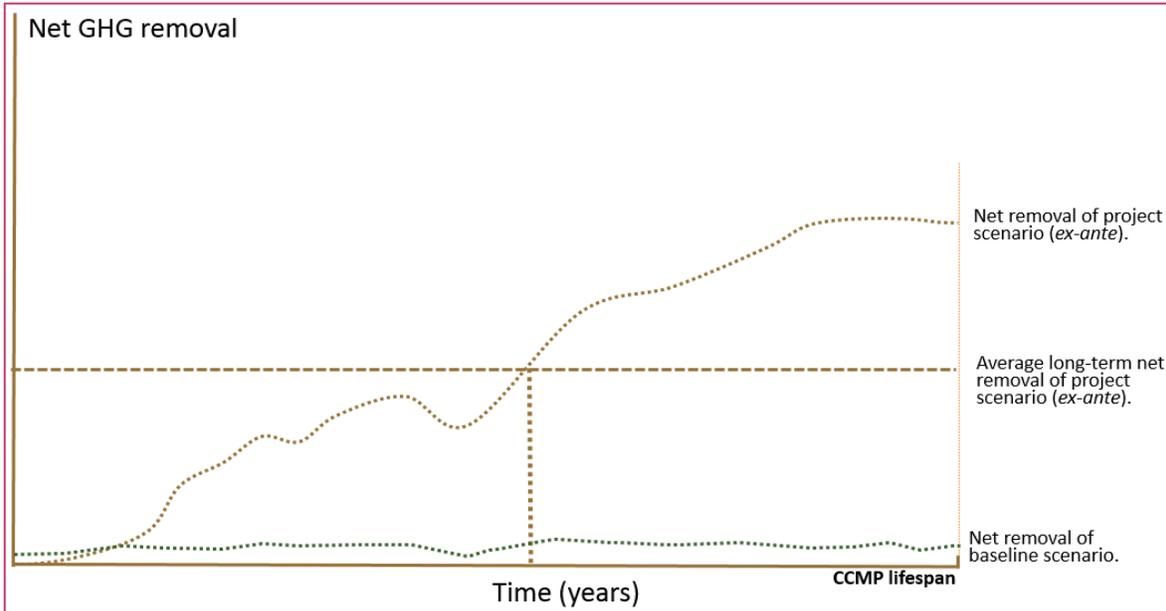

Figure 2. Estimation of the average net carbon accumulated in pools throughout the lifespan of a GHG emissions reduction CCMP.
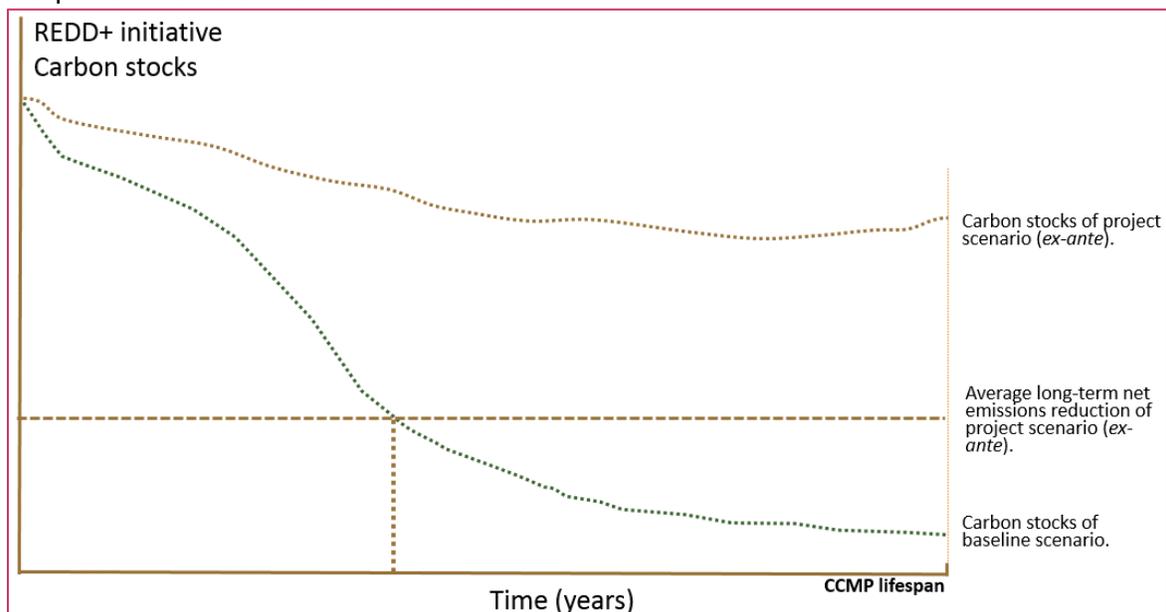
The CCMP may carry out the first verification once the results of the project activity are generated. A percentage is withheld for the pooled and the individual carbon buffer, the latter according to the analysis carried out using the Buffer Tool, based on an assessment of risk factors of the CCMP.

4.4 *Ex-post* calculation of average net removal or reduction over the lifespan of the CCMP

Before a verification event, the CCMP must carry out a monitoring report in which the *ex-post* calculations that support the GHG removal or reduction of GHG emissions are presented. This report is based on the Project Description Document (PDD) and the implementation of CCMP monitoring actions that have been carried out.

The amount of net carbon accumulated by the project activity may be less than, equal to or greater than what is estimated in the exact calculations. If a significant difference of more than 10 % is identified concerning the *ex-ante* calculations, a reassessment of the baseline and project scenarios is to be carried out, considering the annual removals or reductions achieved up to the date of monitoring and the estimated future annual removals or reductions over the lifespan of the CCMP, together with a new estimate of the year in which the CCMP would reach the projected average net removal or reduction, as shown in *Figure 3* (GHG removals) and *Figure 4* (GHG emission reductions).

In the case of the initial baseline and project scenarios, the values for the GHG removal or reduction of GHG emissions for all years, from the start to the end of the CCMP, come from estimates based on field data and from models applicable to these scenarios. In the case of reassessments, values come from a combination of data monitored from the beginning of the CCMP and of estimates and models from the year of verification.

Reassessment of the baseline scenario is mandatory when CCMPs remove areas or grouped projects add areas in the verifications with respect to the *ex-ante* baseline or with respect to the previous verification. Reassessment of the CCMP is required at each verification unless the implementation of the CCMP matches that foreseen in the *ex-ante* scenario or a previous reassessment. The reassessment combines the results monitored annually up to the time of verification and an *ex-ante* scenario from the time of verification to the end of the project.

If credits were generated in the dropped areas, they must be offset against the CCMP or grouped project buffer, as explained in Section 7 of the **Procedures of Cercarbono's Certification Programme** document, available at www.cercarbono.com, section: Documentation.

If the CCMP does not monitor carbon stocks in pools annually over the years before verifications, conservative models are used to estimate such stocks. GHG emissions of the CCMP must be continuously monitored to be duly considered in any future reassessments and verifications.

Figure 3. Reassessment of the average net removal of the long-term project scenario in a GHG removal CCMP.
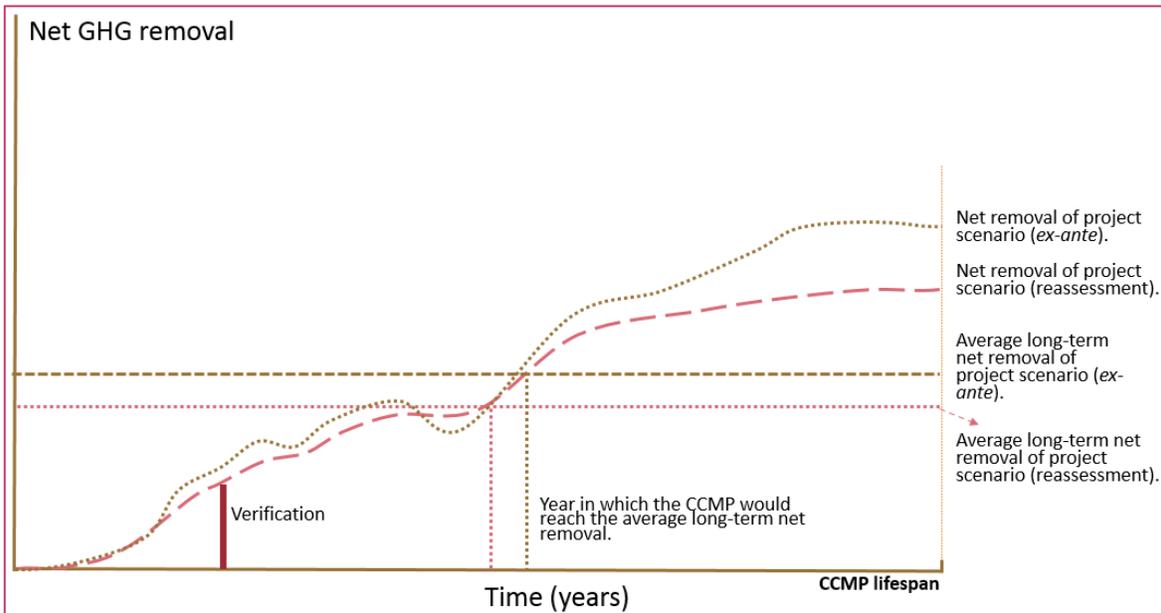
Figure 4. Reassessment of the average net reduction of the long-term project scenario in a GHG emissions reduction CCMP.
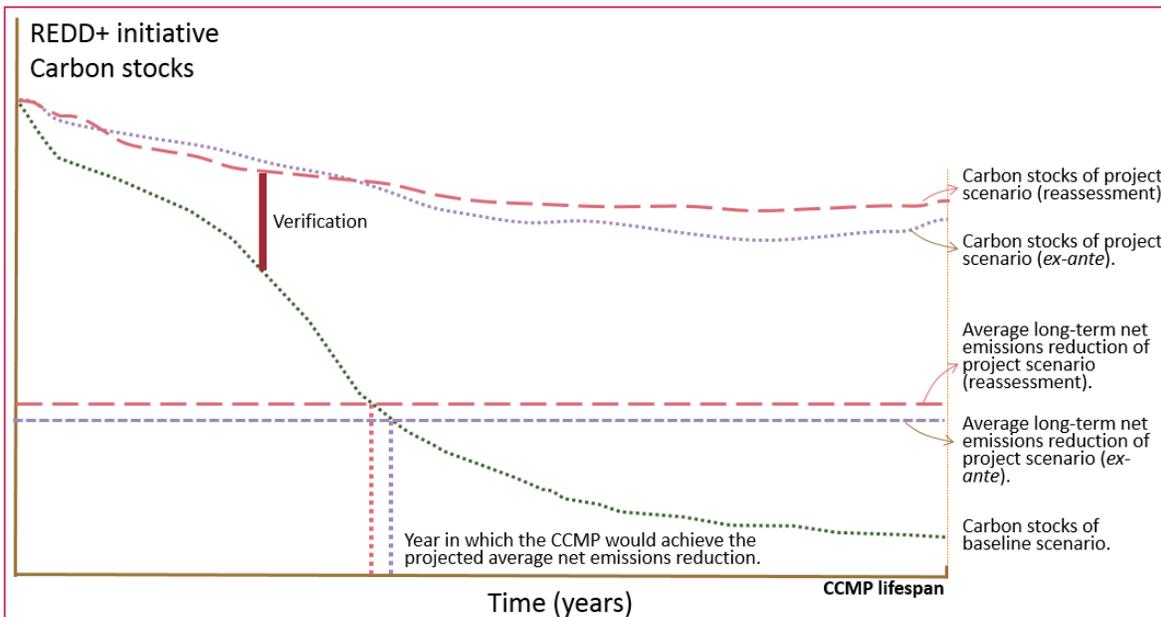
For each verification, the CCMP must evaluate risk factors that may affect the permanence of any GHG removals and reductions of GHG emissions. This is completed using the Buffer Tool to determine the percentage of the individual carbon buffer that is to be applied to the credits obtained in the verification process. Once credits are issued, this percentage is allocated to the individual carbon buffer of the CCMP and 5 % of the credits are allocated to the pooled carbon buffer of Cercarbono. See *Figure 5* for GHG removal and *Figure 6* for

GHG emissions reduction. Both types of carbon buffers are identified separately with their respective serial numbers and linked to the CCMPs that generated them.

Figure 5. Reassessment of the net removal of the project scenario and allocation of individual and pooled buffer to a GHG removal CCMP.
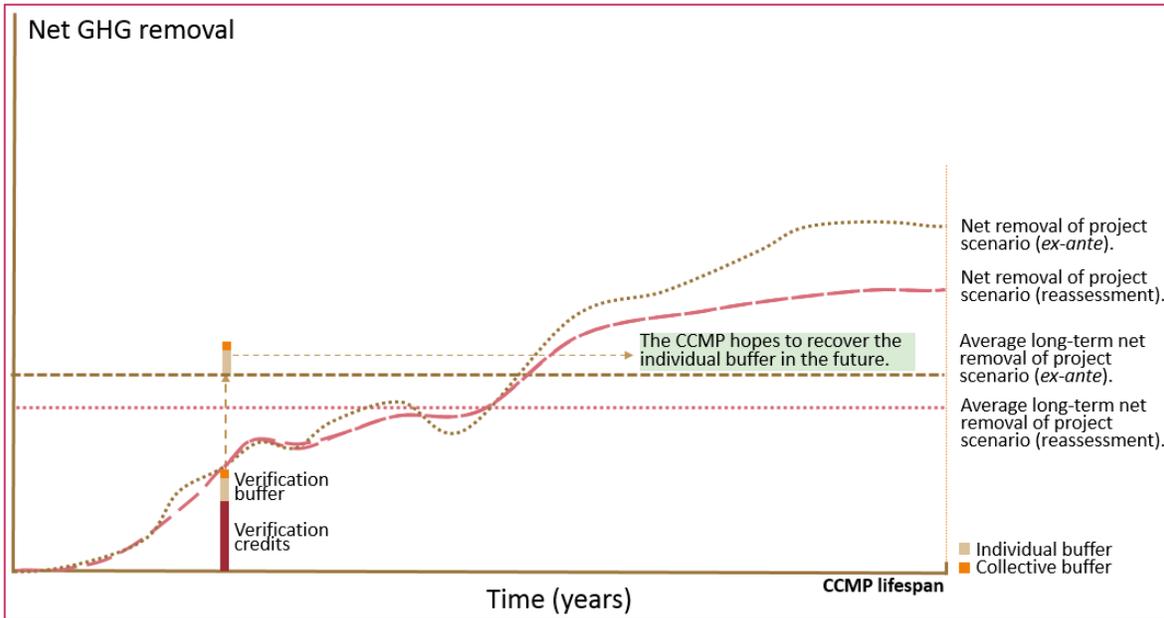
Figure 6. Reassessment of the net reduction of the project scenario and allocation of individual and pooled carbon buffer to a GHG emissions reduction CCMP.
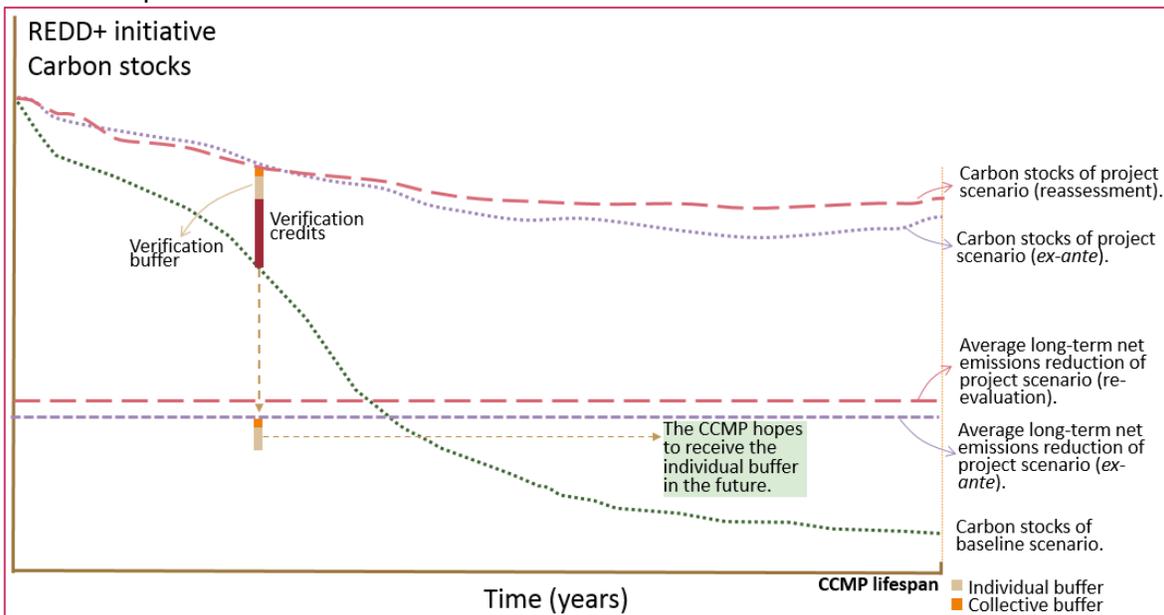
Unless the CCMP implementation is identical to that predicted in the scenario or a previously generated reassessment, reassessment of net removal and reduction and the predicted year for the CCMP to achieve the projections are repeated at each verification until the CCMP effectively achieves the average long-term removal and reduction goals as shown in *Figure 7* and *Figure 8* respectively.

Figure 7. Second reassessment of the net removal of the project scenario and assignment of individual and pooled carbon buffer to a GHG removal CCMP.
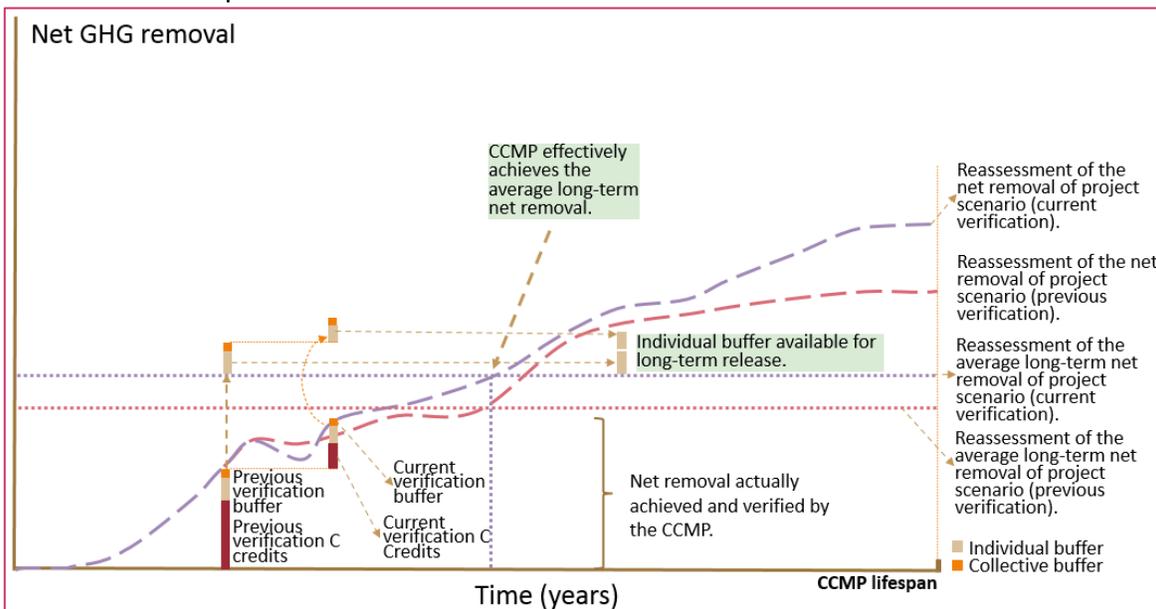

**Figure 8.** Second reassessment of the net reduction of the project scenario and allocation of individual and pooled carbon buffer to a GHG emissions reduction CCMP.
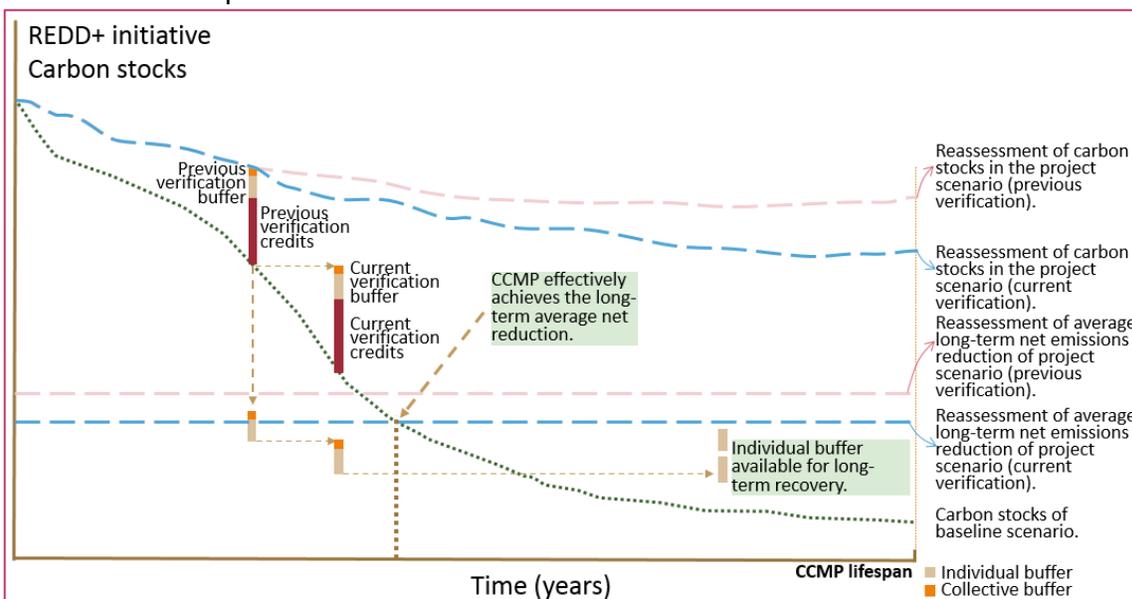
When the CCMP reaches the required long-term average net removal or reduction, its holder or developer may request the release of the accrued individual carbon buffer, according to the rules detailed in the following section.

5   Mechanism for individual carbon buffer release

The CCMP may request a refund of the individual carbon buffer from the moment they have achieved the long-term average net removal or reduction goal. This is verified by creating new verification events to test the GHG removals or reductions of GHG emissions achieved by the CCMP and confirm they are not below the long-term average. If such removals or reductions equal or exceed the long-term average, the individual carbon buffer is released in linear proportion to the last verification that generated carbon credits and the years since the project exceeded the long-term average GHG removal, as seen in *Figure 9*, or emissions GHG reduction, as seen in *Figure 10*.

Figure 9. Structure of the release of the individual carbon buffer in a GHG removal CCMP.
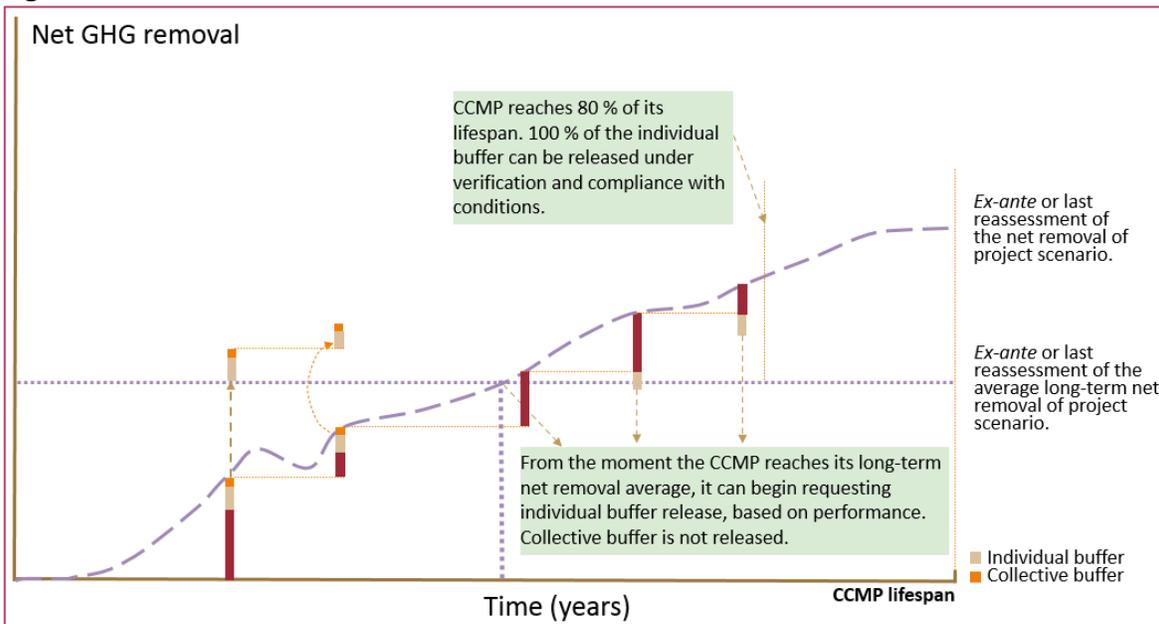
Figure 10. Structure of the release of the individual carbon buffer in GHG emissions reduction CCMP.
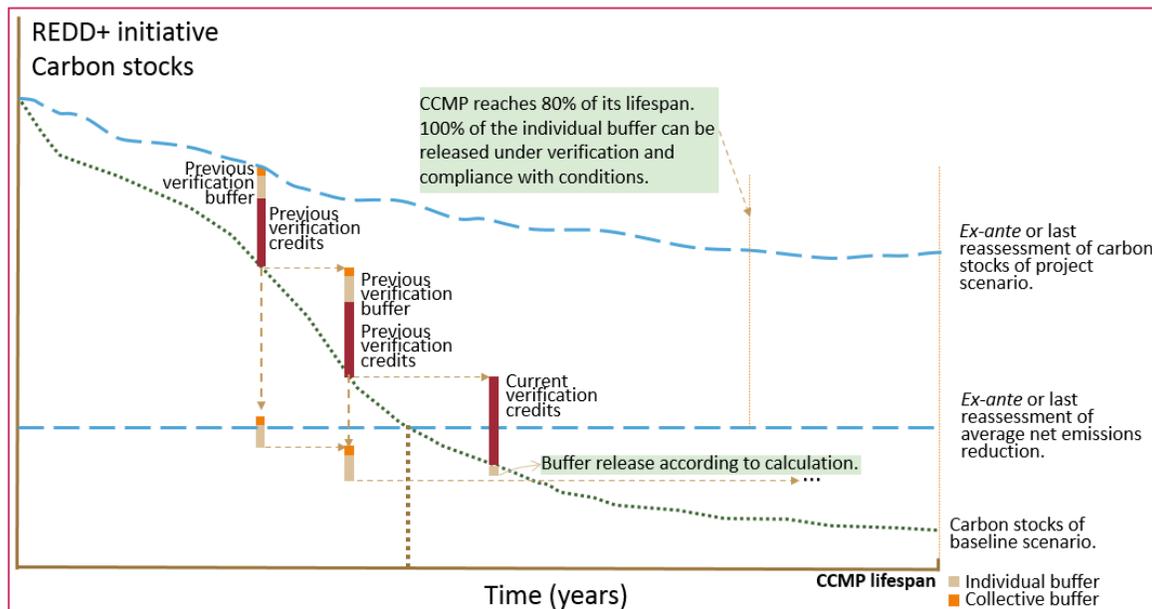
For a CCMP to obtain a 100 % release of the individual carbon buffer, it must have reached 80 % of its projected lifespan. For example, if the CCMP establishes a lifespan of 50 years, 100 % of its individual carbon buffer can be released at year 40, if the long-term net average carbon conditions have also been met or exceeded. Therefore, the longer the period for requesting refunds, the greater the percentage of the individual carbon buffer that has the possibility of being released.

If the CCMP does not continue with its implementation and does not carry out new verification events, the individual carbon buffer is not released and instead, becomes part of the pooled carbon buffer.

5.1 Release of carbon credits from the individual carbon buffer

The CCMP may request the release of carbon credits from the individual carbon buffer through a verification event once it has exceeded the required long-term net average removal or reduction, as described above.

Once the release of the individual carbon buffer has been requested the conversion and updating of the carbon buffer serials are carried out:

- A new serial is issued to the carbon credits of the individual carbon buffer so they can be traded in the carbon market. Such serials are assigned **the issuing year**, regardless of the year in which the carbon buffer was generated.
- The new serial assigned to the individual carbon buffer will operate under the restrictions in which they were initially audited.

5.2 Calculation of the individual carbon buffer to be released

Once a verification has been performed after the year in which the CCMP achieves the long-term average net removal or reduction and the percentage of risk to be applied to the programme or project has been calculated using the Reserve Tool, the credits to be released are calculated as:

$$Icbr = \frac{(Vy - Ylnm)}{(Ytr - Ylnm)} * Icb - Picb$$

Equation 1

Variable	Description	Units
Icbr	Individual carbon buffer to be released.	t-CO$_2$e
Vy	Year of verification for release of individual carbon buffer.	
Ylnm	Year in which the CCMP achieves long-term average net mitigation.	
Ytr	Year of total release of the individual carbon buffer.	
Icb	Individual carbon buffer.	t-CO$_2$e
Picb	Previously released individual carbon buffer.	t-CO$_2$e

The verification year for the release of the carbon buffer must be after the year in which the CCMP achieves the long-term average net removal or reduction.

The calculation of the individual carbon buffer to be released can be done by filling in the corresponding information on the 'Individual carbon buffer release' sheet found in the Buffer Tool.

6 Periodic performance evaluation of the carbon buffer under the Cercarbono programme

Cercarbono establishes a carbon buffer to collectively guarantee the permanence of climate change mitigation certified by the programme. This carbon buffer is replenished as CCMPs are verified and their individual carbon buffers are retained until the CCMP goals are met, the CCMP is abandoned before of the end of its lifespan, or the CCMP has a reversal in its achieved mitigations.

During the CCMP verifications, carbon buffers, both individual and pooled, are retained in proportion to the mitigation achieved, as explained in previous sections.

Amounts retained in verifications as individual buffers are registered with a serial number identifying the originating CCMP, the year and the number of the verification, the amount of GHG mitigated in t-CO2e and an additional identifier indicating that it is an individual buffer.

Amounts retained in verifications as a pooled buffer are registered with an internal identifier, which allows for identification, accounting, and tracking, but do not belong to any CCMP and will not be credits that can be issued. If a portion of the pooled buffer is needed to offset reversals that may occur in a CCMP, beyond the possibility of offsetting them through the individual buffers of that CCMP, that portion will be permanently retired from the pooled buffer and allocated as a long-term backing for previously issued credits.

In CCMPs in the land use sector, reversals occur when the net benefit (considering the baseline scenario, emissions, removals, and leakage) of GHGs is negative in a verification compared to the previous one. If this reversal does not compromise previously issued credits (i.e., does not reach a decrease in carbon stocks that backed previously issued credits) or if it occurs before a verification with the possibility of recovery, it does not constitute a mitigation reversal that needs to be offset by a retirement of carbon buffers to back up previously issued credits.

If offsetting of previously issued credits due to reversals is required, the provisions on reversal management in the ***Procedures of Cercarbono's Certification Programme*** document (available at www.cercarbono.com, section: Documentation) shall apply.

According to these guidelines, Cercarbono assesses the CCMPs performance every two years after the sixth year of the establishment of the carbon pool buffers , and takes into account the total number of CCMPs that required a carbon buffer, the number of credits issued cumulatively over the time period, the size of the pooled carbon buffer, the sum of the individual carbon buffers, the amount of GHG mitigation reversals cumulatively over the time period, and an analysis of the performance of CCMPs. This analysis assesses the CCMPs buffer pool in terms of planned and actual mitigations achieved, the number of CCMPs with a delayed verification process, CCMPs that have been terminated before the end of their lifespan or crediting period, and an analysis of risk factors that contributed to the lower performance of CCMPs. Without revealing details on individual CCMPs, the analysis is to be made public to serve as a basis for adjusting subsequent versions of the Buffer

Tool, determining the number and weighting of risk and mitigation indicators, and defining the percentages of bonus-carryover required from CCMPs. This allows the pooled carbon buffer to be retained and adjusted in the future for new CCMPs. After the renewal of the crediting period, the CCMPs are required to apply the most recent version of the Buffer Tool.

7 The Buffer Tool

The Buffer Tool is implemented in a Microsoft Excel format, where the CCMP can interact in a practical and simple way. When opening the Buffer Tool, the user is asked to activate macros to allow the document to function correctly.

This Buffer Tool is made up of five Excel sheets, explained in *Sections 7.1* through *7.5*.

7.1 Instruction sheet

The instruction sheet presents the structure of the Buffer Tool and provides instructions and considerations for its use (*Figure 11*).

Figure 11. General appearance of the Buffer Tool instruction sheet.

7.2 Indicators sheet

The indicators sheet provides the basic information that the CCMP must enter. This includes the total area of the CCMP and whether it is a programme, a simple project or a group project as seen in *Figure 12* and *Figure 13*.

Figure 12. Section for entering the basic information of the CCMP.

Basic information of the CCMP		
CCMP name		
Holder or developer of the CCMP		
CCMP ID		
CCMP lifespan (years)		
Is it a grouped programme or project?		
Is it a REDD+ project?		

Accreditation period	Start date	End date
	dd.mm.yyyy	dd.mm.yyyy
Verification period	Start date	End date
		dd.mm.yyyy
Date of elaboration	dd.mm.yyyy	

Person in charge	
Contact person	
Contact information	
Approved by	

In the case of programmes and group projects, the area is entered for the different implementation instances. This means the area is entered for each set of areas added to the CCMP during the verifications and is based on the revalidation of the scenarios, as seen in *Figure 13*.

If the user indicates that the CCMP is a group project, the cells related to the different instances of it will be activated with a yellow background. Otherwise, they will be inactivated, and their background colour will remain grey. A non-clustered project is processed in the Buffer Tool as a CCMP with a single implementation instance.

Figure 13. Section for the entry of areas of the CCMP instances.

Table of areas by implementation instances		
Area	ha	Percentage
Instance 1		
Instance 2		
Instance 3		
Instance 4		
Instance 5		
Total CCMP	-	

The range of indicators are then presented in an orderly manner, which the CCMP must justify.

All indicators apply to all CCMPs in the land use sector, including grouped and non-grouped projects except for indicator 10a, which applies only to REDD+ projects.

In the case of grouped projects, the initial risk assessment for validation is done with data of the initial single instance CCMP, while verifications are made for all the instances that

have been implemented up to the moment of verification. As in the case of the CCMP areas, the cells for entering the values of the indicators of the respective instances will be active (with a light purple background) only in the case of grouped projects or programmes. Otherwise, they will be inactive, and their background colour will be grey.

Each indicator is part of a main category and a subcategory and must be analysed separately by each of the implemented instances, in the case of grouped programmes or projects. The Buffer Tool establishes response options for each indicator, which can be percentages, numbers, ranges, or binary options (*Figure 14*).

Figure 14. Partial aspect of the section for evaluation of risk and mitigation indicators.

Assignment of risk indicators									
Code	Category	Subcategory	Risk and mitigation indicator	Instance 1	Instance 2	Instance 3	Instance 4	Instance 5	Score
Ind_1a		Duration	CCMP lifespan (years).						0
Ind_2a		Financial viability	Number of years until the CCMP cash flow reaches the financial breakeven point.						0
Ind_3ab			Percentage of funding already secured relative to what is needed to implement and operate the CCMP.						0
Ind_4a		Technical robustness	Proportion of direct employees who stay less than one year in the company or organization proposing the CCMP.						0
Ind_5a			Number of hours of training relevant to the mitigation activity, received by those involved in the implementation of the CCMP prior to its validation.						0

7.3 Clarification and source sheet

The clarification and source sheet presents considerations that the CCMP holders or developers must account for in the case of specific indicators. For key indicators the official source from which the information should be obtained is established, as seen in *Figure 15*.

Figure 15. Partial aspect of the clarification sheet and sources on risk indicators and mitigation actions.

Clarifications and sources on some risk indicators and mitigation actions					
Code	Risk category	Risk	Risk mitigation indicator and action	Source	Clarification
Ind_11a	Context	Conflicts related to land tenure	Percentage of the CCMP area whose holders have public deeds.		It is recognized that in each country there are different documents that attest holdership (communal or collective properties, lease, healthy possession, unliquidated succession, among others), in case of lease, it must cover the period of accreditation of the CCMP.
Ind_12a			Violent conflict intensity index.	Conflict Barometer from the Heidelberg Research Institute on International Conflict	The Barometer gives a score from 1 to 5, which measures the intensity of each conflict that occurs in a country (1 = dispute, 2 = non-violent crisis, 3 = violent crisis, 4 = limited war, 5 = war). To read the indicator, download the Excel file for the most recent year and select the country to take the scores for the most recent year. Only conflicts that influence the area where the CCMP takes place should be considered.
Ind_13a		Country	World Bank Governance Index.	Worldwide Governance Indicators (WGI)	The indicator takes into account: (I) Voice and accountability; (II) Political stability and absence of violence; (III) Government effectiveness; (IV) Normative quality; (V) rule of law; and (VI) Control of corruption. The latest available indicator should be consulted, usually for the year prior to the year in which this tool is applied. The value of the indicator corresponds to the average of the six indicators presented.

7.4 Balance sheet

The Balance sheet summarises the score assigned to each subcategory according to the type of indicator. Once the user has filled in all the information requested on the indicator sheet, the total percentage corresponding to the carbon buffer is presented. This results from the long-term average net removal or reduction after the verification event obtained on this

sheet, including the individual carbon buffer, depending on the risk assessment, and the pooled carbon buffer, as presented in *Figure 16*.

Figure 16. Balance sheet of carbon buffer calculated for the CCMP based on the risk assessment.

Balance

			Individual buffer percentage	0,0%
Gross risk ratio	-			
			Pooled buffer percentage	5,0%
Net risk ratio	-			
			Total buffer percentage	5,0%

Balance by risk category

Risk category	Subcategory	Risk index	Risk mitigation index	Net index
Management	Duration	0,0	0,0	0,0
	Financial viability	0,0	0,0	0,0
	Technical robustness	0,0	0,0	0,0
	Organizational	0,0	0,0	0,0
	Opportunity cost	0,0	0,0	0,0
	Legal figure	0,0	0,0	0,0
	Species susceptibility	0,0	0,0	0,0
Context	Conflicts related to land tenure	0,0	0,0	0,0
	Country	0,0	0,0	0,0
	Social	0,0	0,0	0,0
Natural	Adaptation of the species used (precipitation)	0,0	0,0	0,0
	Adaptation of the species used (temperature)	0,0	0,0	0,0
	Pests and diseases	0,0	0,0	0,0
	Fires	0,0	0,0	0,0
Performance	Reversals	0,0	0,0	0,0

7.5 Individual buffer release sheet

The individual buffer release sheet presents the calculation that the CCMP must perform to request the release of carbon credits. This release is explained further in *Section 5*.

Figure 17. Individual buffer release sheet with calculation example.

Calculation of individual buffer to be released

$$Icbr = \frac{(Vy - Ylnm)}{(Ytr - Ylnm)} * Icb - Picb$$

Year in which the CCMP achieves long-term average net mitigation.	*Ylnm*	19	
Lifespan of the CCMP.		70	years
Individual carbon buffer.	*Icb*	350,000	t-CO$_2$e
Previously released individual carbon buffer.	*Picb*	4,000	t-CO$_2$e
Individual carbon buffer before release.		346,000	
Year of total release of the individual carbon buffer.	*Ytr*	56	
Year of verification for release of individual carbon buffer.	*Vy*	26	
Individual carbon buffer to be released.	*Icbr*	**65,459**	t-CO$_2$e
Remaining individual carbon buffer.		280,541	t-CO$_2$e

8 References

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9 Document history

Version	Date	Comments or changes
1.0	01.10.2021	Initial version of the document exposed in public consultation from 01.10.2021 to 31.10.2021.
1.1	24.11.2021	Final version with comments from the public consultation duly addressed.
1.2	10.08.2022	Drafting improvements, inclusion of paragraph linking the tool to the reversion management section of the ***Procedures of Cercarbono's Certification Programme*** document.