CM-LU-002 Integrated methodology Reforestation, Forest Restoration, Revegetation and Establishment of Woody Agricultural Crops

Carbon programme

Version 3.1

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Acronyms and abbreviations

AAI	Average Annual Increase
BAU	Business as usual scenario
CCMP	Climate Change Mitigation Program or Project
CDM	Clean Development Mechanism
DOs	Development Objectives defined at a national level
GHG	Greenhouse gas
GPG	Good Practice Guidelines
GPS	Global Positioning System
IPCC	Intergovernmental Panel on Climate Change
ISO	International Organization of Standardization
MMU	Minimum Mappable Unit
MRV	Monitoring, Reporting, and Verification
NDC	Nationally Determined Contributions
PDD	Project Description Document
QA/QC	Quality Assurance and Quality Control.
REDD+	Reducing Emissions from Deforestation and Forest Degradation
SDG	Sustainable Development Goals
SFMP	Sustainable Forest Management Plan
SOC	Soil Organic Carbon
UNFCCC	United Nations Framework Convention on Climate Change

Terms and definitions

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

For the purposes of this methodology, the following terms[1] apply:

- **Biodiversity islands and dispersed vegetation nuclei**: areas where woody vegetation is established to strengthen ecological resilience and landscape heterogeneity.
- **Business-as-Usual (BAU) scenario:** hypothetical scenario representing the most probable trajectory of GHG emissions or removals in the absence of intervention resulting from CCMP activities, based on historical conditions, existing policies, land-use dynamics, and relevant socioeconomic factors.
- **CCMP eligible area:** geographical area where the program or project activity is implemented (in this case, GHG removal), where the Climate Change Mitigation Program or Project (CCMP) directly acts on the land and its associated resources.
- **CCMP total area:** a geographic area backed with demonstrated legal ownership[2], encompassing both the eligible area (in which the program or project activities are implemented) and the non-eligible area.
- **Cropland:** includes cultivated lands, including rice fields, and agroforestry systems where the vegetation structure is below the thresholds used for the forest land category.
- **Ecological corridors and riparian protection strips**: areas with linear or connective surfaces established with woody vegetation to interconnect habitats and/or protect water bodies.
- **Establishment of Woody Agricultural Crops:** set of actions leading to the establishment of woody shrub or tree species in non-forest areas (i.e., part of a land-use planning category other than forests). Due to their establishment, these areas could later meet the definition of forest as defined by national regulations.
- **Forest:** land area covered permanently by trees, compliant with each country's established parameters under the United Nations Framework Convention on Climate Change (UNFCCC) for area, tree cover, and minimum adult tree height.
  For Climate Change Mitigation Programs or Projects (CCMP) focused on forest restoration, this includes areas that are part of a forested area (classified as non-stable forest) that may be temporarily without standing timber due to human intervention, such as harvesting, or natural causes, but are expected to regain tree cover, are included.

[1] Some terms were adapted from the 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 4: Agriculture, Forestry and Other Land Use.

[2] CCMP holder must demonstrate that they have the legal right to use and own the area where the project and/or management of GHG emissions and removals is established.

- **Forest conservation:** Actions aimed at preserving the vegetation cover in a specific area, ensuring that the area is not subject to management or vegetation removal, thereby directly contributing to its ecological stability or function.
- **Forest cover:** area covered by vegetation meeting the forest definition.
- **Forest land:** includes all lands with woody vegetation consistent with thresholds used to define a forest.
- **Forest restoration**: a set of actions aimed at the establishment of woody species (native or functional species approved within the regulatory framework of the country where the project is implemented), of arboreal and/or shrubby growth form, in areas classified as non-stable forest, allowing these areas to recover the condition of stable forest, reaching the forest definition established by the country.

  It may include techniques such as planting and sowing (manual, mechanized, or aerial), as well as assisted regeneration practices (both artificial, through the transplanting of seedlings originating from nurseries or germplasm banks, and natural, through the management of resprouting when the species allows it). It may also incorporate actions to control anthropogenic pressures and other interventions that facilitate the recovery of ecosystem structure and functionality, enabling the area to once again reach the condition of stable forest in accordance with the definition established by the country.

  The purpose of this activity is to restore, conserve, and/or maintain forest cover, as well as to recover the ecosystem services that previously existed in the area, including carbon sequestration, hydrological regulation, soil protection, and biodiversity. In certain contexts, this restoration may contemplate limited and sustainable forest harvesting in the future, in accordance with applicable environmental regulations and the principles of responsible management.
- **Functional species**: plant species that play a key ecological role within an ecosystem by contributing to essential functions related to nutrient cycle, soil retention, pollination, shading, water cycle regulation, or control of invasive species. These species shall be capable of surviving, growing, and reproducing under the bioclimatic and ecological conditions of the implementation site. They are not necessarily native species, although they could be.
- **GHG removal:** results of the processes by which greenhouse gases are removed from the atmosphere and stored permanently as a result of human activities.
- **Grassland land**: includes all lands dominated by herbaceous vegetation, whether natural or semi-natural, that do not meet the national thresholds to be classified as forest. This category comprises grasslands, herbaceous savannas, and other communities with a predominance of grasses and herbaceous species.

  For the purposes of this methodology, this category refers exclusively to vegetation and its carbon pools. The methodology does not cover activities associated with the management of grazing animals (such as livestock, grazing, or livestock rotations), except where there are

explicit vegetation interventions that contribute to increasing biomass or to revegetation processes.

- **Hedgerows, living fences, and biological barriers**: linear strip areas of woody species used for soil conservation, biodiversity, and ecological connectivity.
- **Limited forest exploitation**: refers to the regulated, planned, and sustainable utilization of forest resources (such as timber, firewood, fruits, resins, among others) in areas intervened through program or project activities (forest restoration or revegetation), with the aim of preserving the forest cover achieved by the CCMP, conserving biodiversity, and ensuring the permanence of ecosystem services. This type of use shall be carried out under specific technical and/or legal restrictions established in validated management plans, approved by environmental authorities, community structures, or local governance mechanisms, without compromising the integrity of the GHG removals generated.
- **Native species**: any plant species (in the context of the methodology) that is native to or ancestrally and naturally present in a given geographic location.
- **Natural forest:** a forest ecosystem characterized by the presence of woody species with varying vegetation structure and high biodiversity of flora and fauna. Depending on the degree of human intervention, natural forests are classified into primary and secondary forests.
- **Non-eligible area:** geographic area that does not meet the characteristics to implement the program or project activities according to the methodology used. The CCMP only identifies this area but does not involve it in any project activity.
- **Non-forest**: refers to areas that do not have forest cover under any land-use or land-use planning category according to the regulations of the country. It shall be demonstrated that these areas have not had forest cover for at least ten years prior to the CCMP start date. Changes in these areas shall be recorded during both the projection period and the monitoring period. This category includes areas implemented under agricultural activities (tree plantings within agricultural production systems, for example in fruit plantations and agroforestry systems) and pastures.
- **Non-stable forest:** corresponds to the area featuring a coverage, different from a stable forest from start (t1) to end (t2) of the historical period. It shall be part of a land-use planning category for forests according to country's regulations. It shall also be demonstrated that such area has not been a stable forest (due to frequent disturbances or climatic events) for at least ten years prior to the CCMP start date.
- **Overlap:** intersection of areas included in a program or project registered in Cercarbono with other(s) registered either in Cercarbono, in other standards, or in national programs.
- **Primary forests**: forest areas that have not been significantly altered by human activities, keeping their original ecological dynamics.
- **Reassessment:** process inherent to the project activities that shall be carried out by the CCMP holder or developer to determine whether the implementation and its expected results (which

shall be justified in the monitoring report and reviewed by the VVB during verification and/or revalidation events) are coherent with reality. The reassessment may lead to a revalidation, under certain circumstances related to the magnitude of the difference between the manner of implementation and/or the results obtained, and those originally planned or expected.

- **Reforestation:** direct human-induced conversion of areas with non-forest surfaces into areas with surfaces that would reach the forest definition established by the country, through planting, seeding (manual, mechanized, or aerial), and/or the induced promotion of natural seed sources or native and/or approved tree species within the regulatory framework of the country where the CCMP is implemented.
- **Reforested forests**: areas previously classified as non-forest where a planned plantation of woody species (arboreal and/or shrubby) is established with the explicit goal of creating new forest cover meeting country's forest definition. These forests contribute to ecological and/or functional restoration, sustainable production of goods and services (e.g., timber, food, water regulation, biodiversity), or fulfil both purposes in a complementary manner.
- **Restored forests**: degraded or fragmented areas of non-stable forest, recognized under a forest category in the national land-use planning system, contributing to ecological, functional, and structural recovery of forest ecosystems. Such actions are based on the establishment or facilitation of perennial woody vegetation (arboreal and/or shrubby), such that the involved areas meet once again the forest definition as adopted by the country where the CCMP is implemented in. In certain contexts, restored forests may be subject to limited forest exploitation, provided it is performed in a sustainable manner, and aligned with applicable technical standards and regulatory provisions.
- **Revalidation:** process in which a VVB conducts an audit to validate again aspects related to the implementation, design, baseline, activity modality, additionality, or other characteristics that have been modified in the CCMP due to internal or external conditions (changes in the legal or regulatory framework, renewal events of the crediting period, changes in the applicable methodology, among others), with respect to those considered in the initial validation of the CCMP, issuing an opinion and declaration as appropriate, in order to ensure the integrity of the CCMP once the changes or processes that made such revalidation necessary are taken into account.
- **Revegetated forests or areas**: areas originally classified as non-forest with no assigned forest category under the country's territorial planning, where a functional woody cover (mixed or scattered) has been established or facilitated through establishment of facilitation of perennial woody vegetation of arboreal and/or shrubby type, which may or may not meet the nationally adopted forest definition but significantly contributes to GHG removal, functional ecosystem restoration, and the provision of ecosystem services. In some contexts, these areas may be subject to limited forest exploitation if carried out under sustainable criteria and in accordance with applicable environmental regulations.

- **Revegetation:** actions aimed at the establishment, enrichment, or recovery of native or functional vegetation cover of woody stature (both arboreal and shrub) in non-forest areas, whether degraded, transformed, or productive, contributing to climate change mitigation, soil restoration, ecological connectivity, and landscape resilience. It includes: ecological corridors and riparian buffers; biodiversity islands or dispersed nuclei; live fences, hedgerows, and biological barriers; and low-density agroforestry systems or systems with non-forest species.
- **Secondary forests**: forest areas previously disturbed by human activity, currently undergoing natural or assisted regeneration.
- **Segment:** in the context of climate change mitigation programs or projects, a segment is an area or set of areas dedicated to the same type of mitigation activity.
- **Segment component:** areas or area portions (with the same activity) forming a segment (program or project activities) within areas categorized as eligible land strata (non-stable forest and non-forest) existing in the project or program, allowing to treat them as a unit for analysis, calculations, inventories, monitoring, management, and other purposes.
- **Settlements:** include all urbanized lands, including transportation infrastructure (among them fluvial and terrestrial access routes) and human settlements of any size, which are present within the total area of the CCMP.
- **Shrubs and shrubby species**: woody plants of smaller stature than trees, which do not meet the height and canopy thresholds defined to qualify as forest, but which fulfill key ecological functions.
- **Soil disturbance**: refers to any activity that results in a decrease in Soil Organic Carbon (SOC), due to activities such as plowing or conventional tillage, excavation of pits and trenches, stump removal, among others.
- **Stable forest**: corresponds to the surface that remains covered by natural forest (primary type) from the beginning (t1) to the end (t2) of the historical, projection, and monitoring periods. It must be demonstrated that it has been natural forest for at least the ten years prior to the start date of the CCMP.
- **Stratum:** in climate change mitigation programs or projects in the land use sector, this refers to areas sharing common characteristics, allowing classification of eligible area types within the CCMP.
- **Trees**: perennial woody species of arboreal form that, in adulthood, can reach or exceed the height and canopy thresholds established by the country where the CCMP is implemented for classifying land as forest.
- **Tree vegetation**: vegetation composed of woody plants with a lignified trunk that reach or may reach a height equal to or greater than two meters, without prejudice to their eventual classification as forest when they occur in grouped form, in accordance with the applicable national regulations.

- **Wetlands:** includes areas of peat extraction and lands covered or saturated with water, either throughout the year or part of it (peatlands and other types of wetlands), that do not fall into the Forest Land, Cropland, Grassland, or Settlements categories.
- **Woody agricultural crops**: productive systems of perennial woody species (trees or shrubs) established for sustainable productive purposes and woody biomass accumulation, different from forest timber production. These systems comply with defined criteria for design, density, and sustainable management, and their implementation may contribute to ecosystem services provision, productive reconversion, and carbon removal. This includes agroforestry systems (such as cocoa, avocado, coffee, among others, primarily with shade) and woody agricultural crops (such as cocoa, mango, among others).
- **Woody vegetation**[3]: set of perennial plant species of arboreal, shrubby, or similar growth form that present permanent woody stems, with the capacity for vertical growth and development of aboveground and belowground biomass, and that contribute to carbon fixation in ecosystems. This type of vegetation plays a fundamental role in the structure and functionality of forest systems and may be used in ecological restoration, reforestation, productive reconversion, and the generation of ecosystem services.

[3] Under this methodology, systems with short-rotation cycles or those managed exclusively for intensive timber harvesting, as well as woody plantations that do not generate net carbon accumulation or that lead to the degradation of natural resources, are not considered woody vegetation.

1 Introduction

The land use sector plays a fundamental role in human survival, as it forms the basis for livelihoods, including food production, access to natural resources, and the provision of multiple ecosystem services. According to the Intergovernmental Panel on Climate Change (IPCC), this sector is classified into six major categories: forest land, cropland, grassland, wetlands, settlements, and other land. Although these categories may present variations at the national level, in the context of climate change mitigation those defined by the IPCC are adopted, as they are consistent with the categories officially reported in each country's national greenhouse gas (GHG) inventories.

Internationally, land use is recognized as a significant contributor to climate change, accounting for between 21% and 37% of net anthropogenic GHG emissions (IPCC, 2019). The main sources of these emissions include deforestation, oxidation of wood products, intensive soil cultivation, the use of synthetic fertilizers, and non-sustainable land use changes, which often lead to degradation and desertification processes.

At the same time, land use is not only a source of emissions but can also function as a carbon sink. Through both natural and anthropogenic processes, it can capture and store carbon in reservoirs such as woody biomass, soil, and secondary vegetation, thus playing a key role in global climate change mitigation strategies.

In this context, the land use categories defined by the IPCC acquire strategic relevance, as they enable the implementation of activities that promote carbon capture through the establishment, management, or restoration of woody vegetation.

Currently, there are multiple initiatives aimed at promoting sustainable land-use-based activities as effective mechanisms for GHG removal and carbon credit generation. Within this context, Cercarbono has developed and updated this methodology, which enables the certification of net GHG removals derived from reforestation, forest restoration, revegetation, and the establishment of woody agricultural crops, provided they are managed under sustainable practices.

The formal incorporation of the revegetation activity in this version strengthens and clarifies the methodological approach by recognizing practices that, although they do not always reach the legal definition of forest, contribute significantly to carbon sequestration, ecological connectivity, and the functional restoration of degraded landscapes, making the methodology more comprehensive and coherent with the diversity of mitigation strategies applicable in non-forest lands.

This update is aligned with the commitments of the Paris Agreement and the guidelines of the UNFCCC. Likewise, it responds to the technical criteria required by the voluntary carbon market and is articulated with the Sustainable Development Goals (SDGs), the Development Objectives (DOs) defined at the national level, and the environmental and social safeguards framework. The comments received during the public consultation process and the independent third-party evaluation have been duly considered and integrated herein, as appropriate.

2 Principles

The principles set the basis for the generation of high integrity carbon credits, from initiatives that meet the ultimate objective of climate change mitigation via CCMPs focused on GHG removal through reforestation, forest restoration processes, revegetation or the establishment of Woody Agricultural Crops.

CCMPs applying this methodology shall comply with and refer to the relevant principles and how they have been applied according to the current version of ***Cercarbono's Protocol for Voluntary Carbon Certification*** (hereinafter ***Cercarbono's Protocol***, available at www.cercarbono.com, section: Documentation).

3 Objective and application field

This methodology is applicable to CCMPs that integrate activities aimed at increasing woody vegetation cover through processes of reforestation, forest restoration, revegetation, and the establishment of woody agricultural crops.

It includes the identification and monitoring of the baseline and project scenarios throughout their implementation, supporting conservative approaches through the use of classical or advanced predictive techniques, in accordance with the ***Guidelines for the use of models in baseline carbon quantification in the land-use sector*** (**Section 7.1**).

Likewise, it contemplates the periodic reassessment of the baseline and project scenarios, allowing for the recalculation and dynamic adjustment of the total long-term mitigation potential. The reassessment of baseline scenarios (especially in the case of grouped projects) and project scenarios shall be carried out when changes are recorded in the average net GHG removals resulting from the implementation of the CCMP, improving the accuracy of the estimation of such removals.

The land-use categories applied in the CCMP must be consistent with those adopted in the National GHG Inventory and, where applicable, with those reported in the Nationally Determined Contributions (NDCs). Within this framework, the methodology applies to land uses classified as forest land, cropland, and grassland, in accordance with the official categories of the country and in coherence with the IPCC Guidelines.

The methodology recognizes the progressive vegetation cover transitions defined in those guidelines (2006 and 2019), including early revegetation stages dominated by herbaceous vegetation, shrubs, or dispersed woody species, which may evolve toward stable forest formations. These intermediate stages are considered within the CCMP framework when they contribute to a net increase in carbon in biomass or soil, provided that such increase is attributable to the interventions implemented by the CCMP.

Table 1 below sets out the normative guidelines for the use of modal verbs employed in the methodology, in order to ensure clarity, consistency, and a common understanding of the level of obligation associated with each provision. The standardization of normative language enables the differentiation between mandatory requirements, technical recommendations, and optional provisions, thereby facilitating the correct interpretation and implementation of the

methodology by project proponents or developers, Validation/Verification Bodies (VVBs), and other stakeholders.

Table 1. Normative use of modal verbs employed.

Modal verb	Functional applicability	Compliance requirements
Shall	Mandatory requirements, technical or legal conditions. Covers expressions such as is required to; is mandatory; shall; is obligated.	Mandatory
Should	Good practices, preferred criteria, or methodologically sound approaches. Covers expressions such as is recommended; is preferable.	Recommended (but not mandatory)
May	Options allowed by the methodology. Covers expressions such as is possible; is permitted; has the option.	Optional (at the discretion of the proponent or developer)

3.1 Scope

This methodology is specific to and applicable under the Cercarbono voluntary certification program. It is intended for use by any natural or legal person, public or private, seeking to establish a Climate Change Mitigation Program or Project (CCMP) focused on the removal of greenhouse gases (GHG) through reforestation[4], forest restoration, revegetation, and/or establishment of woody agricultural crops, with the aim of qualifying for results-based payments or similar compensations.

This methodology applies to CCMPs whose actions lead to increased carbon content in the selected reservoirs, either with or without a change in land use, depending on the activity and national context[5]. In any case, applicable national guidelines shall be considered to ensure that the results achieved by the CCMP—in terms of land-use change and GHG removals—can be recognized in the country's climate planning instruments, including the Nationally Determined Contribution (NDC) and other mitigation accounting mechanisms.

[4] This methodology does not distinguish between the concepts of "afforestation" and "reforestation" since the difference between them does not affect the applicability conditions. Nevertheless, reforestation activities must be implemented in non-forest areas.

[5] Within the framework of reforestation or forest restoration activities, the implementation of the CCMP may promote the transition of non-forest lands (such as agricultural lands, grasslands, or other non-woody land covers) to forest lands, as well as the recovery of non-stable forests toward stable forest conditions, in accordance with the definitions and thresholds established by the applicable national regulations.

The program or project activities covered by this methodology are[6]:

a) **Reforestation:** corresponds to the GHG removal due to the establishment or planting of woody tree species (native or approved[7] in the regulatory framework of the country where the project is developed). This activity can only occur in areas with a non-forest surface.

   This activity cannot be implemented if the CCMP areas are part of national or subnational reforestation plans or receive private support.

b) **Forest Restoration:** corresponds to GHG removal due to the establishment of native woody species (native and/or functional) of tree and/or shrub type (including artificial regeneration practices - replanting via transplanting of nursery-grown plants, including from germplasm banks - or natural regeneration, the latter through the growth of sprouts when the species allows it). This activity may occur in areas with non-stable forest cover.
   CCMP holder or developer shall ensure that the areas allocated to this activity are not considered as results in the REDD+[8] mechanism (through the activity of forest carbon stocks enhancement), thus avoiding double counting.

c) **Revegetation:** actions aimed at the establishment, enrichment, or recovery of perennial woody vegetation (arboreal and/or shrubby), native, functional, and/or approved under the applicable regulatory framework.
   During the initial stages of the process, herbaceous vegetation may also be present as part of natural succession or site conditioning; however, herbaceous species do not constitute the main objective of revegetation in the context of this technology, nor do they represent permanent woody components.
   As a result of the program or project activities, the areas may or may not reach the definition of forest adopted by the country. This activity may only be carried out on lands classified as non-forest.

d) **Establishment of Woody Agricultural Crops**: corresponds to GHG removal due to the establishment or exploitation of perennial woody species of tree and/or shrub type, as long as the species are native, naturalized and/or approved in the country where the CCMP is implemented. This activity can only occur in areas with non-forest surface.

Large bamboo species and palms may be included in the establishment of woody agricultural crops only if they meet certain management and use criteria, which depend on the objective of the productive system and the planned management. If their use is ecological, structural, functional, or for functional restoration purposes (such as barriers, slope stabilization, or living fences), and they are not commercially exploited, they may be classified as revegetation.

[6] As a supplement to these terms, please review the Terms and Definitions section.

[7] In charge of the official institution supporting production and commercialization of plant genetic material in the country the CCMP is implemented in.

[8] If this activity is contemplated in the REDD+ mechanism, it must comply with all the requirements established in the REDD+ methodology. Therefore, the present methodology does not support this activity for said mechanism.

In CCMP activities (reforestation, forest restoration, woody agricultural crops, and revegetation), herbaceous vegetation may be present as part of the processes of establishment or recovery of vegetation cover; however, due to its low biomass accumulation, high temporal variability, and limited permanence, herbaceous vegetation is not eligible for the direct generation of carbon credits.

Woody understory (aerial shrub biomass), by contrast, may be optionally included in carbon quantification when its contribution is significant, measurable, and reported consistently in both the baseline and project scenarios, in accordance with the provisions of **Section 6.3**.

In none of the program or project activities eligible under this methodology (reforestation, forest restoration, revegetation, or establishment of woody agricultural crops) is the inclusion of livestock components allowed, such as extensive or intensive livestock farming, direct grazing, or silvopastoral or agrosilvopastoral practices. This restriction applies even when such practices are presented as part of agroforestry systems or mixed management systems.

Trees and woody shrubs that were part of silvopastoral or agrosilvopastoral systems transitioning toward sustainable models may be included, provided that:

- There is no active livestock component during the CCMP crediting period, nor have such activities been displaced in a manner that constitutes leakage attributable to the implementation of the CCMP.
- It is demonstrated that such woody elements fulfill functions of revegetation, soil restoration, or permanent carbon capture.
- The areas meet the eligibility criteria established (**Section 4.1**) for revegetation or forest restoration activities.

The GHG removals achieved by the aforementioned program or project activities result from the sum of the differences between annual gross removals and annual gross emissions during the results period relative to the baseline scenario (taking into account the method used for its establishment; see **Section 7.1**).

Accordingly, CCMPs may be formulated by considering the selection of activities that will be monitored, as shown in the table below:

Table 2. Program or project activities eligible for inclusion by the holder or developer of the CCMP.

Activity*	Explanation	Compliance with the definition of forest
Reforestation	Set of actions leading to the establishment or planting of woody species of arboreal type (native and/or legally permitted) in non-forest areas, with conditions to reach the definition of forest established by the country where the CCMP is implemented. Areas intended for conservation, production, or forest exploitation (timber).	Required

Activity*	Explanation	Compliance with the definition of forest
Forest restoration	Set of actions leading to the establishment of woody species (native and/or functional) of arboreal and/or shrub type in non-stable forest areas. Areas intended to restore, conserve, and/or maintain forest cover, reaching the definition of forest established by the country where the CCMP is implemented. Allows limited forest exploitation in the future.	Required
Revegetation	Set of actions leading to the establishment of woody species (native and/or functional) of arboreal and/or shrub type in non-forest areas. Areas intended to functionally restore ecosystems, which may or may not reach the forest definition established by the country where the CCMP is implemented. Allows limited forest exploitation in the future.	Not required
Woody agricultural crops	Set of actions leading to the establishment and exploitation of one or more perennial species (native and/or approved) of arboreal and/or shrubby type in non-forest areas, for sustainable productive or agro-industrial purposes and for the accumulation of woody biomass, other than timber production.	Not required

* The CCMP shall include at least one of the defined activities and may incorporate one or more of them in a complementary manner, depending on the objectives and the conditions of the intervention area. Their inclusion depends on the operational, technical, and administrative capacity of the project to address them. In each program or project activity, when the term "set of actions" is used, it includes direct actions (such as planting, management, among others) and indirect actions (such as planning, outreach, monitoring, among others), through which their establishment is achieved.

Limited forest harvesting (see **Terms and Definitions section**) shall be permitted within forest restoration and/or revegetation activities, provided that the maintenance or net increase of carbon stocks achieved during the implementation of the CCMP is ensured.

Such harvesting shall be supported by a Sustainable Forest Management Plan (SFMP) or an equivalent technical instrument, in accordance with applicable national and regional regulations, which establishes silvicultural practices, extraction intensity, and rotation cycles.

The plan shall demonstrate, through verifiable technical information, that the applied management practices:

- Maintain or increase carbon stocks in the long term.
- Do not generate forest degradation or permanent carbon losses.

Accordingly, no fixed extraction or rotation limits are established. Harvesting intensity and cycle periodicity shall be defined based on the ecological and silvicultural dynamics of local species and on the results of the project's carbon monitoring.

Harvesting shall be carried out in such a way that carbon stocks do not present a net reduction at the end of the crediting period, taking into account natural fluctuations and management cycles. Temporary reductions associated with harvesting or regeneration shall be permitted, provided that their recovery within the management cycle and the permanence of the generated sinks are ensured.

Additionally, in the Project Design Document (PDD), the CCMP holder or developer shall explicitly declare whether limited forest harvesting is contemplated, and the SFMP (when applicable) shall be annexed, detailing objectives, techniques, restrictions, and associated monitoring mechanisms, in accordance with applicable environmental regulations, safeguard compliance, and the principles of Cercarbono.

3.2 Technical and program compliance

The following Cercarbono's regulatory and technical framework documents[9], in their current versions, are complementary and essential for the application of this methodology:

- Cercarbono's Protocol for Voluntary Carbon Certification.
- Procedures of Cercarbono's Certification Programme.
- Terms and Definitions of the Voluntary Certification Programme of Cercarbono.
- Cercarbono's Tool to Demonstrate Additionality of Climate Change Mitigation Initiatives.
- Cercarbono's Tool to Estimate the Carbon Buffer in Climate Change Mitigation Initiatives in the Land Use Sector.
- Cercarbono's Tool to Report Contributions from Climate Change Mitigation Initiatives to the Sustainable Development Goals.
- Guidelines for Mapping Presentation and Analysis.
- Safeguarding Principles and Procedures of Cercarbono's Certification Programme.
- Guidelines for using Models in Baseline Carbon Quantification in the Land Use Sector.

As well as the following Clean Development Mechanism (CDM) [10] methodological Tools:

- *AR- Tool 03 - Methodological tool: Tool to calculate project or leakage CO2 emissions from fossil fuel combustion.*
- *AR-Tool 08 - Methodological tool: Estimation of non-CO2 GHG emissions resulting from burning of biomass attributable to an A/R CDM project activity.*
- *AR-Tool 12 - Methodological tool: Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities.*
- *AR-Tool 13 - Calculation of the number of sample plots for measurements within A/R CDM project activities.*
- *AR-Tool 14 - Methodological tool: Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities.*
- *AR-Tool 15 - Methodological tool: Estimation of the increase in GHG emissions attributable to displacement of pre-project agricultural activities in A/R CDM project activity.*
- *AR-Tool 16 - Methodological tool: Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities.*

[9] Available at www.cercarbono.com, section: Documentation. In addition, CCMP must incorporate applicable technical tools developed by Cercarbono in the land use sector. not listed previously, available for new CCMP verification events.

[10] Or those substituting them under Article 6.4 mechanism, or complementing them under Cercarbono's regulatory framework. This comment applies to any mention related to any CDM methodological documents referred throughout this document. In the event of any discrepancy between the provisions contained therein and documents belonging to the regulatory framework of Cercarbono, the latter shall prevail.

- *AR-Tool 17 - Methodological tool: Demonstrating appropriateness of allometric equations for estimation of aboveground tree biomass in A/R CDM project activities.*
- *AR-Tool 18 - Methodological tool: Demonstrating appropriateness of volume equations for estimation of aboveground tree biomass in A/R CDM project activities.*

This methodology includes common elements related to CDM methodology:

- *AR-ACM0003 A/R Large-scale Consolidated Methodology: Afforestation and Reforestation of Lands Except Wetlands, version 2.0.*

3.3 Compliance with applicable legal provisions

Within the framework of this methodology, the CCMP shall take into account and fully comply with all applicable regulations, measures, and circumstances (national, regional—or jurisdictional—local, social, environmental, technological, among others) for the implementation of its activities, supported by robust and verifiable evidence. In this regard, the CCMP shall consider and comply with the provisions established in the current version of ***Safeguarding Principles and Procedures of Cercarbono's Certification Programme*** document.

The CCMP holder shall demonstrate that the areas where the CCMP is implemented comply with the required licenses, permits, or environmental management plans, as well as with all other applicable regulations according to the type of operations and the technology employed in the competent jurisdiction, prior to implementation.

GHG removals obtained by the CCMP, as applicable, shall be registered in the national registry of the country they are implemented in (if they correspond to the GHG removal commitments assumed by said country), aligned with international efforts of Measurement/Monitoring, Reporting, and Verification of climate change mitigation initiatives.

4 Eligibility and inclusion requirement

4.1 Area eligibility

The eligibility of the CCMP area of this type is supported by the initial classification analysis[11] of the areas[12] (stable forest, non-stable forest, non-forest and settlements), which determines the eligible areas (non-stable forest and non-forest) and non-eligible areas (stable forest and settlements).

The conditions CCMP shall meet are as follows:

[11] This classification represents the minimum recognition criterion for the CCMP total area, supported by the analysis of satellite imagery (using reliable and verifiable data) and other guidelines outlined in the following sections.

[12] For its minimum recognition, which may be supported by remote sensing techniques.

- The areas in which the CCMP is implemented shall correspond to areas with non-forest surfaces,[13] and/or non-stable forest surfaces[14].
- The areas in which the CCMP is implemented shall not have been covered by stable forest for at least ten years prior to the start date of the CCMP implementation. CCMP implementation must not cause disturbances on stable forests surfaces.
- Soil disturbance is only permitted, as a result of the program or project activity, during site preparation; the CCMP shall promote the inclusion of zero tillage and environmentally friendly and sustainable practices (such as the use of organic fertilizers, integrated pest management, among others), provided that the physical properties of the soil allow it. In the event that alterations to soil structure occur, soil inversion practices at a depth greater than 25 cm (vertical tillage using a chisel plow or subsoiler) may be used.
- At least 10% of the CCMP area[15] shall be identified and managed to protect and enhance the biological diversity of the ecosystems present.
- This methodology does not apply to wetlands or flooded lands.
- Drainage or irrigation of organic soils is not permitted, with the exception of irrigation for planting.
- The CCMP shall not be implemented in environmental protection areas[16].
- Overlap (temporal or geographic) with another initiative of similar scope is not permitted.
- The holder of the CCMP shall demonstrate legal title to the areas where activities are implemented.

All items listed above shall have supporting documentation.

This methodology remains consistent with the forest definition adopted by the country and with the internationally accepted thresholds under the IPCC and the UNFCCC.

The retroactivity period accepted for the CCMP start date of operations is defined in the ***Cercarbono Protocol***.

The holder or developer of the CCMP shall provide evidence that the areas within the planned project boundaries are eligible for at least one program or project activity, demonstrating that at

[13] Corresponds to other land uses, considering this designation for the development of reforestation, revegetation, forest restoration, or establishment of woody agricultural crops activities, which may be subclassified according to the type of vegetation present (herbaceous, shrub-like, or arboreal).

[14] Corresponds to forest lands (or that are part of some category of forest territorial planning according to the country's regulations) taking this denomination into account to develop forest restoration activities.

[15] May be composed of the eligible area and/or the non-eligible area that corresponds to stable forest (as long as the CCMP identifies areas of stable forest within the CCMP boundaries). In cases where it is not possible to reach the 10% threshold exclusively through available areas, the project holder may demonstrate equivalent actions or strategies aimed at conservation, while maintaining environmental equivalence, traceability, and verification by the VVB.

[16] Corresponds to geographically defined areas that have been designated, regulated and managed by public entities to achieve specific conservation objectives. The CCMP may only be implemented when the competent authority determines that such implementation is compatible and formally authorizes it, clearly establishing the project holder as the beneficiary of the environmental results of the initiative.

the start of the activity they contain surfaces classified as non-stable forest and/or non-forest, and providing information that allows these cover types to be reliably identified.

Eligible areas (non-forest areas[17] and/or non-stable forest) shall be determined based on the cross-checking of the information presented in a traceable manner.

Non-eligible areas (when applicable[18]) under this methodology correspond to stable forest areas or settlement areas within the spatial boundaries of the CCMP. These areas shall also be presented in a traceable manner.

Table 3 presents the structure for reporting information on the totality of areas that make up the CCMP, according to which both eligible and non-eligible areas (as applicable) shall be integrated.

Table 3. Presentation of CCMP total area.

Eligible area ($A_{Eligible}$)	**Hectares (ha)**	
	Baseline	**Project**
Non-stable forest	Non-stable forest areas.	– Forest restoration segment.
Non-forest	Non-forest areas.	– Reforestation Segment. – Revegetation Segment. – Establishment of woody agricultural crops Segment.
Non-eligible area ($A_{Non-eligible}$)	**Hectares (ha)** (As applicable)	
Stable forest[19]	Stable forest areas.	
Settlements*	Settlement areas.	
CCMP total area	**Hectares (ha)**	
Eligible area	Total eligible areas	
Non-eligible area (when applicable)	Total non-eligible areas	
Total	Total eligible areas + Total non-eligible areas	

* Corresponds to non-forest areas. See definition in section **Terms and definitions.**

To support area eligibility, the CCMP shall perform:

[17] Consistent with the definition of forest adopted by the methodology, grasslands, grasslands, open shrublands and tussock-type vegetation are recognized as non-forested areas eligible for the development of revegetation activities or woody agricultural crops.

The natural or assisted transition of these land covers to forest formations during project implementation does not affect the eligibility or methodological integrity of the CCMP, provided that traceability of land-cover changes is maintained and that the associated carbon stocks are properly accounted for.

[18] This is because a CCMP may not identify non-eligible areas within its total project area, in cases where 100% of the area is considered eligible.

[19] Projects that identify forest remnants as non-eligible land cover within the boundaries of the CCMP shall identify, delineate, and protect such areas throughout the project crediting period, voluntarily promoting the conservation of the existing biodiversity.

4.1.1 Eligibility analysis based on mapping software

The eligibility analysis based on coverage includes the following stages:

4.1.1.1 Collection and presentation of mapping information

The cartographic presentation of the CCMP shall comply with the guidelines for assessing the quality of geographic data established at Cercarbono's ***Guidelines for Mapping Presentation and Analysis***. The final scale of the products and the relevance of the information sources shall be considered according to the size of the discrete areas included and the total area of the CCMP.

4.1.2 Identification and classification of areas

The CCMP shall classify its area according to land cover into stable forest, non-stable forest, non-forest, and settlements. In the event that the total area of the CCMP includes stable forest areas, these shall be identified and considered as non-eligible areas. Therefore, a methodology shall be applied that allows for a clear classification of the areas present within the CCMP. The ***Guidelines for Mapping Presentation and Analysis*** describe and highlight some key elements to be taken into account in the classification of the areas present in the CCMP.

4.2 Compatibility with land use categories, land use planning, and applicable environmental legislation

The CCMP shall demonstrate the compatibility of the actions developed with the land use[20] categories defined in the country where it is implemented, if such categories exist.

The CCMP shall perform a comparative analysis of the land use guidelines resulting from land use planning or zoning, formulated programs, and project activities. This comparison shall be descriptive and demonstrate the geographic compatibility of the activities. For each CCMP action, it shall report on the planning or zoning frameworks under which it is developed and describe how it aligns with official institutional efforts.

The CCMP shall specify all applicable laws, statutes, and regulatory frameworks (local, regional, national, etc.) regarding land use categorization or zoning and shall identify, implement, and periodically assess their compliance.

4.3 Ownership

The CCMP holder shall demonstrate the capacity to act over the CCMP areas[21], either in its capacity as owner, or by obtaining explicit authorization from the current owner or legal representative of involved areas (both during the preparation of the Project Description

[20] In the event that a given country lacks such categorization, it may rely on those established by the IPCC.

[21] Including cases of areas where farmers populations, indigenous communities or other groups are established, in which in addition to the ownership demonstrated as established here, the validity and legality of the representation held by the signatories of the respective contracts or agreements must be demonstrated, of such populations, communities or groups, including full verification and legal identity documents of such representatives, as well as the certifications or endorsements of the government authorities involved and their representatives, in accordance with the applicable legal framework in the jurisdiction where the CCMP is implemented and with the applicable safeguards.

Document (PDD) and in the monitoring periods that generate mitigation results), whether on an individual, public, or collective basis.

For privately owned properties, explicit authorization from the owner or legal holder of the property(ies) shall be provided, authorizing the implementation of the CCMP. The delimitation of the possession area corresponds to a legally valid declaration of ownership or administration.

Evidence shall be provided regarding the ownership of GHG removals among the interested parties. This means that participation, claims, or transfer of rights over GHG removals shall be supported by a legally binding signed document between the parties.

In addition to this, the CCMP shall consider provisions on this subject as per current version of ***Safeguarding Principles and Procedures of Cercarbono's Certification Programme*** document.

4.4 CCMP general objective

The objective of the CCMP shall be described in the PDD, presenting the main expected positive impact from the implementation of its activities and the expected mitigation potential.

It shall also include, at a minimum, the main activity, the geographic location where the program or project activities are implemented, the actors involved, and the period of execution of the project activities.

5 Additionality

The additionality of the activities contemplated in the CCMP shall be demonstrated through the application of the most recent version of ***Cercarbono's Tool to Demonstrate Additionality of Climate Change Mitigation Initiatives***.

6 CCMP delimitation

The delimitation of the CCMP requires the definition of the different elements that specify its geographic, temporal and activity scope, as well as the emission sources and carbon pools considered. Some of these elements are definitively established during CCMP validation and may not be modified thereafter (for example, start date and duration, activities (segments), emission sources and carbon pools considered), while others may be modified due to changes in implementation (for example, addition of areas or participants, spatial boundaries of segments).

The CCMP is spatially delimited through the definition of its total area, within which the areas eligible and non-eligible for the implementation of CCMP activities and GHG accounting shall be identified.

6.1 Temporal limits

The temporal boundaries of the CCMP shall be explicitly defined in the PDD. Credits for GHG removals may only be obtained during the period determined within these boundaries, which shall be established in accordance with the relevant provisions of the Cercarbono regulatory framework. They shall be defined in terms of:

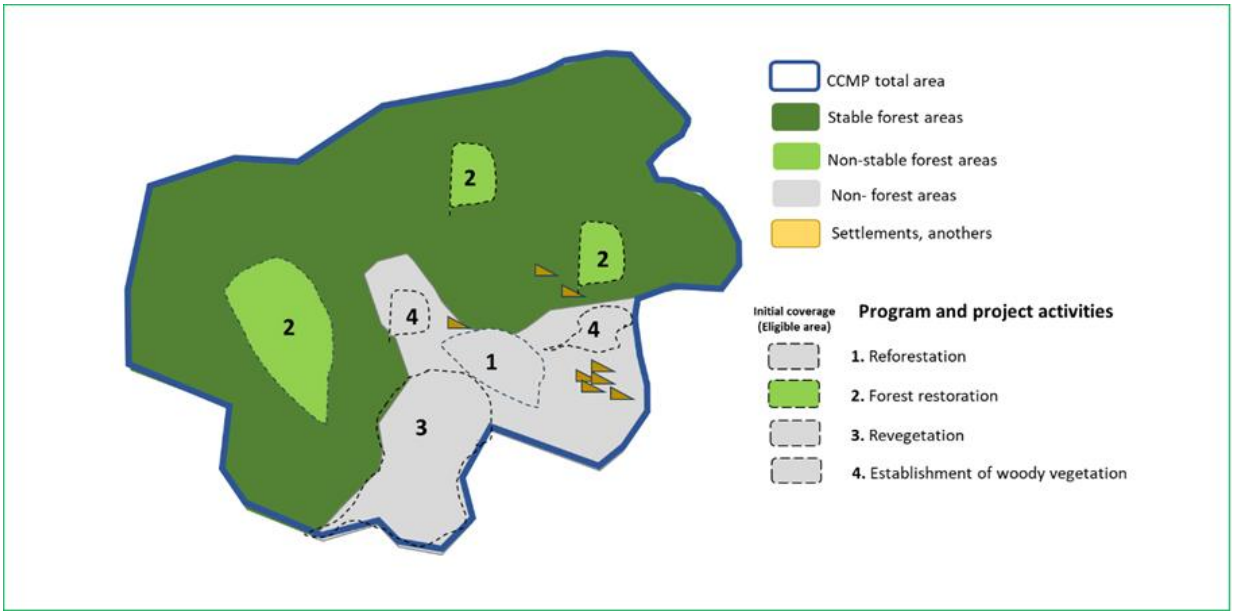
- **CCMP start date** (day.month.year): the date on which the first direct action is implemented in the program or project area that leads to mitigation results; that is, the date on which GHG removals resulting from on-the-ground actions begin.
- **Historical period** (day.month.year to day.month.year): a period (in years) of not less than ten years prior to the CCMP start date, for which the stable forest, non-stable forest, non-forest and settlement covers[22] present in the CCMP area are determined.
- **Projection period** (day.month.year to day.month.year): the time range (in years) for which projections are made in the baseline scenario and the project scenario based on the historical period. The initial year of this period shall be the CCMP start year and shall cover the entire accreditation period.
- **Results period** (day.month.year to day.month.year): the time range (in years) during which CCMP activities and the results of such actions are monitored in terms of GHG removals, with the consequent increases in carbon pools. The results period includes the verification periods during which monitoring of GHG removals is carried out. The total duration of this period is equal to the CCMP accreditation period.
- **Duration of the CCMP** (day.month.year to day.month.year): the period (in years) between the start of project actions and their completion in the CCMP eligible area. The CCMP duration shall be equal to or greater than 40 years (day.month.year to day.month.year). No maximum limit is established, as this will depend on the legal, technical and operational capacity of the holder or developer to maintain CCMP activities. However, the holder or developer may extend it through renewal of the accreditation period.
- **Verification periods** (day.month.year to day.month.year): periods (months or years) included within the results period, during which GHG removal results are verified by a validation and verification body (OVV) approved by Cercarbono. A CCMP shall have an interval of no more than three years between verification events. See the relevant considerations in the current version of the ***Cercarbono Protocol***.
- **Crediting period** (day.month.year to day.month.year): defined in accordance with the provisions established in the current version of the Cercarbono Protocol. It shall be the same for the baseline and project scenarios and for the reevaluation of such scenarios.

6.2 Spatial boundaries

The CCMP shall identify and delimit the following areas in the context in which it is implemented, as exemplified in **Figure 1**.

[22] It should be aligned, where available, with forest or agricultural inventories established at the subnational or national level.

Figure 1. Example spatial delimitation of the CCMP total area, integrating all land covers from the initial classification, and the program or project activities covered by the methodology.



Note: Some areas by type of activity may or may not be contiguous. Areas framed in dashed lines with a number inside represent the segment components.

The spatial boundaries of the CCMP shall be explicitly defined in the PDD. These boundaries correspond to the total territorial extent of the CCMP and constitute the scope within which eligible and non-eligible areas are located, as well as where the quantification of environmental results related to greenhouse gases (GHG) is carried out:

- **Total CCMP area:** It comprises all surfaces included within the spatial boundaries and is classified into two main categories as described below. However, a CCMP may be composed exclusively of eligible areas; in such case, non-eligible areas shall not be considered.

  - **Eligible CCMP area:** Surface or set of surfaces, whether adjacent or separated[23] from each other, on which CCMP activities may be implemented and in which the quantification of GHG removals, emissions and leakages is carried out. It is composed exclusively of those surfaces that, according to the prior land cover classification and the eligibility framework of this methodology, shall correspond to non-stable forest and non-forest.
  - **Non-eligible CCMP area:** Surface that does not meet the criteria for the implementation of CCMP activities and is therefore excluded from GHG accounting. It corresponds to surfaces classified as stable forest and settlements.

[23] With distances not exceeding 20 meters; see the guidelines in the ***Guidelines for Mapping Presentation and Analysis***.

$$A_{CCPM} = A_{Eligible} + A_{Non-eligible}$$

Equation 1[24]

Variable	Description	Units	CCMP Activities*			
			R	FR	RV	WAC
A_{CCPM}	Total CCMP area within the defined spatial boundaries.	ha	NA	NA	NA	NA
$A_{Eligible}$	Total eligible CCMP area (corresponds to the sum of the areas of all eligible strata k defined in the methodology).	ha	X	X	X	X
$A_{Non-eligible}$	Total non-eligible CCMP area $A_{Non-eligible} = 0$ when no non-eligible areas exist.	ha	NA	NA	NA	NA

* R: Reforestation; FR: Forest restoration; RV: Revegetation; WAC: Woody agricultural crops. NA: Not applicable.

$$A_{Elegible} = \sum_{k \in K} A_{Stratum,k}$$

Equation 2

Variable	Description	Units	CCMP Activities*			
			R	FR	RV	WAC
$A_{Eligible}$	Total eligible area of the CCMP. (Corresponds to the sum of the areas of all eligible strata k defined in the methodology).	ha	X	X	X	X
$A_{Stratum,k}$	Total area of eligible stratum k, as defined in **Equation 3.**	ha	X	X	X	X
k	Index of the eligible stratum (Non-stable forest or Non-forest), with $k \in K$.	NA	X	X	X	X
K	Set of eligible strata defined in the methodology.	NA	X	X	X	X

* R: Reforestation; FR: Forest restoration; RV: Revegetation; WAC: Woody agricultural crops. NA: Not applicable.

CCMP General spatial architecture

The spatial delimitation of the CCMP adopts a three-level hierarchical structure composed of:

- Eligible strata
- Segments
- Segment components

This architecture ensures full spatial traceability of carbon accounting from the most general scale to the most detailed scale.

[24] This equation is used exclusively for the characterization and control of the CCMP spatial boundaries and does not form part of the GHG accounting.

- **Eligible strata** constitute the macro-level spatial division of the CCMP and are derived directly from the classification of land cover within the eligible area. The strata:

– Define the general spatial structure of the CCMP.
– Are spatially delimited polygons that share the same initial land-cover condition.
– Provide the basis for identifying the areas subject to monitoring through the establishment of segments.

In the present methodology, two eligible strata are defined [25]:

– Non-stable forest stratum, and
– Non-forest stratum.

Once the eligible strata are defined, they shall be applied consistently in both the baseline and project scenarios. **Table 4** presents examples of possible combinations of strata, from which a CCMP may structure the CCMP activities covered by this methodology. The area of eligible stratum k is calculated as follows:

$$A_{stratum,k} = \sum_{i=1}^{n} A_{k,i}$$

Equation 3

Variable	Description	Units	CCMP Activities*			
			R	FR	RV	WAC
$A_{Stratum,k}$	Total area of eligible stratum k, obtained as the sum of all polygons belonging to the stratum, in both the baseline and project scenarios.	ha	X	X	X	X
$A_{k,i}$	Area of polygon i belonging to eligible stratum k.	ha	X	X	X	X
n	Number of polygons assigned to the eligible stratum.	NA	X	X	X	X
k	Index of the eligible stratum (Non-stable forest or Non-forest), with $k \in K$.	NA	X	X	X	X
i	Polygon index within eligible stratum *k*.	NA	X	X	X	X

* R: Reforestation; FR: Forest restoration; RV: Revegetation; WAC: Woody agricultural crops.
NA: Not applicable.

- **Segments** are operational spatial units within the eligible strata, in which the CCMP activities are implemented and where GHG accounting takes place. Each segment:

– Is contained within a single eligible stratum and may cover part or the entirety of the area of that stratum.

[25] Each stratum groups spatially delineated polygons that share the same initial land-cover condition.

- Corresponds to a single CCMP activity typology (reforestation, forest restoration, revegetation, or woody agricultural systems).
- Constitutes the minimum unit from which removals, emissions, and leakage are aggregated for the calculation of the GHG balance.

When segments cover part or the entirety of an eligible stratum *k*, the sum of the areas of the segments assigned to that stratum shall not exceed the total area of the stratum:

$$\sum_{s \in Sk} TSA_s \leq A_{stratum,k}$$

Equation 4

Variable	Description	Units	CCMP Activities*			
			R	FR	RV	WAC
$A_{Stratum,k}$	Total area of eligible stratum k, obtained as the sum of all polygons belonging to the stratum in the baseline and project scenarios.	ha	X	X	X	X
S_k	Set of segments defined within eligible stratum k.	NA	X	X	X	X
s	Index of segment s (R, FR, RV and/or WAC).	NA	X	X	X	X
TSA_s	Total area of segment s (contained within a single stratum).	ha	X	X	X	X
k	Index of the eligible stratum (Non-stable forest or Non-forest).	NA	X	X	X	X

* R: Reforestation; FR: Forest restoration; RV: Revegetation; WAC: Woody agricultural crops. NA: Not applicable.

In the event that the CCMP design assigns the entirety of the area of eligible stratum k to segments, **Equation 5** shall be interpreted as a ***particular case***, without replacing the applicability of **Equation 4**. This condition is met only when the total eligible area of stratum k has been fully distributed among all segments belonging to the set S_k.

$$A_{stratum,k} = \sum_{s \in Sk} TSA_s$$

Equation 5

Variable	Description	Units	CCMP Activities*			
			R	FR	RV	WAC
$A_{Stratum,k}$	Total area of eligible stratum k completely covered by segments, in the baseline and project scenarios.	ha	X	X	X	X
TSA_s	Total area of segment s (contained within a single stratum).	ha	X	X	X	X
k	Index of the eligible stratum (non-stable forest or non-forest).	NA	X	X	X	X
S_k	Set of segments defined within eligible stratum k.	NA	X	X	X	X

Variable	Description	Units	CCMP Activities*			
			R	FR	RV	WAC
s	Index of segment s (R, FR, RV and/or WAC).	NA	X	X	X	X

* R: Reforestation; FR: Forest restoration; RV: Revegetation; WAC: Woody agricultural crops. NA: Not applicable.

The total area of each segment s (TSA_s) corresponds to the sum of the areas that compose it. Depending on the level of spatial disaggregation used in the CCMP, this area may be calculated from individual polygons or, where applicable, from segment components.

When a segment is not subdivided into components, the total area of the segment is calculated as the sum of the areas of the polygons that compose it, in accordance with the following equation:

$$TSA_s = \sum_{i=1}^{N} A_{s,i}$$

Equation 6

Variable	Description	Units	CCMP Activities*			
			R	FR	RV	WAC
TSA_s	Total area of segment s.	ha	X	X	X	X
$A_{s,i}$	Area of polygon i belonging to segment s.	ha	X	X	X	X
N	Number of polygons that make up the segment.	NA	X	X	X	X
s	Index of segment s (R, FR, RV and/or WAC).	NA	X	X	X	X
i	Index of polygon within segment s.	NA	X	X	X	X

* R: Reforestation; FR: Forest restoration; RV: Revegetation; WAC: Woody agricultural crops. NA: Not applicable.

- **Programme or project activities**: as mentioned in **Section 3.1**, this methodology may be used for the implementation of CCMP focused on GHG removals through reforestation, forest restoration, revegetation, and the establishment of woody agricultural crops.

The present methodology defines four types of segments or programme/project activities: reforestation, restoration, revegetation, and woody agricultural crops. A CCMP may include one or more types of segments, according to the initial classification of area eligibility. The areas of the segments (and of their segment components, where applicable) shall be identified in the baseline and project scenarios in order to avoid double counting of results.

Programme or project activities (CCMP activities) may be implemented independently or jointly within the same CCMP, provided that the conditions established in **Sections 3** and **4** are met.

- **Segment components** are (optional) portions of area with the same activity that make up the segments. Segment components allow for a finer spatial disaggregation without altering the operational structure of the segments. ***This classification is only required*** when:
  - A segment contains several spatially disconnected polygons, or
  - It is necessary to differentiate sub-units within the same segment due to relevant differences in biophysical conditions, management practices, or other characteristics that influence carbon stocks and flows, while maintaining the same activity typology of the segment.

Therefore, when a segment is subdivided into segment components in accordance with the above criteria, the total area of the segment shall be calculated as the sum of the areas of its components, in accordance with the following equation:

$$TSA_s = \sum_{f=1}^{Ncp} A_{s,f}$$

Equation 7

Variable	Description	Units	CCMP Activities*			
			R	FR	RV	WAC
TSA_s	Total area of segment s.	ha	X	X	X	X
$A_{s,f}$	Area of the component f of the segment s.	ha	X	X	X	X
Ncp	Number of segment components in the segment.	NA	X	X	X	X
f	Segment component index.	NA	X	X	X	X
s	Index of segment s (R, FR, RV and/or WAC).	NA	X	X	X	X

* R: Reforestation; FR: Forest restoration; RV: Revegetation; WAC: Woody agricultural crops. NA: Not applicable.

Equations 6 and **7** are alternative approaches and shall not be applied simultaneously for the same segment. Both lead to the same result (TSA_s), differing only in the level of spatial disaggregation used for the characterization of the segment.

The spatial boundaries of the segments considered in the CCMP may only change during its implementation when areas are permanently added or removed, in which case the CCMP shall be revalidated. The rules and calculations related to these changes are presented in **Sections 7** and **8**.

Once the eligible strata (areas of non-stable forest and non-forest) that will form part of the CCMP have been identified (see **Table 3**), the different segments (which correspond to the program or project activities) to be considered by the CCMP must be selected.

Table 4 presents, as an example, different options for the distribution of activities within the CCMP area, considering reforestation as the dominant activity, although it may be combined with other eligible activities, which may also be predominant in accordance with the provisions of **Section 4.** The possible combinations between baseline coverage types and the applicable

activities in the project scenario allow visualization of the flexibility and technical coherence of the methodological proposal.

Table 4. Combinations of strata representing the eligible area of the CCMP for both the baseline scenario (areas of non-stable forest and non-forest) and the project scenario (activities that may be established by the CCMP).

Non-forest areas			Non-stable forest areas
Option 1: Program or project activities (segments)			
Reforestation	Woody agricultural crops	Revegetation	Forest restoration
Option 2: Program or project activities (segments)			
Reforestation	NA	Revegetation	Forest restoration
Option 3: Program or project activities (segments)			
Reforestation	Woody agricultural crops	NA	Forest restoration
Option 4: Program or project activities (segments)			
Reforestation	Woody agricultural crops	Revegetation	NA
Option 5: Program or project activities (segments)			
Reforestation	NA	Revegetation	Forest restoration
Option 6: Program or project activities (segments)			
Reforestation	NA	NA	Forest restoration
Option 7: Program or project activities (segments)			
Reforestation	NA	NA	NA

NA: Non applicable.

When the implementation of a forest restoration segment within the CCMP requires the application of other methodologies developed or approved by Cercarbono—such as the REDD+ methodology (or any other applicable methodology)—the segments in which such activities are carried out shall be explicitly identified and excluded from the CCMP accounting, in order to avoid situations of double counting.

6.3 Carbon pools

The carbon pools included in a CCMP are those that are significant and that can be estimated or measured in a reliable and conservative manner, for the purpose of assessing carbon stocks under the baseline scenario and whose changes are evaluated under the project scenario. These changes shall be associated with the program or project activities implemented, in order to determine the environmental results generated.

The carbon pools considered under the baseline scenario shall include, at a minimum, those that are significant and that contain carbon in the land cover types present in that scenario, and that are susceptible to change as a result of the implementation of the CCMP, as presented in the following table:

Table 5. Carbon pools.

Carbon pool	Activity				Justification	
	Reforestation (R)	Forest restoration (FR)	Revegetation (RV)	Woody agricultural crops (WAC)	Baseline (BL)	Project (P)
Aboveground tree biomass (***Atree***)	Yes (BL-P)	Yes (BL-P)	It depends (BL-P)	Yes (BL-P)	Main carbon pool. In revegetation, its relevance depends on the type of woody vegetation established.	
Belowground tree biomass (***Btree***)	Yes (BL-P)	Yes (BL-P)	It depends (BL-P)	Yes (BL-P)	Main carbon pool.	
Aboveground shrub biomass (***AShrub***)*	Optional (BL-P)	Optional[26] (BL-P)	It depends (BL-P)	Optional (BL-P)	May be considered if it represents a significant proportion of woody vegetation (≥ 5% of total carbon or ≥ 10 tC ha^{-1}), or conservatively excluded.	
Belowground shrub biomass (***BShrub***)	Optional (BL-P)	Optional (BL-P)	It depends (BL-P)	Optional (BL-P)	May be considered or conservatively excluded if its contribution is marginal.	
Aboveground herbaceous biomass (***AHerb***)	Yes (BL) No (P)	Yes (BL) No (P)	Yes (BL) No (P)	Yes (BL) No (P)	Shall be considered if it is present in all segments of this scenario.	May be conservatively excluded.
Belowground herbaceous biomass (***BHerb***)	Yes (BL) No (P)	Yes (BL) No (P)	Yes (BL) No (P)	Yes (BL) No (P)	Shall be considered if it is present in all segments of this scenario.	May be conservatively excluded.
Deadwood (***Dw***)	Optional (BL-P)	Optional (BL-P)	No (BL-P)	No (BL-P)	May be considered if there is significant accumulation (> 10% of total ecosystem carbon), or conservatively excluded.	
Litter (***L***)	Optional (BL-P)	Optional (BL-P)	No (BL-P)	No (BL-P)	May be considered if there is significant accumulation, or conservatively excluded.	
Soil organic carbon (***Soc***)**	Optional (BL-P)	Optional (BL-P)	Optional (BL-P)	Optional (BL-P)	May be considered if there is significant accumulation (≥ 5% of total carbon or ≥ 10 tC ha^{-1} attributable to the CCMP during the accreditation period), or conservatively excluded.	

* "Aboveground shrub biomass" refers to the biomass of all vegetative components (leaves, branches, stems) of shrubs that are above the soil surface in a given area. This includes stems, branches, leaves, flowers, and fruits.

[26] Este This carbon pool may be optionally included in the forest restoration activity when its presence is significant and quantifiable, particularly during the early stages of woody vegetation establishment.

** This carbon pool shall only be included if time series or robust comparison data are available, real improvements attributable to the CCMP intervention are projected, and/or accepted quantification methods are applied (e.g., field and/or georeferenced sampling and laboratory analysis).

Note: Carbon pool established as optional may be included if reliable monitoring data are available, a validated significant change hypothesis exists, and their inclusion improves accuracy without leading to overestimation. If an optional reservoir is excluded, it shall be explicitly justified in the PDD under the principle of conservativeness, indicating that its estimated contribution is marginal and does not materially affect the net removals of the CCMP.

Aerial tree biomass represents the dominant carbon pool in reforestation, forest restoration, and woody agricultural crop activities, in which tree species with a significant capacity for net carbon accumulation are established. Therefore, this carbon pool shall be included in both the baseline scenario and the project scenario.

In revegetation activities, the relevance of the woody biomass pool depends on the type of vegetation implemented. When revegetation is carried out using shrub species or includes early stages with herbaceous vegetation, the latter may form part of the ecological establishment process; however, only woody components (arboreal or shrub) may be considered eligible carbon pools for the generation of carbon credits.

Shrub biomass (aboveground and belowground) is considered optional across all segments, although it may constitute the dominant carbon pool in revegetation projects. If included, it shall be quantified in both the baseline and project scenarios.

Herbaceous biomass shall be considered in baseline scenario segments where it is present and may constitute the dominant pool in herbaceous revegetation projects or during early establishment stages. In the project scenario, herbaceous biomass shall be conservatively excluded when it is replaced by woody vegetation, in order to avoid double counting of carbon removals.

Dead wood and litter may be optionally included in reforestation and forest restoration segments; however, if considered, they shall be included consistently in both the baseline and project scenarios for those segments.

Soil organic carbon (SOC) is an optional carbon pool for all segments, although it may be dominant in revegetation activities. If included, it shall be quantified in both the baseline and project scenarios.

If carbon stocks in any pool change due to a CCMP implementation that differs from that presented during validation, a reassessment of the baseline or project scenario shall be required, in accordance with **Section 6.6**.

6.4 Greenhouse gas (GHG) emission sources

The GHG emission sources considered under this methodology are those arising from burning, fires, fertilizer use, and fossil fuel consumption in agricultural machinery, as presented in the following table:

Table 6. GHG emission sources considered[27] [28].

Emission source	Baseline scenario	Project scenario	Justification
Reforestation, forest restoration and revegetation			
Fires			
CO_2	No	No	Considered in carbon stock calculations.
Non-CO_2	No	Yes	Conservatively excluded in both the baseline and project scenarios. It is included[29] when the event occurs fortuitously (natural or anthropogenic) during project implementation.
Biomass burning			
CO_2	No	No	Considered in carbon stock calculations.
Non-CO_2	No	No	Conservatively excluded in Baseline project. Burning is not permitted in the project scenario.
Use of synthetic and organic fertilizers			
N_2O	Optional	Optional	Nitrification/denitrification from fertilizers and organic amendments applied to soils. May be considered or conservatively excluded in the baseline scenario. In the project scenario, it may be a significant source to consider.
CH_4	No	No	Excluded.
Woody agricultural crops			
Fires			
CO_2	No	No	Considered in carbon stock calculations.
Non-CO_2	No	Yes	Conservatively excluded in the baseline scenario. It is included in the project scenario when the event is generated fortuitously (natural or anthropogenic).
Biomass burning			
CO_2	No	No	Considered in carbon stock calculations.
Non-CO_2	Optional	Optional	In the baseline scenario, only if it is common practice in the region and only if it is included in the project scenario only if permitted by law.
Use of synthetic and organic fertilizers			
N_2O	Optional	Yes	Nitrification/denitrification of fertilizers and organic supplements applied to soils. It can be considered or conservatively excluded in the baseline scenario. It is included in the project scenario because this activity is common in crop management.
CH_4	No	No	Emissions of this gas from this source are not expected to occur in this type of activity.

[27] These emission sources shall be directly associated with the project activity.

[28] Under this methodology, the term "Non-CO_2" groups greenhouse gases other than CO_2, mainly CH_4 and N_2O, when their individual disaggregation is not necessary or relevant for GHG accounting. When an emission source is predominantly associated with a specific gas or requires a particular methodological treatment, such gas is explicitly identified.

[29] This inclusion is conditional and qualitative, depending on whether the event occurs, and is not considered a requirement for prior estimation.

Emission source	Baseline scenario	Project scenario	Justification
Fossil fuel consumption in agricultural machinery			
CO_2	Optional	Yes	Main GHG of this emission source. It can be considered or conservatively excluded in the baseline scenario. It is included in the project scenario because this activity is common in crop management.
Non-CO_2	No	Yes	Potentially very low emission. Conservatively excluded in the baseline scenario. In the project scenario it shall be included.

The estimation of these emission sources may change due to an implementation of the CCMP that differs from what was presented during validation; in such cases, a revalidation and/or reevaluation of the baseline or project scenario may be required.

6.5 Long-term average GHG mitigation potential

The long-term average GHG mitigation potential is defined as the average[30] annual net removals achieved through the implementation of a CCMP, expressed in tonnes of CO_2e per year. It corresponds to the average, over the period considered, of the difference between the GHG removals achieved by the selected carbon pools in the project scenario and the net removals present in the baseline scenario, also taking into account the relevant emission sources and, where applicable, leakage emissions attributable to the implementation of the CCMP.

This potential shall be calculated using **Equation 8** and constitutes the **upper limit** of carbon credits that a CCMP may issue over its implementation. Its determination shall consider the type of activity implemented and the growth dynamics and management of the corresponding woody vegetation.

$$MP_{GHG} = \frac{1}{T}\sum_{t=1}^{T}(Ran_{P,t} - Ran_{Bl,t})$$

Equation 8

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
MP_{GHG}	Long-term average GHG mitigation potential of the CCMP.	tCO_2e / year	X	X	X	X
$Ran_{P,t}$	Net GHG removals in all segments in year t under the project scenario (after deducting emissions and leakage attributable to the implementation of the CCMP).	tCO_2e	X	X	X	X
$Ran_{Bl,t}$	Net GHG removals across all segments in year t, in the baseline scenario.	tCO_2e	X	X	X	X

[30] It allows for planning and identifying the GHG removal capacity over time due to the program or project activities.

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
T	Total duration of the period considered for calculating the mitigation potential.	Years	X	X	X	X
t	Index of the year within the accreditation period or the operational lifetime of the CCMP.	NA	X	X	X	X

*R: Reforestation; FR: Forest restoration; RV: Revegetation and WAC: Woody agricultural crops. NA: does not apply.

Below are some considerations to take into account depending on the selected program or project activity:

• **Reforestation or woody agricultural crops:**

In CCMPs that include the activity of reforestation or the establishment of woody agricultural crops, the long-term average GHG mitigation potential will be estimated as the total net removal of live woody biomass (arboreal and/or shrubby) achieved during the implementation of the CCMP, expressed as an annual average (according to **Equation 8**). In these cases, the effect of the following must be explicitly incorporated:

– Harvests or limited forest use, when foreseen;
– Renewal, rotation, or pruning of biomass, particularly in woody agricultural systems with defined production cycles;
– Management-associated emissions[31], including harvest residues or planned disturbances;
– Potential leakages induced by land use changes or shifts in productive pressure.

The CCMP shall justify the duration and frequency of management cycles according to the implemented species, their growth rate, and the intervention strategy, specifying the moment from which the projected average annual removal is expected to be reached.

• **Forest restoration:**

In the forest restoration activity, the long-term average GHG mitigation potential is determined based on the progressive growth of arboreal and shrubby biomass, until an ecological structural equilibrium or maturity is reached, at which point net removals stabilize. If this equilibrium is reached during the CCMP's duration, this will be the reference point for determining the average; if equilibrium is projected beyond the CCMP duration, the potential will be calculated based on the removals accumulated until its end.

In all cases, removals shall be maintained as **cumulative and non-decreasing,** except when explicitly and duly approved forest management events are included, under sustainability and carbon stocks conservation criteria.

[31] The loss of carbon due to harvesting must be included in the quantification of the project's emissions and affects the average biomass removal, thereby causing the mitigation potential to shift over time.

• **Revegetation**:

In the revegetation activity, the long-term GHG mitigation potential will be calculated based on the projected net removal of perennial woody biomass (arboreal and/or shrubby) in areas that may or may not meet the forest definition, but that show significant structural and functional improvements. The average value shall consider:

– The estimated growth in the selected woody carbon pools;
– The non-forest character and dispersed or mixed structure of the resulting coverage;
– Potential leakages induced by land use changes or shifts in productive pressure;
– The possible implementation of limited forest use when compatible with the segment's objectives.

Based on all of the above, the average mitigation potential does **not constitute a fixed annual limit**. It is a technical reference for planning and evaluating the climate performance of the CCMP. Actual annual removals may be higher or lower than the estimated average, depending on the ecological behavior of the species, establishment success, climate variability, and other management or disturbance factors.

In all cases, the total amount of credits to be issued over the duration of the CCMP may not exceed the product of the average mitigation potential multiplied by the total number of project years, adjusted for cutting events, harvests, or structural losses at the end of the period[32].

6.6 Generic process for estimation and reassessment of baseline and Project scenarios

As mentioned, the segments represent the different eligible activities under this methodology: reforestation, forest restoration, revegetation, and the establishment of woody agricultural crops. These segments shall be projected in the project scenario and implemented in the field according to their technical design.

The initial segments, their specific areas, or their components shall be defined in the CCMP design and clearly documented in the PDD.

For each segment, it is mandatory to estimate the long-term average mitigation potential (net GHG removals), considering the relevant carbon pool for each type of activity, as described in **Section 6.5**. This estimation shall be carried out for both the baseline scenario and the project scenario, and **updated through mandatory periodic reassessments every five years** at the latest, or in the following cases:

– Inclusion or exclusion of new areas or segments;
– Corrections in initially reported areas;
– Changes in species composition or management cycles;
– Variations in observed growth rates;

[32] In these cases, the year in which the harvest takes place must be added to the implementation period, solely for the purpose of calculating the long-term average annual mitigation potential.

– Extension or reduction of the implementation period;
– Occurrence of external events affecting the growth, mortality, or structure of vegetation.

Additionally, the following contextual, regulatory, or institutional changes that could occur and require the baseline to be reassessed should be considered:

– **Changes in government policies or sectoral plans**: when public policies, sectoral strategies, or planning instruments (e.g., rural development plans, land-use plans, agroforestry incentive policies) are adopted that significantly modify the expected behavior in the absence of the CCMP.
– **Legal reforms or new regulatory provisions**: the adoption or entry into force of norms, laws, or regulations that prohibit or incentivize certain land use practices; modify rights of access, use, or conservation of resources; or establish legal mitigation or restoration obligations shall lead to a technical analysis of the impact of such regulations on the viability, relevance, or additionality of the previously established baseline scenario.
– **Contextual factors not induced by the CCMP**: if external factors not controlled by the proponent (such as conflicts, persistent natural phenomena, regional economic changes, etc.) substantially modify the baseline conditions of the territory, the update of the baseline may be requested with technical justification.
– **Mandatory evaluation in accreditation renewal processes**: during the CCMP accreditation period renewal process, the baseline shall be mandatorily reassessed, incorporating: normative, institutional, or programmatic changes since the initial validation; updated common practices for the sector and region; and empirical information accumulated in the previous years of implementation.

The baseline reassessment may be

- Requested by the developer, with technical justification and contextual documentation.
- It may be required by the VVB or Cercarbono as a result of audit processes, methodological review, verification, certification, or application of conservativeness principles.
- It may also be performed ex officio by Cercarbono when normative or policy provisions are issued that affect certified CCMPs across the board.

The overall reassessment aims to recalculate the total long-term mitigation potential and adjust the expected net removal trajectory of the project. This ensures transparency, methodological consistency, and proper risk management, including the determination of the fraction of carbon credits to be held as a reserve.

Figure 2 and**Figure** 3 present generic diagrams of the expected behavior of net carbon removed during the CCMP implementation period, according to each type of activity. These curves allow for visualization of the estimated moment when the CCMP reaches its average net removal, which constitutes the starting point for **the progressive release of the individual carbon credit buffer**, as established in ***Cercarbono's Tool to Estimate the Carbon Buffer in Climate Change Mitigation Initiatives in the Land Use Sector***.

Figure 2. Representation of the long-term net removal GHG of a generic project scenario that implements a reforestation activity or the establishment of woody agricultural crops.

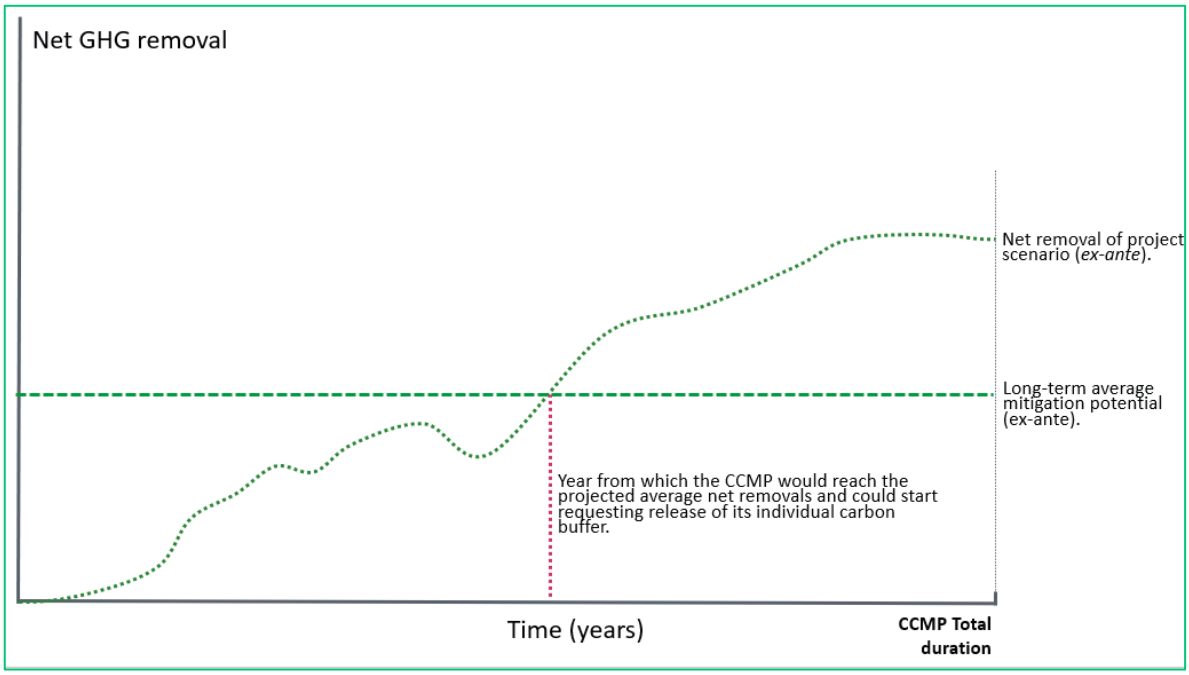


Figure 3. Representation of the long-term average mitigation potential of a generic project scenario that implements forest restoration and revegetation activities.

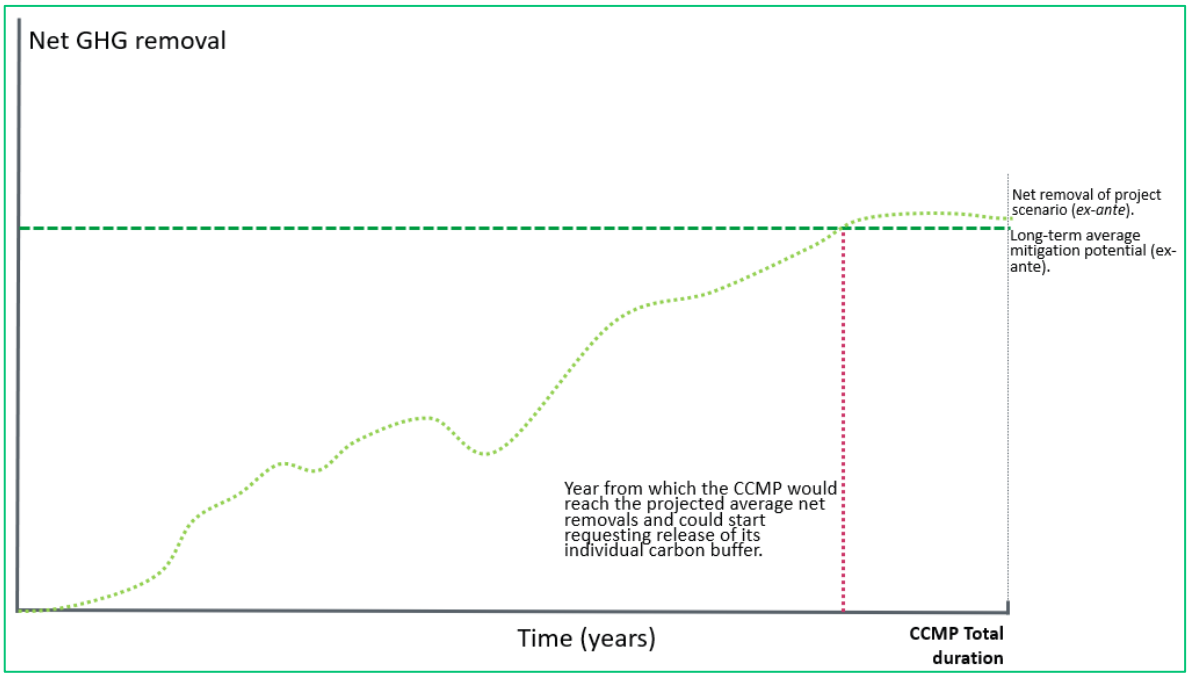


Figure 4. Representation of two possible reassessments of the project scenario (illustrating reforestation or establishment of Woody Agricultural Crops activities) in a CCMP, including the addition of new areas from the first verification and subsequent long-term decline.

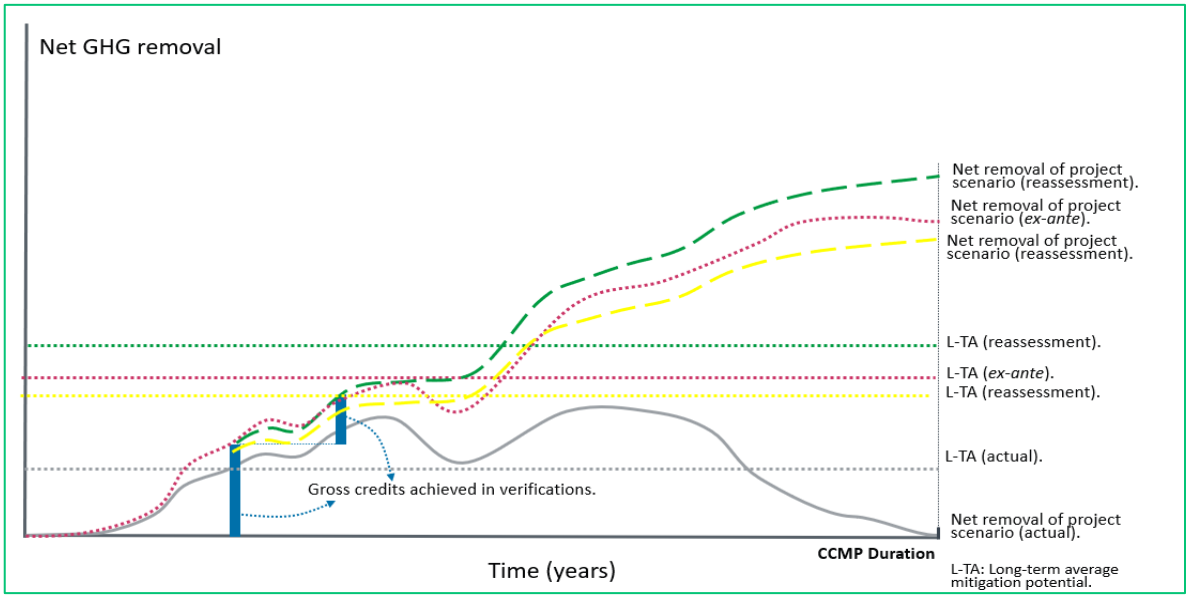
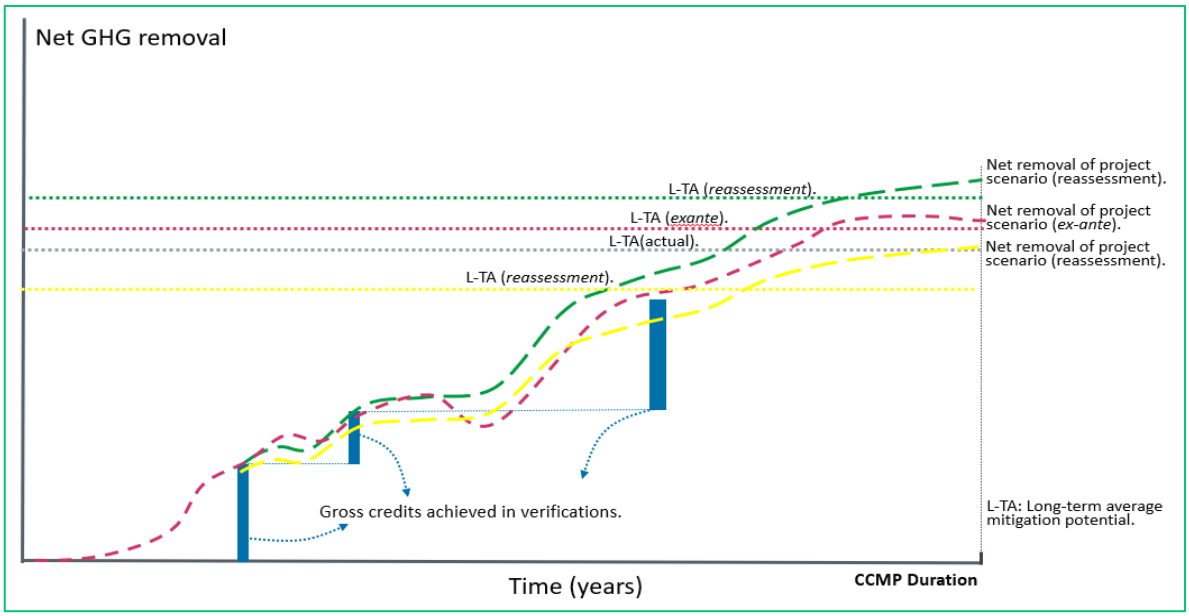


Figure 5. Representation of two possible reassessments of the project scenario (illustrating the forest restoration or revegetation activity) in a CCMP, including the addition of new areas from the first verification.



It is common that, in land-use-related projects, implementation differs from what was originally projected, whether due to technological adjustments, climatic conditions, vegetation response, or operational decisions. In these cases:

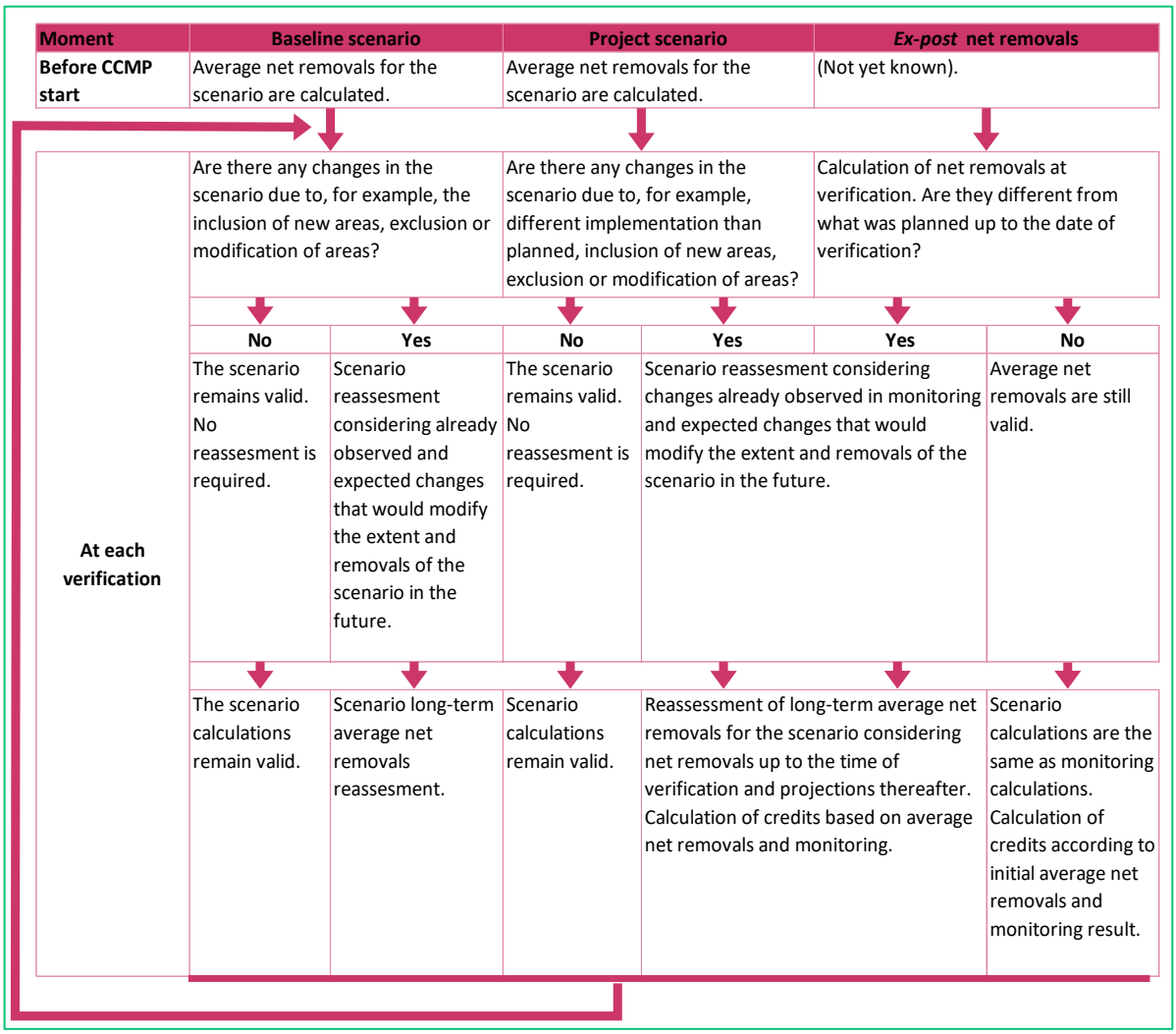
- The net carbon removed may exceed the projected value (upward diagonal green lines, **Figure 4** and **Figure** 5[33]), leading to an earlier release of the individual carbon buffer;
- Or it may fall below the projected value (downward diagonal yellow lines), which implies an extension of the time required to reach the net average and a greater retention time of the reserve.

Since area modifications also affect the baseline scenario, it is likely that a simultaneous reassessment of both scenarios (project and baseline) will be required during each verification, to ensure that the updated average net removals accurately reflect the CCMP's climate performance and its reserve status.

This iterative sequence of estimation, implementation, and reassessment is illustrated in **Figure 6**, which summarizes how the reference scenarios and mitigation values shall be progressively adjusted based on the actual progress of the project.

[33] The percentage increase in average net carbon in the baseline scenario after a reassessment shall not exceed 20% of the initially established total for the validated areas without a revalidation. In the case a decrease greater than 20% is assessed, then the driver(s) for such decrease shall be documented and communicated to Cercarbono and the VVB.

Figure 6. Calculation cycle of baseline and project scenarios and their reassessment due to differences in implementation from that planned.



7 Baseline scenario

7.1 Identification of the Baseline Scenario

If approved guidelines are available in the country for establishing baselines (including standardized ones[34]) in the sector where the CCMP is implemented, their use shall be integrated, with proper documentation on applicable provisions and the method used for their determination. Otherwise, herein set forth guidelines shall be followed.

[34] When these are available and applicable to the context of the CCMP. No explicit criteria are included regarding the minimum quality or the level of conservativeness required for these baselines, given that circumstances in the implementation context may vary and are governed by a regulatory framework. Accordingly, the implementation of these baselines is respected and adopted, provided therein included data are sufficiently conservative, representative, or technically robust (including correction factors to minimize uncertainty) and up to date.

The CCMP shall include the identification of realistic and credible land-use scenarios that would have occurred in the areas in the absence of the program or project activity, within the boundaries of the project's eligible areas. This should take into account relevant national and/or sectoral policies, regulations and national /sectoral circumstances related to land use or land-use change, as well as socioeconomic trends affecting the areas where the CCMP will be implemented[35].

Based on this analysis, the CCMP holder or developer shall select the most realistic baseline scenario, quantifying its characteristics, ensuring that:

- It reflects the best available technologies that are environmentally sound and economically viable, where applicable;
- It applies an approach based on the average emissions or removals from comparable high-performing activities, under similar social, economic, environmental, and technological circumstances;
- The baseline is conservatively set below the business-as-usual (BAU[36,37]) scenario. For this:

– Assumptions representing extreme or artificially high conditions compared to what would reasonably occur without the CCMP will not be accepted;
– The baseline shall be technically justifiable, verifiable, and established below the reasonable upper limit of the BAU scenario, reflecting conservative assumptions about land-use practices, rates of change, or anthropogenic pressure.

In this regard, Cercarbono has developed the ***Guidelines for using Models in Baseline Carbon Quantification in the Land Use Sector*** to ensure environmental integrity, the credibility of the carbon credits generated, and contribute to the additionality of program or project activities.

In addition to the above, to select the baseline scenario, CCMP shall comply with provisions as per in **Sections 3** and **4**.

[35] The analysis must include at least the cases of continuation of the pre-project situation, as well as the scenario of project implementation without considering carbon credits, justifying the selection of the baseline scenario ultimately determined as the most realistic.

[36] The BAU constitutes the reference value for the construction of the baseline. Nevertheless, the baseline shall be conservatively positioned below the BAU, applying technically prudent assumptions and downward adjustments based on actual or historical data, in accordance with the principle of conservativeness. This requirement applies to both projected emissions and natural removals in the baseline scenario, in order to avoid overestimating the net benefit attributable to the CCMP and to ensure the environmental integrity of the credits generated.

In cases of significant uncertainty, discount factors or other adjustment methods shall be used (e.g., conservative percentiles or growth/degradation/deforestation rates lower than historical averages). The BAU may only be adopted without additional adjustments when it is demonstrated, with solid evidence, that it is a conservative and representative projection.

[37] Taking into account the economic feasibility of the critical mitigation activities, practices, or technologies employed. Quantitative factors or methods for the downward adjustment of the baseline will be updated during each renewal of the accreditation period or corresponding reassessment.

The baseline shall be assessed by the CCMP's holder **every 5 years**, verifying its initial consistency. If significant changes are recorded in said evaluation, due to changes in the CCMP design, it may be subject to revalidation.

The stratification criterion used for the baseline scenario is land cover. However, additional stratification criteria (either higher or lower in hierarchy) such as region, climate, among others, may be used if properly justified. If the stratification criterion changes after the CCMP implementation, it shall undergo revalidation.

7.2 Quantification of the Baseline Scenario

Baseline scenario in this methodology consists of estimating the amount of carbon in the carbon pools and significant source emissions (as applicable to the eligible strata identified and considered) that would have occurred within the CCMP eligible boundaries in the absence of the activities planned to be implemented. The GHG emission sources and carbon pools to include are detailed in **Table 5** and Table 6, accordingly.

The ***Guidelines for using Models in Baseline Carbon Quantification in the Land Use Sector***, provide specific guidelines for estimating carbon stocks and GHG emission sources in the baseline scenario, with the objective of ensuring a conservative approach that reinforces the environmental integrity of the CCMP. These guidelines include technical and operational criteria for quantifying carbon in each of the relevant carbon pools: aboveground and belowground biomass (from trees, shrubs, and herbaceous plants), litter, dead wood, and soil organic carbon, using validated methodologies, measurable or estimable data, and internationally recognized default factors, such as those established by the IPCC.

The eligible land coverage (non-stable forest areas and non-forest areas) in the baseline scenario for the areas to be involved in the CCMP activities are presented in **Table 7**. Additionally, the land coverage defined by the country where the CCMP is implemented shall also be considered.

Table 7. Eligible and Non-Eligible Coverage in the Baseline Scenario, Considering the Activities to Be Implemented in the Project Scenario.

Eligible coverages (for the baseline and project scenarios)	**Non-eligible coverages**
Reforestation	
Heterogeneous agricultural areas without woody agricultural crops	Forests (primary and secondary)
Heterogeneous agricultural areas with woody agricultural crops (as long as they do not meet the definition of forest and the carbon stocks associated with these covers at the start of the CCMP are explicitly included in the baseline scenario)	Forest plantations
Areas with no- or scarce vegetation	Stable or protected natural shrub formations
Non-woody permanent crops	Tall secondary vegetation (that meets or is close to meeting the forest definition)
Short cycle crops	Swampy areas and permanent wetlands
Low secondary vegetation (that does not meet the definition of forest)	Peatlands

Eligible coverages (for the baseline and project scenarios)	**Non-eligible coverages**
Pastures (natural or induced, as long as they are not transitioning to forest nor classified as tall secondary vegetation)	
Active agropastoral systems, including silvopastoral, agrosilvopastoral systems, or with presence of grazing.	
Forest restoration	
Degraded secondary forests	Primary forests
Areas with no- or scarce vegetation	Peatlands
Low secondary vegetation that does not meet the forest definition	Swampy areas, naturally flooded lands, and permanent wetlands (except those that have been transformed and meet eligibility for degraded areas).
Tall secondary vegetation that does not meet the forest definition	
Degraded pastures	
Revegetation	
Areas without vegetation or with scarce or degraded vegetation	Stable primary and secondary forests
Heterogeneous agricultural areas without woody crops	Existing forest plantations
Heterogeneous agricultural areas with woody crops (that do not meet the forest definition and the intervention has an ecological or functional, non-productive approach)	Tall secondary vegetation (that meets or is close to meeting the forest definition)
Permanent non-woody crops (when oriented toward partial conversion to systems with greater woody cover)	Protected natural shrub formations or non-intervened woody ecosystems
Short-cycle crops (that can be transformed without affecting food security and without generating land-use conflicts)	Peatlands and swampy areas with active hydrological functions or risk of emissions if altered
Low secondary vegetation (that does not meet the forest definition and is used as a basis for enrichment or ecological rehabilitation)	
Pastures (natural or induced, with potential for functional restoration)	
Active agropastoral systems, including silvopastoral, agrosilvopastoral systems, or with presence of grazing.	
Woody agricultural crops	
Heterogeneous agricultural areas without previous woody agricultural crops	Forests (primary and secondary)
Areas without or with little vegetation	Natural shrublands or protected woody vegetation formations
Non-woody agricultural crops	Existing woody agricultural crops already established in the field before the project start
Short-cycle crops (vegetables, some fruits, flowers, and medicinal plants) when replaced by perennial woody species	Commercial or conservation-purpose forest plantations
Low secondary vegetation (that does not meet the forest definition)	Peatlands, wetlands, or swampy areas due to their high ecological sensitivity and emission potential
Pastures (natural or induced, that can be converted to sustainable woody agricultural systems)	Tall secondary vegetation (that meets or is close to meeting the forest definition)

Eligible coverages (for the baseline and project scenarios)	Non-eligible coverages
Areas with active livestock components or silvopastoral/agrosilvopastoral systems.	

Areas that have been used for agropastoral purposes —including silvopastoral, agrosilvopastoral, or grazing systems — may be considered eligible as part of the initial area of the CCMP, exclusively within the framework of revegetation activities or the establishment of woody agricultural crops, provided that the design of the CCMP contemplates their integral transformation toward permanent woody covers, without the inclusion of livestock practices during its implementation.

Such conversion shall be clearly justified and documented in the PDD, including evidence of:

- Verifiable evidence of the elimination of the livestock component, including management practices and permanent control measures;
- Compliance with eligibility, permanence, and improvement of site's ecosystem conditions criteria;
- There is no allocation of GHG emissions to the previous agropastoral use in the baseline scenario, in application of the principle of conservatism, in order to avoid overestimation of net removals;
- Identification of potential leakage risks derived from the displacement of the excluded agropastoral activities, and definition of mitigation measures in accordance with the guidelines established by the methodology for the treatment of activity leakage.

7.2.1 Carbon stock estimation

Carbon stocks in carbon pools shall be estimated separately for each eligible stratum (non-stable forest or non-forest) over which the segments to be implemented by the CCMP overlap. Calculations shall be performed for the baseline scenario or its reassessment, as applicable.

The data, factors, or parameters used to estimate carbon stocks or changes in carbon stocks across the different vegetation types may be sourced from national or subnational inventories (such as forest inventories) applicable to the country where the CCMP is implemented. In doing so, the guidelines set out in ***Guidelines for using Models in Baseline Carbon Quantification in the Land Use Sector*** shall be followed.

Where adequate national or subnational data are not available, data or parameters from the most recent version of the IPCC Good Practice Guidance (GPG) may be used, or, where duly justified, from earlier versions. In all cases, values shall be conservative and associated with lower uncertainty. The CCMP may determine its own parameters and data using methods or technologies that are coherent, conservative, and consistent with the methodologies and results reported by the aforementioned sources (see **Section 17.2**, which further elaborates on data quality guidelines).

Where required by legal regulations, sectoral technical documents, or international carbon market guidelines, the applicable criteria shall be incorporated into the definition of the baseline scenario. In baseline scenario reassessments, the establishment of conservative baselines shall always be prioritized.

The sum of the carbon stocks of all segments included in the CCMP (one or more, depending on the project design) shall constitute the total carbon stocks in carbon pools under the baseline scenario or its reassessment. These values shall be recorded in the PDD and in the validation calculations, in accordance with the following equation:

$$Rcp_{BL,t} = \sum_{s=1}^{N} Rcp_{BL,s,t} * TSA_s$$

Equation 9

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
$Rcp_{BL,t}$	Total gross GHG removals from carbon pools across all segments in year t, under the baseline scenario or its reassessment.	tCO_2e	X	X	X	X
$Rcp_{BL,s,t}$	Gross GHG removals per unit area from the selected carbon pools of segment s in year t, under the baseline scenario or its reassessment.	tCO_2e / ha	X	X	X	X
TSA_s	Total area of segment *s*.	ha	X	X	X	X
N	Total number of segments considered.	Dimensionless	X	X	X	X
s	Index of segment s (R, FR, RV, and/or WAC).	NA	X	X	X	X
t	Index of year t of the CCMP.	NA	X	X	X	X

*R: Reforestation; FR: Forest restoration; RV: Revegetation and WAC: Woody agricultural crops. NA: does not apply.

For a given segment s and year t, the annual change in carbon stocks in the carbon pools of its segment components (when applicable, since the CCMP may consist solely of segments) is estimated as follows:

$$Rcp_{BL,s,t} = \sum_{f=1}^{Ncp} (\Delta CAtree_{BL,f,s,t} + \Delta CBtree_{BL,f,s,t} + \Delta CAshrub_{BL,f,s,t} + \Delta CBshrub_{BL,f,s,t} + \Delta CAherb_{BL,f,s,t} + \Delta CBherb_{BL,f,s,t} + \Delta CDw_{BL,f,s,t} + \Delta CL_{BL,f,s,t} + \Delta CSoc_{BL,f,s,t}) * 44/12$$

Equation 10

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
$Rcp_{BL,s,t}$	Total removals by the selected carbon pools of segment s in year t, under the baseline scenario or its reassessment.	tCO_2e / ha	X	X	X	X

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
$\Delta C_{ATree_{BL,f,s,t}}$	Average annual change in the carbon content of aboveground tree biomass of segment component *f* within segment *s* in year *t*, under the baseline scenario or its reassessment.	tC / ha	X	X	X	X
$\Delta C_{BTree_{BL,f,s,t}}$	Average annual change in the carbon content of belowground tree biomass of segment component *f* within segment *s* in year *t*, under the baseline scenario or its reassessment.	tC / ha	X	X	X	X
$\Delta C_{Ashrub_{BL,f,s,t}}$	Average annual change in the carbon content of aboveground shrub biomass of segment component *f* within segment *s* in year *t*, under the baseline scenario or its reassessment.	tC / ha	X	X	X	X
$\Delta C_{Bshrub_{BL,f,s,t}}$	Average annual change in the carbon content of belowground shrub biomass of segment component *f* within segment *s* in year *t*, under the baseline scenario or its reassessment.	tC / ha	X	X	X	X
$\Delta C_{Aherb_{BL,f,s,t}}$	Average annual change in the carbon content of aboveground herbaceous biomass of segment component *f* within segment *s* in year *t*, under the baseline scenario or its reassessment.	tC / ha	X	X	X	X
$\Delta C_{Bherb_{BL,f,s,t}}$	Average annual change in the carbon content of belowground herbaceous biomass of segment component *f* within segment *s* in year *t*, under the baseline scenario or its reassessment.	tC / ha	X	X	X	X
$\Delta C_{DW_{BL,f,s,t}}$	Average annual change in the carbon content of dead wood of segment component *f* within segment *s* in year *t*, under the baseline scenario or its reassessment.	tC / ha	X	X	NA	NA
$\Delta C_{L_{BL,f,s,t}}$	Average annual change in the carbon content of litter of segment component *f* within segment *s* in year *t*, under the baseline scenario or its reassessment.	tC / ha	X	X	NA	NA
$\Delta C_{SOC_{BL,f,s,t}}$	Average annual change in the carbon content of Soil Organic Carbon (SOC) of segment component *f* within segment *s* in year *t*, under the baseline scenario or its reassessment.	tC / ha	X	X	X	X
Ncp	Number of segment components of segment *s* in the baseline scenario or its corresponding reassessment.	Dimensionless	X	X	X	X
f	Index of the segment component *f* within segment *s* in the baseline scenario or its reassessment.	NA	X	X	X	X

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
s	Index of segment *s* (R, FR, RV, and/or WAC).	NA	X	X	X	X
t	Index of year *t* of the CCMP.	NA	X	X	X	X
44/12	Molecular weight ratio of carbon dioxide (CO_2) to carbon (C).	Dimensionless	X	X	X	X

*R: Reforestation; FR: Forest restoration; RV: Revegetation and WAC: Woody agricultural crops. NA: does not apply.

For the reassessments of the baseline scenario, the values of the different carbon pools (***Atree***, ***Btree***, ***Ashrub***, ***Bshrub***, ***Aherb***, ***Bherb***, ***Dw***, ***L***, and ***Soc***) are derived either from models, national or subnational data, study data, or extrapolations.

Equations 8 *and* **9** shall be calculated for each of the segments considered in the CCMP.

Changes in carbon stocks in tree and shrub biomass for these segments can be estimated according to the guidelines established in the current version of CDM's methodological *AR-Tool 14*. For this, the current version of CDM's methodological Tools *AR-Tool 17* and *AR-Tool 18* should also be considered.

Changes in carbon stocks in aboveground herbaceous biomass in the baseline scenario in these segments can be estimated according to the following equation:

$$\Delta CAherb_{BL,f,s,t} = (CAherb_{BL,f,s,t2} - CAherb_{BL,f,s,t1})/\ T \qquad \textit{Equation 11}$$

$$CAherb_{BL,f,s\,t} = DM_{Aherb_{BL,t}} * CF \qquad \textit{Equation 12}$$

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
$\Delta CAherb_{BL,f,s,t}$	Average annual change in the carbon content of aboveground herbaceous biomass of segment component *f* within segment *s* in year *t*, under the baseline scenario or its reassessment.	tC / ha	X	X	X	X
$CAherb_{BL,f,s,t2}$	Carbon stock in aboveground herbaceous biomass of segment component *f* within segment *s* in year t_2, under the baseline scenario or its reassessment.	tC / ha	X	X	X	X
$CAherb_{BL,f,s,t1}$	Carbon stock in aboveground herbaceous biomass of segment component *f* within segment *s* in year t_1, under the baseline scenario or its reassessment.	tC / ha	X	X	X	X
f	Index of the segment component *f* within segment *s* under the baseline scenario or the reassessment considered.	NA	X	X	X	X
s	Index of segment ***s*** (R, FR, RV, and/or WAC).	NA	X	X	X	X
t	Index of the reference year to which the calculated average annual change is assigned.	NA	X	X	X	X

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
T	Number of years of the interval between t_1 and t_2 used to calculate the average annual carbon change, $T = t_2 - t_1$.	Dimensionless	X	X	X	X
$CAherb_{BL,f,s,t}$	Carbon stock in aboveground herbaceous biomass of the segment components f of segment s in year t, under the baseline scenario or its reassessment.	tC / ha	X	X	X	X
$DM_{Aherb_{BL,f,s,t}}$	Dry matter of aboveground herbaceous biomass of segment component f within segment s in year t, under the baseline scenario or its reassessment.	t d.m./ ha	X	X	X	X
CF	Carbon fraction of dry biomass.	tC / t d.m.	X	X	X	X

*R: Reforestation; FR: Forest restoration; RV: Revegetation and WAC: Woody agricultural crops. NA: does not apply.

Changes in carbon stocks in belowground herbaceous biomass in these segments in the baseline scenario can be estimated according to the following equation:

$$\Delta CBherb_{BL,f,s,t} = (CBherb_{BL,f,s,t2} - CBherb_{BL,f,s,t1}) / T \qquad \textit{Equation 13}$$

$$CBherb_{BL,f,s,t} = CAherb_{BL,f,s,t} * R_n \qquad \textit{Equation 14}$$

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
$\Delta CBherb_{BL,f,s,t}$	Average annual change in the carbon content of belowground herbaceous biomass of segment component f within segment s in year t, under the baseline scenario or its reassessment.	tC / ha	X	X	X	X
$CBherb_{BL,f,s,t2}$	Carbon stock in belowground herbaceous biomass of segment component f within segment s in year t_2, under the baseline scenario or its reassessment.	tC / ha	X	X	X	X
$CBherb_{BL,f,s,t1}$	Carbon stock in belowground herbaceous biomass of segment component f within segment s in year t_1, under the baseline scenario or its reassessment.	tC / ha	X	X	X	X
$CBherb_{BL,f,s,t}$	Carbon stock in belowground herbaceous biomass of segment component f within segment s in year t, under the baseline scenario or its reassessment.	tC / ha	X	X	X	X
$CAherb_{BLf,s,t}$	Carbon stock in aboveground herbaceous biomass of segment component f within segment s in year t, under the baseline scenario or its reassessment.	tC / ha	X	X	X	X
R_n	Root–shoot ratio of the herbaceous species n considered (ratio between	(t root d.m. / t shoot d.m.)	X	X	X	X

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
	belowground biomass and aboveground dry biomass).					
f	Index of the segment component f within segment s under the baseline scenario or the reassessment considered.	NA	X	X	X	X
s	Index of segment **s** (R, FR, RV, and/or WAC).	NA	X	X	X	X
t	Index of the CCMP year.	NA	X	X	X	X
T	Number of years of the interval between t_1 and t_2 used to calculate the average annual carbon change ($T = t_2 - t_1$).	Dimensionless	X	X	X	X

*R: Reforestation; FR: Forest restoration; RV: Revegetation and WAC: Woody agricultural crops. NA: does not apply.

Changes in carbon stocks in dead wood and litter for these segments can be estimated according to the guidelines established in the current version of the CDM's methodological Tool *AR-Tool 12*.

Changes in carbon stocks in Soil Organic Carbon for these segments can be estimated according to the guidelines established in the current version of the CDM's methodological Tool *AR-Tool 16*.

7.2.2 GHG emission sources estimation

For the determination of the baseline scenario, the values of the different parameters used in the emission sources shall integrate data generated at the national or subnational level; if these data are not available, data and parameters from the Good Practice Guidelines (GPG) of the Intergovernmental Panel on Climate Change (IPCC) in its most updated version or previous versions may be used if their use is technically justified. Academic articles published in indexed journals, academic papers approved and peer-reviewed by accredited programs, or technical publications from research and development institutions specializing in related topics may also be considered valid. These must be made available to the OVV and the certification team.

Total GHG emissions by sources in the baseline scenario or in a corresponding reassessment are calculated according to the following equation:

$$E_{BL,t} = \sum_{s=1}^{N} (EB_{BL,s,t} + EFer_{BL,s,t} + EFF_{BL,s,t}) \qquad \textit{Equation 15}$$

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
$E_{BL,t}$	Total GHG emissions from sources in year t, under the baseline scenario or the corresponding **reassessment**.	tCO_2e	X	X	X	X
$EB_{BL,s,t}$	Non-CO_2 GHG emissions from burning in segment s in year t, under the baseline	tCO_2e	NA	NA	NA	X

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
	scenario or the corresponding reassessment.					
$EFer_{BL,s,t}$	Non-CO_2 GHG emissions from fertilizer use in segment *s* in year *t*, under the baseline scenario or the corresponding reassessment.	tCO_2e	X	X	X	X
$EFF_{BL,s,t}$	GHG emissions from the consumption of all types of fossil fuels in segment *s* (by agricultural machinery) in year *t*, under the baseline scenario or the corresponding reassessment.	tCO_2e	NA	NA	NA	X
N	Total number of segments to be implemented in the CCMP, under the baseline scenario or the corresponding reassessment.	Number of segments	X	X	X	X
s	Index of segment *s* (R, FR, RV, and/or WAC).	NA	X	X	X	X
t	Index of the CCMP year.	NA	X	X	X	X

*R: Reforestation; FR: Forest restoration; RV: Revegetation and WAC: Woody agricultural crops. NA: does not apply.

7.2.2.1 GHG emissions from fires

GHG emissions from fires are conservatively excluded in all segments of the baseline scenario and its reassessment.

7.2.2.1.1 GHG emissions from burning

GHG emissions from burning can only be considered in the baseline scenario and its reassessment if it is common practice in the region where the CCMP is implemented for the woody agricultural crops segment. In the project scenario, burning can only be used if it is permitted by law, in which case it shall be estimated according to the guidelines explained in **Section 7.2.2**.

Emissions from biomass burning are estimated using the CDM's methodological *AR-Tool 08*. Total emissions from burning are calculated using the following equations, as appropriate:

$$EB_{BL,s,t} = \sum_{f=1}^{Ncp} EB_{BL,f,s,t} \qquad \textit{Equation 16}$$

In the reassessments of the baseline scenario, $EB_{BL,f,s,t}$ values come from models, survey data or extrapolations.

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
$EB_{BL,s,t}$	Non-CO_2 GHG emissions from burning in segment *s* in year *t*, under the baseline	tCO_2e	NA	NA	NA	X

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
	scenario or the corresponding reassessment.					
$EB_{BL,f,s,t}$	Non-CO_2 GHG emissions from burning of component *f* of segment *s* in year *t*, under the baseline scenario or the corresponding reassessment.	tCO_2e	NA	NA	NA	X
Ncp	Number of segment components of segment *s* under the baseline scenario or the corresponding reassessment.	Dimensionless	NA	NA	NA	X
s	Index of segment ***s*** (R, FR, RV, and/or WAC).	NA	NA	NA	NA	X
f	Index of segment component *f* of segment *s* under the baseline scenario or the corresponding reassessment.	NA	NA	NA	NA	X
t	Index of the CCMP year.	NA	NA	NA	NA	X

*R: Reforestation; FR: Forest restoration; RV: Revegetation and WAC: Woody agricultural crops. NA: does not apply.

7.2.2.1.2 GHG emissions from fertilizer use

The consideration of GHG emissions from the use of fertilizers are optional in all segments (reforestation, forest restoration, revegetation, and/or woody agricultural crops) in the baseline scenario and its reassessments. They may be included if they are significant and to demonstrate changes in their use compared to the project scenario.

Non-GHG Emissions from the use of fertilizers in baseline scenario are calculated using the following equations, as appropriate:

$$EFer_{BL,s,t} = \sum_{f=1}^{Ncp} EFer_{BL,f,s,t} \qquad \textit{Equation 17}$$

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
$EFer_{BL,s,t}$	Non-CO_2 GHG emissions from fertilizer use of segment *s* in year *t*, under the baseline scenario.	tCO_2e	X	X	X	X
$EFer_{BL,f,s,t}$	Non-CO_2 GHG emissions from fertilization of component *f* of segment *s* in year *t*, under the baseline scenario or the corresponding reassessment.	tCO_2e	X	X	X	X
Ncp	Number of segment components of segment *s* under the baseline scenario or the corresponding reassessment.	Dimensionless	X	X	X	X
f	Index of segment component *f* of segment *s* under the baseline scenario or the corresponding reassessment.	NA	X	X	X	X
s	Index of segment *s* (R, FR, RV, and/or WAC).	NA	X	X	X	X

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
t	Index of the CCMP year.	NA	X	X	X	X

*R: Reforestation; FR: Forest restoration; RV: Revegetation and WAC: Woody agricultural crops. NA: does not apply.

$$EFer_{BL,f,s,t} = \left(FNS_{BL,f,s,t} + FNO_{BL,f,s,t}\right) * FEN * 44/28 * GWP_{N2O} \qquad \textit{Equation 18}$$

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
$EFer_{BL,f,s,t}$	Non-CO_2 GHG emissions from fertilization of component *f* of segment *s* in year *t*, under the baseline scenario or the corresponding reassessment.	tCO_2e	X	X	X	X
$FNS_{BL,f,s,t}$	Amount of nitrogen from synthetic fertilizer applied to component *f* of segment *s* in year *t*, adjusted to reflect volatilization as NH_3 and NO_x under the baseline scenario or the corresponding reassessment.	t N	X	X	X	X
$FNO_{BL,f,s,t}$	Amount of nitrogen from organic fertilizer applied to component *f* of segment *s* in year *t*, adjusted to reflect volatilization as NH_3 and NO_x under the baseline scenario or the corresponding reassessment.	t N	X	X	X	X
FEN	N_2O emission factor per unit of nitrogen input.	t N_2O-N/ t N	X	X	X	X
f	Index of segment component *f* of segment *s*, under the baseline scenario or the corresponding reassessment.	NA	X	X	X	X
s	Index of segment *s* (R, FR, RV, and/or WAC).	NA	X	X	X	X
t	Index of the CCMP year.	NA	X	X	X	X
$44/28$	Molecular weight ratio of nitrous oxide (N_2O) to nitrogen (N_2).	NA	X	X	X	X
GWP_{N2O}	Global warming potential (GWP) of nitrous oxide (N_2O).	Dimensionless	X	X	X	X

*R: Reforestation; FR: Forest restoration; RV: Revegetation and WAC: Woody agricultural crops. NA: does not apply.

7.2.2.1.3 GHG emissions from consumption of fossil fuels in agricultural machinery

The consideration of GHG emissions from the consumption of fossil fuels used by agricultural machinery is optional (they shall be included if they are significant and to demonstrate changes in their use relative to the project scenario) within the woody agricultural crops segment under the baseline scenario and its reassessments. In the other segments these emissions do not apply.

GHG Emissions from the use of fossil fuel in baseline scenario are calculated using the following equations, as appropriate, considering the guidelines established in the current version of the *CDM AR-Tool 03* methodological tool:

$$EFF_{BL,s,t} = \sum_{m=1}^{TF} \sum_{f=1}^{Ncp} EFF_{BL,m,f,s,t} \qquad \textit{Equation 19}$$

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
$EFF_{BL,s,t}$	Total GHG emissions from the consumption of all types of fossil fuels in segment *s* in year *t*, under the baseline scenario or the corresponding reassessment.	tCO_2e	NA	NA	NA	X
$EFF_{BL,m,f,s,t}$	GHG emissions from the consumption of fossil fuel type *m* used by agricultural machinery in segment component *f* of segment *s* in year *t*, under the baseline scenario or the corresponding reassessment.	tCO_2e	NA	NA	NA	X
TF	Total number of fossil fuel types used by agricultural machinery in segment *s*, under the baseline scenario or the corresponding reassessment.	Number of fossil fuel types.	NA	NA	NA	X
Ncp	Number of segment components of segment *s* under the baseline scenario or the corresponding reassessment.	Number of segment components.	NA	NA	NA	X
m	Index of fossil fuel type consumed by agricultural machinery in segment *s*.	NA	NA	NA	NA	X
f	Index of the segment component under the baseline scenario or the corresponding reassessment.	NA	NA	NA	NA	X
s	Index of segment *s* (R, FR, RV and/or WAC).	NA	NA	NA	NA	X
t	Index of the CCMP year.	NA	NA	NA	NA	X

*R: Reforestation; FR: Forest restoration; RV: Revegetation and WAC: Woody agricultural crops. NA: does not apply.

For types of fuel ***m***, used in the implementation of the CCMP, the annual GHG emissions are estimated using the following equation[38]:

$$EFF_{BL,m,f,s,t} = UFF_{m,f,s,t} * LHV_m * FEF_{BL,m,f,s,t} \qquad \textit{Equation 20}$$

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
$EFF_{BL,m,f,s,t}$	GHG emissions from the consumption of fossil fuel type *m* used in year *t* by agricultural machinery in segment component *f* of segment *s*, under the	tCO_2e	NA	NA	NA	X

[38] If different fuels are used, the GHG emissions of each one shall be estimated and then added together to obtain the total GHG emissions for this concept.

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
	baseline scenario or the corresponding reassessment.					
$UFF_{m,f,s,t}$	Quantity of fossil fuel of type *m* used by agricultural machinery in segment component *f* of segment *s* in year *t*, under the baseline scenario or the corresponding reassessment.	Units of volume or mass	NA	NA	NA	X
LHV_m	Lower heating value (LHV) of fuel type *m*, expressed as energy units (GJ) per unit of volume or mass, consistent with the units defined for $UFF_{m,f,s,t}$.	GJ / per unit of UFF	NA	NA	NA	X
$FEF_{BL.m,f,s,t}$	Combustion emission factor of fossil fuel type *m* consumed by agricultural machinery in segment component *f* of segment *s* in year *t*, under the baseline scenario or the corresponding reassessment.	tCO_2e / GJ	NA	NA	NA	X
m	Index of the fuel type consumed by agricultural machinery.	NA	NA	NA	NA	X
f	Index of the segment component under the baseline scenario or the corresponding reassessment.	NA	NA	NA	NA	X
s	Index of segment *s* (R, FR, RV and/or WAC).	NA	NA	NA	NA	X
t	Index of the CCMP year.	NA	NA	NA	NA	X

*R: Reforestation; FR: Forest restoration; RV: Revegetation and WAC: Woody agricultural crops. NA: does not apply.

7.2.3 Estimation of average gross and net removals from the baseline scenario or its corresponding reassessment

The long-term average gross removals of the baseline scenario are obtained from the annual gross removals estimated for each year of the CCMP. To this end, **Equation 9** (annual gross removals) is applied to all years of the period considered. Based on this time series, the average gross removals of the baseline scenario, or of its corresponding reassessment, are determined as follows:

$$Rag_{BL} = \frac{1}{T}\sum_{t=1}^{T} Rcp_{BL,t} \qquad \textit{Equation 21}$$

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
Rag_{BL}	Long-term average annual gross removals by carbon pools across all segments, in the baseline scenario or its reassessment.	tCO_2e	X	X	X	X
$Rcp_{BL,t}$	Total gross GHG removals across all segments in year t in the baseline scenario	tCO_2e	X	X	X	X

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
	or its reassessment (according to **Equation 9**).					
T	Number of years of the period considered.	Dimensionless	X	X	X	X
t	Index of the CCMP year.	NA	X	X	X	X

*R: Reforestation; FR: Forest restoration; RV: Revegetation and WAC: Woody agricultural crops. NA: does not apply.

The values of $Rcp_{BL,t}$ shall be derived from estimates based on empirical data, national inventories, applicable models, or the best official information available. In reassessments, these values shall be updated in accordance with changes in area, composition, management, growth, or relevant regulatory updates.

The net annual removals of the baseline scenario are calculated by subtracting the relevant total emissions from the corresponding gross removals:

$$Ran_{BL,t} = Rcp_{BL,t} - E_{BL,t} \qquad \textit{Equation 22}$$

The average annual emissions of the baseline scenario are determined by:

$$E_{BL} = \frac{1}{T}\sum_{t=1}^{T} E_{BL,t} \qquad \textit{Equation 23}$$

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
$Ran_{BL,t}$	Net annual GHG removals across all segments in year t, in the baseline scenario (ex ante estimation or reassessment).	tCO_2e	X	X	X	X
$Rcp_{BL,t}$	Gross GHG removals per unit area of the selected carbon pools of segment s in year t, in the baseline scenario or its reassessment.	tCO_2e	X	X	X	X
$E_{BL,t}$	Total GHG emissions from all relevant sources in year t of the baseline scenario.	tCO_2e	X	X	X	X
E_{BL}	Average GHG emissions from all relevant sources in the baseline scenario (according to **Equations 13** and **21**).	tCO_2e / year	X	X	X	X
T	Total number of years of the period considered.	Dimensionless	X	X	X	X
t	Index of the CCMP year.	NA	X	X	X	X

*R: Reforestation; FR: Forest restoration; RV: Revegetation and WAC: Woody agricultural crops. NA: does not apply.

At each verification, or whenever there are changes in areas, management practices, growth rates, regulations, or other relevant contextual conditions, the values of $Rcp_{BL,t}$, $E_{BL,t}$ and Ran_{BL} shall be recalculated and documented. The reassessed net removals may be represented as $Ran_{BL,t\ v1}$, $Ran_{BL,t\ v1}$, $Ran_{BL,t\ vx}$ according to the corresponding verification number.

8 Project scenario

8.1 Quantification of the Project Scenario

8.1.1 Carbon stocks estimation

As in the baseline scenario, carbon stocks in the pools are estimated separately for each segment. It is necessary to calculate these stocks for the project scenario at validation, as well as to monitor and update them for each verification event.

When a reassessment of the baseline scenario is carried out, the corresponding reassessment of the project scenario shall be mandatory, in order to recalculate the total long-term mitigation potential. A reassessment of the project scenario shall also be required when there are modifications in areas, composition, growth rates, or variations in implementation with respect to the PDD.

To ensure conservativeness, projected removals are only allowed to increase by a maximum of 20% relative to the original project scenario, provided that there are no associated design changes that would require revalidation.

The sum of the carbon stocks of all segments included in the CCMP shall represent the total carbon stocks of the project scenario or its reassessment. These values shall be recorded in the PDD, and subsequently in the monitoring report and in the detailed calculations of the verification report, in accordance with the following equation:

$$Rcp_{P,t} = \sum_{s=1}^{N} Rcp_{P,s,t} * TSA_s \qquad \textit{Equation 24}$$

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
$Rcp_{P,t}$	Total gross GHG removals in all segments in year t, under the project scenario, its reassessment, or the corresponding monitoring.	tCO_2e	X	X	X	X
$Rcp_{P,s,t}$	Gross GHG removals per unit area of the selected carbon pools of segment s in year *t*, under the project scenario, its reassessment, or the corresponding monitoring.	tCO_2e / ha	X	X	X	X
TSA_s	Total area of segment *s*.	ha	X	X	X	X
N	Total number of segments considered.	Dimensionless	X	X	X	X
s	Index of segment s (R, FR, RV and/or WAC).	NA	X	X	X	X
t	Index of year of the CCMP.	NA	X	X	X	X

*R: Reforestation; FR: Forest restoration; RV: Revegetation and WAC: Woody agricultural crops. NA: does not apply.

The cumulative carbon stocks in carbon pools up to a specific year are obtained by summing the values of all carbon pools considered in each segment.

$$Rcp_{P,s,t} = \sum_{f=1}^{Ncp} (\Delta CAtree_{P,f,s,t} + \Delta CBtree_{P,f,s,t} + \Delta CAshrub_{P,f,s,t} + \Delta CBshrub_{P,f,s,t} + \Delta CDw_{P,f,s,t} + \Delta CL_{P,f,s,t} + \Delta CSoc_{P,f,s,t}) * 44/12$$

Equation 25

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
$Rcp_{P,s,t}$	Total removals from the selected carbon pools of segment *s* in year *t*, under the project scenario, its reassessment, or the corresponding monitoring.	tCO_2e / ha	X	X	X	X
$\Delta CAtree_{P,f,s,t}$	Average annual change in carbon content of aboveground tree biomass of segment component *f* of segment *s* in year *t*, under the project scenario, its reassessment, or the corresponding monitoring.	tC / ha	X	X	X	X
$\Delta CBtree_{P,f,s,t}$	Average annual change in carbon content of belowground tree biomass of segment component *f* of segment *s* in year *t*, , under the project scenario, its reassessment, or the corresponding monitoring.	tC / ha	X	X	X	X
$\Delta CAshrub_{P,f,s,t}$	Average annual change in carbon content of aboveground shrub biomass of segment component *f* of segment *s* in year *t*, , under the project scenario, its reassessment, or the corresponding monitoring.	tC / ha	X	X	X	X
$\Delta CBshrub_{P,f,s,t}$	Average annual change in carbon content of belowground shrub biomass of segment component *f* of segment *s* in year *t*, , under the project scenario, its reassessment, or the corresponding monitoring.	tC / ha	X	X	X	X
$\Delta CDw_{P,f,s,t}$	Average annual change in carbon content of dead wood of segment component *f* of segment *s* in year *t*, under the project scenario, its reassessment, or the corresponding monitoring.	tC / ha	X	X	NA	NA
$\Delta CL_{P,f,s,t}$	Average annual change in carbon content of litter of segment component *f* of segment *s* in year *t*, , under the project scenario, its reassessment, or the corresponding monitoring.	tC / ha	X	X	NA	NA
$\Delta CSoc_{P,f,s,t}$	Average annual change in carbon content of Soil Organic Carbon of segment component *f* of segment *s* in year *t*, under the project scenario, its reassessment, or the corresponding monitoring.	tC / ha	X	X	X	X

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
Ncp	Number of segment components of segment s under the project scenario, its reassessment, or the corresponding monitoring.	Dimensionless	X	X	X	X
f	Index of the segment component of segment s under the project scenario, its reassessment, or the corresponding monitoring.	NA	X	X	X	X
s	Index of segment *s* (R, FR, RV and/or WAC).	NA	X	X	X	X
t	Index of year of the CCMP.	NA	X	X	X	X
$44/12$	Ratio of the molecular weights of carbon dioxide (CO_2) and carbon (C).	Dimensionless	X	X	X	X

*R: Reforestation; FR: Forest restoration; RV: Revegetation and WAC: Woody agricultural crops. NA: does not apply.

In project-scenario reassessments or during monitoring, the values for carbon pools shall use monitored data up to the corresponding verification year, together with updated conservative projections from the subsequent year through the end of the period considered.

Changes in carbon stocks in tree and shrub biomass within these segments may be estimated in accordance with the guidance set out in the current version of the CDM methodological tool *AR-Tool 14*. For this purpose, the current versions of CDM methodological tools *AR-Tool 17* and *AR-Tool 18* shall also be taken into account.

Changes in carbon stocks in dead wood and litter within these segments may be estimated in accordance with the guidance set out in the current version of the CDM methodological tool *AR-Tool 12*.

Meanwhile, changes in Soil Organic Carbon stocks within these segments may be estimated in accordance with the guidance set out in the current version of the CDM methodological tool *AR-Tool 16*.

8.1.2 Estimation of GHG emission sources

To determine the project scenario, the values of the different parameters used for emission sources shall be integrated as described in **Section 7.2.3**.

Total GHG emissions from sources under the project scenario, in a reassessment or the corresponding monitoring, are estimated according to the following equation:

$$E_{P,t} = \sum_{s=1}^{N} EFi_{P,s,t} + EB_{P,s,t} + EFer_{P,s,t} + EFF_{P,s,t} + LKP_{P,t} \qquad \textit{Equation 26}$$

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
$E_{P,t}$	Total GHG emissions from sources in year *t*, under the project scenario, its reassessment, or the corresponding monitoring.	tCO_2e	X	X	X	X
$EFi_{P,s,t}$	Non-CO_2 GHG emissions from fires in segment *s* in year *t*, under the project scenario, its reassessment, or the corresponding monitoring.	tCO_2e	X	X	X	X
$EB_{P,s,t}$	Non-CO_2 GHG emissions from burning in segment *s* in year *t*, under the project scenario, its reassessment, or the corresponding monitoring.	tCO_2e	NA	NA	NA	X
$EFer_{P,s,t}$	Non-CO_2 GHG emissions from fertilizer use in segment *s* in year *t*, under the project scenario, its reassessment, or the corresponding monitoring.	tCO_2e	X	X	X	X
$EFF_{P,s,t}$	GHG emissions from the consumption of all types of fossil fuels by agricultural machinery in segment *s,* in year *t*, under the project scenario, its reassessment, or the corresponding monitoring.	tCO_2e	NA	NA	NA	X
$LK_{P,t}$	Total leakage from the displacement of agricultural or livestock activities (outside the CCMP boundaries) attributable to the implementation of the CCMP in year *t* under the project scenario. These do not occur within the segments, but may be associated with their establishment when applicable.	tCO_2e	X	NA	X	X
N	Index of the segments implemented in the CCMP (maximum of four: reforestation, forest restoration, revegetation, and woody agricultural crops).	Dimensionless	X	X	X	X
s	Index of segment s (R, FR, RV, and/or WAC).	NA	X	X	X	X
t	Index of the CCMP year.	NA	X	X	X	X

*R: Reforestation; FR: Forest restoration; RV: Revegetation and WAC: Woody agricultural crops. NA: does not apply.

8.1.2.1 GHG emissions from fires

Due to their incidental nature, fires are not calculated in the project scenario and its reassessments. They are only included (reported and monitored) when a natural or anthropogenic fortuitous event occurs during the project implementation, affecting the eligible area, and are reflected in the verification event covering the period in which they occurred. These emissions can be estimated following the guidelines established in the current version of the CDM Methodological Tool *AR-Tool 08*.

8.1.2.2 GHG emissions from burning

In reforestation, forest restoration activities and revegetation, burning is not permitted for site preparation or crop residue collection. Although burning may occur in the baseline scenario, it is conservatively excluded for these segments.

The calculation of GHG emissions from burning (for site preparation or disposal of crop residues) is considered in the project scenario for the woody agricultural crops segment only if such practices are legally permitted. In this case, a reassessment of this scenario may be necessary if it differs from what is established in the PDD. Otherwise, burning shall not be considered, even if it occurs in the baseline scenario.

These biomass burning emissions for a particular occurrence are estimated using the CDM's methodological *AR-Tool 08* referenced in the previous section. Total emissions from burning are estimated using the following equations, as appropriate:

$$EB_{P,s,t} = \sum_{f=1}^{Ncp} EB_{P,f,s,t} \qquad \textit{Equation 27}$$

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
$EB_{P,s,t}$	Non-CO_2 GHG emissions from burning in segment *s* in year *t,* under the project scenario, its reassessment, or the corresponding monitoring.	tCO_2e	NA	NA	NA	X
$EB_{P,f,s,t}$	Non-CO_2 GHG emissions from burning in segment component *f* of segment *s*, in year *t*, under the project scenario, its reassessment, or the corresponding monitoring.	tCO_2e	NA	NA	NA	X
Ncp	Number of segment components of segment *s* under the project scenario, its reassessment, or the corresponding monitoring.	Dimensionless	NA	NA	NA	X
s	Index of segment *s* (R, FR, RV, and/or WAC).	NA	NA	NA	NA	X
f	Index of the segment component of segment *s* under the project scenario, its reassessment, or the corresponding monitoring.	NA	NA	NA	NA	X
t	Index of the CCMP year.	NA	NA	NA	NA	X

*R: Reforestation; FR: Forest restoration; RV: Revegetation and WAC: Woody agricultural crops. NA: does not apply.

In reassessments of the project scenario or of monitoring, the values of $EB_{P,f,s,t}$ used from the year following the last year for which monitored data are available and until the end of the corresponding period shall be derived from ex ante and ex post calculations, respectively.

Although the calculation of GHG emissions from fires and from burning could be carried out jointly within a single procedure, they are treated separately here because the latter may be calculated based on the biomass to be burned rather than on the affected area.

8.1.2.3 GHG emissions from fertilizer use

To calculate direct GHG emissions associated with fertilizer use, GHG emissions from fertilization shall first be calculated in accordance with **Equation 28**. Subsequently, GHG emissions from fertilizer use shall be estimated using **Equation 29**, as applicable.

Under this framework, the calculation of emissions from fertilizer use is mandatory for the woody agricultural crops segment and optional (when they represent a significant emission source) for the reforestation, revegetation, and forest restoration segments. In the latter cases, the exclusion of such emissions shall be duly justified.

For the project scenario:

$$EFer_{P,s,t} = \sum_{f=1}^{Ncp} EFer_{P,f,s,t} \qquad \textit{Equation 28}$$

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
$EFer_{P,s,t}$	Non-CO_2 GHG emissions from fertilizer use in segment *s* in year *t*, under the project scenario, its reassessment, or the corresponding monitoring.	tCO_2e	X	X	X	X
$EFer_{P,f,s,t}$	Non-CO_2 GHG emissions from fertilization in segment component *f* of segment *s* in year *t*, under the project scenario, its reassessment, or the corresponding monitoring.	tCO_2e	X	X	X	X
Ncp	Total number of segment components of segment *s* under the project scenario, its reassessment, or the corresponding monitoring.	Number of components of the segments	X	X	X	X
f	Index of the segment component of segment *s* under the project scenario, its reassessment, or the corresponding monitoring.	NA	X	X	X	X
s	Index of the segment implemented under the CCMP in the project scenario, its reassessment, or the corresponding monitoring.	NA	X	X	X	X
t	Index of the CCMP year.	NA	X	X	X	X

*R: Reforestation; FR: Forest restoration; RV: Revegetation and WAC: Woody agricultural crops. NA: does not apply.

$$EFer_{P,f,s,t} = \left(FNS_{P,f,s,t} + FNO_{P,f,s,t}\right) * FEN * 44/28 * GWP_{N2O} \qquad \textit{Equation 29}$$

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
$EFer_{P,f,s,t}$	Non-CO_2 GHG emissions from fertilization of segment component *f* of segment *s* in year *t,* under the project scenario, its reassessment, or the corresponding monitoring.	tCO_2e	X	X	X	X
$FNS_{P,f,s,t}$	Amount of nitrogen from synthetic fertilizer applied to segment component *f* of segment *s* in year *t,* adjusted to reflect volatilization as NH_3 and NO_x under the project scenario, its reassessment, or the corresponding monitoring.	t N	X	X	X	X
$FNO_{P,f,s,t}$	Amount of nitrogen from organic fertilizer applied to segment component *f* of segment *s* in year *t,* adjusted to reflect volatilization as NH_3 and NO_x under the project scenario, its reassessment, or the corresponding monitoring.	t N	X	X	X	X
FEN	N_2O emission factor per unit of nitrogen input.	t N_2O-N/ t N	X	X	X	X
f	Index of the segment component of segment *s* under the project scenario or the reassessment considered.	NA	X	X	X	X
s	Index of segment *s* (R, FR, RV and/or WAC).	NA	X	X	X	X
t	Index of the CCMP year.	NA	X	X	X	X
44/28	Molecular weight ratio between nitrous oxide (N_2O) and nitrogen (N_2).	NA	X	X	X	X
GWP_{N2O}	Global warming potential of nitrous oxide (N_2O).	Dimensionless	X	X	X	X

*R: Reforestation; FR: Forest restoration; RV: Revegetation and WAC: Woody agricultural crops. NA: does not apply.

In reassessments of the project scenario or during monitoring events, the values of $EFer_{P,f,s,t}$ corresponding to the monitored period shall be based on ex-post data, whereas the projected values from the year following the last year with available data through the end of the considered period (T or X) shall be estimated using ex-ante calculations. All such values shall be updated in accordance with the information used in each verification.

8.1.2.4 GHG emissions from fossil fuel consumption by agricultural machinery

Emissions from fossil fuel consumption by agricultural machinery in the woody agricultural crops segment are estimated based on the annual consumption of the different types of fuels used across all its segment components under the project scenario, its reassessment, or the corresponding monitoring, for each year of the CCMP. Each fuel quantity is multiplied by the corresponding CO_2 emission factor, in accordance with the guidelines established in the current version of the CDM methodological tool *AR-Tool 03*.

$$EFF_{P,s,tvx} = \sum_{m=1}^{TF} \sum_{f=1}^{Ncp} EFF_{P,m,f,s,t} \qquad \textit{Equation 30}$$

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
$EFF_{P,s,t}$	Total GHG emissions from the consumption of all types of fossil fuels by agricultural machinery in segment s in year t, under the project scenario.	tCO_2e	NA	NA	NA	X
$EFF_{P,m,f,s,t}$	GHG emissions from the consumption of fossil fuel type m by agricultural machinery in year *t* in segment component *f* of segment *s* in year *t*, under the project scenario, its reassessment, or the corresponding monitoring.	tCO_2e	NA	NA	NA	X
TF	Total number of fossil fuels used by agricultural machinery in the woody agricultural crops segment, under the project scenario or the corresponding reassessment.	Number of fossil fuel types	NA	NA	NA	X
Ncp	Number of segment components of segment *s* under the project scenario or the corresponding reassessment.	Number of segment components	NA	NA	NA	X
m	Index of the type of fuel consumed by agricultural machinery in segment s.	NA	NA	NA	NA	X
f	Index of the segment component under the project scenario or the reassessment considered.	NA	NA	NA	NA	X
s	Index of segment *s* (R, FR, RV and/or WAC).	NA	NA	NA	NA	X
t	Index of the CCMP year.	NA	NA	NA	NA	X

*R: Reforestation; FR: Forest restoration; RV: Revegetation and WAC: Woody agricultural crops. NA: does not apply.

In project scenario reassessments or during monitoring events, the values of $EFF_{P,f,s,t}$ corresponding to the period with measured data shall be based on ex-post information. From the last year with available data through to the end of the period considered, the values of $EFF_{P,f,s,t}$ shall be estimated using ex-ante calculations. All such values shall be updated and documented at each verification.

For fuel types ***m*** used in the implementation of the CCMP, GHG emissions are estimated using the following equation:

$$EFF_{P,m,f,s,t} = UFF_{m,f,s,t} * LHV_m * FEF_{P,m,f,s,t} \qquad \textit{Equation 31}$$

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
$EFF_{P,m,f,s,t}$	GHG emissions from the consumption of fossil fuel type *m* used in year *t* by agricultural machinery in segment component *f* of segment *s* in year *t*, under the project scenario, its reassessment, or the corresponding monitoring period.	tCO_2e	NA	NA	NA	X
$UFF_{m,f,s,t}$	Amount of fossil fuel of type *m* consumed by agricultural machinery in segment component *f* of segment *s* in year *t*, under the project scenario, its reassessment, or the corresponding monitoring period.	Units of volume or mass	NA	NA	NA	X
LHV_m	Lower heating value of fuel type *m*, expressed in units of energy (GJ) per unit of volume or mass, consistent with the units defined for $UFF_{m,f,s,t}$.	GJ / per unit of UFF	NA	NA	NA	X
$FEF_{P.m,f,s,t}$	Emission factor for the combustion of fossil fuel type *m* consumed by agricultural machinery in segment component *f* of segment *s* in year *t*, under the project scenario, its reassessment, or the corresponding monitoring period.	tCO_2e / GJ	NA	NA	NA	X
m	Index of the type of fuel consumed by agricultural machinery.	NA	NA	NA	NA	X
f	Index of the segment component under the project scenario, its reassessment, or the corresponding monitoring period.	NA	NA	NA	NA	X
s	Index of segment *s* (R, FR, RV, and/or WAC).	NA	NA	NA	NA	X
t	Index of the CCMP year.	NA	NA	NA	NA	X

*R: Reforestation; FR: Forest restoration; RV: Revegetation and WAC: Woody agricultural crops. NA: does not apply.

8.1.2.5 Emissions from leakage

The CCMP shall identify, avoid, or address emission sources resulting from leakage, when applicable, considering the use of standardized baselines if available. This methodology considers leakage caused by the displacement of agricultural activities (livestock and crops), estimated using the guidelines established in the current version of the CDM Methodological Tool AR-Tool 15[39].

The CCMP shall take into account available information on leakage emissions as established in the NDC.

[39] Its applicability focuses on CCMPs where previous activities are detectable and quantifiable. In CCMPs where no significant displacement of agricultural activities is evident or where the prior land use was not productive, the tool may not be applicable or may yield null values.

Other sources of leakage (such as market or ecological leakage), due to their complex, indirect dynamics and often exogenous nature relative to the CCMP's area of intervention, cannot be consistently quantified under the principles of transparency, conservativeness, and verifiability that govern the Cercarbono Voluntary Certification Protocol. However, this methodology incorporates structural measures of conservativeness and risk management, such as the application of safeguards, participatory land-use planning, and the allocation of carbon reserves to mitigate non-quantified risks.

The estimated leakage sources are designated as LK_{Ag} (leakage due to displacement of agricultural activities associated with crops) and $Lk_{Livestock}$ (leakage due to displacement of agricultural activities associated with livestock).

Although these tools consider that leakage does not occur after five years from the start of CCMP implementation, under this methodology, leakage monitoring shall be conducted from the beginning to the end of CCMP implementation. If areas are expanded, it will be necessary to calculate leakage for the new areas and carry out the corresponding leakage monitoring.

Total leakages due to displacement of agricultural or livestock activities attributed to the implementation of the CCMP are calculated as:

$$LK_{P,total} = \sum_{t=1}^{T} LK_{P,t} \qquad \textit{Equation 32}$$

$$LK_{P,t} = LK_{Ag,t} + LK_{Livestock,t} \qquad \textit{Equation 33}$$

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
$LK_{P,total}$	Total accumulated leakage from the displacement of agricultural or livestock activities attributable to the implementation of the CCMP over the entire period considered.	tCO_2e	X	X	X	X
$LK_{P,t}$	Total leakage from the displacement of agricultural or livestock activities attributable to the implementation of the CCMP in year *t*, under the project scenario, its reassessment, or the corresponding monitoring period.	tCO_2e	X	X	X	X
$LK_{Ag,t}$	Leakage due to the displacement of agricultural activities attributable to the implementation of the CCMP in year *t* under the project scenario, its reassessment, or the corresponding monitoring period.	tCO_2e	X	X	X	X
$LK_{Livestock,t}$	Leakage due to the displacement of livestock activities attributable to	tCO_2e	X	X	X	X

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
	the implementation of the CCMP in year *t* under the project scenario, its reassessment, or the corresponding monitoring period.					
T	Total number of years in the period considered for the calculation of the average.	Dimensionless	X	X	X	X
t	Index of the CCMP year.	NA	X	X	X	X

*R: Reforestation; FR: Forest restoration; RV: Revegetation and WAC: Woody agricultural crops. NA: does not apply. Leakage occurs outside the spatial boundaries of the CCMP but is attributable to its implementation.

8.1.3 Average gross estimate and net removals from the project scenario or its corresponding reassessment

The gross removals of the project scenario for each year *t* of the CCMP are estimated using **Equation 24**.

Based on this time series, the average gross removals of the project scenario or its reassessment are estimated using:

$$Rag_P = \frac{1}{T}\sum_{t=1}^{T} Rcp_{P,t} \qquad \textit{Equation 34}$$

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
Rag_P	Average long-term annual gross removals by carbon pools across all segments, under the project scenario, its reassessment, or the corresponding monitoring period.	tCO_2e	X	X	X	X
$Rcp_{P,t}$	Total gross removals across all segments in year *t*, under the project scenario, its reassessment, or the corresponding monitoring period (according to **Equation 24**).	tCO_2e	X	X	X	X
T	Number of years in the period considered.	Dimensionless	X	X	X	X
t	Index of the CCMP year.	NA	X	X	X	X

*R: Reforestation; FR: Forest restoration; RV: Revegetation and WAC: Woody agricultural crops. NA: does not apply.

The values of $Rcp_{P,t}$ are based on field data, inventories, models, or updated official information. In reassessments, these values shall be adjusted by combining effectively monitored data from the start of the CCMP up to the last year with available information, and conservative ex-ante projections for subsequent years until the end of the period considered.

Reassessment of the project scenario is mandatory when areas are definitively added or removed, or when growth conditions, management practices, or stratification change with respect to the ex-ante scenario or the previous verification.

If the CCMP does not annually monitor carbon stocks in the carbon pools, it may use conservative and validated models; however, project emissions shall be monitored on a continuous basis.

Failure to continuously monitor GHG emissions constitutes non-compliance with the monitoring obligations established in this methodology and in the rules of the certification program, which may result in consequences such as:

- The possibility that the net GHG balance reported by the CCMP is considered partially or totally invalid;
- The need to apply additional conservative discounts to the estimated GHG removals or reductions;
- The suspension or denial of certification of the carbon credits corresponding to the affected period; and
- In serious or recurrent cases, the exclusion of the CCMP from Cercarbono.

Only under duly justified and documented circumstances, such as force majeure or legal restrictions that prevent access to the CCMP site, may the estimation of emissions using conservative models be accepted, subject to the express authorization of the certification program. In such cases, the CCMP shall demonstrate that these estimates are consistent with the principles of accuracy, consistency, transparency, and conservativeness.

With respect to **net** removals under the project scenario or its reassessment, these are estimated as Ran_P (for CCMP validation) and as $Ran_{P,v1}$, $Ran_{P,v2}$… $Ran_{P,vx}$ for verifications 1, 2, …x or reassessments, according to the following equation:

$$Ran_{P,t} = Rcp_{P,t} - E_{P,t} - Ran_{BL,t} - LK_{P,t} \qquad \textit{Equation 35}$$

The average emissions for the project scenario are determined by:

$$E_P = \frac{1}{T}\sum_{t=1}^{T} E_{P,t} \qquad \textit{Equation 36}$$

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
$Ran_{P,t}$	Net GHG removals in all segments in year *t*, under the project scenario (after deducting emissions and leakages attributable to the implementation of the CCMP).	tCO_2e	X	X	X	X
$Rcp_{P,t}$	Gross removals from carbon pools in all segments in year *t*, under the project scenario.	tCO_2e	X	X	X	X
$E_{P,t}$	Total GHG emissions from all sources in year *t*, under the project scenario.	tCO_2e	X	X	X	X

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
$Ran_{BL,t}$	Net GHG removals in all segments in year *t*, under the baseline scenario.	tCO_2e	X	X	X	X
$LK_{P,t}$	Leakages attributable to the implementation of the CCMP in year *t,* under the project scenario.	tCO_2e	NA	NA	NA	NA
E_P	Average GHG emissions from all relevant sources under the baseline scenario (according to **Equations 24** and **34**).	tCO_2e	X	X	X	X
t	Index of the CCMP year.	NA	X	X	X	X
T	Number of years in the period considered.	Dimensionless	X	X	X	X

*R: Reforestation; FR: Forest restoration; RV: Revegetation and WAC: Woody agricultural crops. NA: does not apply.

At each verification event, or when changes occur in areas, management practices, growth rates, regulatory frameworks, or other relevant contextual conditions, the values of $Rcp_{P,t}$, $E_{P,t}$ and $Ran_{P,t}$ shall be recalculated and properly documented.

8.1.4 Calculation of net removals achieved by the CCMP during the verification period

The net GHG removals achieved by the CCMP during a verification period shall be recorded in the monitoring report and in the verification calculations. These removals are obtained as the sum of the annual net removals $Ran_{P,t}$ corresponding to the period between years t1 and t2 of the verification event:

$$RE_{P,x} = \sum_{t1}^{t2} Ran_{P,tx} \qquad \textit{Ecuación 37}$$

Variable	Description	Units	CCMP activities*			
			R	FR	RV	WAC
RE_x	Net effective removal achieved by the CCMP during verification period **x**.	tCO_2e	X	X	X	X
$Ran_{P,tx}$	Net GHG removals, expressed as an annual flow for year *t*, according to **Equation 33.**	tCO_2e	X	X	X	X
tx	Years included in the verification period; annual index counted from the start of the CCMP or from the end of the previous verification period.	NA	X	X	X	X
x	Ordinal number of the reporting or verification period.	NA	X	X	X	X
t_2, t_1	Start and end years of the verification period.	Years	X	X	X	X

*R: Reforestation; FR: Forest restoration; RV: Revegetation and WAC: Woody agricultural crops. NA: does not apply.

$Ran_{P,tx,}$ is obtained from **Equation 35**. It is important to note that the net removals achieved by the CCMP shall subsequently be adjusted by applying the corresponding deduction for the carbon

buffer, using the ***Cercarbono Tool to Estimate Carbon Buffer in Initiatives to Mitigate Climate Change in the Land Use Sector***.

9 Grouped projects

Grouped projects[40] are those that, in a Monitoring, Reporting and Verification (MRV) process, unify instances (participants or operational units) to achieve environmental impact mitigation through the registration of a single CCMP. It shall be demonstrated that each of these instances meets all the criteria established in the regulations of the country where they are implemented, the ***Cercarbono's Protocol***, and this methodology to be eligible for inclusion. If eligible, these instances can generate GHG removal credits subject to commercialization.

The monitoring requirements shall be fulfilled by all grouped instances.

For several instances to be unified into a single CCMP, additionality shall be evaluated individually for each instance.

The holder of the CCMP, whether a natural or legal person, shall clearly describe in the PDD the spatial and temporal extent of each instance that makes up the grouped project, as well as the ownership of the associated GHG removals, in a differentiated manner for each component or instance.

Additionally, the GHG removals achieved and projected throughout the accreditation period shall be broken down individually by instance, and the accumulated sum shall also be reported.

The monitoring requirements associated with these initiatives shall be met by all grouped instances.

In addition to the guidelines described above, the requirements for grouped projects described in the current version of the ***Cercarbono's Protocol*** shall also be followed.

9.1 Addition and exclusion of grouped CCMP areas

The addition of instances can be done during verifications, provided all requirements foreseen for this type of CCMP outlined in the ***Cercarbono's Protocol*** are met. Adding or removing areas from a CCMP will require a reassessment of scenarios, as explained in **Section 6.6**.

If new instances are added to the CCMP, a new assessment of risks, non-permanence, and uncertainty is required, following the procedures described in **Section 10** and **11**.

If, during a reporting period a participant withdraws from the CCMP, it is necessary to update the PDD, explaining that the calculation of previously issued credits corresponding to the area belonging to the holder who has withdrawn from the project shall be submitted for revalidation.

[40] This modality is particularly useful in contexts involving multiple landowners, local communities, or dispersed parcels, as it facilitates the replicability and territorial scaling of mitigation actions while maintaining methodological consistency and coherence with national GHG registration and monitoring frameworks. Grouped projects shall ensure that incorporated areas comply with project eligibility requirements and boundaries, and that any additions or exclusions are verifiable under the procedures established in the methodology and the standard's MRV system.

The withdrawn area cannot be included in calculations for the subsequent verification and an equivalent amount of the previously issued credits shall be deducted from the total mitigation to be reported in the next verification.

The withdrawal of areas from a holder or participant in the CCMP shall be total[41]; partial area withdrawals are not allowed. To formalize the withdrawal, CCMP shall update the PDD (creating a new version), explicitly indicating the areas and participants that are withdrawing, as well as the number of credits issued in previous verifications associated with those areas, which must be subtracted from the credits to be certified in the next verification.

9.2 Update of spatial boundaries of grouped CCMPs

If the spatial boundaries of the activities included in the CCMP change during its implementation, whether due to the inclusion of new instances or the withdrawal of participants, the CCMP must be revalidated in order to update the spatial boundaries of each modified activity and of the CCMP as a whole, in accordance with the provisions of the ***Guidelines for Mapping Presentation and Analysis***. The total area of each activity shall be the same for both the baseline and the project scenarios.

10 Risks and non-permanence

The requirements of this methodology aim to ensure that every component of quantification yields precise and accurate CCMP results, achieved through the rigorous application of its principles.

Cercarbono has established various mechanisms to enable the CCMP to identify potential risks related to the implementation of its activity (and, when involving social groups, to ensure their full, free, and informed participation through consensus). These mechanisms are backed by compliance with the current ***Safeguarding Principles and Procedures of Cercarbono's Certification Programme*** document of the Cercarbono certification program.

However, due to the inherent nature of the GHG removals, these are considered as non-permanent (as they result from planting and harvesting cycles or other anthropogenic actions such as restoration) and are susceptible to internal and external events (such as disasters, land use changes, infrastructure development). This methodology addresses non-permanence by requiring a percentage of the credits generated by CCMPs to be held in reserve, proportional to their identified reversal risks. This percentage is calculated using the ***Cercarbono's Tool to Estimate the Carbon Buffer in Climate Change Mitigation Initiatives in the Land Use Sector***. The rules for its calculation and subsequent return are detailed in the **Guidelines** of this tool.

The CCMP shall also justify, support, and demonstrate compliance with the safeguard **Measures for Risk Prevention and Management of Reversals**, as established in the ***Safeguarding Principles and Procedures of Cercarbono's Certification Programme*** document of the Cercarbono

[41] Partial or controlled withdrawals are subject to methodological and verifiable conditions. Any implementation of partial withdrawals shall be based on the Minimum Mapping Unit (MMU) as the spatial reference scale, ensuring consistency of the historical inventory, the absence of double counting, and VVB approval for each adjustment.

certification program. This includes implementing management plans for prevention and monitoring to avoid creating negative environmental and social impacts.

Any reversal event shall be fully addressed and identified in the field by the CCMP based on cartographic and temporal evidence. The reversal shall be accounted for in subsequent verification events, with its occurrence deducted from the removals reported in the monitoring event. The risk of reversal shall be analyzed every five years from the start of the CCMP, in line with the reassessment of baseline and project scenarios.

To ensure the permanence of GHG removals, the CCMP shall obtain and maintain sufficient coverage under an insurance policy or comparable guarantee products to reasonably cover[42] the risk of reversals.

11 Uncertainty

The CCMP shall fully document all data sources, parameters, emission factors, and methodologies used to estimate carbon pools and GHG emission sources. In accordance with ISO 14064-2:2019, specifically Annexes A.3.5, A.3.6, and A.3.8, the project shall include a systematic uncertainty assessment during both the planning and implementation phases. This assessment shall identify, quantify, and reduce, where possible, the main sources of uncertainty associated with emission and removal estimates.

As described in Annex A.3.5, uncertainty shall be calculated quantitatively whenever possible, using appropriate statistical methods (such as variance estimates, confidence intervals, or Monte Carlo simulations) and assessing the potential impact of uncertainties on project results. Annex A.3.6 specifies that strategies should be adopted to minimize uncertainty through the selection of technically appropriate measurement methods, the use of local emission factors, and the continuous improvement of data acquisition and processes. Finally, Annex A.3.8 states that in cases where significant uncertainty is obtained, the analysis shall be conservative, favoring estimates that do not overstate the project's benefits.

Consequently, the results of the CCMP shall reflect the magnitude of the reported uncertainty, both in the baseline and in the quantification of project results, ensuring environmental integrity and transparency in the monitoring, reporting, and verification process. In this regard, an incremental adjustment factor of 10%, or the factor corresponding to the total uncertainty level in the determination of baseline removals—whichever is greater—shall be applied as a measure to ensure the principle of establishing conservative baseline removals compared to the business-as-usual (BAU) scenario.

12 Contributions to UN's Sustainable Development Goals

Within the framework of the Cercarbono program, CCMPs shall report their contributions to the Sustainable Development Goals (SDGs) using the ***Cercarbono's Tool to Report Contributions from Climate Change Mitigation Initiatives to the Sustainable Development Goals***.

[42] Facilitating the purchase of credits with the same year of issuance and type of activity.

13 Safeguards

The activities of the program or project considered by the CCMP shall not cause net harm to the social, environmental, economic, or legal aspects of the surrounding areas and/or communities where it is implemented. Therefore, the CCMP shall ensure compliance with the ***Safeguarding Principles and Procedures of Cercarbono's Certification Programme***.

14 Monitoring procedure

The CCMP shall be monitored during its implementation, both within its area and regarding leakages, as a basis for quantifying the results and credits obtained at each verification. All information and data related to the CCMP shall be subject to validation and verification, in accordance with the guidelines of ISO 14064-3:2019 and ***Cercarbono's Protocol***.

Associated GHG removals and emissions shall be continuously reviewed[43] and assessed throughout the entire implementation period. GHG removals may be monitored on a **multi-year basis, annually, or at a lower frequency**, depending on growth dynamics, carbon pool stability, and the design of the sampling plan[44]. By contrast, GHG emissions—particularly those associated with fuels, machinery, fertilization, fires (including unusual or unplanned events), loss of vegetation due to extreme climatic events (such as winds, frosts, or prolonged droughts), or other operational sources—shall be recorded more frequently, typically on an annual or event-based basis, given their temporal variability and their potential impact on the CCMP GHG balance. For verification events, the CCMP holder or developer shall prepare a monitoring report based on the plan established for this purpose in the PDD.

For intermediate years between verification events, monitoring can be conducted through direct field measurements or through projections of recent field measurements using conservative calculations or statistically reliable and well-supported models.

The monitoring report shall include, but is not limited to [45]:

- A description of the CCMP activities monitored and the methods used;
- It is necessary that the data collected on carbon stock estimates, stock change in carbon pools and net removals generated in the monitoring period be based on field measurements, using statistically representative sampling, reliable and accurate remote sensing tools, third party

[43] This refers to the continuous technical monitoring that the project holder or developer shall maintain over the variables affecting the CCMP GHG balance. Such continuous monitoring does not imply real-time measurements, but rather the existence of a permanent system for data recording, control, and documentary updating, which feeds into the formal monitoring reports submitted to Cercarbono.

[44] The methodology includes a comprehensive monitoring system fully applicable to CCMPs that use aerial seeding or other non-conventional vegetation establishment methods. Such interventions are integrated into the MRV framework provided that data sources, monitoring frequency, and verification methods are properly documented. Furthermore, the methodology allows the use of remote sensing, multispectral imagery, and remote sensors to verify the effectiveness of any type of seeding and land-cover changes, provided that the data are auditable by the VVB and subject to cross-validation (QA/QC) through field observations.

[45] Adapted from UNFCCC, 2004[a]

sources and/or robust published literature, whose results are conservative and consider the associated uncertainties.
- A summary of the dataset if the collected data is too large, indicating how access to the full dataset can be obtained;
- Records and logs (where applicable) of GHG removal reversal events;
- Information on how reversal risks were assessed and addressed, in accordance with the risk mitigation measures described in the PDD;
- Information on how negative environmental and social impacts were assessed, mitigated, and managed, in line with the measures described in the PDD.

Although Cercarbono provides standard monitoring report templates (available on its website at (www.cercarbono.com, section: Documentation), CCMPs applying this methodology shall consider all the guidelines established here when preparing the report.

14.1 Description of the monitoring plan

The CCMP shall establish and maintain a monitoring and quality management plan that includes procedures for measuring or otherwise obtaining, recording, collecting, analyzing and presenting data using conservative values (based on justified and appropriate sources). It shall also include all relevant information to quantify and report GHG emissions and removals, ensuring that they are real, transparent, and credible.

The total monitoring period for CCMP activities shall not be less than 40 years, equivalent to the duration of the CCMP. All monitoring procedures, frequencies, data management systems, and quality assurance and quality control (QA/QC) measures shall be designed to ensure continuous, consistent, and transparent monitoring throughout the entire project lifetime.

The monitoring plan should include the following aspects, as applicable:

- Purpose.
- List of parameters to be measured and monitored.
- Types of data and information to be reported, including units of measurement.
- Data sources.
- Monitoring methodologies, including estimation, modelling, measurement, calculation approaches, and uncertainty. When appropriate, the use of remote sensing and digital technologies should be incorporated to enable a transparent, reliable, conservative, and credible calculation and estimation of GHG removal.
- Frequency of monitoring, considering the needs of the CCMP.
- Calculation document, detailing each step of its development and results, ensuring that the calculated GHG removals are achieved solely through the activity and are attributable to it.
- Monitoring roles and responsibilities, including authorizing, approving, and documenting changes to recorded data.
- Controls that include an internal check of data in terms of input, transformation and output elements, as well as procedures for corrective actions.
- GHG information management systems, including the location and storage of recorded data and data management, including a procedure for transferring information between different systems or documentation formats.

[Some items taken from ISO 14064-2:2019 Standard].

The following sections outline the elements that should be subject to monitoring.

14.2 Boundaries monitoring

As part of monitoring, it is necessary to periodically verify that the CCMP has been implemented in the areas that were initially validated or, in the case of grouped projects, added at later stages through subsequent validations. Boundary monitoring includes confirming that the different areas remain under the control of the participants and that the areas reported for each polygon continue to be valid, in accordance with the provisions set out in the ***Guidelines for Mapping Presentation and Analysis***.

14.3 Monitoring of carbon stock

Monitoring of carbon stocks in the selected carbon pools should be carried out on an annual basis, since annual stock data are required for the calculation of the net removals achieved by the CCMP.

In cases where annual field measurements are not conducted, the project holder or developer shall, at a minimum, carry out monitoring prior to each verification event and produce conservative annual estimates based on transparent procedures that are technically sound and consistent with the established sampling methodology.

Mean Annual Increments (MAI) may only be used where they do not lead to overestimation and solely for periods not exceeding five years, and shall be complemented with direct measurements at verification events.

In all cases, the holder/developer shall ensure that annual estimates are properly justified, reproducible, and verifiable.

14.4 Monitoring of emission sources

The CCMP shall monitor the GHG emissions identified in the project scenario that occur during its implementation. Emission sources within the CCMP area shall be monitored continuously throughout the period of results to be verified.

14.4.1 Monitoring parameters related to burning and fires

The CCMP shall keep a log of the occurrences of burnings and fires, where the information shown in **Table 8** should be reported. Based on this table, and according to guidelines established in the current version of CDM's methodological *A/R-Tool 08*, GHG emissions shall be estimated for each occurrence, followed by the annual total and for the corresponding verification periods.

Table 8. Possible structure of the table reporting the occurrence of burns and fires.

Date	Segment component	Area affected (ha)	Biomass burned (%)	Comments

14.4.2 Monitoring of parameters related to fertilizer use

The estimation of GHG emissions from fertilizer use shall also be done using a fertilizer consumption reporting table, where the information shown in **Table 9**. should be reported. It is acceptable to use data from automated registration systems, accounting systems, or warehouse inventories of the company for this table.

Based on this table, and according to the procedures set out in **Section 8.1.2.3**, GHG emissions will be estimated for each occurrence, followed by the annual total and for the corresponding verification periods.

Table 9. Possible structure of the fertilizer consumption report table.

Date	Fertilizer	Composition	Applied quantity (t)	Place of application (lot or stand)	Comments

14.4.3 Monitoring of parameters related to fuel consumption

As with the case of burnings and fires, the CCMP shall keep a logbook to record the consumption of fossil fuels in agricultural machinery or an equivalent record linked to the company's accounting system, which allows the calculation of the annual consumption of each type of fuel used, as shown in **Table 10**.

Based on this table, and in accordance with the guidelines established in the current version of CDM's methodological *AR-Tool 15*, GHG emissions will be estimated for each occurrence, followed by the annual sum, and the corresponding verification periods.

Table 10. Logbook for reporting fossil fuel consumption in agricultural machinery.

Date/month	Type of fuel	Total consumption	Units	Comments

14.4.4 Monitoring of conditions that potentially lead to leakages

In the case of CCMPs not experiencing area expansions during their implementation, leakage monitoring shall be conducted during the first five years of implementation. In the case of additions or changes in areas of implementation, monitoring shall be performed during the following three years following such expansions or area changes. In the case of area reductions, monitoring is not required.

14.5 Variables to be monitored

The values, sources, and requirements for data and parameters that are not subject to monitoring are provided in the text accompanying the equations in which they are used. The variables, parameters, or data that must be monitored during the CCMP crediting period are detailed in **Table 11**, which specifies the data or accumulated measurements at the segment level.

Table 11. Variables to record and/or monitor.

Variable/parameter/data		Unit	Segment*				Data origin and measurement procedure	Frequency	Equation number
			R	FR	RV	WAC			
A_{CCPM}	Total area of the CCMP within the defined spatial boundaries.	ha	NA	NA	NA	NA	Cartographic delineation of the CCMP (GIS), with validated polygons supported by cadastral and land-tenure information.	Validation and revalidation.	Eq 1[46]
$A_{Eligible}$	Total eligible area of the CCMP (sum of eligible strata).	ha	X	X	X	X	Land-cover classification (non-stable forest, non-forest) based on satellite imagery, photo-interpretation, and GIS; field verification through sampling. Based on land-cover information supported by the national forest monitoring system or other official sources of the country where the CCMP is implemented; where such sources are not available, those supported by the IPCC GPG LULUCF 2003 or robustly generated in accordance with the guidelines described in the methodology.	Validation / revalidation / verification (when boundaries are updated or areas are added).	Eq. 1 and 2
$A_{Non-eligible}$	Total non-eligible area of the CCMP (stable forest and settlements), excluded from GHG accounting.	ha	NA	NA	NA	NA	Land-cover classification (stable forest, settlements) based on official cartography, satellite imagery, and GIS; documentation of exclusion.	Validation / revalidation.	Eq. 1

[46] This variable is used exclusively for the characterization of the CCMP spatial boundaries and does not form part of the GHG quantification equations nor of the variables subject to periodic monitoring.

Variable/parameter/data		Unit	Segment*				Data origin and measurement procedure	Frequency	Equation number
			R	FR	RV	WAC			
$A_{Stratum,k}$	Total area of eligible stratum k.	ha	X	X	X	X	GIS layer by eligible stratum (non-stable forest, non-forest); calculation of polygon areas; corroboration through field visits where applicable.	Validation / revalidation / verification.	Eq. 3
$A_{k,i}$	Area of polygon i belonging to eligible stratum k.	ha	X	X	X	X	Digitization of polygons in GIS derived from land-cover classification and/or GPS surveys; area calculation in GIS.	Validation / revalidation.	Eq. 3
TSA_s	Total area of segment s (operational activity unit).	ha	X	X	X	X	Delineation of segments in GIS based on CCMP planning, intervention polygons (operational plans, field maps, GPS).	Validation / verification (when the delineation of segments is changed or adjusted).	Eq. 4, 5, 6 and 7
$A_{s,i}$	Area of polygon i belonging to segment s.	ha	X	X	X	X	GIS cartography of segments; subdivision into polygons; GPS and/or drone surveys for fine-scale adjustments.	Validation / verification.	Eq. 6
$A_{s,f}$	Area of component f of segment s.	ha	X	X	X	X	Disaggregation of segments into components according to operational or biophysical criteria; delineation of components in GIS and/or GPS.	When applicable / verification.	Eq. 7
MP_{GHG}	Long-term average GHG mitigation potential of the CCMP.	tCO_2e	X	X	X	X	Methodological calculation.	Validation / verification.	Eq. 8
$CAtree$	Average carbon stock in aboveground tree biomass.	tC / ha	X	X	X	X	Forest inventories (DBH, height); allometric equations; CDM Tool AR-Tool 14.	Validation / revalidation / verification.	Eq 9, 10, 24 and 25.
$CBtree$	Average carbon stock in belowground tree biomass.	tC / ha	X	X	X	X	Indirect estimation using root-to-shoot ratios in accordance with AR-Tool 14.	Validation / revalidation / verification.	Eq 9, 10, 24 and 25.

Variable/parameter/data		Unit	Segment*				Data origin and measurement procedure	Frequency	Equation number
			R	FR	RV	WAC			
							Field measurements or duly substantiated estimates.		
CF_{Tree}	Carbon fraction of tree biomass.	tC / t d.m.	X	X	X	X	Based on CDM Tool AR-Tool 14. IPCC default value (0.47–0.50) or local data duly substantiated and documented in the PDD.	Validation / revalidation.	Eq 9, 10, 24 and 25.
R_{Tree}	Root-to-shoot ratio of tree species.	(t root d.m. / t shoot d.m.)	X	X	X	X	IPCC default value (0.25) or supported scientific literature. IPCC-supported default value 0.25; alternatively, field measurements, scientific literature, or duly substantiated estimates may be used.	Validation / revalidation.	Eq 9, 10, 24 and 25.
$CAshrub$	Average carbon stock in aboveground shrub biomass.	tC / ha	X	X	X	X	Field measurements and/or estimates in accordance with CDM Tool AR-Tool 14.	Validation / revalidation. Review at each verification event.	Eq 9, 10, 24 and 25.
$CBshrub$	Average carbon stock in belowground shrub biomass.	tC / ha	X	X	X	X	Estimation using root-to-shoot ratios in accordance with AR-Tool 14.	Validation / revalidation. Review at each verification event.	Eq 9, 10, 24 and 25.
CF_{Shrub}	Carbon fraction of shrub biomass.	tC / t d.m.	X	X	X	X	IPCC default value (0.47) or documented local studies.	Validation / revalidation. Review at each verification event.	Eq 9, 10, 24 and 25.
R_{Shrub}	Root-to-shoot ratio of shrub species.	(t root d.m. / t shoot d.m.)	X	X	X	X	IPCC-supported default value 0.40; alternatively, field measurements, scientific literature, or duly substantiated estimates may be used.	Validation / revalidation. Review at each verification event.	Eq 9, 10, 24 and 25.

Variable/parameter/data		Unit	Segment*				Data origin and measurement procedure	Frequency	Equation number
			R	FR	RV	WAC			
CDW	Average carbon stock in dead wood.	tC / ha	X	X	NA	NA	Field measurements; IPCC values or national inventories; CDM Tool AR-Tool 12.	Validation / revalidation. Review at each verification event.	Eq 9, 10, 24 and 25.
CL	Average carbon stock in litter.	tC	X	X	NA	NA	Field measurements or IPCC values; CDM Tool AR-Tool 12.	Validation / revalidation. Review at each verification event.	Eq 9, 10, 24 and 25.
CF_{Litter}	Carbon fraction of litter biomass.	tC / t d.m.	X	X	NA	NA	Based on CDM Tool AR-Tool 12. IPCC-supported default value 0.37; alternatively, field measurements, scientific literature, or duly substantiated estimates may be used. Based on CDM Tool AR-Tool 16.	Validation / revalidation. Review at each verification event.	Eq 9, 10, 24 and 25.
SOC	Soil Organic Carbon stock.	tC / ha	X	X	X	X	Based on CDM Tool AR-Tool 16. IPCC default values, or values obtained from field measurements, laboratory analyses, or high-precision technological tools.	Validation / revalidation. Review at each verification event.	AR-Tool 16
$A_{Burn,s,t}$	Burned or fire-affected area (when the event occurs) in segment s in year t.	ha	X	X	X	X	Field inspections and pre- and post-event satellite imagery; CDM Tool AR-Tool 08.	Review at each verification event.	AR-Tool 08
EF_{CH4}	CH_4 emission factor in segment s (burned or fire-affected) in year t.	gr CH_4 /k m.d	X	X	X	X	IPCC values or national inventories in accordance with AR-Tool 08.	Validation / revalidation. Review at each verification event.	AR-Tool 08

Variable/parameter/data		Unit	Segment*				Data origin and measurement procedure	Frequency	Equation number
			R	FR	RV	WAC			
EF_{N2O}	N_2O emission factor in segment s (burned or fire-affected) in year t.	gr N_2O /k m.d	X	X	X	X	IPCC values or national inventories in accordance with AR-Tool 08.	Validation / revalidation. Review at each verification event (as applicable).	AR-Tool 08
GWP_{CH4}	Global Warming Potential of CH_4.	Dimensionless	X	X	X	X	Latest IPCC Assessment Report or Cercarbono guidelines.	Validation / revalidation.	IPCC
GWP_{N2O}	Global Warming Potential of N_2O.	Dimensionless	X	X	X	X	Latest IPCC Assessment Report or Cercarbono guidelines.	Validation / revalidation.	IPCC
$COMF_S$	Combustion factor of segment s.	Dimensionless	X	X	X	X	IPCC values or documented field measurements; CDM Tool AR-Tool 08.	When the CCMP is validated and revalidated. At each verification event, as applicable and depending on the project activity from which the source is generated.	AR-Tool 08
FNS	Nitrogen from synthetic fertilizers applied.	t N	X	X	X	X	Purchase records, application records, and CCMP operational plans.	Annual monitoring, reporting at each verification event.	Eq. 18 and 29
FNO	Nitrogen from organic fertilizers applied.	t N	X	X	X	X	Application records and agricultural planning.	Annual monitoring, reporting at each verification event.	Eq. 18 and 29
FEN	N_2O emission factor per nitrogen input.	t N_2O-N/ t N	X	X	X	X	IPCC default value or documented national factor.	Annual monitoring, reporting at each verification event.	Eq. 18 and 29
TF	Total number of fossil fuels used in agricultural machinery in the woody agricultural crops	Number of fossil fuel types	X	X	X	X	Monitoring of fuel consumption within the CCMP, obtained from field measurements or	Continuous monitoring, reporting at each verification event.	Eq. 19 and 30

Variable/parameter/data		Unit	Segment*				Data origin and measurement procedure	Frequency	Equation number
			R	FR	RV	WAC			
	segment, in the corresponding project or reassessment scenario.						national or subnational inventories.		
FEF	Emission factor for fossil fuel combustion.	tCO_2e / GJ	NA	NA	NA	X	Based on CDM Tool AR-Tool 03. Monitoring of fuel consumption within the CCMP, obtained from field measurements or national or subnational inventories.	Continuous monitoring, reporting at each verification event.	Eq. 20 and 31
UF	Amount of fossil fuel of type m consumed.	Volume or mass units	NA	NA	NA	X	Consumption logs and administrative records; CDM Tool AR-Tool 03.	Continuous monitoring, reporting at each verification event.	Eq. 20 and 31
ADA_t	Land area to which displacement of agricultural activities attributable to the implementation of the CCMP occurs in year t.	ha	X	X	X	X	Field measurements using remote sensing.	When the CCMP is validated and revalidated. At each verification event, as applicable.	AR-Tool 15
$LK_{Livestock,t}$	Leakage due to displacement of livestock activities attributable to the implementation of the CCMP in year t of the project scenario or its reassessment.	tCO_2e	X	X	X	X	Based on CDM Tool AR-Tool 15. Obtained from field measurements or national or subnational inventories. Based on CDM Tool AR-Tool 15.	At each verification event, as applicable. From the first five years of implementation and three years from the incorporation of areas.	Eq. 33
$LK_{AG,t}$	Leakage due to displacement of agricultural activities	tCO_2e	X	X	X	X	Based on CDM Tool AR-Tool 15.	At each verification event, as applicable.	Eq. 33

Variable/parameter/data		Unit	Segment*				Data origin and measurement procedure	Frequency	Equation number
			R	FR	RV	WAC			
	attributable to the implementation of the CCMP in year t of the project scenario or its reassessment.						Obtained from field measurements or national or subnational inventories.	From the first five years of implementation and three years from the incorporation of areas.	

*R: Reforestation; FR: Forest restoration; RV: Revegetation and WAC: Woody agricultural crops. NA: does not apply.

14.6 Monitoring of contributions to the Sustainable Development Goals

The monitoring of contributions to the United Nations Sustainable Development Goals (SDGs) is carried out according to the ***Cercarbono's Tool to Report Contributions from Climate Change Mitigation Initiatives to the Sustainable Development Goals***.

14.7 Safeguards monitoring

The monitoring of and compliance with focal areas of sustainable development and safeguards is carried out in accordance with the ***Safeguarding Principles and Procedures of Cercarbono's Certification Programme*** of the Cercarbono certification program.

15 Stakeholder consultation

Stakeholder consultation in this methodology shall be carried out in accordance with the guidelines described in the section: ***Public consultation of CCMPs*** of the ***Cercarbono's Protocol*** and in the applicable reference documents.

All records and results of the public consultation process shall be uploaded to the EcoRegistry platform, where they will be duly stored.

Additionally, the requirements on this matter outlined in the current ***Safeguarding Principles and Procedures of Cercarbono's Certification Programme*** document of the Cercarbono certification program shall be observed.

16 Effective participation

CCMP shall identify local or ethnic communities present in the project area or those that may be directly affected by the implementation of the CCMP and guarantee full and effective participation with the legal mandates governing such procedures and in alignment with the rights of ethnic minorities.

CCMP shall comply with the provisions on effective participation outlined in the current ***Safeguarding Principles and Procedures of Cercarbono's Certification Programme*** document of the Cercarbono certification program.

17 Information management

The CCMP holder shall establish and apply quality management procedures in accordance with the principles of this methodology to receive, manage and control data, databases and information, including uncertainty assessment, relevant to baseline and project scenarios and monitoring activities[47].

The CCMP holder should reduce, as much as possible, uncertainties related to the quantification of GHG removals. Detected errors or omissions shall be identified and addressed appropriately, with documentary evidence should be generated and maintained.

[47] CCMP holder can apply the principles of ISO 9001 and ISO 14033 for data quality management.

The CCMP holder shall apply tracking criteria and procedures to conduct consistent reviews or audits to ensure the accuracy of the quantification of GHG removals, in accordance with the monitoring plan.

When monitoring and measuring equipment is used, the CCMP holder shall ensure that calibrated or verified equipment is used and maintained as appropriate.

All data and information related to CCMP monitoring shall be recorded and documented.

17.1 Data, model and parameter quality management

This methodology acknowledges the combined use of various sources of information for the estimation and monitoring of carbon stock levels and changes, including field measurements, remote sensing tools (remote sensors, satellite images, LiDAR, etc.), and default values from the IPCC. Since these sources may vary in resolution, accuracy, or methodological approach, the CCMP shall apply the following Technical criteria to ensure the consistency, traceability, and quality of the data used. For this purpose, the ***Guidelines for the use of models in baseline carbon quantification in the land-use sector*** shall also be taken into account.

- ***General guidelines for all sources of information:***

- **Conservative data selection:** In the case of discrepancies between sources, the use of the most conservative value shall be prioritized, understood as the one reflating a lower level of removals or a higher degree of uncertainty, provided it is technically justifiable.
- **Prioritization of direct measurements:** Preference shall be given, wherever feasible, to data obtained through replicable and technically validated field measurements, especially in areas surrounding the CCMP.
- **Efficient use of remote sensing:** It should be strategically employed to complement, verify, or extrapolate field measurements and shall be supported by: documented calibration and validation protocols; appropriate spatial and temporal resolution; and quality control in the classification of land cover and land-use change.
- **Uncertainty management:** Levels of uncertainty associated with each data source shall be quantified and reflected in the calculation of net removals. In the absence of robust estimates, conservative adjustments will be applied, or the carbon pool reserve will be increased.
- **Academic and scientific support:** All parameters and models used shall be supported by recognized procedures in academic or scientific literature, either through duly substantiated and validated proprietary developments or external sources with peer review.

The use of parameters from the IPCC Guidelines or Good Practice Guidance is permitted [48,49].

- **Methodological consistency**[50]**:** the integration of data from different sources must follow a uniform methodological logic.
- **Data accuracy:** The data obtained shall be technically reliable. This requires the use of calibrated instruments, standardized procedures, and adequately trained personnel for their collection and processing.
- **Sampling representativeness:** Plots or sampling units shall be representative of the total area of the CCMP and properly documented.
- **Application of statistical techniques:** Appropriate statistical methods shall be applied to estimate errors, confidence intervals, and the prison of the results obtained, especially in the context of periodic monitoring.
- **Scalability and spatial-temporal adjustment:** Models shall be applied at scales compatible with the spatial and temporal dynamics of the project. Extrapolations beyond their validity scope will not be accepted without justification.
- **Technical updating and validation:** The data used shall be kept up to date and validated against empirical information from the CCMP. Periodic review cycles are recommended.
- **Transparency and traceability:** All phases of the carbon inventory (collection, modeling, calculation) shall be properly documented and available for audit, ensuring the replicability of the process.

- ***Minimum requirements for the use of national or subnational sources:***

- **Representativeness:** It shall cover the region or ecosystem where the CCMP is located or demonstrate its representativeness for the predominant vegetation type and environmental conditions, specifying climatic domains, land cover types, or land-use classes included.
- **Level of spatial disaggregation:** Data shall be disaggregated at least to the subnational level (departmental, regional, Ecozones, or equivalent), with explicit georeferencing. Generic national averages should be avoided when relevant Enological or land-use variations exist.

[48] Holders or developers must use the IPCC guidelines in the following order of priority, unless a documented technical justification supports an exception:

a) 2006 IPCC Guidelines for National Greenhouse Gas Inventories (main version).

b) 2019 Refinement to the 2006 IPCC Guidelines, as a complementary update.

c) 2003 IPCC Good Practice Guidance (GPG), whose use is restricted to cases where applicable data are not available in the previous versions.

[49] The arbitrary combination of guidelines from different versions is not permitted without a documented technical justification and without ensuring methodological consistency throughout the project. The version of the IPCC guideline used for each parameter must be described in the PDD, along with the technical rationale for its selection, including whether the priority was accuracy, conservativeness, or compatibility with national regulations.

[50] The methodological tiers (Tier 1, Tier 2, and Tier 3) defined by the IPCC (2006; 2019 Refinement) are explicitly adopted for the quantification of GHGs across all components. The integration of data, emission factors, models, and methodologies shall maintain consistent methodological coherence. Therefore, the combination of different methodological tiers is not permitted unless an explicit technical justification is provided, demonstrating their compatibility, ensuring traceability, and maintaining a conservative approach in the calculation of emissions and removals.

- **Methodological level:** Data shall be based on a documented methodological approach (e.g., Tier 2 or higher inventory according to the IPCC), including documentation on sampling design, sample size, and measurement methods.
- **Temporal validity:** The maximum acceptable age is 10 years from publication. If this limit is exceeded, the stability of the Ecosystem shall be justified or conservative adjustments applied.
- **Transparency and documentation:** The source shall be clearly identifiable as an official source (ministries, research institutes, others), publicly accessible, or referenced in scientific literature. It shall be accompanied by metadata on limitations and quality.
- **Uncertainty management:** It shall include uncertainty analysis (preferably quantitative). Otherwise, the developer will apply reasonable discounts or adjustments to the carbon pool reserve.
- **Methodological and temporal consistency:** Compatible methods shall be used over time (e.g., between inventory cycles). The combination of incompatible estimates will require technical justification.
- **Peer-reviewed or institutionally validated:** Priority will be given to sources peer-reviewed or validated by recognized technical entities.

- ***Criteria for parameters and models developed by CCMP holders or developers:***

- **Local representativeness:** Parameters shall correspond to the species, cover types, and predominant Ecological conditions of the CCMP area.
- **Methodological level:** Use of Tier 2 or higher methods is prioritized. If Tier 1 approaches are used, their application shall be technically justified and adopt a conservative approach.
- **Valid Technical sources:** Data shall come from proprietary inventories, peer-reviewed technical studies, or IPCC sources, as applicable.
- **Model quality and documentation:** Equations shall include statistically adjusted coefficients, validation metrics (such as r^2 or standard error), and clearly specify their range of applicability.
- **Updating and validity:** The maximum age will be 10 years, with the same conservative justification criteria if this threshold is exceeded.
- **Explicit treatment of uncertainty:** Quantitative analysis shall be included (when possible), or conservative correction factors applied if estimation is not viable.
- **Traceability, replicability, and verifiability:** The technical documentation shall allow the method to be reproduced by third parties. The parameter may be verified by the Verification and Validation Body (VVB) through documentary and/or field review.
- **Methodological coherence:** All methods and parameters shall be consistent with each other throughout the monitoring cycles, across carbon pools, and within the components of the CCMP.

17.2 Mapping quality management

For the presentation of cartographic information, with the objective of ensuring traceability of the eligible areas that define the geographical boundaries of the CCMP, information for each management unit (property, location[51], year of establishment, species, area in hectares, planting density, owner) may be included, in accordance with the provisions of the *Guidelines for Mapping Presentation and Analysis*.

18 CCMP documentation

All documentation and records generated to demonstrate that the CCMP activity has been implemented as designed or reassessed (supported by the PDD and relevant updates) or as implemented (supported by the monitoring report) shall be retained. Any deviation of the implementation relative to the design shall be technically justified, ensuring compliance with the guidelines, conditions and procedures of this methodology.

The CCMP holder shall maintain documentation demonstrating the GHG project's conformity with the requirements of this document. This documentation shall be consistent with the validation and verification needs of Cercarbono's carbon programme.

19 Transition regime for the use of other methodologies

For CCMPs registered with Cercarbono, the use of this methodology is adopted for CCMPs that are in Stages 1 and 2 (formulation and public comments), as well as for CCMPs that undergo revalidation, or for those that, upon revalidation, choose to update the version of the methodology initially selected to this one.

20 CCMP validation and verification

The requirements for validation and verification processes, in addition to the technical guidelines of this methodology, are outlined in the current version of the ***Cercarbono's Protocol*** and in the ***Procedures*** document or other applicable supporting documents.

[51] According to the classification adopted by the country where the CCMP is implemented: State/Department and Municipality, or any other applicable administrative level.

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22 Document history

Version	Date	Comments or changes
1.0	01.10.2021	Initial version of the document open for public consultation from 01.10.2021 to 31.10.2021.
1.1	25.11.2021	Final version after public consultation. This version was developed jointly by Forest Consulting Group.
2.0	16.01.2023	Updated version in which all its content has been reviewed and modified and is subject to evaluation by an independent third party.
2.1	26.07.2024	Updated version with comments from the third-party evaluation and which is put up for public consultation.
2.2	04.03.2025	Final version after public consultation and final review by an independent third party. Change the title Methodology M/UT/F-A02 For the Implementation of GHG Removal Projects through Reforestation, Forest Restoration, and Woody Agricultural Crops Establishment, to: CC-CM-LU -002 Integrated methodology Reforestation, Forest Restoration and Establishment of Woody Agricultural Crops.
3.0	07.07.2025	Comments received after public consultation from key sector stakeholders have been incorporated. The revegetation activity has been established to provide greater coherence among supported project activities, distinguishing it from woody agricultural crops. Annex 1 has been removed and is now part of the Mapping Guidelines. Settlements have been explicitly included in the methodology to allow differentiation from non-forest areas. New supporting documents relevant to the methodology have been updated and referenced, such as those related to safeguards, SDGs, and guidelines for conservative baseline setting. The methodology title has changed from: Integrated Methodology CC-CM-LU-002 Reforestation, Forest Restoration, and Establishment of Woody Crops to: Integrated Methodology CM-LU-002 Reforestation, Forest Restoration, Revegetation, and Establishment of Woody Agricultural Crops. For all the reasons above, the revised methodology is once again subject to public consultation from July 1, 2025, to July 31, 2025.
3.1	29.12.2025	Final version after public consultation and final review by an independent third party.