

Biodiversity and the Carbon Removals Carbon Farming Framework:

A poor implementation of
the mandatory co-benefits criterion

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Executive summary

Humanity is facing an interlinked biodiversity and climate crisis. Averting catastrophe and ensuring our future sustainability requires that we tackle these two environmental challenges simultaneously: efforts towards improving biodiversity and enhancing biogenic sequestration must go hand in hand.

Carbon farming activities under the EU's Carbon Removals and Carbon Farming Framework (CRCF) are supposed to protect and restore ecosystems. However, the current draft methodologies for these activities do not give it that central role. Instead, carbon sequestration is favoured over biodiversity concerns.

In particular, the proposed results-based and activity-based approaches suffer from severe shortcomings. The indicators under the results-based approach are weak, particularly the use of soil organic carbon (SOC) as an indicator for measuring biodiversity in agriculture. Using SOC means that the very activity the scheme is trying to certify will also be used as a means to measure biodiversity. This is circular thinking and not grounded in science. Instead, indicators should measure the number, type of, and role that species play.

Meanwhile, the activity-based approach would presume biodiversity benefits by mere implementation of the relevant activity. Yet, the context-specificity of the farm must always be considered as the same action can yield significantly different results depending on where and how it is applied.

To help ensure that carbon farming activity truly benefits biodiversity, a results-based approach using more robust indicators should be considered. Furthermore, to give itself and the scientific community time to hammer out effective solutions, the European Commission should consider delaying the publication of the methodologies. In addition, a review clause should be added to the methodologies to ensure the co-benefits assessment is regularly updated and strengthened in line with the latest science. In any case, the methodologies should clearly state their limitations in measuring and ensuring compliance with the mandatory co-benefits criterion.

Ultimately, it was the EU institutions which decided to include the mandatory biodiversity co-benefits criterion. With land-based activities involving temporary and uncertain carbon sequestration, biodiversity must be given a central role, as the true strength of these activities lies in restoring and protecting ecosystems. Not taking this seriously disrespects the spirit and outcome of the CRCF negotiations and misses out on contributing to biodiversity goals.



Introduction

In December 2024, the EU adopted its Regulation on the certification framework for permanent carbon removals, carbon farming and carbon storage in products. The Carbon Removals and Carbon Farming Framework (CRCF), as it is more commonly known, will apply to specific activities. So far, the following have been identified: direct air capture and storage, biomass with carbon capture and storage, biochar, biogenic carbon storage in buildings, peatland restoration through rewetting, planting of trees on unused and severely degraded land, and soil carbon sequestration in mineral (or agricultural) soil and agro-forestry. Of these, the latter three are classified as carbon farming activities.

The finer details of the CRCF are being fleshed out through specific methodologies, there will be one per activity. Drafts are published on an on-going basis and are subsequently assessed and discussed by stakeholders belonging to the EU Expert Group on Carbon Removals. The most recent drafts, published in October 2024, were fraught with problems. Yet, with a couple of iterations left - the final versions will likely only be adopted between the latter part of 2025 and early 2026 - existing issues can still be solved. Ultimately, the methodologies must set out robust conditions, tests and safeguards for eligible activities to be certified under the CRCF scheme.

Using the most recent drafts of those methodologies (dated October 2024), this briefing delves deeper into how biodiversity, specifically the mandatory co-benefits, is being handled in the carbon farming methodologies, with a particular focus on the agriculture methodology.



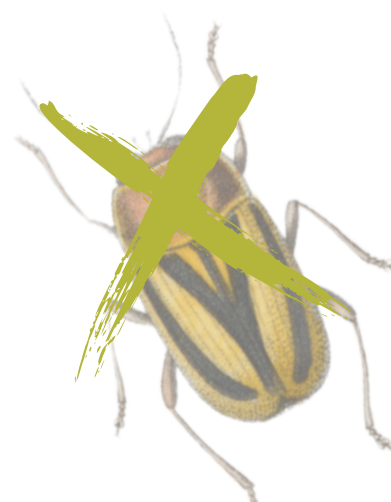
What is carbon farming?

Carbon farming has in scientific literature and many jurisdictions been associated with agricultural practices that aim to enhance carbon sequestration in soil. The CRCF has a different definition, and also includes agroforestry, tree planting (afforestation), and rewetting peatlands under 'carbon farming'. These activities either reduce emissions or enhance carbon sequestration in the land sector, making the term "carbon farming" rather vague and confusing.

Activities enhancing carbon sequestration, also known as biogenic sequestration or temporary removals, should not be confused with permanent carbon removals. According to the CRCF, permanent carbon removals extract carbon dioxide from the atmosphere and permanently store it for several centuries ([article 2.9](#)). In contrast, biogenic sequestration relies on living biomass and soil to absorb and store carbon dioxide from the atmosphere. Biogenic sequestration cannot guarantee permanence because it involves natural sinks, which are vulnerable to both human and natural disturbances. This means that a change in land-management practices, weather conditions, the climate crisis and its intensifying effect on natural disasters affect the ability of natural sinks to store carbon. Due to its vulnerability and volatility, storage can be short term. The CRCF therefore qualifies these as temporary carbon removals, restricting the activity period to at least five years ([article 2.10](#)).

Given these challenges, the practice of counting the temporary and volatile carbon stored in these systems towards corporate or country climate targets is highly problematic. If and when reversals occur, they ultimately increase emissions into the atmosphere. In addition, reversals risks render land managers, such as farmers or foresters, liable for future carbon releases.

Nonetheless, carbon farming is important for increasing nature's resilience to the dire effects of a heating planet, to strengthen ecosystems, and to improve biodiversity. Despite the huge importance of these functions, the CRCF refers to them as 'co-benefits', relegating them to mere byproducts of biogenic sequestration. This should be contested as it is precisely healthy, resilient ecosystems that provide significant potential for biogenic sequestration. Biodiversity and carbon sequestration must not only go hand in hand, biodiversity should be the priority when it comes to these activities. Ultimately, carbon farming is a misnomer - its value lies not in its climate impact but in its ability to boost biodiversity and ecosystem services.



The need for a holistic approach

Article 7.2 of the CRCF Regulation states that a carbon farming activity shall at least generate co-benefits for the protection and restoration of biodiversity and ecosystems, including soil health as well as avoidance of land degradation. Article 7.4 calls for rules on the monitoring and reporting of these co-benefits. Together, these provisions set the framework for the so-called 'mandatory biodiversity co-benefit' criterion, which is currently being fleshed out in the carbon farming methodologies.

Why are these provisions so important?

With the capacity of the EU land sink in decline by around one third over the past decade, and approximately 70% of the EU's soil stock being unhealthy, it is evident that we are facing a crisis that requires a holistic response, addressing both climate and environmental issues in tandem. In its recent "nexus assessment" report, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services explored the interlinkages between climate change, biodiversity, food, water and human health, and clarified that focusing on a single element of the nexus at the expense of the others would be harmful for both humans and the planet.

In stating that carbon farming activities must contribute to tackling the escalating biodiversity crisis, the articles set out above aim to capture this issue; concrete action must be taken to restore our degraded nature, whilst sequestering carbon in the process. Yet, as will be explored below, current proposals remain insufficient.

Results or activities

While the methodologies acknowledge the need to address soil carbon, biodiversity and resilience in tandem, the proposed enforcement mechanisms are weak. To monitor and report on the mandatory co-benefits, the proposal resorts to the [Nature Restoration Regulation \(NRR\)](#), the EU Biodiversity Strategy's flagship policy. There are two potential options: a results-based or an activity-based approach.

Results-based approach

The European Commission proposes to use the results-based approach for the agricultural methodology, i.e. soil carbon in mineral soil and agro-forestry. For clarity, enhancing soil carbon in mineral soil covers a series of land-management practices, such as introducing cover crops, crop rotations, or enhanced grassland management. The results-based approach would involve using the indicators under [Article 11\(2\)](#) of the NRR. While Article 11(2) lists three indicators, the methodology looks at two of these: (1) the stock of organic carbon in cropland mineral soil (SOC) and (2) the share of agricultural land with high-diversity landscape features. To make matters worse, any practice that can show an improvement on one of these indicators will be considered compliant with the mandatory co-benefit requirement.

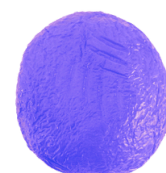


There are several issues with following the Article 11 indicators. First and most problematic, using SOC as an indicator assumes that the mandatory co-benefits requirement is automatically complied with by mere virtue of carrying out the certified activity; sequestering carbon complies with biodiversity because it sequesters carbon. It also means that the very activity the scheme is aiming to credit is also used to prove biodiversity benefits. This amounts to circular thinking and was certainly not what the co-legislators had in mind during negotiation. Indeed, for many policymakers, the inclusion of carbon farming in the CRCF was only deemed acceptable because of the mandatory biodiversity co-benefits criterion: carbon farming activities sequester carbon in vulnerable storage media, meaning their strength lies in protecting and restoring nature. Adopting such poor monitoring and reporting provisions, disrespects the spirit and outcome of the CRCF negotiations.

Furthermore, [Article 7.2](#) of the CRCF defines the generation of co-benefits as the “protection and restoration of biodiversity and ecosystems, including soil health as well as avoidance of land degradation”. As suggested in a [report](#) on the sustainability of carbon farming by CREDIBLE, an EU-funded project on carbon farming, soil health and avoidance of land degradation should be interpreted as additional but not sufficient examples of how protection and restoration of biodiversity and ecosystems could be met. In other words, merely avoiding land degradation is not sufficient to meet biodiversity goals. In this sense, while SOC can bear a link to land degradation (degraded soils absorb less carbon) it cannot act as a proxy for high diversity in soil organisms. Instead, the number and type of species, as well as their role must be measured. This is known as taxonomic and functional biodiversity.

Second, the NRR is a national-level policy and, therefore, its indicators operate on a different scale; they do not function at a sufficient level of detail to cover individual farms. This means that NRR data risks not being transposable to the CRCF. Moreover, for SOC and high-diversity landscapes, monitoring must be carried out every six years. This could differ from the monitoring cycles established under the CRCF, where clear requirements on monitoring and its frequency are still lacking.

Lastly, the CRCF is a results-based scheme, which means that relevant carbon sequestration or emission reduction activities must be accurately measured, monitored, reported, and verified (MRV) by a third party before a carbon credit (or unit) can be issued to the operator. Requiring robust MRV is an elevated standard that attests to the quality of the credit. Yet, the same level of rigour is not being applied to biodiversity - either poor, inappropriate indicators, or a performance standard (explored below) are proposed. As such, for the sake of consistency with carbon measurements, and given that we are facing an interlinked crisis, the policy instrument should ensure that biodiversity assessments are subject to the same elevated, results-based standard as carbon. [The biodiversity impacts of many carbon farming activities are at least as important as their potential climate impacts](#). In this vein, the [ESABCC](#) itself has called for “mandatory sustainability safeguards supported by measurable indicators”. Failing to do so could harm biodiversity by deprioritising it relative to carbon and would make determining whether a particular activity has in fact improved biodiversity difficult, if not impossible.



Activity-based approach

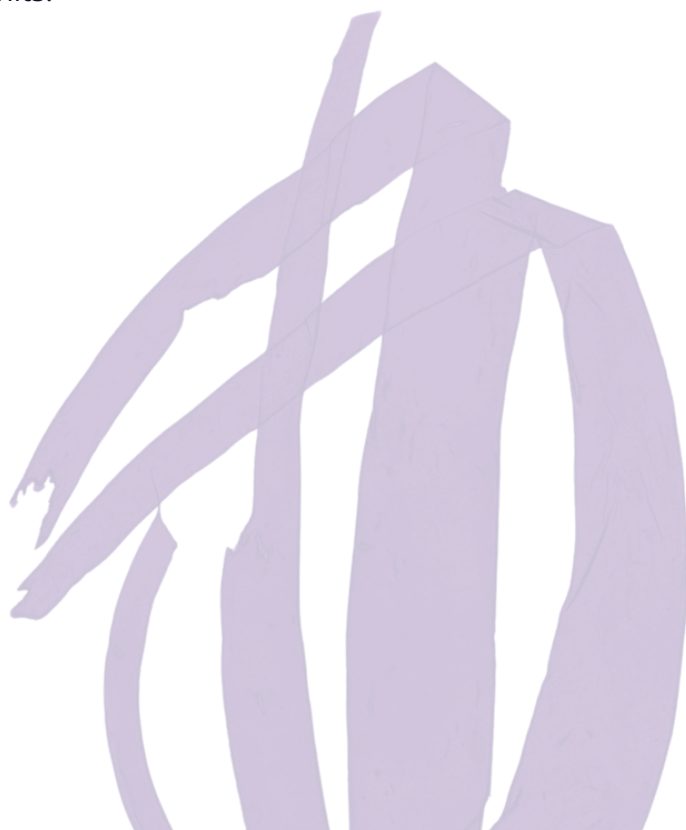
As to the activity-based option, this option applies to all carbon farming methodologies. The proposal is for operators to carry out one or more of the restoration measures listed in [Annex VII of the NRR](#). The Annex lists 33 activities. Examples for agriculture involve reducing the use of chemical pesticides, removing invasive species, or reducing grazing intensity. Applying these to the CRCF, the idea is to presume positive biodiversity outcomes following the uptake of these activities, though the minimum number of activities to be implemented remains unclear.

However, the [CREDIBLE report](#) mentioned above argues that biodiversity cannot be presumed just because a particular activity was implemented. The context-specificity of the farm (whole-farm impact) must always be considered. In a nutshell, the same action can yield significantly different results depending on where and how it is implemented. This suggests that simply pointing to a list of activities is insufficient to prove compliance with the mandatory co-benefits criteria.

Note that the European Commission is putting forward the activity-based approach as a means of reducing costs for farmers. Cost-effectiveness would have also applied to an activity-based approach for carbon sequestration. Indeed, land operators would have been supported in applying good practices, meaning quantifying and monitoring carbon - which, due to its complexity, is necessarily expensive - would not have been needed. In addition, activity-based finance would not subject landholders to liability in the case of intentional reversals. Should operators change or abandon sustainable land-management practices,

they would simply cease to receive support, instead of being liable for payment. Again, the fact that an activity-based approach is being proposed for biodiversity reveals an inconsistency in how the carbon and co-benefits aspects of the carbon farming activity are being treated and measured. Yet, if in light of the interlinked crisis, both are equally important, there should be no discrepancy.

Overall, the entire CRCF process is permeated by the need to strike a balance between minimising the administrative burden and ensuring environmental integrity. Yet, for the carbon farming parts of the scheme, administrative burdens clearly trump environmental impact. This completely disregards that the volatility and vulnerability of the soil, and the complex ecosystem dynamics taking place, renders measuring reductions, sequestration and biodiversity incredibly difficult. Overall, the current approach clearly lacks detail and accuracy, which undermines the credibility of the scheme and will lead to ongoing questions on the quantification and issuance of units.



Potential alternatives and conclusion

The challenges presented above reveal that neither of the approaches, as they are currently conceived, are satisfactory. In this sense, potential alternatives could and should be considered, such as the Regen10 indicators or the indicators discussed under the Soil Monitoring Law.

Regen10, a global initiative that supports an inclusive, regenerative, and equitable food systems transition, has developed a set of indicators. This includes metrics like the number of wild species and crop species on a farm. Yet these are all limited to measuring above-ground biodiversity. By excluding below-ground biodiversity, they do not capture the whole picture. Note that the CRCF does not specify whether above- or below-ground biodiversity is required, though the aim is to cover carbon sequestration in above- and below-ground biomass. Ideally, both types of biodiversity would be measured.

Alternatively, one might consider the indicators discussed under the EU's Soil Monitoring Law (SML) that is currently being negotiated. Here, the Commission, the Council and the Parliament have each proposed indicators. Suggestions involve, but are not limited to, soil basal respiration; the metabarcoding of bacteria, fungi, protists and animals; the abundance and diversity of nematodes, earthworms, springtails and native ants; or the presence of invasive alien species and plant pests.

Unfortunately, the outcome of the SML negotiations remains unclear, and as with the NRR, the scope of the regulation differs from that of the CRCF. The CRCF process is also significantly ahead, with the first delegated acts potentially appearing later this year. Consequently, the extent to which the indicators of the SML will feed into the CRCF is also uncertain.

It is evident that there is a general lack of data and scientific understanding when it comes to biodiversity. Despite this, the alternatives above demonstrate that identifying better indicators than those under the NRR is possible, and can at least inform how the issue might be handled under the CRCF. Clearly, a mixture of indicators is required to capture the complexity at hand. While this may be more challenging, robustness is key for assessing the impact certain carbon farming practices have on biodiversity, and consequently, to confirm whether the mandatory co-benefits criterion has been complied with or not.

For now, solutions are limited, so the Commission should consider delaying the publication of the methodologies, leaving more time for SML negotiations and scientific developments to catch up and, thus, respect the precautionary principle. In addition, a review clause should be added to the methodologies to ensure the co-benefits assessment is regularly updated and strengthened in line with the latest science. In any case, the methodologies should clearly state the limitations in measuring and ensuring compliance with the mandatory co-benefits criterion.

Undoubtedly, biodiversity co-benefits need to be a central component of the carbon farming methodologies, particularly since these activities amount to temporary sequestration and will therefore have uncertain climate benefits. Unfortunately, the current drafts do not grant it that core role, but rather approach biodiversity as a mere box-ticking exercise. As mentioned previously, the will of the co-legislators was clear: a robust co-benefits criterion to measure the biodiversity impacts of each activity. Current provisions clearly undermine this.



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