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Introduction

This document provides short summaries of the topics discussed during eight online workshops that were organised between 26 November 2024 and 30 January 2025 in the context of the development of carbon farming methodologies under the Carbon Removals and Carbon Farming (CRCF) Regulation (EU)2024/3012¹.

Where available, results from online polls carried out during the workshops are included under each section of the document, whereas input papers, annotated agendas and slides presented during the workshops are available as separate documents.

¹ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32024R3012&qid=1733910756533>

1 Quantification and sustainability – Agriculture

1.1 Workshop characteristics

On 26th November a technical workshop on the agriculture methodology for EU carbon removal and carbon farming certification was organised, which was attended by about 150 participants. The workshop aimed to follow-up on and deepen the discussions on quantification and sustainability based on the draft elements presented to the Expert Group on Carbon Removals during its 5th meeting in October. To that end, the workshop was structured in two sessions, one on quantification and one on sustainability, each with four breakout groups.

1.2 Summary of the workshop

The participants discussed the following questions:

1. *To avoid the risk that carbon removals or soil emission reductions on certified parcels are compensated by an increase in soil emissions on other, non-certified parcels under the control of the operator, it is proposed that the entire farmed land under the operational control of the operator should be included in the monitoring. Do you agree that the entire farmed land under the operational control of the operator should be monitored?*

Participants who were against whole-farm monitoring questioned that this would be justified given the low risk of internal carbon leakage, pointed at the administrative burden of whole-farm monitoring, underlined practical difficulties (i.e. what to do if the boundaries of the farm change over the course of the activity), or warned about the risks of low uptake of carbon farming if monitoring is too demanding. Participants who were in favour of whole-farm monitoring stressed that under regenerative agriculture farmers view their farming system as a whole, and especially with crop rotations it makes sense to monitor what happens on the entire farm; this is already common practice in the context of insetting or scope-3 reporting programmes. Many agreed that in the case of fertiliser use it is easier to monitor the entire farm, but that this is more difficult for soil organic carbon, prompting some to suggest that whole-farm monitoring should only apply to indicators that are easier to monitor at that scale.

Mentimeter question 1-1

Q1. Should the entire farmed land under the operational control of the operator be monitored?
(61 respondents)

- Yes: 31
- No: 23
- I don't know: 7

2. *As the uptake of agro-forestry practices in Europe is still relatively low, it is important to reward this practice, including the front-runners. Therefore, a standardised baseline equal to zero is proposed, meaning that all new removals associated to the increment in biomass during the activity period can contribute to the net carbon removal benefit, whether the project is newly established or pre-existing (however, the trees or woody elements cannot be older than 5 years). Do you agree on this approach for a standardised baseline for agro-forestry?*

Some participants agreed with this approach and even asked for recognising the efforts of early practitioners who started more than 5y prior. Others only agreed with this approach in the case of agro-forestry practices that are not common practice in the area (such as in-field agro-forestry) or suggested to use a fixed cut-off date (e.g. start of CRCF) instead of a rolling 5-year period. Participants that were against the proposed approach raised issues of additionality (cannot justify

financial additionality if the project has already started) and practicality (difficult to provide evidence that the project has not started more than five years prior). Some participants also raised concerns about perverse incentives to remove trees or hedges in order to start a new activity and be rewarded.

Mentimeter question 1-2

Q2. What should the standardised baseline for agro-forestry be?

(62 respondents)

- Activity-specific baseline: 21
- Standardised baseline equal to zero, also if trees are already present (threshold: planted 5y before start of activity period): 21
- Standardised baseline equal to zero, also if trees are already present (other thresholds): 11
- I don't know: 7

3. *Many respondents to the written feedback survey asked for more precise guidance on how to do soil sampling, how to use remote sensing for quantification of the activity-specific baseline or of the activity itself, how to quantify GHG emissions associated with the carbon farming activities, and how to address uncertainties in a conservative manner. Do you have concrete suggestions for more detailed guidance on these aspects?*

- On GHG emissions associated to a Life Cycle Assessment (LCA): some participants noted that many existing LCA tools used by the industry already quantify the emissions related to input production.
- On soil sampling: some participants stress the need for a statistical framework to define what is “smart” sampling and referenced existing soil sampling protocols. However, some participants expressed a preference for modelling over sampling, because of large variability of soil samples. In any case, transparency on the approach used is very important. References were made to the RecSoil initiative by FAO and the GHG protocol Land Sector and Removals Guidance (LSRG)
- On soil depth: participants did not agree on whether soil samples should be 30-centimeter deep (lower cost) or 1-meter deep (more accurately reflecting soil transfer between layers).
- On uncertainty measurement: need to define a level that is acceptable by markets; one participant explicitly agreed with using the probability of exceedance as main parameter.
- On the use of remote Sensing (RS): participants agreed that RS is not fit to monitor carbon stocks or emissions but that it can be useful for monitoring activities/practices and landscape features.

Mentimeter question 1-3

Q3. Should there be a limitation for the use of off-farm organic amendments?

(64 respondents)

- Yes: 13
- No: 32
- I don't know: 19

Mentimeter question 1-3

Q4. Is the proposed minimum activity period of 5 years (and 10 years for permanent grassland and agroforestry) sufficient?

(66 respondents)

- Yes: 38
- No: 22
- I don't know: 6

Mentimeter question 1-4

Q5. Do you agree with having choice between two quantification approaches (1. measure-remeasure and 2. measure-model approach)?

(59 respondents)

- Yes, keep both: 43
- No, allow only measure-remeasure approach: 8
- No, allow only measure-model approach: 4
- I don't know: 4

Mentimeter question 1-5

Q6. Should the sampling depth for soil samples be more than 30 cm?

(58 respondents)

- Yes: 22
- No: 27
- I don't know: 9

Mentimeter question 1-6

Q7. What emission sources should be included in the calculation of GHG associated?

(63 respondents)

- Only on-farm emissions: 30
- Also some life-cycle emissions outside of the farm (e.g. emissions from production of inputs): 30
- I don't know: 3
- Other: 0

4. *In line with the requirements of the CRCF regulation, to be eligible for certification, a carbon farming activity must comply with minimum sustainability requirements and deliver co-benefits for biodiversity. The minimum sustainability requirements are inspired by the Do No Significant Harm (DNSH) principle set out in the Taxonomy Regulation and aim to ensure policy consistency and facilitate implementation of existing legislation. Do you agree with the proposed criteria, or do you see any gaps or inconsistencies?*

Some participants stressed the need to avoid going beyond existing environmental legislation (e.g. on sustainable pesticide use, water abstraction, and nitrogen inputs), to avoid overburden farmers with additional requirements; others favoured landscape-level monitoring of biodiversity indicators. Some participants also asked to better clarify exceptions for compost that contains peat, with some underlining the need to avoid new peat extraction and others pointing out that peat-free soil products are more expensive. Some participants were concerned that putting too much emphasis on environmental requirements could hinder the uptake of carbon farming practices. One participant suggested that operators should prepare a farm environmental plan covering all sustainability objectives (possibly with the support of CAP and/or advisors). The discussion also touched upon: the need for clear distinction between activities happening on mineral vs organic soils; the importance of recognising natural nitrogen-fixing mechanisms and of considering water availability in different contexts; the question how to deal with reduced yields.

5. *As for the mandatory co-benefits for the protection and restoration of biodiversity and ecosystems, including soil health and the avoidance of land degradation, an approach based on the relevant indicators from Article 11 of the Nature Restoration Regulation (NRR) is proposed. An alternative approach (followed in the afforestation methodology) is to create a positive list of practices based on the relevant practices listed under Annex VII of the NRR. Do you agree with the approach based on indicators, or do you recommend an approach based on a list of practices? Or other?*

Some participants favoured using indicators aligned with existing policies (NRR or Soil Monitoring Law) and well-defined. However, there were diverging views on whether an increase in Soil Organic Carbon could be considered enough to show an improvement in soil health; some participants suggested that operators could be given the choice of a longer list of indicators. Other participants preferred a positive list of practices, as it may be more practical at the farm level and easier to implement, but only if practices are well-defined and linked to actual improvements.

Mentimeter question 1-7

Q8. In order to show mandatory co-benefits for biodiversity or soil health, operators should:
(63 respondents)

- Show an improvement on one indicator mentioned in NRR Article 11: 12
- Show an improvement on two indicators mentioned in NRR Article 11: 14
- Implement one of the restoration measures mentioned in NRR Annex VII: 8
- Other: 18
- I don't know: 11

2 Quantification and sustainability – Forestry

2.1 Workshop characteristics

On 28th November a technical workshop on the methodology for the planting of trees on unused and severely degraded land was organised, which was attended by 173 participants. The workshop aimed to follow-up on and deepen the discussions on quantification and sustainability based on the draft elements presented to the Expert Group on Carbon Removals during its 5th meeting in October. To that end, the workshop was structured in two sessions covering various breakout groups.

The discussions revolved around the following questions:

Quantification:

- *What are the key datasets available through remote sensing technologies that can be integrated into monitoring and quantification of carbon removals?*
- *What are the key elements that the modelling exercise should integrate for the purpose of quantification of carbon removals, such as minimum datasets and accuracy standards, in order to ensure a robust yet viable process?*
- *Do you agree with the limitation of the scope to unused and severely degraded land? If not, which other type of land should be included?*

Sustainability:

- *Do you agree with the proposed approaches? If so, given the non-exhaustive nature of the activity list in Annex VII of the NRR, would it be relevant to expand the set of activities? If yes, what other activities should be included?*
- *What other approaches or metrics could be used to prove the generation of co-benefits for biodiversity, taking into account regional specificities, as well as limiting administrative burden on operators?*

2.2 Summary of the workshop

Quantification session

Integration of Remote Sensing (RS) and Field Data:

- RS is essential for monitoring forest growth and carbon quantification but requires integration with field measurements to ensure accuracy and credible methodologies.
- RS is limited in precision for below-ground data, soil conditions, and degraded land monitoring, necessitating complementary methods like eddy covariance (expensive) or direct measurements.
- It does open the way for less on-site measurements once the validation and calibration of a model has been done correctly.
- For small seedlings/saplings being planted airborne laser scanning may be useful (e.g. for measuring height growth). This will require new biomass allocation and expansion factors for small trees as the smaller trees usually not included in current NFI and LULUCF methodologies. LIDAR would give more or less similar results and can be applied with drones and can cover larger areas.

Challenges with Data Availability:

- There are disparities across European countries regarding available datasets for RS and modelling.

- Publicly available data varies in granularity and reliability, making standardized application across the EU difficult. MS have data “hidden” in NFI’s.

Modelling and Quantification:

- Models need calibration with field data to be effective, and there is no pan-European growth curve model.
- Take climate change into account when looking at growth curves.
- Countries like Sweden and Spain use localized models, but these approaches highlight the need for better harmonization of data and methods.
- Strike a balance between being too prescriptive and being too vague.
- For forest soils, soil models appear to be the most feasible method. Data should then be collected to further improve the models. What happens to generated credits if an operator generates carbon credits on the basis of biomass, and later on when more cost effective methods for soil carbon are available it appears that soils had emissions?

Accuracy

- Important to strike a balance between robustness of the methodologies and their cost for implementation. This would also depend on the use-case, which currently remains unclear if no decision is taken on the allowed use of the temporary carbon credits generated through carbon farming activities.
- One needs to take into consideration how uncertainty is distributed across different spatial scales and works in different use-cases. With increasing sample sizes (and higher spatial scales) usually uncertainty decreases. Ensure methodologies meet specific accuracy standards relevant to their use-case.
- Include methodological Flexibility: Allowing for adaptation to different regional conditions and data availability.
- In CAP Member states should ensure that error in distributed subsidies is lower than 3%". This rule then drives the methodology, but it is up to each Paying agency to demonstrate to Auditors from DG AGRI that rules guarantee 3% rule.
- Combine multiple data sources and methodologies to reduce quantification errors.
- Use combination of best practices: Using the best available data and methodologies to minimize errors. What are best available data and methodologies may differ per country.

Concerns Over Species Selection and Monoculture:

- Short-rotation species are prioritized in some scenarios due to the shorter project timelines, potentially incentivizing monoculture plantations.
- Monocultures raise biodiversity and resilience concerns, and guidelines must include species diversity as a core requirement.
- Monocultures are sometimes unavoidable. Maybe different cultivars can be used.

Carbon Credit Durability and Monitoring Periods:

- The proposed 30-40 year monitoring period raised questions about the potential for carbon loss if forests are harvested post-project.
- Longer monitoring and preservation periods were suggested to enhance carbon sequestration and credit value.
- The rationale for 30/40 years should be better expanded upon.

- Are shorter periods allowed?

Risks and Resilience:

- Forests face risks such as pests, diseases, and wildfires, exacerbated by climate change.
- Strategies to mitigate these risks include proper species selection, thinning, and continuous management.

Stakeholder Considerations:

- Landowners need clear and practical methodologies that accommodate diverse local conditions and financial incentives.
- Social and economic aspects, including rewards for rewilding and sustainable land use, must be integrated into the framework.

Future Directions:

- The group emphasized developing case studies to test RS and field data integration methods and calibrate models.
- Calls for more nuanced guidance on climate-adapted species, tailored methods for degraded lands, and better harmonization of EU-wide standards were highlighted.
- For the scope also other “Used” lands should be taken into account. Used grasslands and croplands.

Key Takeaways

- The workshop highlighted the need for robust yet flexible methodologies for carbon removal quantification.
- There was a consensus on the importance of integrating ground-truth data and considering all carbon pools in models.
- The scope of land use for carbon farming should be reconsidered to also include afforestation on other land types than unused land and degraded land.
- Sustainability and biodiversity co-benefits should be carefully balanced with carbon removal goals.

Mentimeter question 2-1

Q1. Would you consider the scope for the planting of trees sufficient for a first step, or would you prefer to expand it?

(77 respondents)

- It is sufficient: 17
- Extend to all grasslands: 2
- Extend to all croplands: 5
- Extend to both grasslands and croplands: 53
- No opinion: 0

Mentimeter question 2-2

Q2. Do you agree with the approach to set the standardized baseline to zero for the planting of trees on unused and severely degraded land?

(74 respondents)

- Yes: 30
- No, it should be different from zero: 3
- No, it should be activity-specific: 36
- No opinion: 5

Mentimeter question 2-3

Q3. If soil carbon were to be included in the methodology as a carbon pool, is there a robust yet cost-efficient method to quantify it?

(81 respondents)

- Yes: 25
- No: 13
- Don't think it should be included for now: 19
- No opinion: 24

Sustainability session

Overall, participants supported the need to find an approach for the mandatory biodiversity co-benefits that is fit-for-purpose and enables a sufficient uptake of land managers - in particular small operators - across the EU. While recognising the important aspect and possibilities for biodiversity, several participants recalled that the main purpose of the CRCF is to certify carbon removals.

A majority of participants expressed support for an activity-based approach informed by Annex VII of the NRR. Some others argued an approach based on indicators would be more robust, but in this regard the difficulty in agreeing on a fixed list and associated challenges such as lack of common methodologies, benchmark-setting and the varying nature of forest ecosystems across the EU was highlighted. On the activity-based approach, some found the list in Annex VII either not sufficiently broad or in need to be better adapted for the specific needs of afforestation/the planting of trees. In this context, some participants referred to other certification schemes or EU guidelines as sources of inspiration.

With regard to the minimum sustainability requirements, there was a general consensus on the proposed approach, but few participants pointed at the complexity of monitoring compliance with these requirements due to their open formulation.

Mentimeter question 2-4

4) Are there additional activities that deliver biodiversity co-benefits that could be included in the proposed list?

(49 respondents)

- Yes: 24
- No, the list is sufficiently comprehensive: 25

3 Standardised Baseline for agriculture on mineral soils

3.1 Workshop characteristics

The meeting took place online on the 12th December 2024 and was attended by 90 participants.

The JRC presented its interpretation of the standardised baseline definition and the implication on the net emissions/removals calculation compared to an activity specific baseline. Afterward, JRC illustrated how a modelling ensemble, combining LUCAS and process-based model, can provide the rate of SOC changes in agriculture mineral soils within similar pedo-climatic conditions, across the EU. The overall reaction was that this framework could be very useful at a broader scale or to provide a first-order approximation of benchmark values. The major concerns regarded the capability of this framework to capture the fragmentation of the agricultural systems and their specific management interventions not often accounted for using large-scale datasets.

During the workshop a set of questions have been discussed with the expert group, based on a background paper. The outcome of this discussion is summarised below. While the group of participants included different actors and stakeholders, due to its limited size the answers may not be taken as representative of the positions of all relevant experts.

3.2 Summary of the workshop

Mentimeter question 3-1

Q1. What is the role of the Commission, of Member States, and of operators in establishing the baseline?
(42 respondents)

- The Commission establishes the methodology for the standardised baseline and calculates the number: 9
- The Commission establishes the methodology for the standardised baseline and Member States calculate the number or provide the relevant data: 14
- The Commission establishes the methodology for the standardised baseline and (groups of) operators calculate the number based on the standard management practice: 19

The majority of experts were in favour of option 3, i.e. to have a protocol for calculating the standardised baseline rather than a fixed value provided by the EC. The main reason for this preference is that this approach allows to use the same quantification method to calculate emission/removal values for the baseline and for the carbon farming activities. This option, however, raised some issues about the risk of jeopardising the integrity of the certification framework due to the operators gaming to generate the most convenient number, ending up with different standardised baselines that need to be assessed in terms of robustness and fit-for-purpose. The higher administrative burden for operators was not perceived as a barrier during the discussion.

Option 2 was about the possibility of using more local data from MS or part of the Greenhouse Gas Inventory (GHGI) methodologies when higher tiers are in place. This option was ranked at the 2nd place by experts, who highlighted how large inventories may not be necessarily suited (or scalable) for carbon farming accounting at the project level. On the other hand, the main advantage of this option would be the consistency with GHGI, and the possibility to easily integrate C farming data within MS inventories.

The less voted option 1 confirmed the perplexity to have fixed baseline values provided by the EC rather than protocols. However, some consensus was related to the 'objectivity' of this approach

(i.e. the same baseline would be assigned to all operator in the same conditions), and the simplification for operators not having to calculate it.

Mentimeter question 3-2

Q2. Should the standardised baseline be an ex-ante number set at the start of the activity period, or an ex-post trajectory recalculated at the end of the activity period?

(28 respondents)

- Static number computed ex-ante: 8
- Dynamic trajectory recalculated ex-post: 20

The majority of experts was in favour of a dynamic baseline, which allows to take into account natural variability (e.g. weather anomalies and extreme events) during the activity period. These effects would, under this option, be cancelled out since they would both affect the baseline and the quantification of the activity's emissions/removals.

Nobody intervened during the meeting to support an ex-ante static calculation, although it received 28% of the vote. Overall, fewer participants casted their vote for this question (n = 28) compared to question 1 (n = 42). This suggests a need for further consideration of this topic.

Mentimeter question 3-3

Q3. How would early movers (i.e. farmers who have already adopted carbon farming practices in the past) be recognised?

(33 respondents)

- Standardised baselines should differ depending on the initial carbon stock: 15
- Standardised baseline should be equal to 0 to reward all new removals: 8

Some expert interventions stressed the fact that current calculation (Art. 4, eq. 2.1 and 2.2), based on differences in fluxes, does not recognize the soil C pool accrued by past management. Indeed, others were not even in favour to differentially reward early movers since: 1) the difficulty to disentangle the origin of high SOC stocks (natural factors vs anthropogenic interventions) or reconstruct the land use history, 2) there does not exist a precise definition of what constitutes an early mover. Another point was that, if carbon farming units are meant to offset emissions in Voluntary Carbon Market (VCM), true additionality (and not the avoided emissions) should be the goal.

Answer 2, which received half of the votes, was considered to penalise farmers who need to become net removers before any carbon accrual can be credited. This does not apply to the first option, as it reflects the concept of similar circumstances. Overall, the debate to reward early movers was inconclusive, and it was suggested that the use of the units (VCM, CAP, Scope 3 reporting) would impact both answers.

4 Soil emissions from fertilizers (Technical Focus Group meeting)

4.1 Meeting characteristics

The technical focus group meeting was organised on Friday 13 December 2024 and was the first meeting where the methodology for soil emission reduction from fertilizers was discussed. This was an online meeting with the following agenda:

- 9.30 Welcome and tour-de-table
- 9.40 Introduction CRCF (DG CLIMA)
- 9.55 Introduction technical assessment paper and review (Morgane Henaff)
- 10.05 Discussion on eligibility aspects
- 10.25 Discussion on Quantification aspects
- 10.50 Break
- 11.00 Continuation discussion on Quantification aspects
- 11.30 Discussion on Sustainability aspects
- 11.50 Wrap-up

4.2 Summary of the meeting

The following questions were discussed:

- Should some practices be excluded or restricted because of the risk of indirect land use change due to productivity reduction? Or should the leakage and the indirect land use change be quantified and integrated in quantification approach?
- Should some emission reduction practices be excluded from the eligible practices because of the (current) difficulty to monitor their impact?
- Should some emission reduction practices be excluded from the eligible practices due to the lack of data on their environmental impacts?
- What is the best scale to involve farmers, quantify and monitor GHG emissions reduction? Field or farm scale?
- What minimum degree of precision (tier level) should be recommended for calculating GHG emissions?
- What should be the guidelines and their level of precision to quantify GHG associated emissions in projects (what type of GHG emission sources should be quantified – direct, indirect, with which methods?)
- How feasible is the development of a standardised baseline for N₂O emissions reduction from agricultural soils and how could it look like?
- Do you see any possibility to include the N balance approach in the quantification of N₂O emissions, e.g. yield scaled EFs?
- Which additional indicators or list of practices should be assessed in case of implementation of practices that reduce emission from fertilizers to monitor impacts and co-benefit for other environmental objectives?

Regarding eligibility criteria for practices there was consensus that specific criteria are difficult to set. Thresholds for maximum crop yield declines were not seen as feasible, given the annual variations in crop yields. For nitrification inhibitors there was more discussion and currently a lack of clear rules, and the fertilizer regulation has insufficient criteria for approval of these products.

Most participants were in favour of using the farm scale for the quantification of emission reductions, as data is often not available at field level and to prevent leakage within the farm.

However, some people favour field scale, in combination with process-based models, which can improve quantification and reduce uncertainty.

For the quantification at least use of Tier 2 approaches was proposed. Some participants were also in favour of Tier 3 model approaches, although these kind of models are available in the scientific domain, the data requirements are high and currently this seems very challenging to apply them in practice for certification purposes. Participants were in favour of aligning with the approaches used for the national GHG inventory.

There was also discussion about the use of yield scaled N₂O emissions, i.e. N₂O emissions are expressed as function of crop yield, which would incentivise crop production to be maintained or even increased as long as the N₂O emission per unit of product would decrease. However, this is difficult to align with the CRCF regulation and there is also no agreed functional unit (e.g. per kg dry matter, or per kg energy or protein), which makes it very difficult to compare among different crops.

Finally, the potential co-benefits were shortly discussed. Co-benefits for water and air quality can be expected (less nitrate leaching and lower ammonia emissions). However, quantification of these co-benefits should preferably be done by Tier3 models that simulate nitrogen flows in an integrated way. IPCC emission and leaching factors were considered to be not sufficiently accurate.

5 Carbon Removals and Carbon Farming Certification – Peatlands

5.1 Workshop characteristics

A technical workshop on the methodology for the peatland rewetting took place online on 16th January 2025, which was attended by over 50 participants. The workshop aimed to follow-up on and deepen the discussions on the aspects of quantification, sustainability and additionality based on the draft elements presented to the Expert Group on Carbon Removals during its 5th meeting in October.

The discussions revolved around the following questions:

Eligible activities

- Is it desirable to include a closed list of activities?
- Is there a need for specific rules on paludiculture?

Activity length

- Keep current 20 years or go for a shorter renewable period to attract more farmers?
- Do we need a maximum end date for projects (e.g. 2050 climate neutrality, or determined on the basis of peat depletion rate (current draft)?)
- What effect would the activity length have on the update of the baseline?

Quantification of emission reduction net benefit

GHG associated emissions

- Initial methane emissions: how to tackle this in the net soil emission reduction benefit calculation: provide default emission factors?
- Which rewetting type minimise methane emissions: can we limit eligibility to exclude cases with high methane emissions risk?

Monitoring plan

- What should be the minimum essential elements of a monitoring plan (such as water table level, vegetation)?
- What is the list of parameters/specific requirements on the data to be used, the unit they need to be reported in, as well as eligible data sources and frequency of monitoring?

Additionality

- What are the best approaches to verify financial additionality?
- Would a choice among different possible additionality tests (such as common practice test, net present value, set ceilings) help?

Sustainability

- How can the Do No Significant Harm (DNSH) criteria be operationalised and monitored (e.g. operators shall minimize the use of pesticides)?
- Mandatory co-benefits: what would be the best approach to prove compliance?

5.2 Summary of the workshop

The workshop focused on the main comments from the feedback received through the survey and the including the most recent expert group meeting of 22 October on the draft version on the certification methodology for peatland restoration through rewetting.

The following key aspects were discussed:

- **Eligible Activities**
 - Discussion on whether to use a **closed or open list of activities**. A compromise suggestion of having a **closed list** (clarity and transparency needed for certification purposes) **with a review clause to allow for some flexibility to add further activities** in the future could be explored. Alternative proposals included creating a "negative list" of excluded activities (such as rare cases where rewetting would harm biodiversity).
- **Paludiculture**
 - **Need for clear rules and definitions** including the plants/silviculture that would qualify.
 - **Limiting paludiculture to already agricultural or forestry lands** was suggested to avoid harming high-biodiversity areas such as grasslands.
- **Activity Length**
 - Suggestions to **consider shorter/renewable periods** (less than the current 20 yrs) to encourage farmer participation versus longer commitments aligned with peat depletion rates. Regular updates to baselines and flexibility were emphasized.
- **Methane Emissions**
 - Discussion on the **potential ways of incorporating methane emissions** into the net carbon emission reduction benefit calculations. Options to consider: providing standard emission factors for the different rewetting scenarios, including mitigating measures like gradual rewetting.
- **Associated Greenhouse Gas Emissions**
 - A need for **an exhaustive list of emissions to simplify operator requirements** while ensuring comprehensive accounting.
 - Leakage monitoring was debated, with proposals to start at the landscape level and expand to the value chain over time.
- **Monitoring Plan**
 - **Essential elements include water table levels and relevant vegetation surveys** (peatland-specific vegetation) as proxies for to monitor both emission reductions and biodiversity.
 - Discussions included **minimizing monitoring burdens** (especially for farmers) and it was highlighted that the frequency of monitoring depends on which proxy is used.
- **Sustainability**
 - Debated operationalizing the "Do No Significant Harm" criteria and monitoring biodiversity using proxies or scorecards.
- **Financial Additionality**

- Emphasized the currently additional nature of any rewetting activities due to the lack of alternative income for farmers. Issues of double financing and combining public subsidies (such as CAP or State aid) with carbon credits were discussed, with calls for clear rules.

6 Rules for suitable quantification approaches

6.1 Workshop characteristics

The workshop took place online on 21 January 2025 and was attended by 52 participants. The carbon farming methodologies under the CRCF offer flexibility for the quantification approaches of carbon removals and emissions reductions. This allows i) the uptake of new tools or models, which can stimulate innovations that improve the quantification and reduce uncertainty and ii) the use of tools or models that are suitable for the specific region, e.g. a national model might perform better than EU wide model, or sampling approaches that account for regional specific circumstances. However, the CRCF methodologies should define criteria for the minimum quality of these models, tools and sampling approaches. The workshop aims to discuss the rules for these minimum requirements for the use of models and for sampling approaches.

The discussions revolved around the following aspects:

1. Proposed rules for model selection and use, including the following questions:
 - a. Can empirical models based on machine/deep learning or statistical models be used as well, or only process based models?
 - b. Regarding the criterion that the model should have been published in at least 3 peer-reviewed scientific articles: how do we define the level of the scientific consensus for models, should there be at least one or more peer-reviewed articles? Should it be recent articles?
 - c. Regarding the criterion that the model should be calibrated and validated for the conditions where it will be applied (in terms of soil types, climate, agricultural/forestry systems within the EU and carbon farming practices): Should there be constraints to the type of data that can be used for calibration and validation of the models? E.g. uses minimum duration of experiments of 5 years for SOC modelling, or are data from space for time experiments also accepted?
 - d. Should recognised certification schemes be obliged to share (anonymously) data for future validation of models?
2. Rules for suitable (soil) sampling approaches, including the following questions:
 - a. Should the methodology prescribe the use of a specific sampling design? If yes, which type of sampling design would be most appropriate?
 - b. Do you have any views on the appropriate rate of error that can strike a good balance between acceptability and sampling costs?
 - c. Should European level data, e.g. LUCAS soil data or soil maps be used, to estimate the expected variability or can the operator provide its own local/regional data?
 - d. How should be the minimum relevant effect/difference that a sampling design should detect be defined?

6.2 Summary of the workshop

Model selection

- On governance aspects, the input paper suggested three possible ways² for assessing the suitability of models. Some participants highlighted that certification schemes often lack the necessary in-house capacity and mentioned the significance of involving academic experts in the verification process of models. On this point, one participant informed that the Horizon-funded project OrCaSa is planning to provide a similar academic service. Other

² 1. Model used for the national GHG Inventory that has been reviewed by the UNFCCC or by the EEA (LULUCF comprehensive review). 2. Model validated by the certification schemes that are recognised by the Commission. 3. Model chosen by the operator and verified by the certification body.

suggested to form national or EU-level expert groups to work on this, in synergy with LULUCF inventory compilation.

- It was agreed that publication of the model in peer-reviewed journals does not guarantee quality. The focus should be on the appropriate use of models and on the quality of the input data; to this end, transparent data sharing is essential, including Open source access to parameters and equations. Machine learning models were also discussed, with concerns about potential biases and the importance of independent expert judgment. The use of model ensembles could also be required to constrain estimates and prevent manipulation. Reference was made to the Verra guidance for Model Calibration, Validation, and Uncertainty (VMD0053) as an example of best practice in this area.
- Some participants underlined that the choice of the best monitoring approach also depends on the scale of the activities and on the final use of the units, because the MRV objectives could differ.

Sampling approaches

- Participants mentioned several specificities of sampling accuracy, such as: sampling should aim detecting changes in SOC rather than the absolute SOC levels; measuring small changes within the field is challenging, depending on spatial/temporal variability; sampling strategies can benefit from stratification based on methods assimilating remote sensing; some models are more sensitive than others to initialisation based on SOC measurements; and the high costs of soil sampling.
- Horizon projects (Orcasa, MARVIC) are preparing “cook-books” with decision trees on which sampling approach is better depending on different uses of the samples. However, the need for a minimum common denominator for sampling design was also raised. In particular, it was suggested that a standardised sampling design should be based on the IPCC methodological handbook describing tier 3 sampling approaches (including in terms of depth, volume, lab analysis, format for documentation). It was also mentioned
- On the definition of error rates proposed in the background paper, it was suggested that the level of acceptable error rates (probability of overpaying or underpaying the operator) depends on the use of the unit and the nature of the buyer (public or private sector). On this point, one participant referred to a recommendation from Horizon project NIVA to allow the stacking of public and private payments based, respectively, on activity-based and result-based indicators.
- Agroforestry sampling adds complexity due to need to also measure the depth of tree roots, which is not integrated in most models. This points to the need of accepting higher uncertainty levels for agroforestry, until better models are developed. Characterisation of landscape elements in the LPIS can help.

7 Standardised baseline for forestry

7.1 Workshop characteristics

On 24th January 2025, 09:30-12:00, the online Workshop on Standardised Baseline in Forestry under the EU CRCF took place which was attended by 122 participants. The workshop focused on standardized baselines for sustainable forest management, while the baseline for tree planting was not discussed because it was agreed during the last expert group meeting and follow up expert group online workshops, DG CLIMA and JRC presented, respectively, the guiding questions and the report on the “Carbon Removals in Land” project that had already been shared via input paper ahead of the workshop.

The discussion revolved around the following questions:

Q1. What role should the Commission, Member States and operators have in establishing the standardised baseline?

- Option 1: the Commission establishes the methodology and provides the calculations of standardised baselines;
- Option 2: the Commission establishes the methodology for the standardised baseline and Member States calculate the values or provide the relevant data;
- Option 3: the Commission establishes the methodology for the standardised baseline and (groups of) operators calculate the standardised baseline on the standard management practice.

Q2. How would early movers (i.e. forest owners who have already adopted carbon farming practices in the past) be recognised?

- Option 1: Standardised baselines should differ depending on the initial forest age and species diversity;
- Option 2: Activity-specific baseline is used to recognise early movers.

7.2 Summary of the workshop

With regard to the first question, concerns were raised regarding biodiversity conservation and climate-change induced wild-risk management. Technical questions arose concerning landscape heterogeneity (data granularity) and how to ensure that the information, especially from MS which collect high level of data, is not lost. In the light of the complexity of Option 3 and simplicity of Option 1, a majority of experts expressed their preference for Option 2 (see Figure 1) that would allow Member States to calculate their own baselines when the data are available using Tier-3 approaches or in alternative with the Commission establishing a methodology.

However, the discussion showed that most participants would be in favour of a combination of the three options that would deliver flexibility and account for the variety of situations at national and local level. A key aspect remains to define the workflow to follow and the rules for the selection of one or the other baseline option, or rule to prioritise one option compared to the others.

Mentimeter question 7-1

Q1. What role should the Commission, Member States and operators have in establishing the standardised baseline (SB)?

(71 respondents)

- 1st: the Commission establishes the methodology for the SB, and Member States calculate the values or provide the relevant data: 38.

- 2nd: the Commission establishes the methodology for the SB, and operators calculate the SB on the standard management practice: 23.
- 3rd: the Commission establishes the methodology and provides the calculations of standardised baselines (SB): 10.

Concerning the second question, questions were raised as to how to identify early movers and to what data and level of quality should be used in this respect, i.e. what method would be best to overcome the difficulties in quantifying structural and species diversity (NFI/satellite products/LiDAR). In addition, in terms of methodological suggestions most participants agreed that either a standardised baseline with a more refined set of parameters to define the similar circumstances of the land should be used, or - when data is insufficient to define a standardized baseline, an activity-specific baselines could be used, subject to clear provisions when this can be allowed.

Mentimeter question 7-2

Q2. How would early movers (i.e. forest owners who have already adopted carbon farming practices in the past) be recognised?

(47 respondents)

- 1st: standardised baselines should differ depending on the initial forest age and species diversity: 26
- 2nd: activity-specific baseline is used to recognise early movers: 21.

8 Liability elements of the CRCF carbon farming methodologies

8.1 Workshop characteristics

The workshop took place online on 30 January 2025 and was attended by 105 participants. The draft methodologies as presented at the Expert Group meeting in October 2024 had contained only general rules for liability, which have been further elaborated in the background document that was provided to the meeting participants.

The discussion revolved around the following questions:

Rules to carry out the risk assessment:

- Can you share any examples or good practices to conduct the risk assessment to ensure sufficient and resilient enough buffer pools?
- How to show in a quantitative way that an activity makes carbon storage more resilient, and therefore fewer units need to be allocated to the buffer pool for that activity?
- Should the Commission develop precise guidance for the risk assessment (including a template, risk categories, a scoring system) or should this be left to the certification schemes?

Default risk rate for carbon farming activities:

- If no risk assessment is conducted, what should be the default size of the buffer for carbon sequestration in agricultural soils, in agroforestry and in afforestation? Should the buffer size be the same for these activities, or should it be different?

Liability rules in case of unavoidable reversals (e.g. due to natural disturbances) & the role of insurance companies

- Do you think that insurance companies are well-equipped, or will soon be well-equipped, to offer insurance products to the carbon farming certification industry?
- Do you have any experience with insurance companies in this field, or their views on the role of insurance? Or do you have ideas what the Commission could do to boost this development?

Stress test

- What measures should certification schemes undertake if the stress-test finds risks on the resilience, sufficiency, or solvency of the buffer pool? Should this for example cover a revision of the risk assessment, of the default risk rate, rules and criteria for the exclusion of high-risk activities? Please share any experience or best practice in this respect.
- Should the stress-test be carried out on the buffer pool every 3 years (in addition to when a significant loss event occurs)?

Rules for giving back the buffer units to the operators

- Do you have any view on if and how the units in the buffer pool should be given back to the operator? How can it be ensured that this does not jeopardise the resilience of the buffer pool and does not result in an insufficient coverage of the assessed risks?

Liability rules for emission reduction units

- What liability rules should apply in the case of emission reduction units?

8.2 Summary of the workshop

Presentation on Article 6 Rules and draft CRCF rules:

- DG CLIMA presented the recently adopted standards on removals and how they address reversal risk. The presentation covered: the mechanism under Article 6 of the Paris Agreement, the challenges faced in agreeing on standards, the adopted removal standards, the risk assessment tool being developed, and the importance of monitoring and addressing reversals. The two key issues to be kept in mind are: how to make sure that liability mechanisms cover the storage of carbon, and how to incentivise operators to have good behaviour (keep the carbon stored).
- After this first presentation, DG CLIMA presented the current liability rules drafted for the CRCF methodology, which are aligned with the article 6 rules. Participants reacted with clarification questions about: general effectiveness of buffer pool as a liability mechanism; importance of the distinction between avoidable and unavoidable reversals; fungibility of the units in the buffer (e.g. temporary and permanent units; between CRCF and non-CRCF units; between units with different validity periods); hosting the buffer in the EU CRCF registry; role of insurance companies vs certification schemes vs project developers in managing the risk.

Risk assessment tool:

- DG CLIMA stressed that if a practice is carried out in a way that increases resilience, and therefore reduce the risk of carbon release, this should result in a smaller buffer, giving a direct benefit to the operator. Therefore, the risk assessment tool should be able to give a better score (resulting in a smaller buffer) to more resilient projects.
- One participant mentioned that models used by insurance companies are broadly able to do this. Another referred to already existing risk assessment tools (Verra VM0042, SustainCert protocol) that CRCF could build on. The ICVCM received some recommendations from stakeholders pointing to the need to provide guidance on risk variables and their components.

Q1. The rules to conduct the risk assessment should be harmonised as much as possible. The Commission should develop detailed guidance for this risk assessment:

(39 respondents)

- Strongly agree: 24
- Agree: 13
- Neither agree nor disagree: 1
- Disagree: 0
- Strongly disagree: 1

Default size of the buffer:

- Participants in general expressed concerned about default buffer size. Some mentioned that a risk assessment should always be conducted, if not by the operator, at least a modelled one by the certification scheme; if that is still not possible, then the default buffer size should be very conservative to avoid gaming.

Q2. The size of the buffer for agricultural activities agroforestry and afforestation should be...:

(34 respondents)

- The same: 3
- Different: 31

Role of insurance companies:

- A participant from the insurance industry noted that insurance companies have the experience needed to insure and price risks, but they need a demand signal to go into carbon certification. A challenge with the public sector managing the buffer pool is that

there is no capital behind to cover the risks. A dialogue between policy makers and private insurance suppliers would be beneficial.

- A farmer representative noted that currently insurance for yield loss is more easily accessible for big scale / monoculture farmers.
- Some participants noted that the buffer pool does not give trust to operators, and that insurance should rather insure the operator's ability to cover for the risk, and not the risk itself.

Q3. Insurance companies are well-equipped, or will soon be well-equipped, to offer insurance products to the carbon farming certification industry.

(34 respondents)

- Strongly agree: 2
- Agree: 5
- Neither agree nor disagree: 9
- Disagree: 11
- Strongly disagree: 7

Stress test:

- On the frequency for stress-testing the buffer, it was suggested to do it every five years or more frequently. Insurance companies in general test the adequacy of their solvency quarterly.
- The importance of aligning with the evolving price of carbon credits was also mentioned.

Q4. Should the stress-test be carried out on the buffer pool every 3 years (in addition to when a significant loss event occurs)?

(32 respondents)

- Agree: 14
- More frequently: 11
- Less frequently: 7

Giving back units from the buffer to operators:

- Some participants were against the idea that units from the buffer should be given back to operators because it would undermine the resilience of the buffer pool.
- Others considered that units could be given back if monitoring shows a negligible risk of release, but the problem in that case would be that even if units are given back they may not be very valuable, because they would have an old vintage (year of issuance), which is not in high demand; to address this problem, certification schemes or insurances could be allowed to sell some units from the buffer in the beginning, keep the money, and give the money back to operators at the end if there was no release (if there was, then the money would be used to buy units to replenish the buffer).

Q5a. Units in the buffer should be gradually given back to the operators before the end of the monitoring period.

(36 respondents)

- Strongly agree: 0
- Agree: 10
- Neither agree nor disagree: 6
- Disagree: 8
- Strongly disagree: 12

Q5b. If you answered "I agree" on Q5a, when do you think it is appropriate to give back units to the operator?

(11 respondents)

- Units should be given back to the operators at every recertification audit: 1
- Units should be given back to the operators after every update of the risk assessment: 10
- Other: 0

Liability rules for emission reduction units

- Some participants mentioned that emission reductions should be considered permanent, hence there is no need for liability rules. Carbon emissions would be quantified against the standardised baseline.
- A participant raised the need for more clarity of what is meant by reversal and what needs to be monitored, and for a distinction between natural cycles and avoidable reversals.

Q6. In case of soil emission reductions (SER) there is no need for liability rules.

(23 respondents)

- I agree: 4
- Disagree, liability rules are only needed when the extent of the carbon release is such that the climate benefit of the activity is undone: 7
- Disagree, liability rules are needed for SER activities, but only as far as carbon emissions are concerned: 8
- Disagree, liability rules are needed for all soil emission reduction activities (carbon and N₂O): 4
- I agree nor disagree: 0