

## **Comments v1.2 Methodology Review from Regen Registry Team: Responses from Ecometric in Red**

[Methodology Proposal for Soil Organic Carbon Estimation in Regenerative Cropping and Managed Grassland Ecosystems](#)

[GHG Benefits in Managed Crop and Grassland Systems](#)  
[Credit Class](#)

There is one comment from Ned in the [Methodology](#) updated draft. [Addressed by Hywel's document attached.](#)

Beyond that there was some discussion about the changes in the 7.Data Verification. The way the wording changed we feel created some ambiguity. We propose the sentence should read:

"All data and information collected during the Monitoring report as stated in section 5.1.1 including all publicly reported data as outlined in 5.1.2 and non public data as outline in 5.1.3" [Marked up in V1.2 to be sent tomorrow.](#)

Lastly regarding data collection and then verification, we would like to suggest adding a bit more detail around the Monitoring Reporting Requirements so that it is more clear as well as to what the Registry Agent and Verifier are looking to check off on.

The suggested upgrades are in the interest of increasing the integrity and consistency of the reports submitted by Project Proponents and reducing the need for clarification from the Registry Agent and Verifier. The goal is to make the submission process as clear and efficient as possible, minimizing uncertainties and delays. Some of this you had but seem to be suggesting it is deleted - what were your thoughts around that? [The only data deleted was the specific corer tool and diameter because the laboratory calculate bulk density so we don't need this info. We also have sampling teams with operating a mix of machines, which doesn't matter given the laboratory homogenisation of the composite sample, so there is no intact core analysis. As per the methodology description, all samples are composite with 10 cores min per stratum bagged together and homogenised in the lab creating a physical average.](#)

Or possible you can refer back to the sections that have more information about each of the monitoring/reporting requirements - ie Core design, numbers and depth as detailed in Section 3.5.3

Suggestions for more some more detail around a few bullet of Data Reporting **I will work on this tomorrow and send on V1.2 to see if I'm getting closer to what you want.**

Field data requirements: characteristics of the tools used in the field to extract cores, number of subsamples (whether the subsamples were composite how, and which sample locations were composite)

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GIS input data: add in property boundaries (polygon), any mask that might be applied (polygon or grid), stratification if performed (polygon or grid), etc. Specify the type of file for each layer (shapefile , KML/KMZ,

GeoJSON, etc.).

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Lab results- include exactly what they should contain (bulk density, SOC, nutrients, etc) and lab name and location

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Farm data/Emissions data: amendments, livestock, machinery, etc.

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Another option would be to provide a table that would include monitoring and reporting fields: Example data reporting table with data required, the format it should be presented in, and the frequency of submissions:

| Data               | Bulk density  | Publicly available       |
|--------------------|---|--------------------------|
| Data Unit          | gm/cm <sup>3</sup>  | <input type="checkbox"/> |
| Description        | Bulk density from laboratory analysis, subtracting the mass portion of coarse fragments |                          |
| Source/Format      | Laboratory reports  |                          |
| Calculation/Method | Section "x", Credentialed laboratory procedures   |                          |
| Frequency          | Every 5 years at sampling event   |                          |
| Oversight          | None, credentialed laboratory   |                          |
| Purpose            | For baseline and monitored SOC calculations   |                          |

Once we have come to agreement on and incorporated the proposed updates from you and from our team we would like to do a Public Comment period to stick to our principles of integrity and transparency. Overall, I do not foresee any issues as all of the suggestions are to move toward more clarity, integrity and efficiency.

The one slightly more major change is the suggested change of dividing parcels into equal sized stratum with 10 or more composites. As this does change the required number of samples per parcel we feel this in particular is change that lends itself more to a Public Comment process. Attached document to widen the context. Interestingly we are only suggesting what your own grasslands methodology applies, that as project size increases sampling density has to reduce to maintain financial viability and practicality. Given that field size, underlying SOCS variability and Project Area are different for every project, we simply can't apply a single sampling design to all and need the flexibility to intelligently adjust? Without this flexibility we will need a methodology change request every time we encounter a project characteristic that doesn't fit? Given that each

monitoring report will specify exact sampling design, this will be completely transparent and subject to VVB, so nothing is hidden.

## **Version 1.2:**

Gisel Comments:

1. There's no mention of sampling size in relation to the area of the property , or the area of the strata. Is there a minimum number of samples by area that shall be reached? I guess most of their projects are in similar sized properties so this might not represent an issue today. But if implementing this same method in other areas where properties might be much larger there might be a minimum sampling density to request. Im almost sure that Ned commented on this too before.

2. I dont see any specific SOC analysis recommended or requested. Is LOI or any other analysis preferred? If not, they might just say that the analysis must follow standard recommendations or standard procedures for SOC analysis... something along these lines... A citation to the most accurate or widely used ones would be nice.

Also, there shall be a requirement that the same analysis type is done throughout the project, if possible using the same laboratory to avoid errors from changing the procedures in the middle of the project lifetime. From our experience with CarbonPLus, this is highly relevant.

3. There's a reference in section 3.5.4. SAMPLE ANALYSIS to an old soil sampling guide for CarbonPLus, that I think we are no longer using in the new Carbonplus version. Id rather briefly list some recommendations so this section is not depending on upgrades made on another method.

## **Version 1.2.2 - comments - June 11, 2024**

Tica - Adjust version # on cover page to 1.2.2

Ned - In section 3.5.1 I made the following comment. The text is suggest would be inserted after "within each stratum." Here's my comment: I copied text from the external document for this addition. The intent is to provide more insight into the sampling design and justify why a strict framework is not followed. This needs additional review on the RND side and Ecometric to make sure it's sensible.

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Sampling design attributes will be calculated using simulations, and the process will be documented for each project. This provides the flexibility to match stratum size to field size, shape, SOC variability (where known), and project size to balance sample density with 'real world' cost constraints. The sampling design will be detailed in each monitoring report and so fully transparent to validators and verifiers.

The tables provided satisfy my other comment about needing more information about the trained network. I like the public and non-public data tables. They make it easy to follow and, more or less, provide a template for verifiers, which I think is important.

Gisel-

I left a comment around sampling density in section 3.5.2. I agree with Ned in his addition, but I would also emphasize more that "The POTENTIAL impact of a change in sample density ON THE UNCERTAINTY will be balanced against cost..."

The point here being, the max. uncertainty threshold is 20%.

So IMO that's what needs to be counterbalanced here, cost versus risk of not meeting that uncertainty threshold because of undersampling! As long as that is clear, then from my perspective the methodology can relax a bit the text on the specifics on how to ensure the sampling minimum density, as this would fall more on the project side of things. It is the project that needs to make sure that the sampling density is appropriate to meet the 20% max uncertainty while being able to afford the sampling.

Please see my comment in section 3.5.5. on sample analysis specifications, which seems to have not been addressed yet from the last review. Also from the last review, there's still a reference in section 3.5.4. SAMPLE ANALYSIS to an old soil sampling guide for CarbonPlus, that I think we are no longer using in the new Carbonplus version. I'd rather briefly list some recommendations so this section is not depending on upgrades made on another method.

My last comment is in section 3.7. Which I seem to have missed before, referring to the training/ validation samples proportion. This proportion is important (e.g. 70/30), and I recommend that at least a minimum proportion for validation is requested in the methodology, so that there's a way to ensure that the procedure to estimate the uncertainty is valid/ standard procedure. It would be good to add a citation to a sci. paper to justify the minimum proportion requested is within reasonable and standard and ensures the validation set is sufficiently robust.