

Soil Enrichment Protocol V2.0 Update Taskforce Meeting Notes and Takeaways

Workgroup Meeting Date: 7/31/2024

Workgroup Members in attendance:

Name	Organization	Present (P)/Absent (A)
Margaret Kosmala	CIBO	P
Jocelyn Lavallee	Environmental Defense Fund (EDF)	P
Emily Oldfield (alternate)	Environmental Defense Fund (EDF)	P
Sarah Coffman	Grassroots Carbon LLC	P
Ben Chen	HabiTerre	P
Missy Motew	Indigo Ag	P
Kevin Tu	Kateri	P
David Schurman	Perennial	P
Beth Ziniti	Regrow Ag	P
Jason Ackerson	Soil Health Institute (SHI)	P
Negar Tafti	The Nature Conservancy (TNC)	P
Brian McConkey	Viresco Solutions	P

Agenda:

- **Introductions**
- **Protocol Update Process**
- **Model Calibration/Validation Approval Process**
- **Permanence – applicability of models**
- **Future topics & Next steps**

Main Points of Discussion in Meeting:

- **Model Calibration/Validation Approval Process**
 - Peer Reviewed Publication as a replacement for the Model Validation Report (MVR)
 - The current Model Cal/Val document lists peer reviewed publication as one pathway that can be used to approve a model for use in projects.
 - There was discussion around the applicability of this approach and whether it would be a suitable alternative to the MVR. Specifically, concerns were raised that peer reviewers wouldn't be evaluating a modelling paper for whether it addresses the guidelines set out in the protocol, but rather the scientific validity of the model. There's risk then that a peer-reviewed publication may not meet the specific requirements required in the protocol.
 - One option to address these concerns would be to have an additional review of the publication that would include a supplemental document to ensure that the protocol model cal/val documents would be met. Concern was raised though if this subsequent review of the publication found gaps or areas that did not align with the protocol requirements, how would this be addressed?
 - The protocol requirements also require specific reporting of parameters that are different from how a scientific paper would present results – for example the requirements around defining the model domain, including listing the land resource regions and practice changes, which are ultimately the key details that are used to assess whether a model can be applied to a project.
 - Requiring a supplemental document with the publication, however, could slow down an already slow process, and may make the publication pathway unrealistic for most projects.
 - It was proposed that a data repository may be needed from which all models pull from to conduct calibration/validation, so that there is less bias in the types of publications that are being used by developers.
 - Another note was made that given that datasets used for calibration/validation must be from peer reviewed publications, that can be limiting for entities that may have proprietary datasets that they want to use. It was suggested that allowing for the peer reviewed publication pathway may be a way for these proprietary datasets to be published as well.
 - Generalized model validation report & verification requirements
 - Feedback was solicited requiring the verification requirements for generalized model validations (Type 2), specifically with the requirement that model experts provide a sensitivity analysis regarding the requisite data inputs for the given model
 - It was noted that this requirement may be too broad/vague – more detail needs to be added on what is needed for this check.
 - The intent of the sensitivity analysis requirement was to provide a check that

confirmed that the project data being provided to the model was sufficient for what the model needs to operate and that projects weren't skipping over a data parameter that the model is sensitive too. So providing an operational check that the model was run for the project appropriately.

- Given this intent, language should be added to the Model Cal/Val document to make sure this check is being done with projects.
- Concern was raised in general for generalized model validations, that there might be risk that the model uncertainty from the generalized model validation is not representative of the uncertainty associated with the project-specific parameters, and so is mis-representing project performance.

- **Permanence – applicability of models**

- The question posed to the group was around the feasibility of using model outputs to identify the quantity of carbon that needs to be accounted for for permanence monitoring on fields, and if that can be quantified for models following observance of certain reversal events.
- It was noted that while it may be possible for process based models to provide an estimate of this, the confidence of that prediction may not be very high. Part of how the uncertainty in the model outputs for projects is able to be lowered is through increasing scale of the projects. At the project level, these predictions are being made across many fields, which increases confidence of predictions at the project level. In the case of reversals though, this requires confidence of predictions at just an individual field. And currently for these predictions the confidence in general at the field level is very low.
- Overall members felt that a more conservative approach should be applied for cases of reversals at field level – this may mean staying with current protocol guidance that CRTs associated with fields that have left projects and have observed reversal events will need to subtract all CRTs issued to that field from the project.
- Further differentiating between SOC removals and reductions is also needed – this delineation would also need to be part of the model cal/val document to ensure that this delineation process has also been validated within the model. Concern that uncertainty around model outputs differentiating between removals and reductions for SOC will probably be higher than the uncertainty around the project and baseline SOC difference.
 - Overall, process for identifying SOC removals and reductions does not necessarily need new work around implementing the models but more so increased validation that needs to be done and increased reporting.
 - Agreement that this needs to be worked on more. Since the model validation is focused on estimates from the difference in project vs baseline SOC changes, not SOC stocks themselves, this makes it particularly challenging to address the reversal issue, which is trying to make estimates on SOC stocks at the field level.
- A point was made that there's limited/no data for measurements on reversals, and given that this is a field-level issue, it would be difficult to figure out how this could be estimated at the project level.
- Concern was also raised for how differentiating SOC removals vs reductions may impact the incentives that farmers receive.

- **Future Topics**

- In addition to the list provided in the slides, members also provided additional topics they want to see addressed in the update.
- Support for empirical methods was noted as an area that would be of interest, or at

least discussion around how empirical methods would be used, but may be out of scope for Version 2.

- Additional requirements in the model cal/val document for reporting potential relationships in the errors and whether these have been accounted for or not
- Spatial dependence of sample and sample locations in particular was an area that was flagged as being missing in the model cal/val requirements. This would be included in the discussion on soil stratification and sampling guidance.
- There was preference for structuring future meetings so that interconnected topics are discussed together, but across multiple meetings so that meeting times don't get too long.

Action Items for the Reserve:

- Identify areas from task force discussion that need to be re-visited in future meetings.
- Put together agenda for next meetings topics
- Compile feedback from task force members and present to group for review