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Response to proposed methodology: Adoption of sustainable agricultural land Management, submitted to VCS by BioCF/Worldbank

Respondent:
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Overview:
The proposed methodology relies entirely on modeling for determination of carbon benefits in the major pool accounted. This approach has significant benefits in terms of reducing costs. However, models like Century, etc., have been better truthed for some situations than others. Furthermore, even for those areas where they have been well truthed, recent research suggests that overestimation of carbon benefits may occur in some cases. This methodology draft needs to be carefully reviewed to ensure that results from the soil carbon determinations will be reasonably conservative, and reflect the high degrees of uncertainty existing under specific circumstances for model outputs.

Any amount of actual sampling which could be included in monitoring would be highly beneficial, both to reduce uncertainty, and to provide data which can be used to tune the models. In general I feel a significant discomfort with moving to purely modeled approaches at this time, precisely because they will not provide any useful data to fine tune the models, which is still very much needed.

As well this methodology appears to have been drafted with increased use of organic fertilizers (manure, nitrogen fixing species) in wetter ecosystems in mind. The methodology should be carefully reviewed to ensure applicability to dry-land ecosystems, no-till, etc., or the applicability criteria should be revised.

Specific comments:

1) Section 1.2 – Selection of Baseline Approach
   The statement that "agricultural practices can change very slowly…" is an assumption, which in a significant number of cases will not be true. At the very least his must be given as an applicability criteria, such that the proponent must demonstrate that this is true in the area of the project for the type of agriculture being practiced within the project boundary before applying the methodology. In order to do this, some definition of what "very slowly" means must be given. I suspect that the examples being considered were for small scale or subsistence farming, where this statement might in many cases be true. However, at this point this methodology is also potentially applicable to first world agriculture, where this statement might often not be true. This is the key applicability criteria for this methodology, since for projects where this is not true a completely different baseline approach will be needed, the tools for which are not given in this methodology.

2) Section 1.4 – Below ground biomass
   A minor point, but the statement "Belowground biomass is expected to increase…" appears to be reflecting some particular project scenario. This may not be true in all project scenarios. The Explanation/Justification should be the same as for Above ground biomass
3) II.4.5 and III.1.5 & 6 – Reliance on modeling for soil C. Existing models are more or less applicable to specific ecosystems and management practices depending on the amount of sampling and truthing which has been done for the models under those circumstances. We would generally suggest that at least some soil sampling be done for the baseline scenario to truth the models. As well, proponents should get access to potential error estimates for the models for the scenarios modeled, and where those error estimates are very large, should use a conservative approach to model results.
4) III.1.5 – Project equilibrium, last paragraph page 10
   Not sure what this paragraph means in real terms. There are two possible interpretations – that the standard deviation (Standard error of the mean? At 90% confidence interval? 95% confidence interval?) in the input parameters within any given stratum should be less than 10% of the mean, or that the modeled deviation should be less than 10%. This latter interpretation relies on an ability of the model to forecast such deviation, which in turn relies on the degree to which the model has been truthed for the specific circumstances obtaining under the project scenario. This is a very important consideration, which needs to be well defined, and workable in the real world. This section deserves a detailed explanation.
5) III.1.6 – Soil organic carbon with transitions
   - The use of the variable "t" in this equation is very confusing – appears both to mean the time since project commencement and the time to equilibrium – needs to be distinguished
   - Ranges of error for values of D also need to be estimated. This is an area where very little data exists. Proponents will need to demonstrate that the figure they use is conservative. I would recommend removing the option to use the IPCC default 20 years, since in many cases this will be significantly wrong, and non-conservative. I would also note that this equation assumes a straight line function. This is a reasonable approach at this time, given the paucity of data, but should be reviewed as more data is gathered, as in many cases variations on sine curves may be more accurate.
6) VI.1 - Equation 11
   - Subtraction of area burnt from the area should only be applied to above ground portion, not both.
   - $Frac_{renew}$ is not correctly applied in this equation. For instance, an alfalfa field that is only renewed every 3 years does not have 1/3 the emissions of one that is renewed every year. Although there may be some effects associated with renewal, these effects are very site specific and hard to model. Conservatively this factor should be removed.