Biogeosciences Discuss.,
https://doi.org/10.5194/bg-2018-500-AC2, 2019
© Author(s) 2019. This work is distributed under
the Creative Commons Attribution 4.0 License.

Biogeosciences Discussions

Interactive comment on "Ideas and perspectives: Synergies from co-deployment of negative emission technologies" *by* Thorben Amann and Jens Hartmann

Thorben Amann and Jens Hartmann

science@thorbenamann.de

Received and published: 12 April 2019

Dear reviewer, Thank you for a constructive and thoughtful review. We acknowledge your concerns and will incorporate all suggestions in the revision. We like to specifically address a few issues raised.

Reviewers comment

Our reply

However, the authors focus on the beneficial effects of enhanced weathering and biochar on afforestation and BECCS while the title suggests a somewhat broader overview.

In this respect, you and your co-reviewer raise the same concern. We acknowledge this and will adapt the text, and maybe even the title to be more specific about the NETs discussed. Please look into our reply to reviewer 1 for an extended answer.

Additionally, some statements would benefit from describing synergies in a more quantitative way.

Also, here the concern is also raised by reviewer 1. We explicitly chose the format of a "perspectives piece" to identify the main important processes that need to be considered in future research on NETs and their combined effects. This should provide a guideline for projects to come. Yet, we try to be at least a little more specific in the discussion of the processes.

- I agree with reviewer 1 that it's not clear at all how to read Figure 1. Intuitively I would expect benefactors on top of beneficiaries and additional CO2 sequestration. I was also confused by the two verbs connecting benefactors and beneficiaries. Lastly, the additional CO2 sequestration is unclear. I assume the downward arrows mean that e.g. EW increases CO2 sequestration via BECCS or AFF (flux from the atmosphere to the land) but one could also interpret it as a decline.
As you both had similar issues with this figure, we will modify it to have it more logically structured and less room for interpretation.

- Figure 2: I think it would be interesting to show the CO2 capture potential of dunite in this figure as it seems to be a highly relevant rock. After all you show Komatiite which also has very low K and P contents.

As mentioned in the caption, dunite contains so little K and P that it wouldn't be easy to visualize. We will try to come up with a solution for this.

- Table 1: The reader is left wondering what values are typical. Can you also provide numbers for some other rock types for comparison?

We generalized the data now, by distinguishing classes via SiO2 content of volcanic and plutonic ultrabasic/basic/intermediate/acid rocks. This classification enables us to give a broader and more general overview of what to look for in a rock. Additionally, we add the rock types dunite and basalt as commonly discussed types for reference. Due to the increased amount of data, we may convert the table into a figure similar to Fig. 2.

Interactive comment on Biogeosciences Discuss., https://doi.org/10.5194/bg-2018-500, 2018.