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Interactive comment on “Editorial “The Interdisciplinary Nature of SOIL”” by E. C. Brevik et al.

Anonymous Referee #2

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The manuscript entitled "The interdisciplinary nature of SOIL" is intended to illustrate the scope of the new journal, in particular to highlight the need for a holistic perspective on soil. While the journal is published by the EGU, and thus strongly anchored in the natural sciences, the editorial could still emphasize the interdisciplinary nature in a much wider sense than just the natural and environmental sciences. While there is clearly a tension between introducing a new journal for the wider soil and natural science community and global soil-related issues, this could be solved much better by identifying the role of soil for the challenges faced by humanity in the 21st century (food security, climate, land tenure, . . .) in the introduction, followed by short chapters on the topics of SOIL listed on the webpage (Soils and plants; Soils and water; Soils and atmosphere; . . .) and highlighting their relevance for the global issues identified above,

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including a short identification of research gaps. This would explain the position and focus of the journal and the need for further, holistic, research. Following "big" soil topics would also show much more clearly why SOIL is actually required in the journal landscape. Based on the identification of these relevant topics, the editorial could then conclude with an outline of the mentioned "interdisciplinary framework to understand soil", may be even amended with a figure illustrating the proposed new perspective on soil (and of SOIL). This would also avoid the impression that the authors want a new framework, but are not able to explain it.

Apart from these general comments, here are some specific concerns:

1. Abstract and Introduction: the focus on the natural sciences is too narrow for the 21st century meaning of interdisciplinary work.
2. Introduction: the comparison of soil scientists and SOIL with people like Leonardo da Vinci is a bit ambitious, especially in the light of the narrow interpretation of interdisciplinary research.
3. Some text is repetitive, e.g. in lines 10 to 15 of the first page.
4. The topical sections (2 to 8) should match the topics identified on the webpage (Soils and plants; Soils and Water; Soils and Atmosphere; . . .) linking the editorial to the scope of the journal and explaining it.
5. Each topic (sections 2 to 8) is relevant, but the texts read much like an introduction to these topics in a text book for undergrads. The connection to key global issues (food security,...), an explanation of the relevance of soils in these issues and the importance of each specific topic is largely missing in each of these sections. The order of the sections also appears arbitrary, for example "Threat to Soils" would seem to be the most important than to me. The selection of topics is also arbitrary, for example no mention of soil information is made, which for many global and development issues is the most relevant at this stage.

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6. Some chapters need more structure and a conceptual outline, for example chapter 2 and 4 are quite long and the rationale for what is presented remains unclear. Some sort of concept linking back to the scope of SOIL structuring each topic would be helpful.
7. The referencing between sections chapters varies strongly, without explanation.
8. If citing papers to illustrate the relevance of a topic, some numbers would be useful to put a process/property in perspective.
9. Some sections, like 4 on "Soil and Water" go into much detail, others don't. 10. Section 4 wavers between research history and results, but lacks a new message. Talking about hydrophobicity, but ignoring results e.g. of the recent research on fire effects on soil hydrophobicity illustrates the far too narrow focus of the editorial.
11. Section 5, 7 and 8 are very short compared to the others and lack major topics, one could think of e.g. the "One Health" initiative worth mentioning because it aims at linking environmental, animal and human health.
12. Section 6 is fairly long, but still does not achieve what it wants to illustrate: the patterns of land use described there are not social, but simply illustrate that farmers knew how to match soil and crop, which is largely independent of societal structure (if one ignores some recent "-isms"). Mentioning the potential to work with "socio-economists" reads a bit like an attempt to get an interdisciplinary element in the text. This should happen much earlier and not by simply merging every non-natural scientist into one group. This just underpins the problem of the authors connecting soil to a community outside the natural sciences.
13. The relevance of soil in war would probably fall more into the topic of food security, the examples given here are part of strategic geography or military environmental engineering, but do not consider soil as a substrate for plants etc., but just whether a horse or tank can move on it.
14. Section 8 illustrates a problem of the text: it remains unclear why soil structure is

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actually an important research topic beyond soil science, e.g. for climate, food security etc. Some new findings and research gaps are listed, but the need for interdisciplinary research is not explained.

15. The conclusions should give some hint what and how "holistic research" should look like and how SOIL wants to contribute.

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