

## ***Interactive comment on “SoilGrids 2.0: producing quality-assessed soil information for the globe” by Luis M. de Sousa et al.***

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Undoubtedly a huge effort to pull together the data and execute the rather complex workflow of globally mapping a selected number of soil properties at 250m grid cell resolution. Authors are to be congratulated for pulling this difficult computational task off. The quality and clarity of writing needs no further improvement in my opinion.

To me this paper reads as a methods paper and in doing so, does not introduce any new approaches to my knowledge. This is not a negative comment as it is important these types of documents exist to explain how such soil mapping products are produced. In saying this though i think the paper comes across as rather mechanical and does not demonstrate any deep knowledge of the global distribution of soil phenom-

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ena, rather a deep insight into statistical models and the validation of these models. The rather short discussion on the qualitative assessment of the mapping seems like a token attempt to slot some soil science into the work in my opinion.

Much discussion is made of the promised improvements of DSM over time due to new modelling capabilities, data and covariates etc. However, no mention or analysis is made about the comparison with Version 1 SoilGrids. Is version 2 better or worse? where are the improvements if any etc. Probably some work to do here. Would like to see comparisons with other existing digital soil maps outside of the USA too for example in France, Australia, UK and Denmark as a few examples.

Some comments are made of the scale issues with SoilGrids and they are probably not reliable for detailed analysis at sub-national scales etc. In areas of data richness with already well-developed soil mapping whether it be digital or legacy, shouldn't much more thoughtful and integrative analysis be pursued to combine these better products into the global digital soil mapping? No doubt much investment has been made to develop these data rich soil mapping infrastructures, but the top down approach implemented in this study neglects to take these efforts into account in my opinion. The ultimate outcome of having a suite of candidate maps of the same soil attribute over a specified spatial extent to a map user is confusion. Many people think, why so many different maps of the same thing? If ISRIC feel they have the imprimatur to produce world soil maps than i think approaches for doing this should not only be more consultative and collaborative with the global soil mapping community but to recognize the efforts and investments already made in areas of data richness and integrate that knowledge into the global work. There is little doubt that these global products show their value in data poor landscapes. Perhaps ISRIC should concentrate on this issue rather than push aside the intensive efforts of organisations whom have invested heavily in their own soil mapping infrastructure. In any case, a desktop and relatively easy fix would be combinatorial approaches to combine existing mapping with the SoilGrids models. The engagement with other practitioners is much more difficult to pull off with case-in-

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point being the GlobalSoilMap.net initiative, but any constructive attempt at this to me is much better than a myopic top down approach that appears to have favour with the authors of this paper.

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