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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We thank Dr. Malone for his insightful comments on our manuscript 'SoilGrids 2.0: producing quality-assessed soil information for the globe'. Besides various suggestions for improving the product itself, which we will address later in our combined comments to the two referee reports, we would like to respond here to the fourth paragraph of the interactive comment. This paragraph directly addresses ISRIC's role and approach.

Overall, we agree with the observation that SoilGrids250m predictions are not to be recommended for 'detailed' use at sub-national scale. To that end we provide measures for uncertainty in the predictions, as resolution itself does not convey any information on (regional) accuracy. In the manuscript, we indicate this clearly by stating: "In this

context, it should be realized that SoilGrids250m predictions are not meant for use at a detailed scale, i.e. at the sub-national or local level, as national data providers often have access to more detailed point datasets and covariate layers for their country than SoilGrids250m can consider (Chen et al., 2020; Roudier et al., 2020; Vitharana et al., 2019). The advanced work in the USA and Australia may be added to the examples.

Coming back to ISRIC's role. ISRIC in no sense is "push[ing] aside the intensive efforts of organisations [which] have invested heavily in their own soil mapping infrastructure." On our website we compile all publically-available sources of digital soil information (see https://www.isric.org/explore/soil-geographic-databases) and have consistently recommended that users in countries with high-quality products use those products for their soil use and management needs.

We are not only acknowledging the fact that nationally produced products are preferred for national level applications, we also stimulate the production of national level products through cooperation with national soil institutes. From its inception, following up on the recommendation of the International Union of Soil Sciences (IUSS, then ISSS) and the UNESCO General Council, ISRIC was created to support the FAO-UNESCO-ISSS "Soil-Map-of-the-World-Project" as started in 1961. Since that time, ISRIC has been involved with the development of broadscale soil databases, initially using a pedology-based approach (e.g. SOTER, WISE and HWSD, as referenced in the manuscript). By their nature, these projects involved international collaboration and capacity building. Presently, as an example of worldwide collaboration, we are co-developing the federated Global Soil Information System of the Global Soil Partnership (GSP) aimed at a bottom-up approach, with intensive country collaboration and capacity building foreseen.

Our global soil mapping effort are complementary to the above-mentioned bottom-up programs. Complementary in the sense that the products developed by the national partners are applied at national and sub national level by national stakeholders, whereas SoilGrids is a globally-consistent and seamless product to be used by (e.g.)

global environmental modellers. SoilGrids is meant as a consistent product, not as a replacement for good national products. But to give global modellers a consistent and seamless product we have chosen to use consistent global models, rather than compile a patchwork of national products.

While developing SoilGrids we do collaborate intensively with many different data providers and with global experts for the design of the methodology, e.g. as active member of the GlobalSoilMap.net consortium, now a working group of the International Union of Soil Sciences and GSP partner.

The suggestion to use existing national and regional gridded products in order to improve global products is a valuable suggestion and on our list of future developments. The difficulty is the patchwork nature of the coverage. We plan to investigate how to best realise such integration, perhaps using these products as priors in a Bayesian approach. This is an active area of research and outside the scope of the current product described in this paper.

We certainly look forward to further collaboration with Dr Malone's and other DSM groups, enabling an environment for collaborative research.

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