

SOIL Discuss., author comment AC1  
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## Reply on RC1

Bartosz Bartkowski et al.

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Author comment on "Application of the governance disruptions framework to German agricultural soil policy" by Bartosz Bartkowski et al., SOIL Discuss.,  
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Thank you for the constructive comment! We agree that lack of data is an important issue. However, our contention is that soil policy is also needed in a world without perfect data, and that for policy purposes, data availability need not be perfect. Considering major policy objectives (e.g. land degradation neutrality by 2050, stop of biodiversity decline or climate change mitigation), the data availability is already relatively good with respect to the most relevant indicators, at least in Germany; for instance, we know pretty well that soil organic carbon levels are deteriorating (Riggers et al., 2021), and we have an idea which practices could improve the situation and which are ineffective or even counterproductive (e.g. Wiesmeier et al., 2020). Similarly for other soil functions and their link to management. This – though not perfect – is a fair basis for policy-making, even though you are right that really result-based policy at field and farm level is much more of a challenge, and data availability does play an important role here. Nonetheless, if we could act only in fields where we have data availability as desired by scientists, we would hardly have any environmental policy. In this sense, environmental policy is an art of making decisions and creating instruments in the absence of perfect knowledge and in a way that allows to adapt to new knowledge (adaptive governance). Moreover, policies only provide the framework for action and cannot address each specific case of the heterogeneous soils we have in Germany – this is subject to policy implementation – and local authorities and practitioners should know the local situation well.

To acknowledge the valid point of data availability, we will integrate it particularly under target adequacy (where choice of indicators is crucial) and instrument adequacy, when discussing result-based approaches.

### References

Riggers, C., Poeplau, C., Don, A., Frühauf, C., Dechow, R., 2021. How much carbon input is required to preserve or increase projected soil organic carbon stocks in German croplands under climate change? *Plant Soil*. <https://doi.org/10.1007/s11104-020-04806-8>

Wiesmeier, M., Mayer, S., Paul, C., Helming, K., Don, A., Franko, U., Steffens, M., Kögel-

Knabner, I., 2020. CO2 certificates for carbon sequestration in soils: methods, management practices and limitations. BonaRes Ser. 2020/3.  
<https://doi.org/10.20387/BONARES-NE0G-CE98>