

Interactive comment on “FORUM paper: The significance of soils and soil science towards realization of the UN sustainable development goals (SDGs)” by S. D. Keesstra et al.

Anonymous Referee #1

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The forum paper tackles the inevitable role of soil science community in achieving the Sustainable Development Goals (SDGs) and as a such discuss the possible directions of further development of the soil science agenda in the coming years. The paper demonstrates the relevance of soil science for SDGs through the links between ecosystem services and soil functions connected to trans-disciplinary SDGs. It provides insights in the six main issues to which the soil science could have crucial contribution and discuss the action to be taken. The paper is of a great relevance for the soil science community and achieving the SDGs and I fully support its publication. I do have only few remarks, that might improve the readability and presentation.

1. the six key issues are described in six short essays. Each of them has its own

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style and way of presentation, what makes reading of section 3 attractive. On the other hand, the direct and quick comparison between the essays outcomes is difficult. A summary table, which would include: (example for first essay) 1. key issues -identified by experts (role of soils for food security) 2. related SDGs (1,2,3) 3. main challenges (necessity of fast growth of food production vs. smallholder farming, climate 4. change impact, soil degradation, biodiversity conservation) 5. opportunities for change rooted in soil science: (restoring soil productivity and ecosystem function) 6. way to move forward soil science can address: (innovative “precision agriculture”, system approach to nutrient acquisition and management, agroecological strategies, soil food web and nutrient and water use efficiency).

This would improve the link to sections 4.1, 4.2. Other possibility would be to divide each essay to subsections concerning the bullet points above. Ideally a subsection / column “role of soil science” would be added.

2. Section 4: Actions to take.

According to the title, the readers might seek the answers to questions “which action to take to tackle the SDGs”. The interdisciplinary research, system approach managed from soil scientist in the centre, and awareness raising are named together with many constraints. The complexity of the problem is sufficiently and effectively described (in all three subchapters), but might sound overwhelming for soil scientist as it requires change in paradigm within and without of the soil science community. The action to be taken within and without the community should be stated and distinguished more clearly. There are positive examples in other disciplines in meeting the political and societal constraints, that might be used to describe the way “how to take the action”, which might be the question of the reader. Section 4.5, it would be interesting to state how to proceed with the outlined agenda beyond the International Year of Soil 2015, in the International Year of Pulses, which have also connection to soils.

Technical comments: p.10, line 177-181, there is no social science and economics in

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figure 1 Graphical abstracts address the issues discussed in article much better than Figure 1. Could the graphical abstract be used instead of Figure 1 Unclear meaning of small blue and red circles with white numbers in the graphical abstract

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