COMMENT

The “4p1000” initiative: A new name should be adopted

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Comment to: Rumpel, C., F. Amiraslani, C. Chenu, M.G. Cardenas, M. Kaonga, L.-S. Koutika, J.K. Ladha, B. Madari, et al. 2019. The 4p1000 initiative: Opportunities, limitations and challenges for implementing soil organic carbon sequestration as a sustainable development strategy. *Ambio*. <https://doi.org/10.1007/s13280-019-01165-2>.

Since its launch in 2015, the “4 per 1000” (4p1000) Initiative has been the object of sustained criticism from a variety of sources, and for a sizeable number of different reasons (e.g., Baveye et al. 2018; de Vries 2018; White et al. 2018). Whereas there is universal agreement on the many benefits resulting from storing more carbon in soils, considerable uncertainty surrounds the amount of CO₂ released by consumption of fossil fuel that carbon sequestration in soils could realistically compensate. Even supporters of the initiative cannot come up with overall figures that amount to more than about 10% of the target, under the best of conditions. In a recent article in this journal, Rumpel et al. (2019) summarize some of the key criticisms. In particular, in a very informative and likely useful table, they list the numerous practical questions that are still unanswered at this point and will require significant research before soil carbon sequestration can be viewed as a serious contender to contain climate change.

To stimulate further the ongoing debate on the initiative, and complement the information provided by Rumpel et al. (2019), it seems worthwhile to broach an issue that has not been very much discussed yet in the open literature. It concerns the name itself of the initiative, which one might contend has the potential to seriously mislead policy makers. Rumpel et al. (2019) point out that the initial intent of the proponents of the initiative, accounting for its name, was related all along to a “thought experiment” or an “aspiration” and never to an actual, achievable target.

One might argue that most policy-makers are not sufficiently equipped scientifically to grasp this “thought experiment” nature of the initiative. Unfortunately, the snippets of information available about the initiative on internet (and which policy makers are most likely to consult, if they read anything on the subject), do not make its science-fiction character obvious. On the official web site of the “4p1000” initiative (at www.4p1000.org), one can read that “an annual growth rate of 0.4% in the soil carbon stocks, or 4‰ per year, would halt the increase in the CO₂ concentration in the atmosphere related to human activities” and that “global soils contain 2 to 3 times more carbon than the atmosphere. If this carbon level was increased by 0.4%, or 4‰ per year, in the top 30–40 cm of soils, the annual increase in carbon dioxide (CO₂) in the atmosphere would be stopped.” On YouTube, the website (www.youtube.com/watch?v=pvCCaTv_3LE) dedicated to the “4p1000” initiative by Regeneration International indicates that “the 4p1000 Initiative is the ONLY climate agreement that puts AGRICULTURE at the center of how we deal with climate change.” Given how plausible these statements implicitly make an increase of soil carbon stock by 0.4%, there seems to be little chance that policy-makers reading them would realize that they all refer to a thought experiment, nothing more, and certainly not to something that is achievable in the foreseeable future.

Unlike goals expressed in terms of numbers of degrees of warming not to be exceeded, the “4p1000” initiative raises significant risks because it promotes specific policy decisions, in a context where that could have dire consequences. Over the last decade, many individuals have pointed out that governments were not moving sufficiently fast to correct the global climate trajectory. Clearly, policy-makers in most countries are dragging their feet when it comes to taking the unpopular decisions needed to

transition to renewable forms of energy. In this general context of inaction, any suggestion that agriculture, via the increase of soil carbon stocks, can compensate, if not for the totality, at least for a substantial part of the CO₂ released by the consumption of fossil fuels, is likely to be music to the ears of policy-makers, since it means clearly that they can largely or even entirely sidestep the transition to renewable forms of energy, thereby placating the powerful lobbies of the petroleum and gas industry and pleasing farmers by acknowledging a key role for them in saving the planet (after years of blaming them for countless environmental problems). Overall, for politicians, it would be a win–win–win solution, too good to resist.

To avoid this very real threat of causing further inaction about climate change, it seems clear to us that we, the soil science community, should be very careful not to promise or even hint at the promise of things we cannot deliver in a timely fashion. Therefore, we suggest that the name of the initiative be changed. It could be called something like “the 4p1000 aspiration”, which clearly indicates that what is being proposed is still at the conceptual stage and offers no guarantee that it can be implemented, or else something like “the soil carbon sequestration initiative”, which emphasizes a process that so far is backed by virtually unanimous support, without unduly targeting a goal that evidence shows is utterly unrealistic in the very few years we have left to mitigate climate change.

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