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The weight of peatland conservation and restoration in the global cycle of C and N

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In order to contextualize the problem of peatland degradation, we calculated its weight on global C and N cycle and put it in perspective with the actual debate on global C sequestration.
To do so we first crossed geographic data on global peatland extension with land use data and climate. This allowed us to match peatland areas with IPCC emission factors for all greenhouse gases, obtaining the potential emissions if all the peat would degrade. By crossing than this map with available data on the actual peatland degradation we obtained a map of estimated emissions from actual peatland degradation. We aggregated this estimate and used it to calculate two future emission scenario, which we put in perspective with estimates on global potential of cropland SOC sequestration in the future.
Globally, the impact of the actually degrading peatland area on the global C cycle resulted comparable with the estimated C we can potentially sequester into croplands. We estimated that emissions from peat degradation would be equivalent to cropland SOC sequestration in 104 to 1021 years. This would happen in 63 to 374 year in the likely case of doubling area of peatland degradation (with net emissions rising since then). Moreover, due to their 3.4 times higher C:N ratio, the C stored in peatland is much less costly in terms of N compared to cropland. We estimated that sequestering the C amount in actually degrading peatland back into agricultural lands would need 30-80% of the N actually used in agriculture.
Although our study does not diminish the importance of C sequestration in agricultural soils, it contextualizes the problem to scale and points out the massive relevance of peatland conservation and restoration in a global perspective. Peatland conservation is clearly strategic in terms of global greenhouse gas balance and it should receive the due attention from politics and research.