



Upscaling SOC changes from long term field experiments to regional level – evaluation of agri-environmental measures on their contribution to mitigate climate change

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Several agri-environment measures in Austria are presumed to also mitigate climate change. These are mainly measures that lead to an increase or stabilization of soil organic carbon (SOC) in arable soils, like e.g. organic farming, legumes and cover crops in the crop rotation as well as the application of organic fertilizers. A reduction of mineral fertiliser application may also reduce greenhouse gas emissions. The results of the study aim to evaluate different agricultural practices on their impact on SOC changes. Data from long term field experiments in Austria with different tillage systems and incorporation rates of crop residues and manure are used to determine effects of agricultural practices on SOC changes. Management factors that compare results from different activities on cropland are calculated and compared with international data. Furthermore these data are used to verify results gained from the application of humus balance model (VDLUFA). For the upscaling of potential SOC changes at regional level (federal states of Austria) data of the IACS - Integrated Administrative Control System are applied in the humus balance model. In order to cover the range of possible SOC changes three different approaches of the humus balance model are introduced and the results will be presented.