



Mapping soil organic carbon from the landscape to the continent

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The progress in monitoring and mapping of soil organic carbon (SOC) over the last decade has demonstrated patterns in both spatial and vertical distribution of SOC particularly in agricultural landscapes. These patterns appear to be related to differences in (historic) management as well as lateral redistribution of topsoil by tillage and water erosion. For entire countries, the impact of these detailed processes is hard to detect. Still soil monitoring networks have revealed trends in SOC related to land use, soil type and climate. Digital soil mapping techniques are used combining multiple regression between SOC and co-variables with spatial coverage of these co-variables over the entire area. The uncertainty of the models and the accuracy of the maps can formally be assessed when the spatial variation can be modelled. At the continental scale, spatial trends in SOC still exist and are dominated by climate and land use. The challenges in mapping SOC at this scale are that on the one hand the density of uniform continental scale soil monitoring networks is limiting and on the other hand the joining of national networks causes problems of homogenization.