



## Changes in soil properties on agricultural land with the impact of water and tillage erosion in the last 60 years

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The decline in soil organic carbon (SOC) is generally perceived as a major threat to the sustainability of the soil due to its key role in many productive and non-productive soil functions. The aim of this research is to assess the intensity of changes and the spatial variability of SOC and soil depth in the last 60 years. Estimation of spatial variability of soil properties was performed by using digital soil mapping. A study area is located in the chernozems area in south Moravia (Czechia). This region is traditionally intensively cultivated with the strong impact of water and tillage erosion. The study is based on the analysis of historical data that comes from the Large-scale mapping of Agricultural Soils in Czechoslovakia soil database. Our dataset contained data from 120 soil profiles. A new field investigation shows significant SOC losses on steep slopes and slope shoulders with a decrease of depth of the humic horizon. As a result, there is a gradual transformation of soil units from the former Calcic Chernosems into the Haplic Calcisols. These findings are the result of ongoing environmental changes with the strong impact of historical agricultural policy and inappropriate interference in the landscape.