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Soil mapping in past and recent agricultural management sustainability assessment

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Human impact on soils via accelerated processes of soil degradation has created heterogeneous soilscapes in the Chernozem regions in South-West Carpathians Foreland. Loess hilly lands, such as Trnavska Tabula Table, are characterized by colourful mosaic of 'bright patches' represented by eroded Chernozems or Regosols, and dark non-eroded or accumulated soils. Detailed soil mapping of soil spatial patterns with regard to topography and land use structures is inevitable for assessing sustainability of past land management triggering conditions in which current sustainable management must operate, and description of current conditions. To tackle this challenge, the study analyses extensive datasets of more than 800 field drillings, and develops topography based prediction models to analyse regional sediment budget since the onset of agriculture. Current and reconstructed soilscapes are compared with historical and recent land use patterns and effects of different land uses and landscape designs on soil and erosion processes are evaluated.The project is supported by APVV-15-0054.