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## LAND DEGRADATION ASSESSMENT WITHIN THE SOUTHERN BĂRĂGAN PLAIN, ROMANIA

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### Abstract

Southern Bărăgan Plain is one of the most important agricultural areas in Romania. The importance of the area is given by the soils of the chernozem class that are very fertile. Also, the large fields with a small relief energy facilitate agricultural work. In terms of food security, the Southern Bărăgan Plain has an important role to play in ensuring a significant percentage of production at the national level. Poorly cohesive soils on moderately sloping lands present a risk of erosion due to water. In order to identify the extent to which these surfaces are affected by runoff, a thorough analysis was performed. This was done using the USLE method in which the latest and most advanced data sets were used. The study consisted of a diachronic analysis for the interval 2015-2021 and a punctual one in which the year 2018 was taken as reference. Topographic index values were extracted based on the high-accuracy Copernicus digital elevation model (GLO-30). The present study showed that to a large extent erosion is below the threshold of unsustainability. The highest values of erosion are present in the north-east of the area of interest (Ciulniței Plain and Făcăeniului Plain), where in some areas the erosion exceeds 2 t/ha/year. The study shows the impact that crops that cover the soil for a longer period of the year have in protecting it, in the majority of cases, cereal or permanent crops reducing local erosion by more than 25%. In the face of climate change, long-term monitoring is needed to prevent the expansion of areas where erosion is unsustainable.

*Key words:* earth observation, food security, land degradation, long-term monitoring, USLE

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