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Land degradation and soil conservation in the Barlad Plateau, Romania: a case study from Racova catchment

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Land degradation by soil erosion, gully, landslides and reservoir sedimentation is a major environmental threat in the Barlad Plateau of Romania. This paper reviews both land degradation and the development of soil conservation measures in a representative 32,908 ha catchment. Previous studies focused on larger regional areas and provided insufficient detailed information about land degradation and land improvements. Results estimated the mean value of soil losses at 22.7 t ha⁻¹ y⁻¹ based mostly on the USLE. Gully erosion is very limited in extent (covering 3% of the catchment area), but has considerable impacts in terms of sediment production and triggering or reactivating landslides. The 1:5,000 scale landslide distribution map shows that 56% of Racova Catchment is covered by landslides, in any shape or age. Most of them are shallow seated and inactive landslides. Traditional agriculture in the Barlad Plateau focused on 'up-and-down slope' farming on small plots. Soil conservation measures were actively undertaken over a 20-year period (1970-1989). However, more recent legislation (No. 18/1991 Agricultural Real Estate Act) includes two provisions that discourage maintaining and extending soil conservation practises. Hence, the former contour farming system has been abandoned in favour of the traditional, degradational farming methods. The mean annual sedimentation rate in reservoirs is moderate at 2.7 cm y⁻¹ in the upper Racova Catchment and almost double that rate in Puscasi Reservoir at the catchment outlet. Consequently, land degradation remains a serious problem in the study area and effective soil conservation is urgently needed.