



## THE IMPACT OF NATURAL FACTORS ON EROSION PROCESSES IN THE BIZDIDEL RIVER BASIN

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**Abstract:** *This study examines how natural factors influence erosion processes in the Bizdidel River basin. Using geomatic tools such as GIS and remote sensing, we analyzed relief, soil types, and precipitation patterns to identify areas vulnerable to land degradation. The results contribute to more accurate erosion risk assessments and support sustainable land management strategies.*

### • Introduction

Soil erosion remains a key environmental challenge in regions with complex terrain and variable climate. In the Subcarpathian zone of Dâmbovița County, these conditions require advanced spatial analysis to understand erosion patterns. This research applies geomatics to assess the natural drivers of erosion in the Bizdidel basin.

### Material and method

The study is based on geomatic processing of publicly available datasets, including digital elevation models, land cover, and climate data. Mapping and analysis were performed using QGIS, with validation from field surveys conducted in 2023.

**Acknowledgement:** This research is part of an ongoing PhD thesis at the University of Agronomic Sciences and Veterinary Medicine of Bucharest, based on field and spatial analyses in the Bizdidel River basin.

### • Results and discussions

The Bizdidel basin displays varied topography and climatic influences that shape erosion dynamics. Steeper slopes in the upper sector show visible signs of active erosion, while agricultural areas in the middle sector present surface degradation. Field observations confirmed these patterns, supporting the spatial data interpretation.

### • Conclusions

The use of geomatic techniques enabled a detailed evaluation of erosion-prone areas. The results emphasize the importance of slope, land use, and vegetation cover in understanding erosion risk, offering a reliable framework for future conservation actions.