



## **Using GIS techniques to detect the impact of territorial evolution on producing natural hazard in Northern Romania, commune Vorniceni**

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Using techniques of information, such as Geographic Information Systems (GIS), on spatial analysis, offers numerous possibilities in terms of spatial emphasizing the study area and marking hazard risk areas (especially landslides). Although the means ultra modern techniques have advanced, using GIS in spatial planning remains the most important technique used. Also, GIS maps obtained are more objective than paper made by hand, using the same data and the same conceptual model.

The study area, commune Vorniceni is situated in the north of Romania, Ibaneasa River basin, a tributary of Jijiei and occupies an area of 63 km<sup>2</sup>. The area has experienced over the past 50 years, a trend not only territorial but also morphological and morphometric. This study involves a relation between the evolution of territorial distribution of the population of the commune Vorniceni and influence on the environment. The construction of the dam reservoir Ibaneasa River using poor borrow pits, meant a starting point for the development of landslides. Brutal antropic intervention on the environment by building a dam or lake clogging the two reservoirs (ponds) increased possibility of negative phenomena in the area. These phenomena directly affect the village population as territorial evolution involved the construction of settlements in areas with potential risk of landslides. The analysis of the factors that have influenced the evolution of territorial and producing negative phenomena and making GIS database will be followed by the realization of a hypsometric map of slopes, slope inclination and land use.

All this, highlights the relationship anthropic environment - natural environment, and not turning both low population provides another opportunity to use the land in a beneficial way by harnessing the risk map obtained. Although not without shortcomings, the method proved to be a feasible and cost-effective approach for assessing landslide susceptibility and mapping.

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