



Landslides distribution analysis and role of triggering factors in the Foglia river basin (Central Italy)

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The present work is focused on the distribution of landslides in Foglia river basin area (northern Marche-Romagna), using a heuristic approach supported by GIS tools for the construction of statistical analysis and spatial data.

The study area is located in the Adriatic side of the northern Apennine in the boundary that marks the transition between the Marche and Emilia-Romagna regions. The Foglia river basin extends from the Apennines to the Adriatic sea with NE-SE trend occupying an area of about 708 km².

The purpose of this study is to investigate any relationships between factors related to the territory, which were taken into account and divided into classes, and landslides, trying to identify any possible existence of relationships between them.

For this aim the study of landslides distribution was performed by using a GIS approach superimposing each thematic map, previously created, with landslides surveyed. Furthermore, we tried to isolate the most recurrent classes, to detect if at the same conditions there is a parameter that affects more than others, so as to recognize every direct relationship of cause and effect. Finally, an analysis was conducted by applying the model of uncertainty CF (Certainty Factor).

In the Foglia river basin were surveyed a total of 2821 landslides occupy a total area of 155 km², corresponding to 22% areal extent of the entire basin.

The results of analysis carried out highlighted the importance and role of individual factors that led to the development of landslides analyzed. Moreover, this methodology may be applied to all orders of magnitude and scale without any problem by not requiring a commitment important, both from the economic point of view, and of human resources.