



## **Study of an northern Calabria area subject to landslides supported by GIS analysis.**

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The results of the study of an area subject to landslides is presented. This work has arisen from a European project called the Riscmass Project ([www.riscmass.eu](http://www.riscmass.eu)). The studied area has an extent of about 100 km<sup>2</sup> and is placed along the western edge of the Crati graben, Calabria (Italy). All the areas subject to landslides have been represented on cartography, listed and classified, and subsequently included in an Geographic Informative System (GIS). Particularly a preliminary interpretation of aerial photos (at different scale, altitude and year) has been performed. A detailed geomorphological survey has been performed to map each phenomenon. Every landslide has been filed, on the basis of :

a) geomorphological, hydrogeological and geostructural characteristics; b) depth, typology, state of activity, age; c) anthropical factors.

The collected information has been inserted in a database developed in GIS environment. In the GIS, territorial information has been inserted and organized in layers (dtm, slope, geology, infrastructures, vegetation, etc.). Through operations of topological overlay it has been possible to connect the information contained in different layers, to identify spatial relationships among the different physical attributes, and to get the distribution of the landslides whit the territorial data. Overall 658 unstable zones have been identified of which 445 landslides and 213 "landslide zones" (i.e.: areas interested by extension phenomenona smaller of 60\*60 m<sup>2</sup>), about 30% of the study area resulted to be affected. From analysis of the obtained results is emerged which most of the landslides are planned on more lithology, recent end referable to slide or slide-flow.