A GIS-based vulnerability assessment tool for the quantification of natural risk in mountain and coastal areas

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Decision-makers need friendly tools for estimating natural risk for different future scenarios and for designing risk reduction strategies. In this work, a flexible GIS-based tool is presented in order to estimate vulnerability indicators (physical, economical, social) over territories of different size and at different scales. The tool has been designed in order to meet the requests of several categories of users (e.g. risk managers, decision planners, scientists). The tool is dedicated to the assessment of the vulnerability from several natural hazards (rock fall, landslide, flood, coastal erosion). On the basis of a database on the elements at risk, the user first selects the analysis scale (micro at the scale of the element at risk; meso at the scale of the municipality; macro at the scale of the catchment). Then, the calculation of vulnerability indicators is performed from this selection. The functionalities of the tool will be presented, and example of vulnerability indicators for some communities exposed will be discussed. The tool is developed within the ANR Project SAMCO.