

REGIONAL LANDSLIDE RISK ASSESSMENT IN RHEINHESSEN, GERMANY

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Commonly, landslide risk assessments combine spatial landslide hazard data, elements at risk including the respective damage potential and the vulnerability of each of the elements. A crucial element within this analysis is the scale of investigation. Detailed analysis is based on scales less than 1:10,000 and includes commonly physically-based process modelling to determine the specific landslide hazard, information on single risk elements including their precise damage potential and the exact vulnerability for each object. Such detailed analysis, however, cannot be performed for regional assessments. Therefore, landslide hazard at scales larger 1:10,000 is regularly assessed using deterministic and statistical approaches. Elements at risk are classified and averaged potential damage values are assigned. Similarly, vulnerability is given for respective classes only. Although this approach lacks on detail, it is useful for regional planning purposes and for identifying 'hot spots' within a given environment. This study applies the latter approach to Rheinhessen, located in southwest Germany. A previously calculated landslide hazard map was used as input data. Based on regional plans, the area was classified in agricultural areas, residential and industrial divisions, infrastructure lines such as roads and recreational sections. To each of these elements at risk, a damage potential was assigned using officially available statistics. The vulnerability of each element was set to be high, assuming that if one risk element was affected by landsliding, it is fully destroyed. Results show a distinct regional differentiation of landslide risk. But it could also be shown that changing weight of different parameters lead to different results. However, if respective maps are accompanied by detailed description of limitations and methods applied within the analysis, these assessments are indeed most important and supportive as an additional tool for regional development plans and for specific communities.