

Landslide databases review in the Geological Surveys of Europe

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Landslides are one of the most widespread geohazards in Europe, producing significant social and economic damages. Rapid population growth in urban areas throughout many countries in Europe and extreme climatic scenarios can considerably increase landslide risk in the near future. However, many European countries do not include landslide risk into their legislation. Countries lack official methodological assessment guidelines and knowledge about landslide impacts. Although regional and national landslide databases exist in most countries, they are often not integrated because they are owned by different institutions. Hence, a European Landslides Directive, that provides a common legal framework for dealing with landslides, is necessary. With this long-term goal in mind, we present a review of the landslide databases from the Geological Surveys of Europe focusing on their interoperability. The same landslide classification was used for the 849,543 landslide records from the Geological Surveys, from which 36% are slides, 10 % falls, 20% flows, 11% complex slides and 24% remain either unclassified or correspond to another typology. A landslide density map was produced from the available records of the Geological Surveys of 17 countries showing the variable distribution of landslides. There are 0.2 million km² of landslide prone areas. The comparison of this map with the European landslide susceptibility map ELSUS v1 was successful for 73% of the predictions, and permitted identification of 25% of susceptible areas where landslide records are not available from the Geological Surveys. Taking these results into account the completeness of these landslide databases was evaluated, revealing different landslide hazard management approaches between surveys and countries.