

Large landslides in the Pyrenees: preliminary tasks carried out for a harmonized cross-border risk analysis

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Large landslides are recognised as one of the main erosional agents in mountain ranges, having a significant influence on landscape evolution. However, few efforts have been carried out to assess their geomorphological impact from a regional perspective. Regional-scale investigations are also necessary for the reliable evaluation of the associated risks (i.e. for land-use planning).

Large landslides are common in the Pyrenees but: 1) their geographic distribution on a regional scale is not well known; 2) their geological and geomorphological controlling factors have been only studied preliminarily; and 3) their state of activity and stability conditions are unknown for most of the cases. Regional analyses of large landslides, as those carried out by Crosta et al. (2013) in the Alps, are rare worldwide. Jarman et al. (2014) conducted a very preliminary analysis in a sector of the Pyrenees. The construction of a cartographic inventory constitutes the basics for such type of studies, which are typically hindered by the lack of cross-border landslide data bases and methodologies.

The aim of this contribution is to present the preliminary works carried out for constructing a harmonized inventory of large landslides in the Pyrenees, involving for the first time both sides of the cordillera and the main groups working in landslide risk in France, Spain and Andorra. Methods used for landslide hazard and risk analysis have been compiled and compared, showing a significant divergence, even as regards the terminology. A preliminary cross-border inventory sheet on risk of large landslides has been prepared. It includes specific fields for the assessment of landslide activity (by using complimentary methods such as morpho-stratigraphy, morphometric analysis and remote techniques) and indirect potential costs (that typically overcome direct ones), which usually are neglected in the existing data bases.

Crosta, G.B., Frattini, P. and Agliardi, F., 2013. Deep seated gravitational slope deformations in the European Alps. *Tectonophysics*, 605, 13–33.

Jarman, D., Calvet, M., Corominas, J., Delmas, M. and Gunnell, Y., 2014. Large-Scale Rock Slope Failures in the Eastern Pyrenees: Identifying a sparse but significant population in paraglacial and parafluvial contexts. *Geografiska Annaler (Series A, Physical Geography)*, 96: 357–391.

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