

Does the Updating of Landslides Inventories Have a Relevant Impact on the Landslide Susceptibility Assessment?

Raquel Melo^{1,2}, Sérgio C. Oliveira^{1,3*}, Ricardo A.C. Garcia^{1,3}, José Luís Zêzere^{1,3}

¹ Centre of Geographical Studies, Institute of Geography and Spatial Planning, University of Lisbon, Lisbon, Portugal

² School of Science and Technology, University of Évora, Évora, Portugal

³ Associated Laboratory TERRA, Lisbon, Portugal

*corresponding author: cruzdeoliveira@campus.ul.pt

Abstract. Landslide inventories are essential for developing an accurate susceptibility assessment. However, the complete and systematic updating of these inventories is a time consuming and challenging task. In this study, we aimed to determine if the temporal updating of historical landslide inventories improves the landslide susceptibility models and if the size of the study area plays a relevant role in the decision to update or not landslide inventories. To answer these questions, the work was carried out in two study areas with different sizes but a similar geomorphological context. The landslide susceptibility modelling, developed using the Information Value method, was performed for distinct types of landslides and using three landslide inventories: one with landslides that occurred before 2012; a second with landslides that occurred during the event of 2010; and a third with landslides that occurred up to 2019. The results obtained indicate no improvement or only a residual enhancement in the susceptibility models' predictive capacity, regardless of the type of landslide or the size of the study area.

Keywords: Landslides, inventories completeness, susceptibility assessment, predictive capacity