



Effect of resolution of DEM for landslide hazard mapping

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Topographical characterizations of terrain are critical to landslide hazard mapping. That is the reason why high resolution DEMs are commonly used. In the framework of FODISPIL project, photogrammetric techniques are being applied to increase the prediction capability of shallow landslides hazards maps. Digital Photogrammetric workstations are being used for both, high resolution DEM generation and landslide mapping 3D stereomodel-assisted

In this contribution we have examined the effects of the resolutions of DEM to the accuracy of representing terrain for purpose of generating landslide susceptibility maps by means of spatial data analysis. The study has been carried out in a homogeneous area in which only variables derived from DEM vary.

Four different levels of pixel resolutions, 1, 5, 10 and 25m have been obtained from a set of stereo-pairs of high resolution aerial photographs (1: 5,000). Those DEMs have been used to derive a series of terrain models describing the geometry of slopes to be included in landslide susceptibility modeling.

Comparison of models thus obtained provides some clues on DEM resolution requirements regarding the type and size of landslide features.