



Geomorphological map and multitemporal analysis of Corella (Dicomano, Florence, Italy)

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The valley of Corella, a small village located in the municipality of Dicomano (Florence, Italy), cuts almost normally to the strike an alternance of sandstones and clayey-marly units belonging to the Ligurian domain and tilted from 10° to 70° mainly to the southwest. Different type of movements were recognized in both sides of the valley and can be ascribed mainly at rock flows, translational slides and deep-seated gravitational slope deformations (DSGSDs). Lenticular alternations and rock masses, fractured by intense tectonic transport, together with the valley down-cutting has probably contributed to the activation of the movements. The most dynamic landslides are those affecting Larciano area, on the right side of the valley, Corella and the small cluster of houses of Petrognano, on the left side. In both slopes the presence of extensive trenches, more evident in Larciano and Petrognano, allows to classify them as DSGSDs, characterized by multilayered movements with the superficial part locally affected by rock flows. The sliding surfaces are located along the weak clayey-marly layers. A geomorphological map at 1:10.000 scale was performed together with a multitemporal photo-interpretation using orthophotos of 4 different period, ranging from 1954 to 2013 (1954-1988-1996 in black and white, 2013 in colour).

The aim of the investigation is to recognize landslides boundaries, their typology and the main hazard elements of the area. The multitemporal analysis has allowed to understand the evolution of the landscape, identifying the state of activity of the main gravitational movements in the last 60 years. This approach allows, at very low cost, to understand the problems associated with the landslide hazard, in order to program other additional analysis for a deeper characterization and to undertake measures to reduce the triggering factors.