

## **Hillslope degradation in small Mediterranean catchments along the Apennine chain in Italy**

Pierluigi Brandolini (1), Domenico Capolongo (2), Chiara Cappadonia (3), Andrea Cevasco (1), Christian Conoscenti (3), Maurizio Del Monte (4), Giacomo Pepe (1), Marco Piccarreta (2), and Francesca Vergari (4)

(1) University of Genova, Dipartimento di Scienze della Terra, dell' Ambiente e della Vita, (2) University of Bari, Dipartimento di Scienze della Terra e Geoambientali, (3) University of Palermo, Dipartimento di Scienze della Terra e del Mare, (4) University of Roma "La Sapienza", Dipartimento di Scienze della Terra

In this research, the results coming from the investigation of some small catchments located along the Apennines (Italy) affected by hillslope degradation are presented. Four key study areas, particularly sensitive to climatic and anthropic changes, have been selected in Liguria (Cinque Terre), Tuscany (Val d' Orcia), Basilicata (Fossa Bradanica) and Sicily (Scillato) regions. These areas are characterized by different climatic and geological conditions, orographic and tectonic settings, land use evolution and land management practices. All of them recorded very severe landscape changes in the last few centuries, because of unsustainable anthropogenic modification together with their increasing proneness to fast erosion by mass movements and runoff on slopes. Hence, degradation processes are widespread in the selected areas leading to loss and depletion of soil, economic damage, risk conditions and environmental changes. Interestingly, despite the small extent, the selected basins can be considered representative of the land degradation issues that occurred at the wider regional scale. The obtained results show that the maximum denudation effects occur during occasional but extreme rainfall events that can mobilize, in a few hours or days, the total annual sediment yield estimated for a single catchment and for a single slope. Furthermore, the case studies revealed that land mismanagement has a crucial impact in increasing the erosion rates, especially when crop-land are abandoned and/or land maintenance practices are no longer carried out. Since hillslope degradation, together with the recent changes in the rainfall regime and in land use, can lead to an increasing in both geomorphological hazard and risk, our findings can contribute: (i) to define a proper land management; (ii) to support the decision-making; (iii) to schedule an effective strategy for landscape conservation and its enhancement.