IGU 2015 Book of Abstracts

IGU 2015 – 3184

Assessment of hydro-erosive processes in small steep coastal basins in Liguria and Sicily, Italy

Michael MÄRKER, Ivano RELLINI, Claudia SCOPESI, Elmar SCHMALTZ, Sergey CHALOV, Silvia ANGILERI, Mariaelena CAMA, Christian CONOSCENTI, Luigi LOMBARDO, Edoardo ROTIGLIANO, Marco FIRPO
(Germany)

The steep Mediterranean catchments underwent drastic socio economic changes in the last decades. Moreover, these basins are also subject to climate variability and potential future climate change effects. Due to mechanization in agriculture a lot of surfaces changed from terraced vineyards and olive growth to abandoned land. The terraced areas are less productive and more cost and labour intensive and hence cannot compete with a highly mechanized agriculture. Furthermore, tourism based on the natural and cultural heritage of the region is more and more important for the income of the inhabitants. The abandonment has effects on the entire landscape system in terms of hydrological dynamics, sediment dynamics as well as soil characteristics and the terraces itself. These changes are leading to a succession in vegetation, destabilization of slope systems, and changes on the runoff and sediment discharges leading to disasters such as the Vernazza event on the 25.10.2011 or the Messina event on the 01.10.2009. In this study, we present a comparison between the two mentioned areas located respectively in Liguria in the Cinque Terre National park (World heritage site-UNESCO) and in the Messinean area, Sicily (Italy) and a test of transferability aimed to assess debris flow susceptibility. In the framework of this research extensive fieldwork, remote sensing and terrain analysis have been performed in order to parameterize both stochastic and physically based models. Moreover, few attempts of reproducing extreme events have been made. The results show that these Mediterranean catchments are highly sensitive to changes in landuse and climate. Hence, the study contributes to the understanding of landscape dynamics under global change conditions.

Local Organising Committee
Lomonosov Moscow State University.
Faculty of Geography
GSP-1 Leninskie Gory
Moscow, 119991

E-mail: info@igu2015.ru
Tel.: +7 495 939 1552
URL: www.igu2015.ru