



Maintenance and recovery of agricultural terraces to reduce geo-hydrological hazards: the Santa Giulia in Centauro (Liguria, Italy) and Valstagna (Veneto, Italy) case studies

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Throughout the World, men have built terraced landscapes to gain ground suitable for cultivation in steep terrain. Beyond the historical and cultural importance of terraced slopes, terraces have played an important role for soil conservation and water management. In many areas, their abandonment has led to more frequent and/or abundant geo-hydrological hazards. We analyse two terraced areas in northern Italy, including (i) the Valstagna prealpine terraces (Veneto) where the Republic of Venice initiated the cultivation of tobacco in 1600, and (ii) the coastal terraces of Santa Giulia di Centauro (Liguria) where terraces host vineyards and olive groves since 2000 years. Using a combination of direct and indirect mapping methods and tools, including LiDAR topographic surveys, the visual interpretation of aerial photographs and the analysis of historical maps, we performed a systematic mapping of the terraces. Using the available maps, we determined statistics for the width, height and extent of stonewalls and we evaluated the historical evolution of the terraces for the past 50 years, considering changes in land use, the expansion of forest, and the changes in the precipitation regime. Finally, through a preliminary cost-benefit analysis, we propose good practices to help the recovery of the terraces in the two study areas.