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An experience of knowledge co-production for setting up landslide risk management processes in a critical infrastructure: the case of Campania Region (Southern Italy)

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In Campania Region (Southern Italy), expected increases in heavy rainfall events under the effect of climate changes and demographic pressure could entail a growth of occurrence of weather induced landslides and associated damages. Indeed, already in recent years, pyroclastic covers mantling the slopes of a large part of the Region have been affected by numerous events often causing victims and damages to infrastructures serving the urban centers. Due to the strategic relevance of the area, landslide events affecting volcanic layers in Campania Region are one of the five case studies investigated in the FP7 European Project INTACT about the impacts of extreme weather on critical infrastructure.
The main aim of INTACT project is to increase the resilience of critical infrastructures (CI) facing extreme weather events improving the awareness of stakeholders and asset managers about such phenomena and their potential variations due to Climate Changes and providing tools to support risk management strategies. A WIKI has been designed as a remote support for all stages of the risk process through brief theoretical explanations (in Wiki style) about tools and methods proposed and reports on the findings and hints returned by case studies investigations. In order to have a product tailored to the needs and background of CI owners, managers and policy makers, an intense effort of knowledge co-production between researchers and stakeholders have been carried out in different case studies through questionnaires, meetings, workshops and/or 1-to-1 interviews.
This work presents the different tools and approaches adopted to facilitate the exchange with stakeholders in the Campanian case study such as the “Storytelling approach”, aiming to stress the need for a comprehensive and overall approach to the issue between the different disaster management phases (mitigation, preparedness, response and recovery) and actors; the CIRCLE approach developed by Deltares, partner in INTACT consortium, which investigates direct and cascading effects induced by landslide events in pyroclastic cover; pairwise comparisons to identify the more relevant parameters of protection actions against landslide events in pyroclastic soils; and cumulative distribution functions returned by multi model climate simulation ensembles, displaying the occurrence probability of fixed variations in weather-proxy for landslide events, and providing a reliable frame of the current uncertainties in climate projections. The main findings achieved through the application of these tools and methods for the Campanian test case are illustrated and discussed.