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Changes in hydrogeological risk perception over time: Longitudinal evidence in the North-eastern Italian Alps

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Hydrogeological hazards are increasingly causing damage in many regions of the world due to climatic and socio-economic changes. When it comes to disaster risk reduction at the local level, building a more resilient community is crucial to reduce potential losses. One of the first steps in promoting community resilience is to understand how people perceive potential threats around them. This study aims at exploring how risk perception of hydrological hazards changes over time. Two villages in the North-eastern Italian Alps – Romagnano and Vermiglio – are analysed. These two areas were affected by heavy rainfall events that caused debris flows in 2000 (both in Romagnano and Vermiglio) and 2002 (in Vermiglio only). A few years after these events, in 2005, surveys were conducted in both areas by Scolobig et al. (2012) to assess the non-trivial relationship between risk awareness and preparedness. The authors found that, even when individuals are aware of the hazard risk, they are not necessarily prepared to face it. To unravel the potential changes in risk perception over time, we conducted a longitudinal study in 2018, which builds on the questionnaire that was administered in 2005. Given the absence of extreme events for almost twenty years, we test the hypothesis that risk perception has significantly reduced. We repeated part of the original survey in both areas and compared the results to the outcomes of the 2005 survey. In addition, qualitative data collected through semi-structured interviews with local authorities complement the surveys and provide key information on changes in the political contexts, risk communication strategies, and demography at the community level. A preliminary analysis of survey data does not show major changes in the level of awareness, potentially challenging the hypothesised relationship between risk perception and time, but only an in-depth statistical analysis will provide additional insights to unravel this counter-intuitive result. Apart from highlighting factors potentially affecting risk perception, the results of this study also inform the design of future longitudinal surveys in the hazards risk perception field. Both outcomes can guide the study of socio-hydrological systems, inform risk assessment methods, and contribute to the development of better policies for disaster risk reduction.