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The socio-economic dimension of flood risk assessment: insights of KULTURisk framework

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The approaches for vulnerability and risk assessment have found different and often contrasting solutions by various schools of thought. The two most prominent communities in this field are: climate change adaptation (CCA), and disaster risk reduction (DRR). Although those communities have usually in common the aim of reducing socio-economic vulnerability and risk to natural hazards, they have usually referred to different definitions and conceptualizations. For example, the DRR community has always driven more emphasis on the concept of risk and vulnerability is considered as a physical/environmental input for the quantification of risk, while the CCA research stream, mainly under the auspices of the Intergovernmental Panel on Climate Change (IPCC), considered vulnerability as an output deriving from social conditions and processes such as adaptation or maladaptation. Recently, with the publication of the IPCC Special Report on extreme events and disasters (IPCC-SREX), the notions of vulnerability and risk are somehow integrated in order to jointly consider both climate change adaptation and disaster risk management.
The IPCC-SREX indeed is expected to significantly contribute to find common language and methodological approaches across disciplines and, therefore, the opportunity emerges for proposing new operational solutions, consistent with the most recent evolution of concepts and terminology.
Based on the development of the IPCC Report, the KULTURisk project developed an operational framework to support integrated assessment and decision support through the combination of contributions from diverse disciplinary knowledge, with emphasis on the social and economic dimensions. KIRAF (KULTURisk Integrated Risk Assessment Framework) is specifically aimed at comprehensively evaluate the benefits of risk mitigation measures with consideration of the dynamic context deriving from the consideration of climatic changes and their effects on natural disasters, within the policy framework of climate change adaptation (CCA).
Three main innovations are proposed with respect to the current state of the art: (1) to include the social capacities of reducing risk, (2) to go beyond the estimation direct tangible costs, and (3) to provide an operational solution for decision support to assess risks, impacts and the benefits of plausible risk reduction measures, compatible with both the DRR and the CCA literatures. As stated above, the proposed framework is the inclusion of social capacities (adaptive and coping capacities) in the process of translating risk into a comprehensive cost matrix considering not only direct tangible costs (damages), but also the three other components deriving from the combination of tangible/intangible and direct/indirect costs. The proposed KIRAF approach is thus expected to provide: 1) an operational basis for multidisciplinary integration; 2) a flexible reference to deal with heterogeneous case studies and potentially various types of hazards; and 3) a means to support the assessment of alternative risk prevention measures including consideration of social and cultural dimensions.