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Stakeholder Perceptions of Multi-hazards and Implications for Urban Disaster Risk Reduction in Istanbul

Emin Yahya Menteşe¹, Robert Šakić Trogrlić², Ekbal Hussein³, Harriet Thompson², Emine Öner¹, Aslihan Yolcu¹, and Bruce D. Malamud³

¹Boğaziçi University, Kandilli Observatory and Earthquake Research Institute, Department of Earthquake Engineering, Turkey

²King's College London, Department of Geography, London, United Kingdom

³British Geological Survey, Nottingham, United Kingdom

Istanbul is a large urban area exposed to many natural hazards, including earthquakes, landslides, tsunami, flooding, and drought. In addition to the potential risk from these single hazards, their interrelationships can amplify overall risk, potentially overwhelming the capacity of governments, communities, and systems limits. Here, in order to investigate how multi hazards and their interrelationships are understood and considered in the decision making process in Istanbul, we have conducted two workshops and three interviews with 22 expert practitioners with a wide range of natural hazard relevant roles in Istanbul institutions.

We focused our activities on: (i) Identifying multi-hazard interrelationships relevant for Istanbul of tomorrow and creating multi-hazard interrelationship scenarios. (ii) Understanding the usefulness of multi-hazard thinking in the context of different stakeholders, and (iii) Exploring barriers and opportunities for the integration of multi-hazard thinking into operational practice. We find in the Istanbul urban context that (i) single hazards are calculated, examined, and incorporated within urban development and planning process at a significant level, (ii) the participants' perception of multi-hazard is mostly focused on cascading single hazards where one triggers another, excluding increasing probability and compound hazard interrelationships, (iii) that although multi-hazard approaches are taken into account at some levels in Istanbul, the main focus is still mainly on single hazards, (iv) there is a lack of interaction amongst many hazard related institutions that are often single-hazard focused, thus hindering disaster risk reduction in a holistic and integrated way.

Among the multi hazard types, earthquakes induced hazards such as landslides, tsunami and floods are highlighted by the participants often. It is notable that climate change related scenarios such as heavy rainfalls and heatwaves are also mentioned during conversations. Our results show that multi-hazard scenarios have the potential to improve DRR in Istanbul as there are some studies that already address the multi hazard perspective to a certain extent and knowledge on potential multi hazards is significant among experts. However, changes in policies, legislative environment, and governance arrangements are needed, as well as further physical characterisation of interrelationships.

