

## Utilization of Online Risk Mapping Techniques versus Desktop Geospatial Tools in Making Multi-Hazard Risk Maps for Italy

**Authors :** Seyed Vahid Kamal Alavi

**Abstract :** Italy has experienced a notable quantity and impact of disasters due to natural hazards and technological accidents caused by diverse risk sources on its physical, technological, and human/sociological infrastructures during past decade. This study discusses the frequency and impacts of the most three physical devastating natural hazards in Italy for the period 2000-2013. The approach examines the reliability of a range of open source WebGIS techniques versus a proposed multi-hazard risk management methodology. Spatial and attribute data which include USGS publically available hazard data and thirteen years Munich RE recorded data for Italy with different severities have been processed, visualized in a GIS (Geographic Information System) framework. Comparison of results from the study showed that the multi-hazard risk maps generated using open source techniques do not provide a reliable system to analyze the infrastructures losses in respect to national risk sources while they can be adopted for general international risk management purposes. Additionally, this study establishes the possibility to critically examine and calibrate different integrated techniques in evaluating what better protection measures can be taken in an area.

**Keywords :** multi-hazard risk mapping, risk management, GIS, Italy

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