

# **Review and Systematization of the Available Data for Earthquake Risk Mitigation in Bulgaria Using GIS**

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## **SUMMARY**

The territory of Bulgaria is exposed to numerous natural hazards. Among the various strong geological hazards (landslides, earthquakes, erosion and sea processes, loess collapsibility due to shallow ground water and liquefaction sands) manifested and mapped for the territory of Bulgaria, a key role in the National Natural Disasters Mitigation Strategy and on the Balkans is given to the risk earthquakes mitigation. Seismic hazard as unpredictable natural process could cause large amounts of negative consequences and fatalities among the population, property and infrastructure damages. Adequate risk assessment due to seismic hazard and its reduction require a broader disaster risk management approach. The integration of the numerous data sources and tools that are available at various levels of government, academia and the private sector is one of the major tasks in conducting the earthquake risk estimation and a major component of the multi-hazard risk assessment towards natural hazard mitigation. Considering the National strategy to reduce disaster risk, adopted in 2014 in Bulgaria, closely related to the European Horizon 2020 program, this paper aims to illustrate the use of an integrated approach for systematization of all available information for earthquake risk mitigation in Bulgaria. Results of a comparative overview of the data (digital and hard copy maps, statistics) that might be used for earthquake risk mitigation using GIS are presented. This effort has been part of a university UACEG-CNIP research project dealing with building a model for information system for expert express evaluation of the earthquake risk over the Bulgarian territory using GIS. Selected GIS layers will be the initially set of maps gathering-collected maps describing the earthquake hazard available from various sources and maps of different infrastructure elements at risk, and particularly constructed maps related the building stock, population in major cities, health institutions. One of the major obstacles is combining the data from various available sources that are in different formats, size, standards and precision. Further development of this idea as hopefully spread out at smaller scale of Administrative territorial units in collaboration with local administrations and the potential provided by technological web-based GIS innovation platforms, that increases the utility and importance of all data to allow for better decision-making at all management levels, are discussed too.