



Seismic Hazard and Risk Assessment for Georgia

Nino Tsereteli (1), Otar Varazanashvili (1), Vakhtang Arabidze (2), Tengiz Gugeshashvili (1), Teimuraz Mukhadze (1), and Aleksandre Gvencadze (1)

(1) Institute of Geophysics, Department of Seismology Seismic Hazard and Disaster Riskss, Tbilisi, Georgia (nino66_ts@yahoo.com, 995 32 332867), (2) Agricultural University of Georgia

Risks of natural hazards caused by natural disaster are closely related to the development process of society. The high level of natural disasters in many countries makes necessary to work out the national programs and strategy. The main goal of these programs is to reduce the natural disasters risk and caused losses. Risk mitigation is the cornerstone of the approach to reduce the nation's vulnerability to disasters from natural hazards. So proper investigation and assessment of natural hazards and vulnerability of the element at risk to hazards is very important for an effective and proper assessment of risk. This work issues a call for advance planning and action to reduce natural disaster risks, notably seismic risk through the investigation of vulnerability and seismic hazard for Georgia. Firstly, detail inventory map of element at risk was created. Here elements at risk are comprised of buildings and population. Secondly, seismic hazard maps were calculated based on modern approach of selecting and ranking global and regional ground motion prediction equation for region. Thirdly, on the bases of empirical data that was collected for some earthquake intensity based vulnerability study were completed for Georgian buildings. Finally, probabilistic seismic risk assessment in terms of structural damage and casualties were calculated for the territory of Georgia using obtained results. This methodology gave prediction of damage and casualty for a given probability of recurrence, based on a probabilistic seismic hazard model, population distribution, inventory, and vulnerability of buildings.