Geophysical Research Abstracts
Vol. 14, EGU2012-5855, 2012
EGU General Assembly 2012

Scientific services related to climate-induced natural hazards in the Vrancea Seismic Region, Romania

M. Sima (1), D. Micu (1), C. Dragota (1), V. Chendes (2), M. Micu (1), and D. Balteanu (1)

(1) Romanian Academy, Institute of Geography, Bucharest, Romania (igar@geoinst.ro), (2) National Institute of Hydrology and Water Management, Bucharest, Romania (viorel.chendes@hidro.ro)

Scientific services, regarded as a tool for offering different stakeholders and users with the necessary information adapted to their needs, are a major challenge to researchers nowadays.
The paper aims to present an example of user-researcher interaction on issues related to climate-induced hazards in a highly seismic region of Romania. It is a case-study included in the FP7 ECLISE project which has in view the assessment of landslide and floods hazard and risk, as being the most important climate-induced natural hazards in the region. The main climate signals derived from the observational data indicate a tendency of precipitation concentration over short time intervals and the increase of their torrential character, combined during spring with long-lasting rains and snowmelt which generally led to a higher instability of the slopes due to landslides and flash floods. The Vrancea Seismic Region, considered being the most active sub-crustal earthquake province of Europe, with 3-5 earthquakes over magnitude 7 per century, is represented by the Curvature sector of the Carpathians and Subcarpathians of Romania. The region is affected by a large diversity of slope processes (especially landslides and mudflows) and flood and flash-flood events, generated by the morphometric traits of the small catchments, the loose lithology, the torrential features of rainfalls especially during the summer and by the severe changes occurred in the land cover characteristics after 1989 (large deforestation, property fragmentation, lack of interest in land-management works). Based on a comprehensive landslide inventory, the landslide susceptibility map (showing the probability of occurrence in space), obtained through statistical analysis and field/statistically-validated, would be completed with the hazard assessment, resulting from the correlation of landslide frequency and magnitude, rainfall triggering threshold and its returning period. The numerous elements at risk (transport and inhabitation infrastructure, water supplying networks, people) will be then quantified for obtaining a vulnerability assessment map, which will provide vital information for the final risk assessment, the base for the regional development plans. The main user of the current study is a county subsidiary of the Civil Protection (Buzau County), the provided scientific service being necessary for their activity targeted on the management of extreme events and the improvement of intervention procedures in case of extreme events (floods, landslides, mudflows).