

Assessing public flood risk perception for understanding the level of risk preparedness - Evidence from a community-based survey (the Bend Subcarpathians, Romania)

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Floods (slow-onset and rapid) are among the costliest hydro-meteorological hazards in Romania, with strong societal and economic impacts, especially in small rural settlements, with a limited adaptive capacity to their adverse effects induced by the regional socio-economic context (e.g. aging population, low economic power). The study-area is located in the Bend Subcarpathians (Romania), a region with high tectonic mobility (the Seismic Vrancea Region), active slope processes (e.g. shallow and deep-seated landslides, mud flow, gully erosion) and increasing frequency of flash floods associated to heavy rainfalls. The study was conducted in the framework of the project "Vulnerability of the environment and human settlements to floods in the context of Global Environmental Change - VULMIN" (PN-II-PT-PCCA-2011-3.1-1587), funded by the Ministry of National Education over the 2012-2016 period (<http://www.igar-vulmin.ro>). Prior research derived valuable insights into the local population vulnerability to extreme hydro-meteorological events, revealing an increased individual experience to past hydrological events, a high level of worry associated to flood recurrence, a low rate of the perceived trustworthiness in national institutions and authorities, as well as evident differences between the perception of community members and local authorities in terms of risk preparedness. In the present study, an attempt has been made for developing an advanced understanding of the current level of flood risk preparedness within some communities strongly affected by the floods of 1970-1975, 2005 and 2010. The recent events had a significant impact on local communities and infrastructure in terms of the financial losses, causing a visible stress and even psychological trauma on some residents of the most affected households. The selected communities are located in areas affected by recurrent hydro-meteorological hazards (floods and flash floods), with return periods below 10 years. A flash flood susceptibility index developed within the project was also used to identify the rural communities located in areas with high susceptibility to flash floods with return periods of 50 and 100 years.

A questionnaire-based survey was conducted in 12 rural settlements located in the Teleajen-Buzau hydrographic area (Buzău and Prahova counties), in 2014 and 2015, totally addressed to nearly 100 residents who experienced or witnessed past flood events in their current living area.

The findings reflect a generally good level of awareness of flood exposure of the living areas among the community members, which is closely connected to the high worry level and large damages associated to past floods events. The results showed that the increased level of awareness and worry is not resulting in an increased level of preparedness at the level of affected communities. Several important gaps have been identified in terms of existing capacity for prevention and reduction of adverse effects of floods within the flood prone and already flood affected areas that explain the decreased resilience of all selected rural communities: e.g. a low efficiency of the early flood warning process; a limited effectiveness of the implemented structural measures aimed to improve the community resilience, to respond and cope with floods; the lack of training activities and exercises on flood prevention, protection and mitigation for the exposed population. These gaps are related to the limited financial support of the authorities to implement long-term measures for human safety, as well as for the protection of goods and property in the flood prone areas.