

HAZARD, VULNERABILITY AND RESILIENCE TO FLOODS IN ROMANIA. APPROACHES AT DIFFERENT SPATIAL SCALES

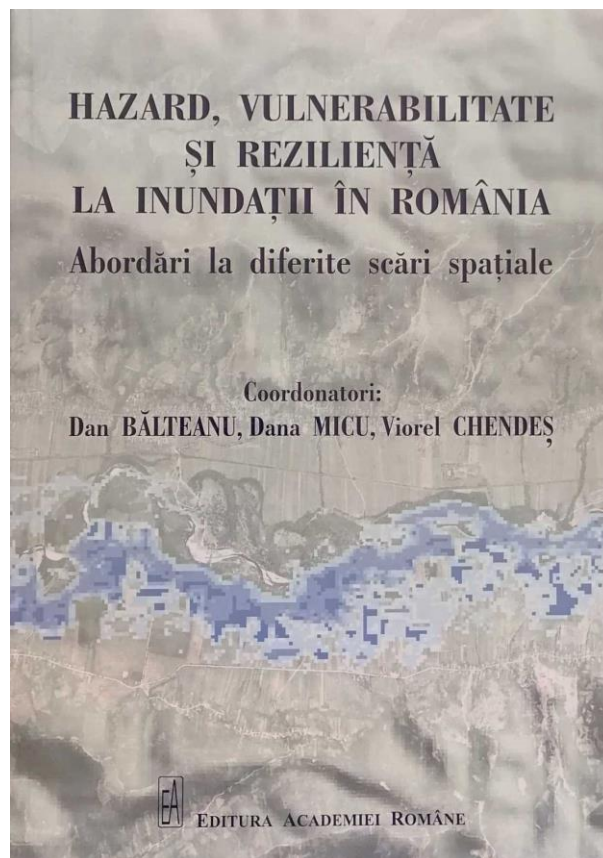
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Floods are an increasing public concern worldwide due to the impressive damage volume and high numbers of injuries. In Romania, floods are highly recurrent and costly hydrometeorological phenomena, producing an average annual economic loss of about 140 million Euros.

This book is a comprehensive analysis of the prerequisite components of an integrated flood risk management, taking into consideration both hydrometeorological and socio-economic processes and their interrelations at different spatial scales, from local, to regional and national. It synthesises the research results obtained in the framework of the VULMIN project, funded by the Executive Unit for the Financing of Higher Education for Research (PN-II-PT-PCCA-2011-3.1-1587) and comprises the valuable contributions of specialists from four profile institutions in the fields of applied environmental studies and geosciences (Institute of Geography of the Romanian Academy, coordinator; National Institute of Hydrology and Water Management; University of Bucharest, Faculty of Geography; Research Institute for Analytical Instrumentation – INOE2000). The research aim in the book was to assess the environmental and socio-economic vulnerability to floods, in close connection with the type and intensity of the hydrological

phenomena (slow onset floods or flash floods), as well as with the current level of adaptive capacity and resilience of society to these phenomena. The analyses combine theoretical and methodological aspects related to flood hazard and flood vulnerability covering various relevant aspects in this regard, such as: identification and delimitation of flood areas on the main rivers in Romania; assessment of susceptibility to slow and rapid floods; analysis of climate change effects on the maximum discharge regime; assessment of the drinking water quality in the flood affected areas; analysis of community perception of flood risk in flood-affected and flood-prone areas; assessment of socio-economic vulnerability; and the relationship of vulnerability–adaptive capacity–resilience to floods, at different spatial scales.

The methodological approaches used in this book are both interdisciplinary and transdisciplinary and involved the use of: a Geographic Information System (GIS) for the delineation of flood-prone areas and assessing flood susceptibility; hydrological and hydraulic models for simulating flood events and estimating the impact of climate change; comprehensive databases for inventorying floods and flood-prone areas; water samplings to determine the level of pollution in flooded areas; sets of indicators for assessing socio-economic and environmental vulnerability to floods; indicators for analyzing the relationship of vulnerability–adaptive capacity–resilience to floods at a regional and national level.



The assessment of socio-economic vulnerability to floods at different spatial scales, started from the local level in the case study areas of the project (Timiș–Bega Low Plain, Teleajen–Buzău hydrographic area and the Tecuci town) and continued at regional (county) and national scales. Flood vulnerability assessment identified the types of regions according to their adaptive capacity and correlated the socio-economic vulnerability with the existing potential for adaptation to flood risk. The aim was to highlight the premises for increasing flood resilience and ensuring the effectiveness of national flood management policies and strategies. The study also synthesized the main measures to reduce flood vulnerability through the implementation of the EU Flood Directive in Romania (Directive 2007/60/EC).

The book is a valuable source for future flood-related research and practice and addresses to a wide range of readership, from decision-makers involved in flood management to researchers, postgraduate lecturers and students.