

## **Extreme Geohazards, Disaster Risks and Societal Implications**

Alik ISMAIL-ZADEH

*Institute of Earthquake Prediction Theory and Mathematical Geophysics,  
Russian Academy of Sciences, Moscow, Russia  
Institute of Applied Geosciences, Karlsruhe Institute of Technology, Karlsruhe, Germany  
Institut de Physique du Globe de Paris, Paris, France*

Humans face geohazards on different scales in time and space. Extreme geohazards affect human life and health as well as having a dramatic impact on sustainable development of society. Protecting life and property against disasters caused by natural events requires an uninterrupted chain of research and civil protection tasks: from understanding of the physics of earthquakes, volcanoes, tsunamis, and landslides, their analysis and monitoring, through interpretation, modeling, hazard assessment, and forecasting of single or concatenated events, to delivery of the scientific forecasts to disaster management authorities. The major question in the field of geohazards and disaster risk research is when, where and why geohazards turn to become disasters. Natural scientists try to answer the questions developing scientific tools for geohazard assessments, enhancing observing and modeling capabilities and reducing predictive uncertainties in geohazards research. As geohazards cannot be reduced being manifestations of Earth's dynamics, natural and social vulnerability can be reduced to improve resilience of society. The disaster risk research should be based on developing links between natural and social sciences, between science and policy-makers, media and insurance industry. Consequences of extreme events can be reduced by enhancing science education on geohazards, improving awareness on extreme hazards and disaster risks at local, regional and global scales as well as strengthening the efforts in risk mitigation and management.