

Methodology for natural hazards risk assessment: Ukraine experience

Katya STEPANOVA¹, Oleg RUBEL², Anatoly KRISILOV³

¹International Humanitarian University; Odessa, Ukraine, (e-mail:katstep2005@mail.ru)

²Institute of Market Problems and Economic and Ecological Research, Odessa, Ukraine

³The Black Sea Branch of Environmental Academy of Sciences of Ukraine

Abstract

Natural hazards in Ukraine pose a serious problem to communities and form a roadblock to sustainable development. Earthquakes, landslides and floods have a strong impact on the environment as well as on local economies.

Floods occur at 27% of the territory of Ukraine (165,000 km²). One third of population of Ukraine lives in potentially dangerous areas. Landslides pose an additional threat both in inland and coastal areas of Ukraine. Abrasion and landslides are causing loss of recreational areas and agricultural lands, disappearance of unique landscapes. Earthquakes pose a threat to assets and on the environment as the triggers of landslides and other geotechnical problems. 120 000 km² of Ukrainian territory (about 20 %) is located in seismically dangerous areas.

The paper presents analysis of methods and models for floods, landslides and seismic risks assessment, methodology for risk mapping, natural hazards forecasting, national standards and guidelines related to risk management in Ukraine. Methodologies and models used in Ukraine to assess natural hazard are focused more on assessment of primary, direct economic loss. Recommendations for improvement of methodologies, including assessment of indirect, intangible as well as secondary loss, are given.

Key words: natural hazards, risk assessment, risk management

Acknowledgements

This research was supported by the Join Operation Programme “BLACK SEA BASIN 2007-2013” (Project “A Scientific Network for Earthquake, Landslide and Flood Hazard Prevention –SciNetNazPrev”)

sa2015_a0131