



Preliminary results from two international pluvial flood event studies

Viktor Roezer (1), Matthieu Spekkers (2), and Heidi Kreibich (1)

(1) Section Hydrology, German Research Centre for Geosciences (GFZ) Telegrafenberg, Potsdam, Germany (vroezer@gfz-potsdam.de), (2) Department of Water Management, Delft University of Technology, Delft, the Netherlands (M.H.Spekkers@tudelft.nl)

Pluvial floods have caused severe damages to urban dwellings in Europe and elsewhere in recent years. With a predicted increase in extreme weather events as well as an ongoing urbanization, pluvial flood damage is expected to increase in the future. These type of flood events, caused by stormwater being unable to enter urban drainage systems or flowing out of urban drainage systems when capacity is exceeded, often happen with little warning and in areas which are often not obviously prone to flooding. Up to now little research was done on the adverse consequences of pluvial floods, as empirical damage data of pluvial flooding is scarce. In this study, results of two telephone surveys are discussed. The surveys comprise interviews with more than 500 flood-affected households in Germany (Münster and Greven) and the Netherlands (Amsterdam), related to the severe rain event of July 28th 2014. Respondents were asked a series of questions about the damage to their building structure and contents, as well as on topics such as early warning, emergency and precautionary measures, building properties and hazard characteristics. The questionnaire was developed with the aim to create a harmonized transnational pluvial flood damage survey that can potentially be extended to other European countries. New indicator variables have been developed to account for different national and regional standards in building structure, early warning, socio-economic data and recovery.

The survey data from the German and Dutch case studies are compared with the goal to identify similarities and differences in damage reducing factors and recovery. Water level data and other hazard characteristics are used to form comparable groups out of the German and Dutch sample. Within these groups, regional distinctions in building topology and use are expected to have the strongest impact on differences between reported damage amounts of the two case studies. The newly collected data will be used in future studies to develop pluvial flood damage models.