

The challenges of identifying and analyzing triggering rainfall amounts for floods and landslide in Europe as part of the CHANGES project

T. Turkington, C. van Westen, & J. Ettema
ITC, University of Twente, The Netherlands

Flood and landslide hazard studies are increasingly assessing the effects of different climate change scenarios on the probability of occurrence. The frequency of floods and landslides is partially governed by intense precipitation as well as antecedent soil moisture conditions. With global and regional climate models (GCMs and RCMs) projecting changes for many different meteorological variables in the coming century, the frequency of floods and landslides in Europe is likely to change. However, quantifying how these frequencies may change faces many challenges. GCMs and RCMs are at a scale that is too coarse for most hydrological models that investigate these processes and the precise meteorological triggers are often poorly understood.

This poster gives an overview of work related to the analysis of changes in hydro-meteorological risk in Europe, focusing on the challenges faced in analysing changing triggering factors for floods and landslides. This is one part of a recent EU FP7 Marie Curie Initial Training Network called "CHANGES" that intends not only to analyse changing hazards, but also changing vulnerabilities and exposure to risk. This project (Changing Hydro-meteorological Risks – as Analyzed by a New Generation of European Scientists) intends to develop an advanced understanding of how global changes, including environmental, climate change as well as socio-economical changes, will affect the temporal and spatial patterns of hydro-meteorological hazards and associated risks in Europe. It will include investigating how these changes can be assessed, modeled and then incorporated in sustainable risk management strategies with the focus on spatial planning, emergency preparedness and risk communication.