



Are we ready? Trends in European flood risk and financing resources

Brenden Jongman (1), Laurens Bouwer (1), Stefan Hochrainer-Stigler (2), Luc Feyen (3), Wouter Botzen (1), Jeroen Aerts (1), and Philip Ward (1)

(1) VU University Amsterdam, Institute for Environmental Studies, Amsterdam, Netherlands (brenden.jongman@ivm.vu.nl),

(2) Risk, Policy and Vulnerability Program, International Institute for Applied Systems Analysis, Laxenburg, Austria, (3)

European Commission – Joint Research Centre, Ispra, Italy

River flooding is the most frequent and damaging natural hazard currently affecting European countries, with losses in excess of 7 billion USD reported in 2010 alone. The upward trend in damages that is reported over the past three decades in some parts of Europe is expected to continue in the future, as a result of changes in hazard, and increases in exposure and vulnerability. Several mechanisms are in place to distribute and compensate these losses on both country and European Union levels, such as government guarantees, private insurance programmes and the EU Solidarity Fund. In addition, separate funds at national and EU level are available to assist in the prevention of future losses. The chosen mechanism of flood risk financing affects the efficiency of the system, its distributional effects and the incentives for private involvement in adaptation, and is thus an important policy issue. In this paper we (1) present trends and projections in flood losses for different parts of Europe using loss data and risk modeling approaches; (2) analyse the public and private mechanisms in place for financing flood recovery and adaptation; (3) assess the expected required and available funds for the period 2010 – 2050; and (4) propose policy on flood risk financing going forward. Results show that increasing economic exposure and climate change induced flood pattern changes increase the chance that annual flood losses exceed insurance and EU Solidarity Fund resources on a European scale. The results are important for researchers, policy makers and (re-)insurance firms that are concerned with natural disaster costs and financing mechanisms.