ClimateChangePost

River flood damages under climate change in Germany

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For individual German river reaches, the impact of climate change on flood damages was quantified for the time horizons 2041–2070 and 2071–2100, and compared with the reference period 1961–2000. In this study no changes in land use (e.g., riverine settlements), water management (e.g., flood protection), and value of assets were considered.

The future projections were made with regional climate models under a number of climate change scenarios (IPCC SRES scenarios A1B, A2 and B1). The climate scenarios were transformed into river flow and flood frequency characteristics using a hydrological model, and subsequently the projected river flows were transformed into economic losses using damage functions.

According to these results, the total annual flood damages in Germany sum up to nearly EUR 500 million per year for the reference period 1961–2000 and, on average, double until the

end of the scenario period (2071-2100). In fact, total economic losses can be higher than the damages on buildings and small enterprises considered in this study. The projected increase of flood losses is in line with the ones according to other studies for the European scale and for the Rhine basin.

Source: Hattermann et al., 2014. Natural Hazards and Earth System Sciences 14: 3151–3169.

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