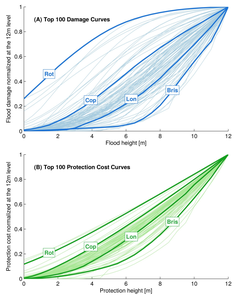
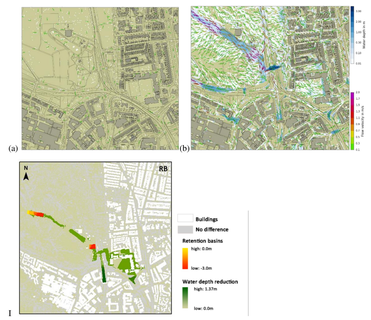
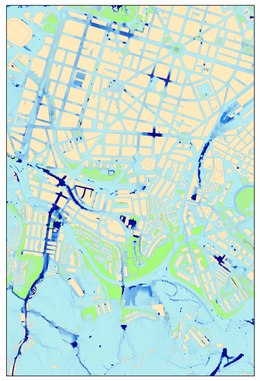
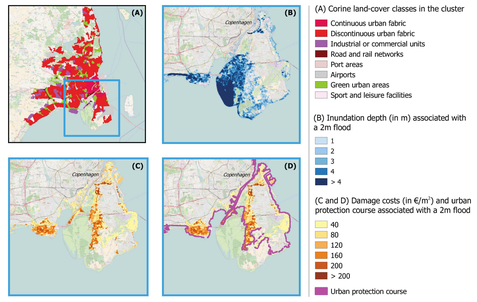
Reconciling adaptation, mitigation and sustainable development for cities – overview of some results

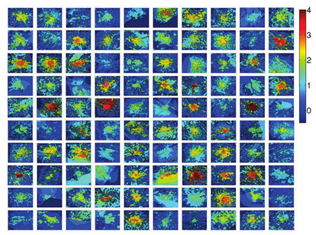
Ramses Team

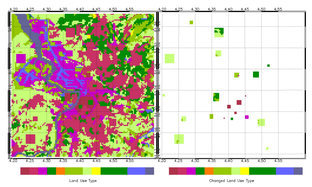












Damage loss and protection curves for 600 European coastal cities.
Top-Down (generic) approach: systematic, automatized, transferable.
top-left: 600 city clusters considered in the study
bottom-center: land-cover classes, inundation depth, damage loss, and protection course
top-right: obtained damage loss and protection curves available for download from pangeae.de

Small scale vulnerability and risk assessment for cities and sectors.
Bottom-up city-scale approach: high resolution and higher accuracy.
top-left: local scale analysis of adaptation. water velocity and depth with and without retention ponds
center-right: CityCAT flood hazard simulation for city of Bilbao
bottom-left: UIAF flood simulation in London

Urban climate assessment and climate change scenarios and adaptation for urban agglomerations.
The UrbClim^{TM} model allows systematic city climate modeling at intermediate level of complexity.
top-center: model results for 102 European cities
bottom-left: mean summer UHI effect for considered cities in 2009
bottom-right: land-use scenario map of Antwerp and location's original land-use types

The research leading to these results has received funding from the European Community's Seventh Framework Programme under Grant Agreement No.~308497 (Project RAMSES).

Some publications:
- Damage and protection cost curves for coastal floods within the 600 largest European cities. Prahl BF et al. submitted 2017.
- Assessing urban strategies for reducing the impacts of extreme weather on infrastructure networks. Pregnolato M et al. Royal Society Open Science 2016, 3(5), 160023.
- UrbClim - A fast urban boundary layer climate model. De Ridder K et al. Urban Climate 2015, 12, 21-48

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