

Germany

Federal Agency for Cartography and Geodesy (BKG)

Heavy rain hazard maps enable preventive measures in Germany

“Extreme weather conditions caused by global climate change have become increasingly frequent phenomena of our everyday life. In July 2021, the impact of these climatic changes manifested themselves by intense rain causing a flood disaster in the border region of Belgium and Germany. By establishing a nationwide uniform basis for heavy rain hazard maps in Germany, the Federal Agency for Cartography and Geodesy (BKG) is making an important contribution to risk management. As the first region mapped, North Rhine-Westphalia marks the beginning of the BKG project planned to be expanded to other federal states.”

Professor Paul Becker
President, Federal Agency
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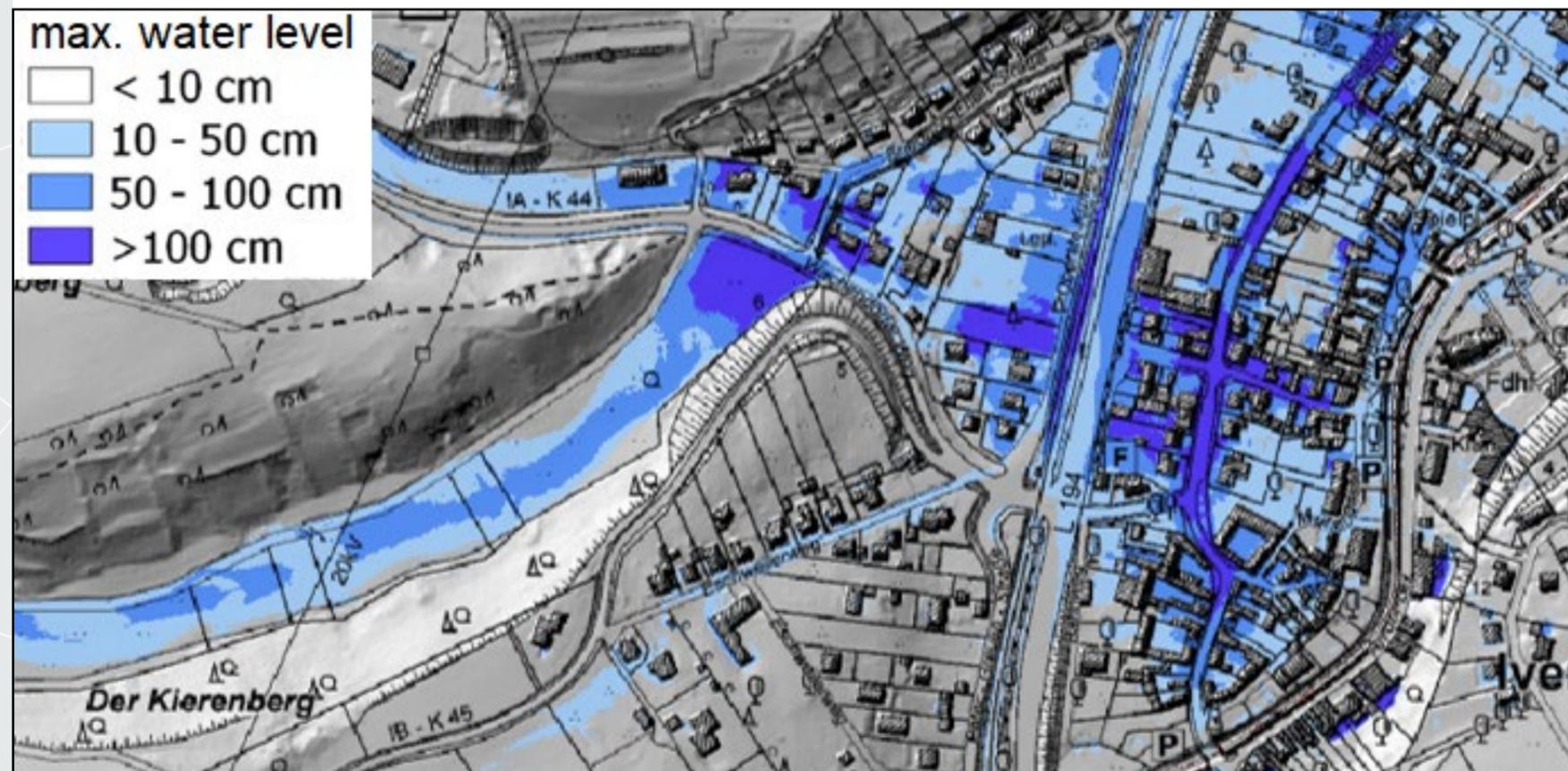
Heavy rain hazard information maps are minimising the risk of human loss and preventing damage in Germany.

The aim of the project being delivered by the Federal Agency for Cartography and Geodesy (BKG) is to create a standardised, public, freely accessible, and easy-to-use heavy rainfall hazard information map. By integrating geospatial data such as a digital terrain model, meteorological data provided by the German National Meteorological Service (DWD) and land use data, heavy rain hazard simulations are produced for two scenarios.

The first is a rare event that is not expected to take place more than once every hundred years is based on DWD regionalised long-term meteorological data, the second is an extreme scenario assuming a rainfall intensity of 90 mm/h. The map shows the hydro numerically computed water levels and flow velocities for each of scenarios.



The geodata are publicly accessible via the central platform of the German Spatial Data Infrastructure www.geoportal.de



Benefits

- Informs the population, public decision-makers and emergency services about potential flooded areas in case of a heavy rain event.
- Provides important information for future construction projects and supports a building policy adapted to climate change.
- Enables precise planning of preventive measures by showing where infrastructure is most vulnerable using a spatial grid resolution of 1 metre.
- Establishes the first nationwide basis for heavy rain hazard maps.
- Supplies municipalities with a basis for heavy rainfall risk management and can serve as a reference dataset for municipal mapping
- Provides a freely accessible and easy-to-use heavy rainfall hazard information map on a central platform.
- Promotes cross-sectoral cooperation and exchange of expertise across public agencies.