



## **Impacts of heavy precipitation events to emergency preparedness and response in the Rhine-Main-Area (Germany)**

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Heavy precipitation events are assumed effects of the climate change with wide seasonal and regional differences concerning their magnitude. An increase of particular short and intense rainfall is predicted by climate modelling for mid-Germany within the next 30 years, especially in spring and summer. The Rhine-Main-Area is stated one of the largest metropolitan areas in Germany with a very high density in population as well as industrial and traffic infrastructure. The vulnerability to natural hazards rises according to this fact.

It is shown, that even today's heavy precipitation events have already a large extend of loss and cause high operational expenses to the Fire Departments involved, mainly caused by the enormous number of same-time reported incidents. The Fire Brigade of a community represents the responsible authority for rapid intervention to all kinds of emergencies resulting from heavy precipitation events.

All emergency interventions by the local fire-brigade are coordinated by a superior local emergency control center, also operated by the Fire Department, where all incidents are logged in an electronic control system. The German Meteorological Service (DWD) offers support in previous warning and provides data for the subsequent evaluation of heavy precipitation events. The analysis of the correlation between heavy precipitation and reported local incidents for the Fire Departments helps to point out the problem.

Within the efforts to cope with the consequences of climate change effects, the authorities as well as the hazard control institutions have to prepare new strategies and emergency plans for the future as requested by the German "National adaption strategy to the climate change". This is not especially a task for the Fire Brigades, but also for the general public to enhance their resilience.

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