


RISK ASSESSMENT AND MAPPING ACTIVITIES	
Commissioning of a hydrological expert report before planning of structural risk reduction measures - Korbitzer Schanzen, Kirchsteigbachtal	
Where was it implemented?	
City of Meissen, Saxony, Germany	
Fields of action	
Farmland, forests, watercourses, settlement areas	
Related to measure from the catalogue of measures	
<ul style="list-style-type: none"> • Event and damage documentation; event analysis • Risk area identification, mapping and designation • Catchment based concepts and plans • Afforestation in headwater areas and on hillslopes • Dry detention reservoirs and depressions of any capacity 	<p>Aerial image of several erosion channels on arable land at the inflow of the brook „Kirchsteigbach“ - the analysis of such data was part of the study</p> <p>Source: P. van der Burgt, Saxon State Office for Archaeology</p>
Area characterisation	
Area type: rural/urban Landscape type: hilly	
Problem	
<p>On 27 May 2014, the district Meissen-Triebischtal was affected by a heavy rain event of 40-60 l/m² precipitation per hour in the catchment area of the Triebisch river and its tributaries. Resulting floodings and mud flows on and from farmlands passed the forested valleys, reached the settlement area of Triebischtal and caused damages of 6 mio. Euro.</p> <p>The extent of the damage quickly led to the conclusion that an event analysis and conceptual groundwork should be undertaken prior to the planning of measures.</p>	
Description and aim	
<p>Immediately after the heavy rain event the preparation of a hydrological expert report was commissioned by the municipality to determine potentials and limits of erosion protection and flood and sediment retention. A key aspect of the report was the establishment of a precipitation discharge model to quantify the effectiveness of possible retention measures or land-use changes as well as to derive rated values for water management buildings, which were planned in parallel for water maintenance and flood retention. Digital maps of soil erosion risk developed by the Saxon State Office for Environment, Agriculture and Geology for all farmlands in the Free State of Saxony delivered Important input data.</p> <p>The report shows that a transformation of arable land into forest by → afforestation and technical measures (e.g. → retention basin) reduce the risk of damages. The report also shows that the effectiveness of such measures in case of extreme events is nevertheless limited. A residual risk will remain.</p>	
Description of implementation	
Implementation: 07/2014-10/2014	Effect horizon: medium-/long-term
Costs: 19.200 € + 2.000 € for additional supplements for later measure plannings	Involved stakeholders: City of Meissen, building department, assigned engineering company to set up the report

Lessons-learned	
<p>Main success factor: Having such a report, the heavy rain event is documented professionally in detail. Recommendations by the assessor form the basis for further measurement plannings.</p>	<p>Main challenge: Requires extensive, well-documented amount of input data of the precipitation event and losses to create a plausible and reliable precipitation discharge model.</p>
<p>Synergies / beneficial aspects: The report served as scientific basis for measure plannings for many years, supported the decision making process to achieve the requirements of designated risk reduction measures and was adduced when having applied for subsidies.</p>	<p>Conflicts / constraints: none</p>
Key message to others starting with a similar task	Contact
<p>Hydrological reports that inform about discharge conditions with regard to different precipitation scenarios are a very good basis for planning risk reduction measures and risk communication strategies.</p>	<p>City of Meissen, Municipal Building Office, Markt 1, 01662 Meissen E-Mail: stadtbauamt@stadt-meissen.de</p>
<p>Further information (in German)</p>	<p>Steffen Wackwitz (2015): Das Starkniederschlagsereignis in Meissen im Sommer 2014, in: WasserWirtschaft 9/2015, URL: https://www.springerprofessional.de/das-starkniederschlagsereignis-in-Meissen-im-sommer-2014/6110106, 13.11.2019.</p> <p>A. Gerner, K. Brust, A. Münch, A. Wahren (2014): Hydrologisches Gutachten [hydrological report] - Potenziale und Grenzen von Erosionsschutz sowie Hochwasser- und Sedimentrückhalt im Schadensgebiet vom 27.5.2014 in der Stadt Meissen (unpublished report).</p>

What happened after the heavy rain event in Meissen on 27 May 2014?

