Summary of the 10th Flood Risk Symposium of the German Association for Water, Wastewater, and Waste

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On Nov. 29, the 10th Flood Risk Symposium of the "German Association for Water, Wastewater and Waste" was held in Magdeburg, the capital of Saxony-Anhalt, Germany. The symposium was established as one of the outcomes of the research project RIMAX (Risk Management of Extreme Floods), initiated after the 2002 floods in Germany and elsewhere in Europe and was sponsored by the German Federal Research ministry. The DWA established a working group for transferring the results of the RIMAX-Projects into practice. This working group recommended a yearly Flood Risk Symposium where results and progresses in flood risk management in Germany are presented and discussed.

Regionality is one of the keywords to describe the German water management situation. This refers to the hydrologic and hydrodynamic situation as well as to the structure of the water authorities – in Germany the responsibility for water legislation, and execution, is up to the states and not the federal government. So the Flood Risk Symposium is rotated among various regions with a focus on the specific regional problems being the subject of presentations.

The River Elbe, which runs through Magdeburg, is the dominant river in the state of Saxony-Anhalt. There are big former flood areas and meadows that were partly "reactivated" by several dike breaks during the 2013 floods.

The program had four parts:
In **Part 1** the actual state of the implementation of the EU Floods Directive in Saxony-Anhalt was discussed. In Saxony-Anhalt, flood risk was evaluated along 67 rivers with a total length of about 1,900 km (1,180 mi). The total flooded area is about 3,500 km^2 (734 mi^2) for a 200-year flood. Saxony-Anhalt follows the "room for the rivers" concept. Former flooding areas are now planned to be reactivated by relocation of dikes and the construction of polders (pastures or farms). In the renovation or reconstruction of flood protection measures the state invested since 2002 more than 940 Million Euros (US$1.067B). More than 868 km (539 mi) of dikes have been renovated or constructed completely new and about 1.500 ha (3.7 ac) of retention areas has been activated. Along the river Elbe, 266 Million m^3 (9394 ft^3) effective storage will be activated by means of nine polders that are now being planned and constructed. In addition to the Technical Flood Protection Measures, the flood warning model for the river Elbe is being permanently improved. Another important topic is the risk management of flash floods caused by heavy rainfall and the adoption of flood risks maps for smartphones use. These risks can occur statewide and is therefore a real challenge.

Part 2 was dedicated to risk communication issues. An overview of concepts and experiences with public risk communication of flood protection measures were provided. This issue is

Central Park in Magdeburg, Germany flooded by the River Elbe in June 2013 (The Irish Independent).

becoming more important. In many cases, professional moderators or communicators are being involved to support technical staff.

Part 3 addressed the opportunities provided by space and regional planning tools. German federal law directs the states to require more strict rules for all buildings in areas at risk, in particular at the 100-year-flood recurrence.

Part 4 gave an impressive insight to the possibilities of dike/dam breach modelling and the online prediction of the flooding due to the breach. These calculations help the responsible committees ("Katastrophenstab") to decide on evacuations and give information about which areas can still be accessed. The use of drone technology for airborne surveys was discussed to improve the online prediction of flooding by comparing observations with calculations.

In summary, the Flood Risk Conference gave an excellent overview on the ongoing work along the Flood Directive.