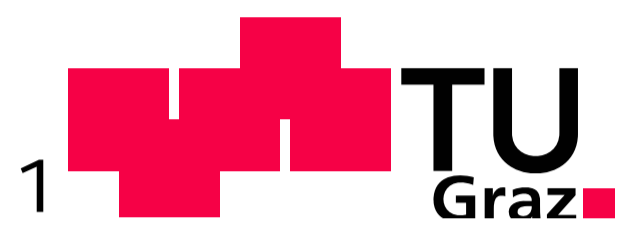


2nd ERA-Net CRUE Research Funding Initiative

Sustainable Strategies of Urban Flood Risk Management with non-structural Measures to cope with the Residual Risk - SUFRI

Helmut Knoblauch¹, Simone Ortner¹, Cornelia Joebstl¹, Reinhard Pohl², Antje Bornschein², Luigi Natale³, Gabriella Petaccia³, Ignacio Escuder Bueno⁴, Allen Bateman⁵, Andr s D az⁵, Gerhard Grossmann⁶,
Alexandra Kulmhofer⁶



Abstract

The project aspires an improvement of flood risk management in case of disaster flood especially in respect of non-structural measures. Trans-national strategies are needed to implement sustainable flood risk management, aiming for advanced warning systems, vulnerability analysis, and risk communication to optimize the disaster control management. To achieve recommendations for good practice international differences will be surveyed. To analyse national proceedings, infrastructure, as well as the public's risk perception, case studies of vulnerable European cities will be undertaken: Graz, Dresden, Lodi, and Valencia.

Objectives

To achieve a stable and effective flood event management, primarily the recent situation with the projected structural measures has to be evaluated to detect the weak spots in the technical system, infrastructure, as well as in the crisis coordination. Based on this information case scenarios will be worked out to get an estimation of the vulnerability of the structures, and additionally due to the analysed interaction of the differing consequences general arrangement drawings can be improved. With additional spatially limited measures in urban areas the flood peak can be reduced and with flood-aware-structures, an innovative form of living on the waterside can be achieved.

The main focus of the project is on risk communication which entails awareness raising, sensitization, public participation, as well as individual precaution measures, and highly advanced warning systems of small catchment areas. It is essential to optimise the crisis communication as well as coordination with the action force and the people involved. For an efficient flood risk management the public participation is an obligatory precondition, because they are familiar with the local flood history, and, in case of flooding, the habitants are requested to act.

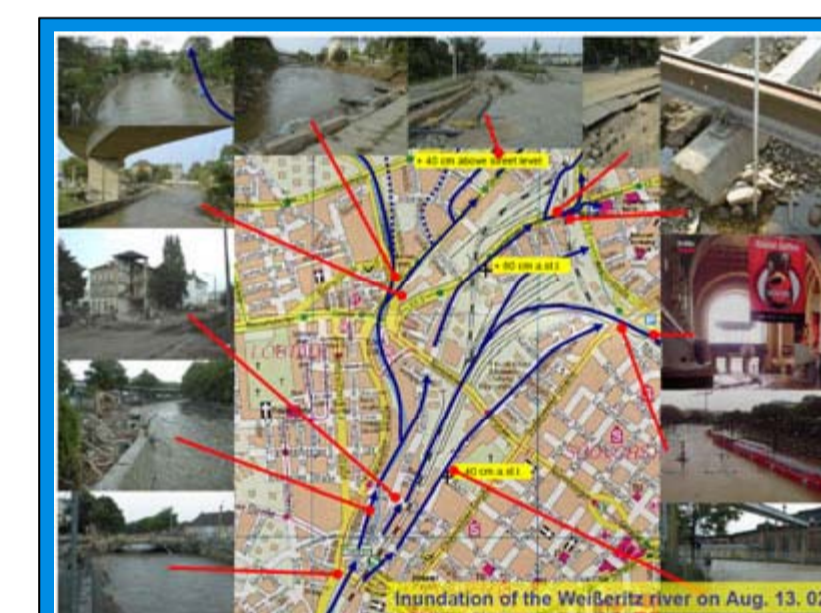
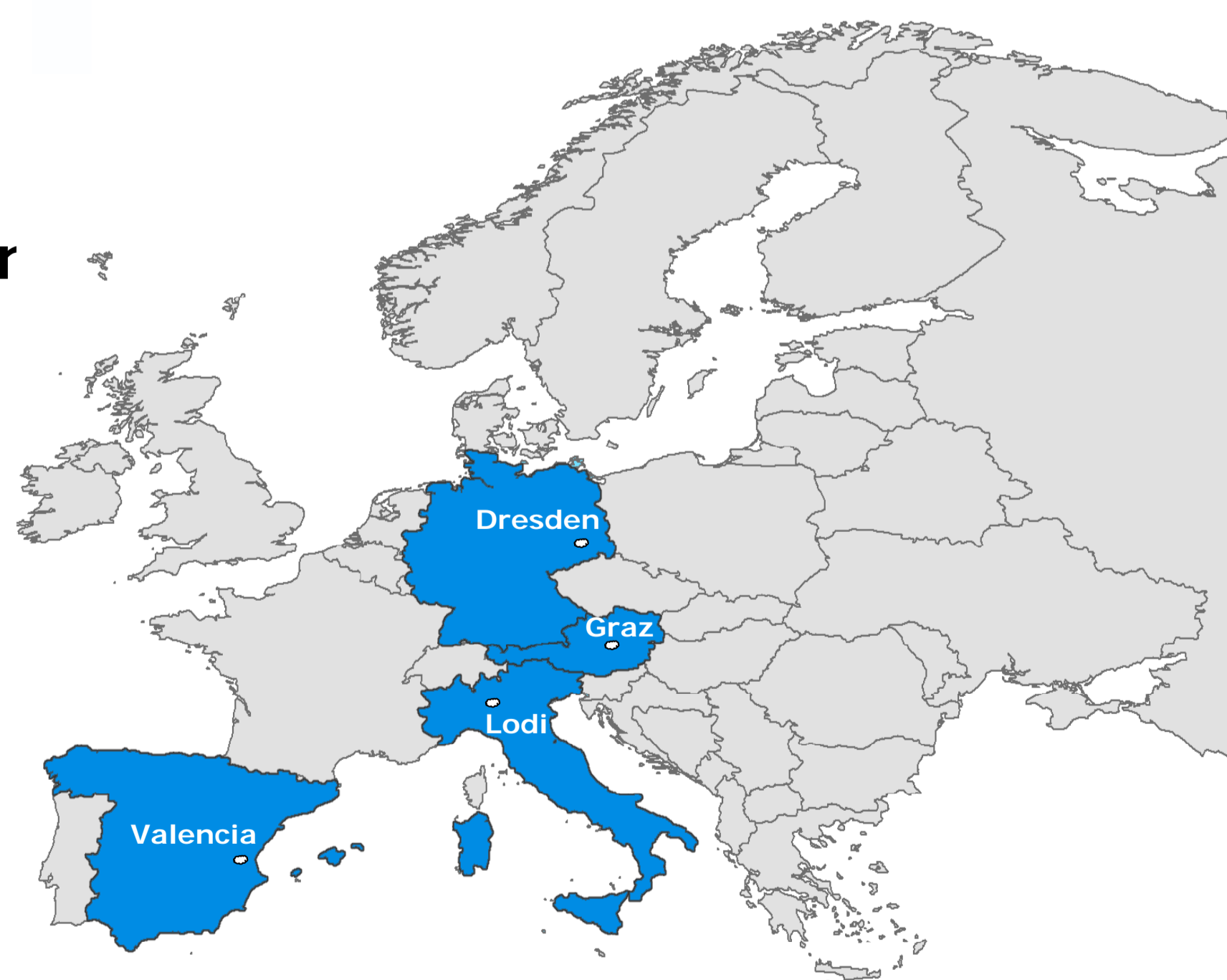
As flood protection and management are major tasks and of high public interest trans-national strategies are needed to implement sustainable flood risk management, aiming for advanced warning systems, vulnerability analysis, and risk communication to optimize the disaster control management. The development of a detailed advanced warning system is, thus, essential to allow the administration, the engineers, as well as the action force to coordinate their work.

With the case studies of the European partner cities the trans-national approach can be compared and improved.

Work Packages (WP)

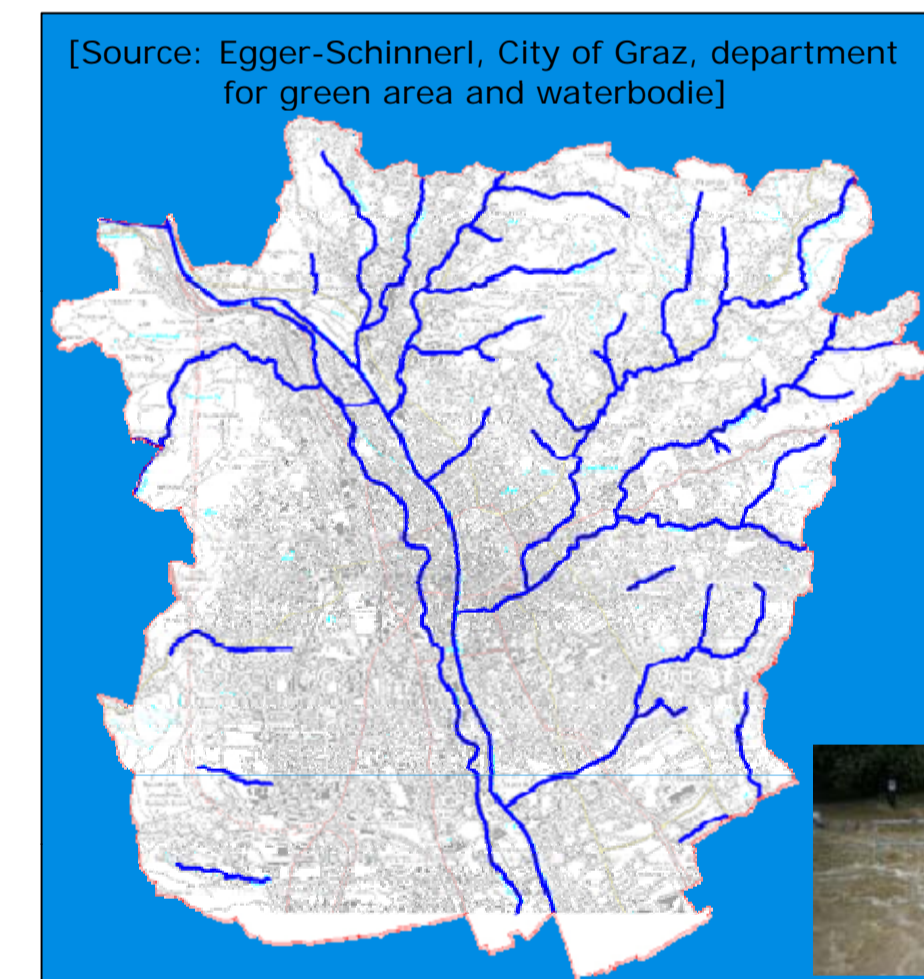
- ◀ **WP1: Project Management and Coordination**
Coordinator: Helmut Knoblauch
- ◀ **WP2: Advanced warning systems of small urban catchment areas**
Coordinator: Reinhard Pohl
- ◀ **WP3: Residual risk and vulnerability analysis**
Coordinator: Ignacio Escuder Bueno
- ◀ **WP4: Risk communication**
Coordinator: Helmut Knoblauch
- ◀ **WP5: Optimization of disaster control management**
Coordinator: Allen Bateman
- ◀ **WP6: Use and national comparison of disaster control management**
Coordinator: Helmut Knoblauch

Case Studies



GERMANY: DRESDEN

River Elbe
2002: flood forecasting lead time of 24 and 12 hours
Since 2004: Saxon Flood Centre
Today: flood forecasting lead time of 60 hours



AUSTRIA: GRAZ

52 brooks with a multiplicity of small channels and 10 mountain streams

Graz-Andritz Flood 18th July 2009
[Source: <http://gis.graz.at>]

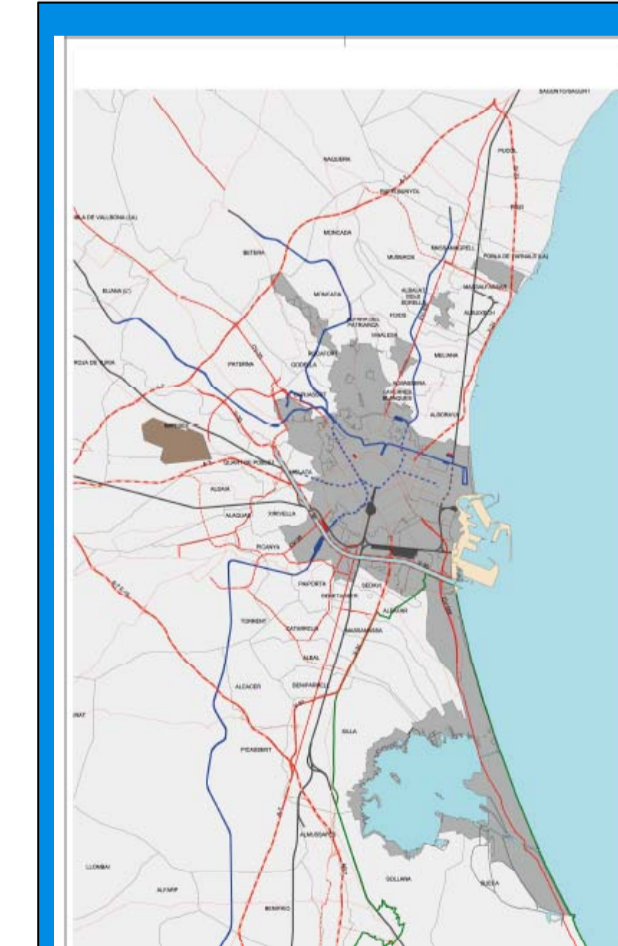


ITALY: LODI

River Adda
Length: 313 km

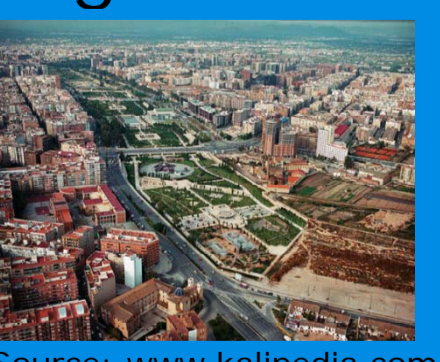


[Source: <http://www.guidelodigiano.it/immagini/altro/presentazione.jpg>]



SPAIN: VALENCIA

1957: catastrophic flood
The diversion of the river Turia, new land uses and settlements, among other factors, have to be accounted for residual risk estimation.



[Source: www.kalipedia.com/ciencias-tierra-universo/te...]