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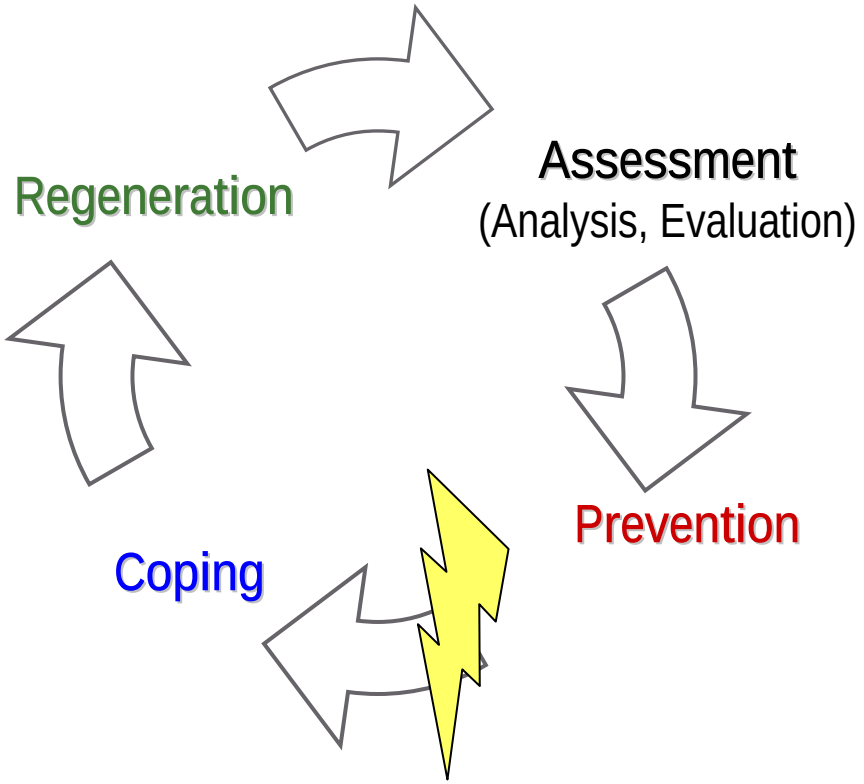
Implementing Hazard Information in Spatial Planning

MONITOR 08

International Conference on Monitoring Methods

Raumberg-Gumpenstein, 21.02.2008

Risk Management Cycle



Spatial planning is operative within evaluation, prevention and to a limited extent within regeneration after damaging events

Kienholz and Krummenacher, 1995 as cited by Stoetter and Zischg, 2008

Functions of Spatial Planning within Risk Prevention

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- Documentation of spatial risk extension within planning instruments
- Reduction of damage potential
  - Distribution of land uses and demands for future land uses according to the suitability of locations: zoning restrictions for highly vulnerable land uses (e.g. building land) in endangered areas and in areas with protective functions
  - Coordination of hazards and land use interests binding for real estate owners

Spatial planning is able to contribute to risk prevention, but it is just one player among many others.

Integrative Character of Spatial Planning

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2 goals of the spatial planning law of Lower Austria

- § 1 Abs. 2 Z 1: consideration of natural hazards within spatial planning measures
- § 1 Abs. 2 Z 3 : securing spatial conditions for economic development, securing locations for establishing new enterprises

Risk prevention concerning natural hazards is an important goal of spatial planning but not the only one. To which extent risk prevention obtains priority cannot be judged in general terms.

Instruments of Spatial Planning in Austria

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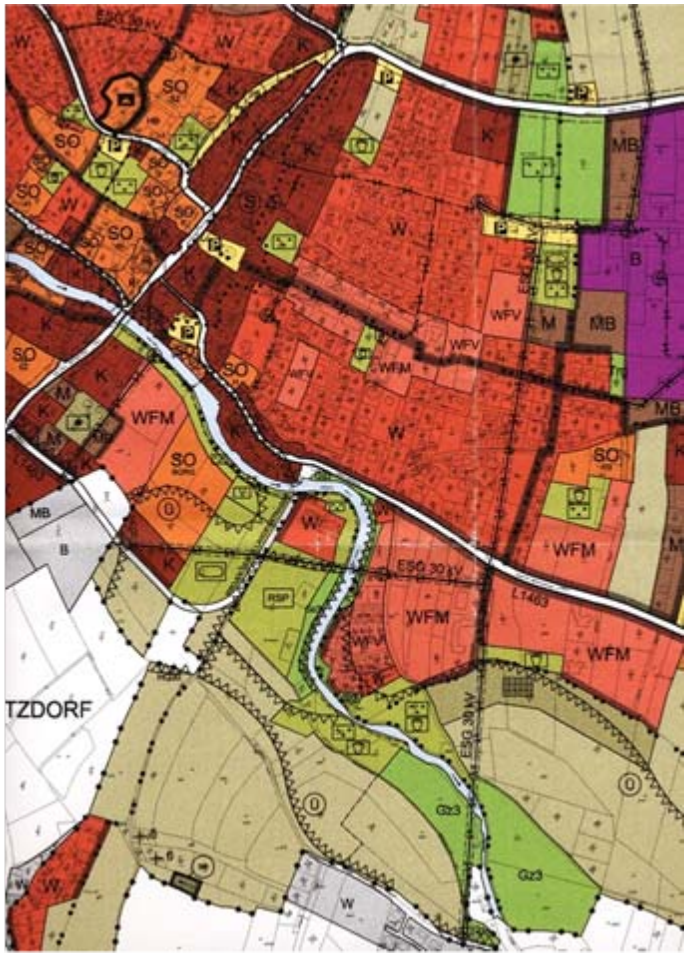
- Spatial planning on state level
  - State development plan
  - Sectoral state plan
  - Regional (development) plan
- Spatial planning on community level
  - Local development concept
  - Local land use plan (zoning plan)
  - Building plan



Spatial Planning and Hazard Information

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- Spatial planning is not able to carry out risk analysis
- Hazard informations are provided by responsible administrative bodies (sectoral planning)
- Hazard mapping is the basis for integrating hazard information into spatial planning instruments
- For implementation in spatial planning risk analysis can be carried out one-time, there is need for updating hazard and vulnerability informations in case of adaptation to changing circumstances or after hazard events (“low frequency monitoring“)

Spatial Planning and Hazard Information

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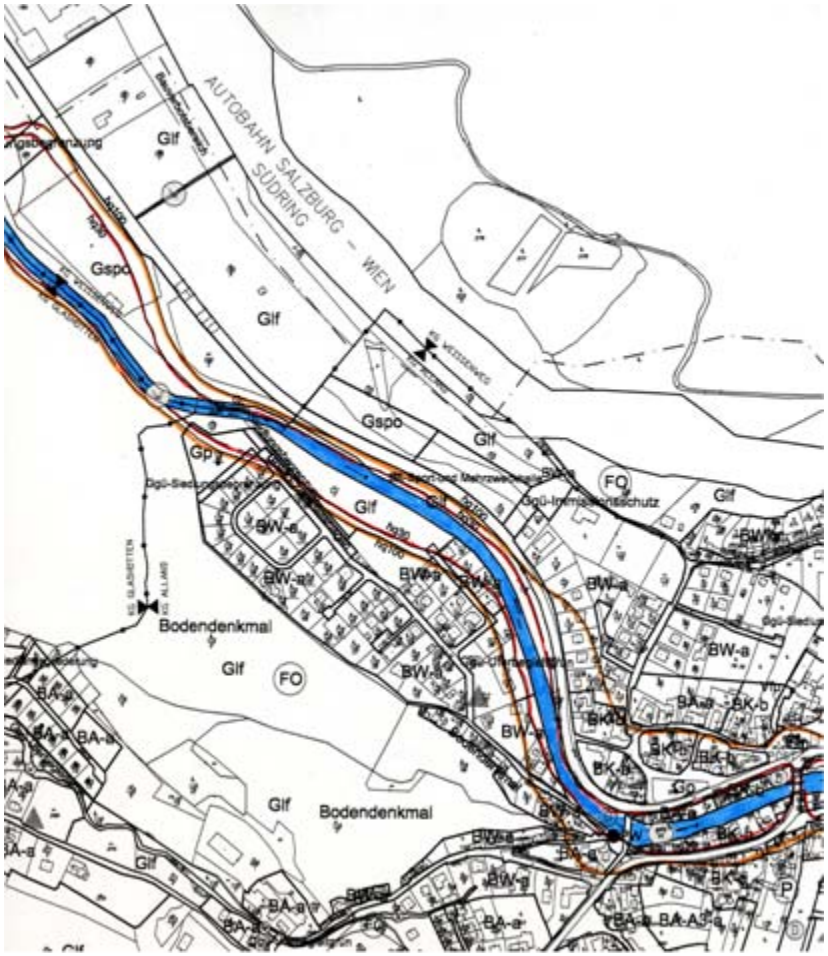
- Spatial planning instruments are usually revised periodically, e.g. update of local land use plans after 5-10 years
- Different regulations concerning revision of local land use plans as a result of updated hazard information
- In Austria hazard maps are considered as “qualified expert opinions“, they are not legally binding for spatial planning unless there is special reference in the respective spatial planning law (e.g. TROG)



Spatial Planning and Hazard Information

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Spatial planning is operative by:

- Displaying hazard informations in spatial planning instruments (informative function)
- Zoning of land uses according to hazard information (regulatory function)
  - Zoning defines possibilities and restrictions concerning land use
  - Basically the zoning board holds scope for decision-making

Local Land Use Plan (LLUP)

- Indication of hazard areas in LLUP is mandatory in almost all spatial planning laws, in many cases with explicit reference to hazard maps
- Restrictions for zoning in hazard areas
  - Restrictions for zoning of building land
    - Prohibition of building land zoning with reference to defined standards (e.g. 100 year flood) or to hazard mapping
    - Prohibition of building land zoning based upon verbal descriptions (e.g. “flood-prone areas“)
    - Exceptions
  - Restrictions for development of existing building land
    - No influence on developed building land
    - Regulations concerning undeveloped building land such as prohibition of development and re-zoning obligation

Kanonier, 2007

Local Development Concept (LDC)

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- Unused potentials within LDC
- Strategic instrument with long-term planning horizon
- Anticipatory coordination of different land use interests
- Participative planning approach

GIS Steiermark, 2007

Long-term coordination of development areas and areas with importance for risk prevention

What about the Regional Level?

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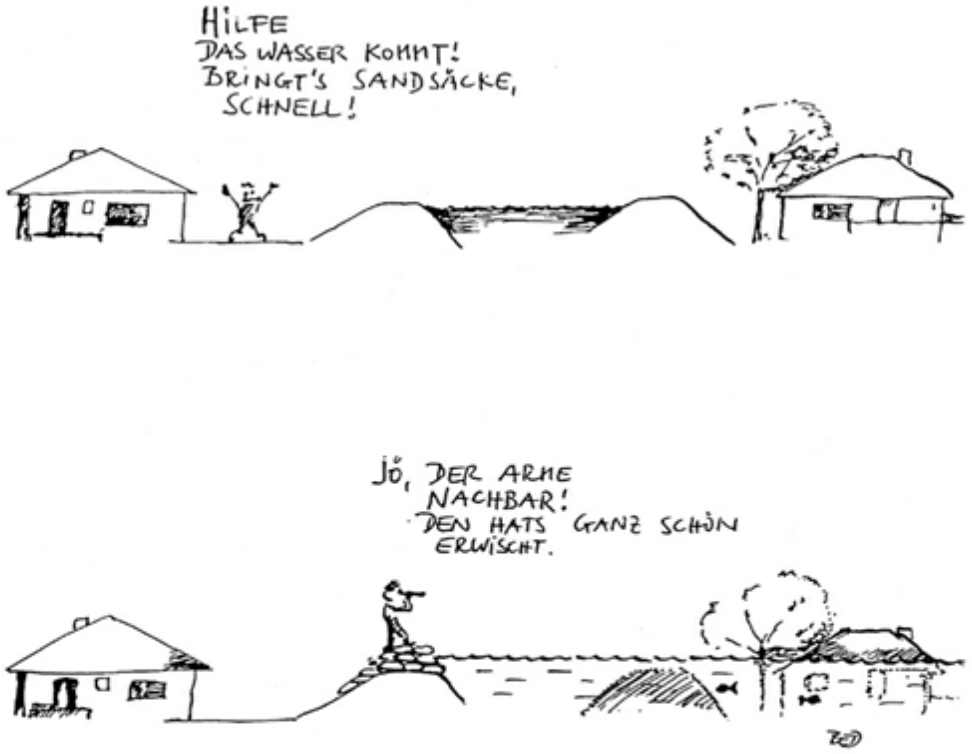

Im Juli regnet es am meisten – rette sich, wer kann!
Kein Wasser im Keller?....10 Punkte

Bednar, Meyer-Cech, 2003

What about the Regional Level?

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- Floods do not stop at community borders
- Demand for planning at regional level
- Overlapping of different spatial types: river basin area (catchment area) and the area of political and administrative action
- Gap between a newly-defined administrative area and existing territorial institutions and stakeholders
- “Problem of fit“
- Spatial “misfits“ result in external effects and induce a high demand for coordination

Young, 1999; Moss, 2003

Regional Planning

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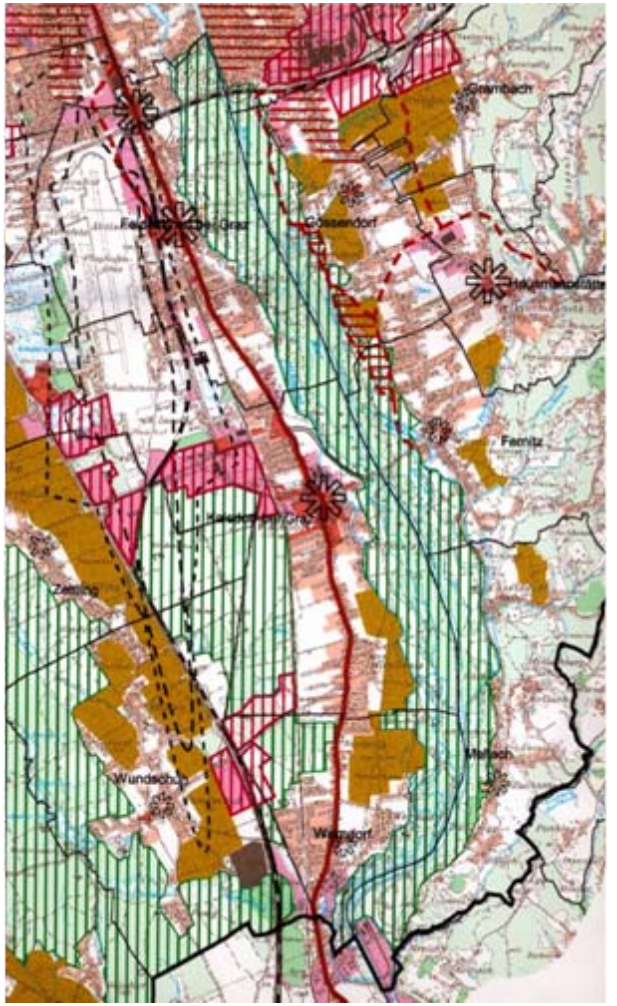
- Currently there are no legal obligations concerning risk prevention in regional (development) plans
- Risk related zoning in regional plans is not excluded by law
- In practical implementation measures of risk prevention are no main issues in regional planning
- The sectoral programme “Flood Protection“ in Styria defines legally binding rules for risk related zoning on community level (restrictions and exceptions)



GIS Steiermark, 2007

Regional Study Aist (Upper Austria)

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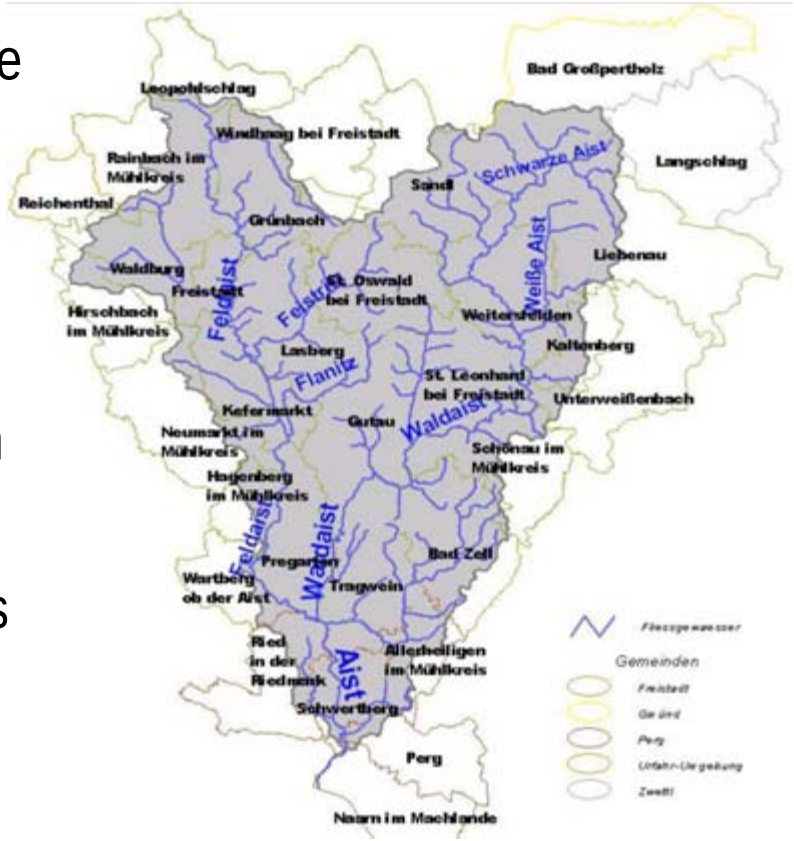
- Planning instrument on behalf of the Austrian Service for Torrent and Avalanche Control, Section Upper Austria
- Reduction of floods by recommending conservation of existing retention areas within whole catchment area and implementation of flood retention basins in the upper parts of catchment area
- Coordination of different planning activities with spatial relevance
- Implementation by a **cooperation of 27 communities** within the catchment area: **Aist Water Board**



Puchinger and Henle, 2007; Kitzberger, 2006

Regional Study Aist (Upper Austria)

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- Spatial planning authority on state level is not involved in this cooperation
- Potential for spatial planning in terms of coordinating sectoral planning activities and stakeholder interests within cooperation processes
- Integration of risk prevention issues into regional development concepts (regional cooperations)

Puchinger and Henle, 2007; Kitzberger, 2006

Challenges

- Different updating periods of hazard maps and spatial planning instruments
- Improving legal links between hazard mapping and spatial planning
- Consideration of areas (directly) beyond protective structures (areas of remaining risks) within spatial planning
- Information database for risk based (instead of hazard based) planning
- Spatial planning is focused on future developments, very limited possibilities to influence existing land uses
- Limited possibilities of actively supporting spatial development in spatial planning because of (financial) incentives lacking

Thank you for Attention!

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