The implementation of the EU-FD in Austria – experiences and insights

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Overview

• History of flood risk management in Austria
  – shift from flood protection and flood management to **flood risk management**?
  – historical examples and implications

• Current stage of implementation of the EU-FD in Austria
  – typical procedures
  – problems

• The role of participation
  – current stage of participation
  – definition of interested parties and involvement
History of flood risk management in Austria
History of flood risk management in Austria

Early historical example from the Alps

• settlements in valleys often affected by floods
  – flooding from main river: HQ$_{5-10}$ or even annually and affecting large area
• consequence: “self regulation”
  – villages moved on alluvial cones
  – flooding from main river: HQ$_{5-10}$ or even annually and affecting larger area.
  – flooding from torrent: more seldom
  risk reduction !
• achieved by local protection alliances
Villages on alluvial cones not in valley
Villages on alluvial cones not in valley
History of flood risk management in Austria

After WW II Austria tried to build the “10th region”

- drainage of wetlands combined with flood protection of farm land (funding system)

- consequences:
  - rivers were put into narrow channels and flood wave accelerated
  - although the Austrian water law says that people affected from flooding are self-responsible for their own protection, funding supported the opposite
  - no participation – no interest in participation!
    “responsibility of state”
Channelisation of rivers
Nature „fought back“ in 1965 and 1966
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History of flood risk management in Austria

Many technical measures did not work, further consequences were needed

- formation of an interdisciplinary group
  - foundation of (1968)

  **INTERPRAEVENT**

  - documentation and analysis of events

- flood protection concepts towards risk management (low level of participation)
  → e.g. Gail valley
  - flood retention system upstream in rural area to protect city from flooding
Flood retention system Gail valley
Retention pool „Presseggersee“
Ring dam in Gail valley
Flood retention in unsettled area
Cost–benefit ratio of flood protection

Gegenüberstellung Kosten - Nutzen des Hochwasserschutzes für Gemeinden an der Gail (1971-2008)

Millionen EURO

- Kosten je Gemeinde
- Kosten aufsummiert

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Implementation of the EU-FD in Austria (current stage)
HZM: a part of the integrated risk management
Steps and problems of implementation

- APSFR: Areas of potential significant flood risk M 1:25000
  - HM: Hazard maps M 1:25000
    - RM: Risk maps M 1:25000
      - RMPL: Risk management plans
  - HZM: Hazard zone maps M 1:2000

2013

2015

RISK awareness at scale of 1:2500 very problematic!

HZM with more details than HM

inhomogeneous HZMs

HZM of WLV for 150 years return period

HZM of BWV for 100 years return period (from 2006 on for 30, 100 and 300)
Hazard maps in Carinthia

Legend
- Green: Hazard map - Federal Water Engineering Administration
- Yellow: Flood risk analysis for Austria
- Red: Hazard map - Austrian Service for Torrent and Avalanche Control

Scale: 0 3 7.5 15 22.5 30 Kilometers

North
Map of risk

Legend

- not evaluated
- no risk
- low risk
- medium risk
- high risk
- very high risk

0 3.75 7.5 15 22.5 30 kilometers
Flood hazard maps in Austria – not only a tool

Hazard maps for already 35 years in Austria

• 1975: Torrent and avalanche control started and implemented HZM in the Forestry Law → consequence of INTERPRAEVENT

• 1994: Hazard zone maps for rivers fixed in technical funding guideline

• 2006: addition of 300 years return period events in technical funding guideline

• 2011: Hazard zone maps in Water Law but still as an expertise
The role and current stage of participation
Participation within hazard mapping

Municipality needs flood protection

1st step always hazard zone map

After first results of flooding maps available

information to municipality

After HZM is ready

4 weeks public available at municipality

formal letter from municipality to inhabitants

within these 4 weeks

possibility of reacting against with written argumentation

local, public presentation with people

on-site examination by commission

Commission = BWV, spatial planning, civil engineer, municipality, WLV, affected infrastructure (e.g. rail way, road service) and the PUBLIC

→ reaction to all (argumentative) statements!
Public presentation
On-site examination by commission
Folder describing hazard zone mapping

KONTAKT:

WAS IST EIN GEFAHRENZONENPLAN?

Der Gefahrenzonenplan (GZP) stellt die Gefährdungshöhe für eine geplante Bauvorhaben oder bestehende Ansiedlungen dar.

Was leisten die Gefahrenzonen?


Was leisten die Gefahrenzonen?


GEFAHRENZONENPLAN
FÜR FLÜSSE

GEOGRAFISCHE PLANUNG SCHÜTZTE VON HÖCHWASSER

Wasserbau-Kärnten

VORSICHT: HÖCHWASSER GEFAHR

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IMRA project

Integrative flood risk governance approach for improvement of risk awareness and increased public participation

Main goals:

• Self assessment of risk communication methods
• Workshop on the understandability of hazard maps and other plans
• Stake holder workshops → definition of roles
• Improvement of risks awareness
• Implementation of a natural hazards commission
Stakeholder workshop
Conclusions

• Integrated flood risk management has in some ways already started
• Risk management like in Switzerland not yet in Austria
• Participation is necessary
• The proper level of participation is not clear yet
• Participation needs time and human resources
Good example from Switzerland