

OFFICE OF THE STYRIAN GOVERNMENT
Department 14 Water Management,
Resources and Sustainability
Protective Water Management Unit



Status of the implementation of FD 2007/60/EC in Austria and Styria

Christoph Schlacher



Das Land
Steiermark



MINISTERIUM
FÜR EIN
LEBENSWEERTES
ÖSTERREICH

Thu, 19 May 2016



- General framework
 - PRFA, APSFR, Maps
- Used method FRMP
 - Overview & Focus
- Results Austria & Styria

remark:
tables, diagrams, etc.
© riocom – Consulting Engineers
RIVERGATE, Handelskai 92, 1200 Wien

General Framework



WHY?

EC Floods Directive 2007/60/EC, WRG 1959, §55

WHO?

Federal Ministry of Agriculture and Forestry, the Environment and Water Resources (BMLFUW)
Office of the Government of Styria, Dep 14
Permanent Working Group for FRM (established 2013)

HOW?

Preliminary Floods Risk Assessment, Hazard and Risk Maps, Federal Draft for FRMP

WHAT?

FRMP for 391 APSFR in Austria / 55 APSFR in Styria
Main work: 6 Civil Engineers (lots) + 1 project coordinator
communities / interested parties

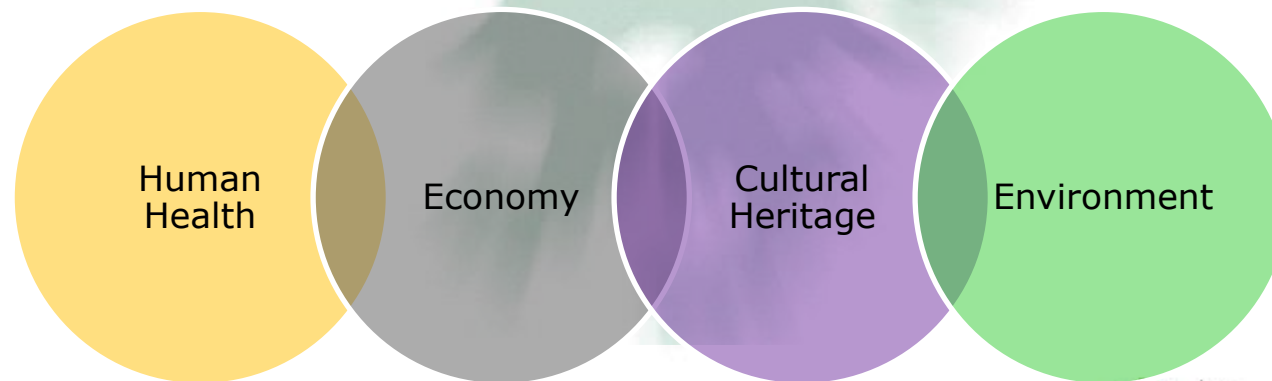
WHEN?

1st Cycle: 2007 - 2015



Preliminary flood risk assessment:

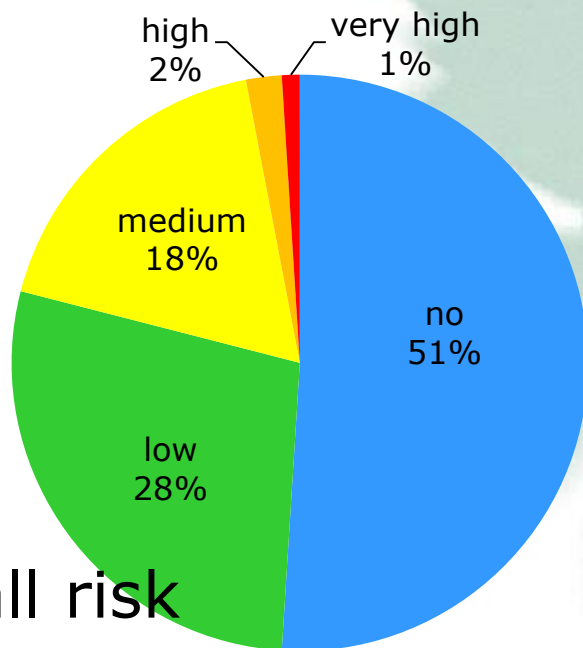
- Significant past floods
- Potential significant future floods
- Risk and negative consequences for:



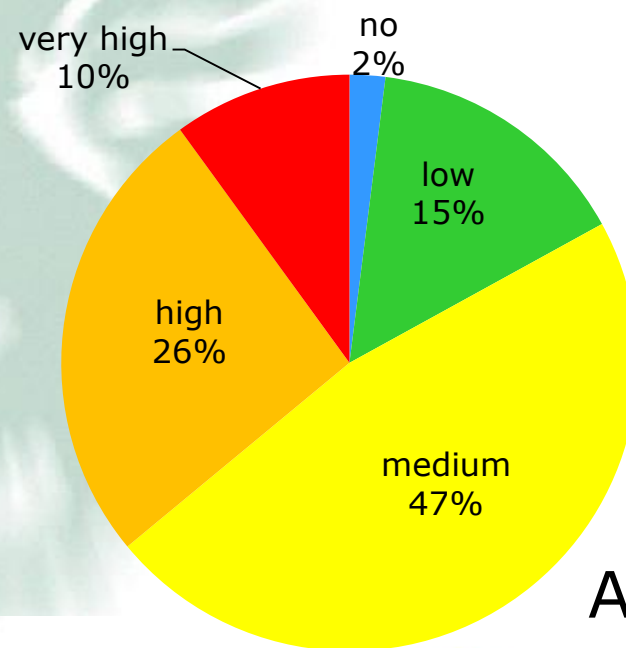


- APSFR in Styria

Examined rivernet in Styria [km]	Identified APSFR	Length of APSFR [km]	Average length of APSFR [km]
7329,61	55	524,93	9,5



overall risk

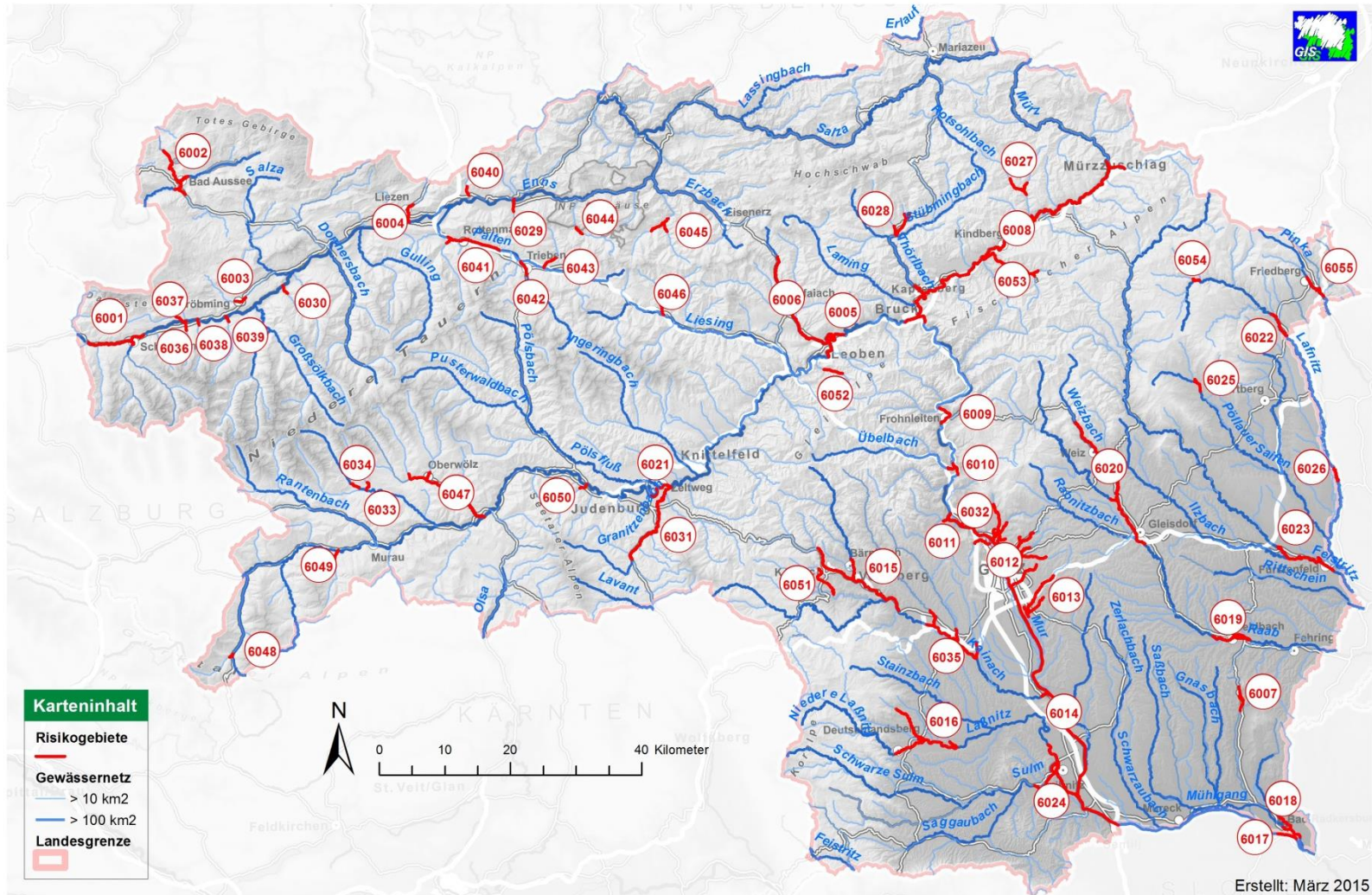


APSFR

General Framework



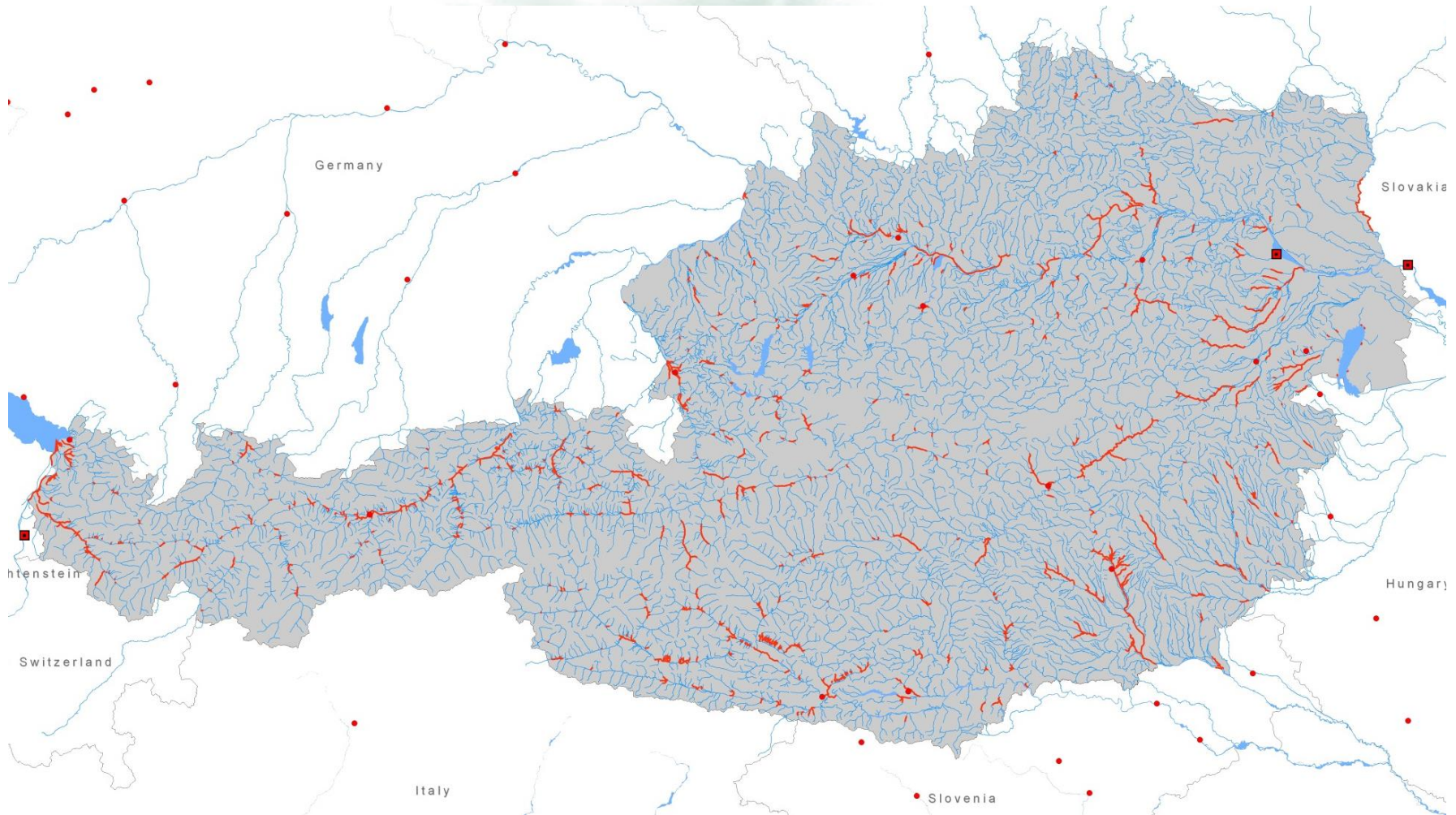
- APSFR in Styria



General Framework



- APSFR in Austria





- Flood Hazard Maps

floods with...

- **Low probability** (expected period of recurrence: 300 years or extreme event scenario)
- **Medium probability** (expected period of recurrence: likely return period at least 100 years)
- **High probability** (expected period of recurrence: 30 years)

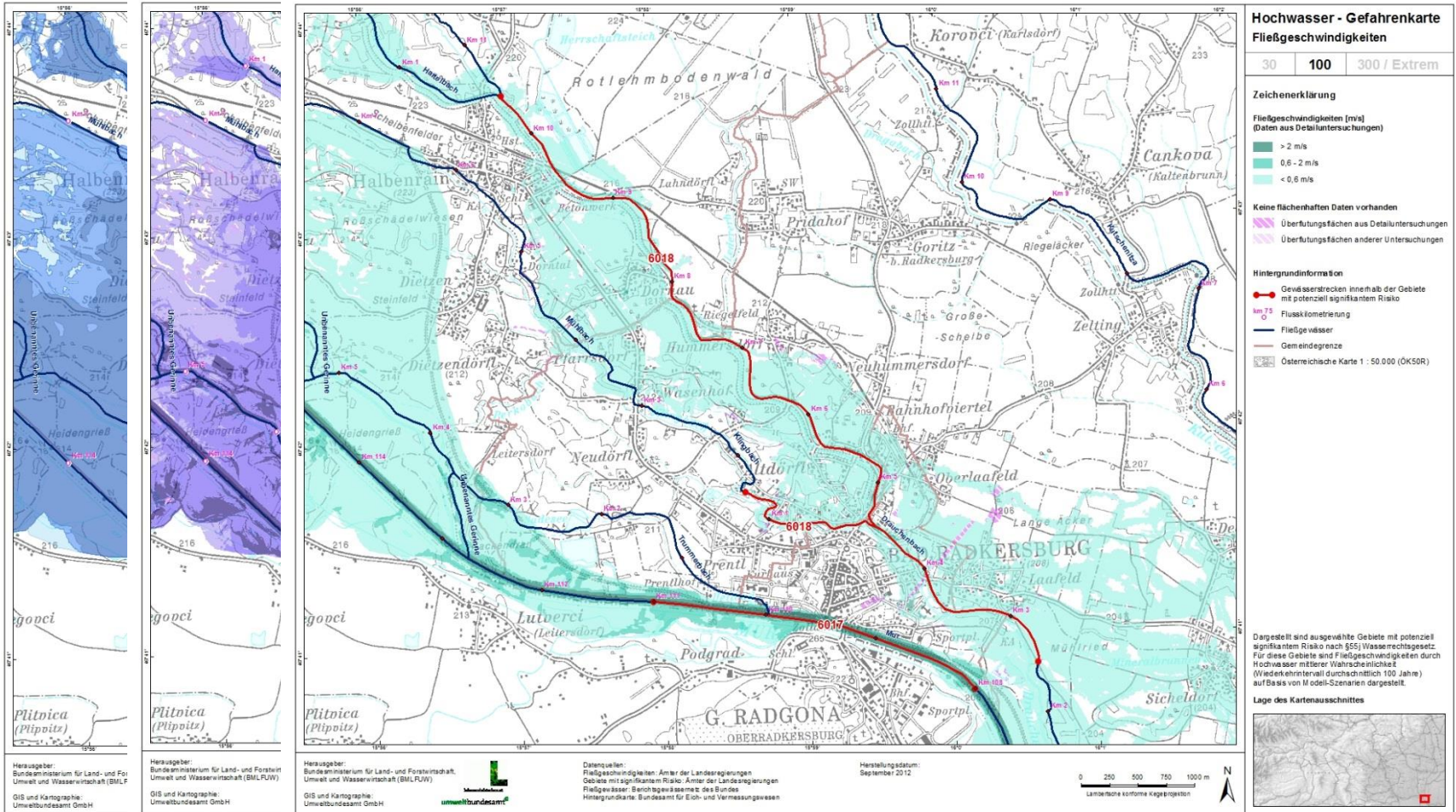
for...

- **Flood extent** → 1 maps for all scenarios
- **Water depth** → 3 maps (1 for each scenario)
- **Flow velocity** → 3 maps (1 for each scenario)

General Framework



• Flood Hazard Maps





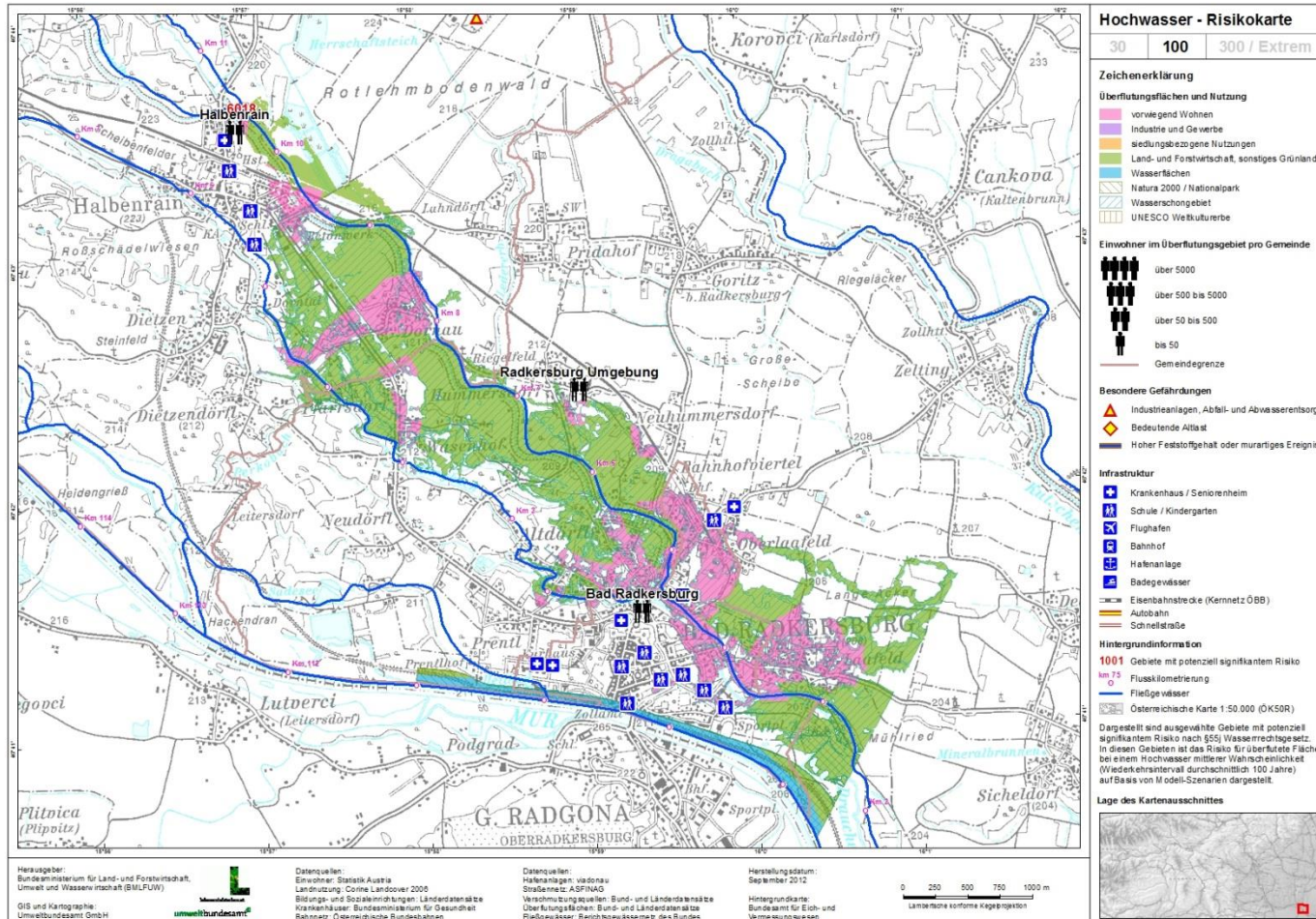
- Flood Risk Maps

- Statistical data of affected population, 125 m raster (2001)
- IPPC installations, PRTR and SEVESO II plants and other sources of pollution (E-PRTR-register)
- Protected Areas
- Corine Landcover 2006 for flooded areas
- Database „POI“ (cultural heritage, infrastructure,...)
- Important transport infrastructure: roads, railroads, harbours and waterways

General Framework



- Flood Risk Maps





Used method - FRMP



- Focus

- coordination in planning and implementation across various disciplines
- better cooperation of admin. levels and disciplines associated to all relevant fields of flood risk management
- steering mechanism for funding
- overview of measures already implemented (and to be implemented)
- active involvement of relevant disciplines and the broad public



>> Catalogue of 22 measures



Source: BMLFUW (2015): 1. Nationaler HWRMP, Sicher leben mit der Natur

>> Action planning for each APSFR

- Information about
 - Flood and area characteristics
 - Coordination flood directive and water framework directive
 - Coordination of the FRMP
 - Adaption to climate change
 - Public information
 - Working process in the current cycle
- Selection of proper measures
 - Current status
 - Additional information
 - Status development
 - Uncertainties concerning the realization
 - Prioritization



- Types of measures considered

M01: Compilation and update of hazard zone plans

M02: Incorporation of hazard zone plans

M03: Development of concepts, plans, projects, strategies on catchment scale to improve the water and sediment balance

M04: Compilation and incorporation of local and regional land use planning strategies

M05: Definition of a framework for implementation and maintenance of flood protection and mitigation measures.

M06: Improvement of retention capacity on catchment scale

M07: Restoration of flood plains and sedimentation areas

M08: Structural protection measures

M09: Object oriented measures

M10: Relocation and reallocation

M11: Improvement of river inspection

M12: Maintenance of protection and mitigation measures, river maintenance

M13: Definition of operating instructions for flood prone and flood influencing facilities

M14: Information of public in an appropriate way

M15: Improve participation

M16: Educational activities

M17: Implementation of monitoring, forecasting, warning systems

M18: Compilation of emergency plans

M19: Ensure availability of facilities for emergency

M20: Emergency response

M21: Evaluation and repair of damages

M22: Documentation and analysis



Results Austria & Styria

Ergebnisse Steiermark

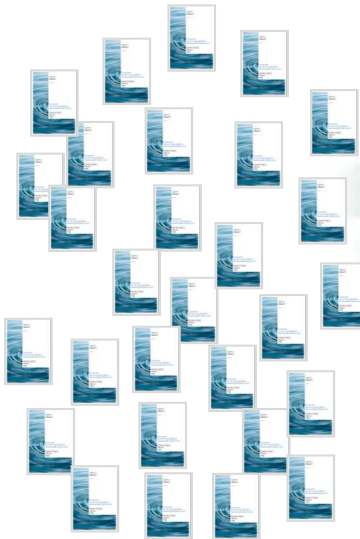


391 FRMP Austria
55 FRMP Styria

9 FRMP

1 FRMP

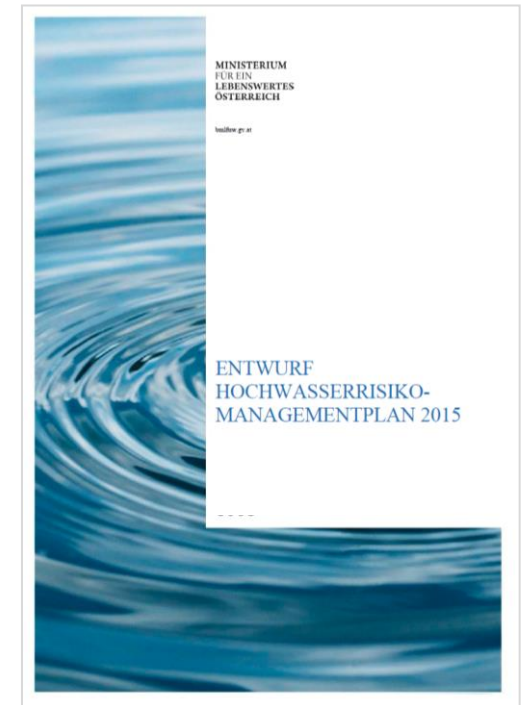
▶ one for each APSFR



▶ one for each state



▶ one for Austria



Results Austria



- Prioritization Austria

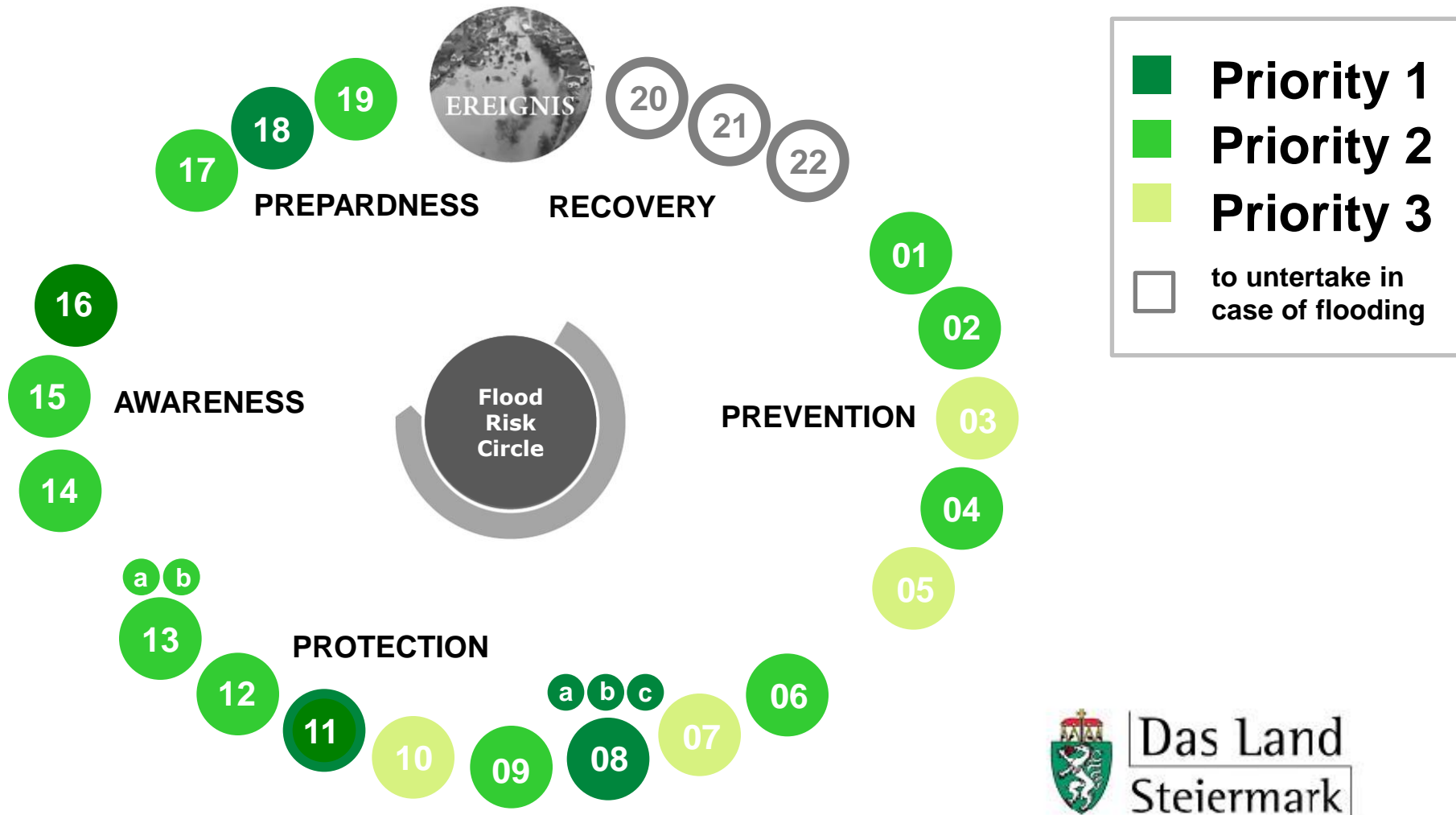


■	Priority 1
■	Priority 2
■	Priority 3

Results Styria



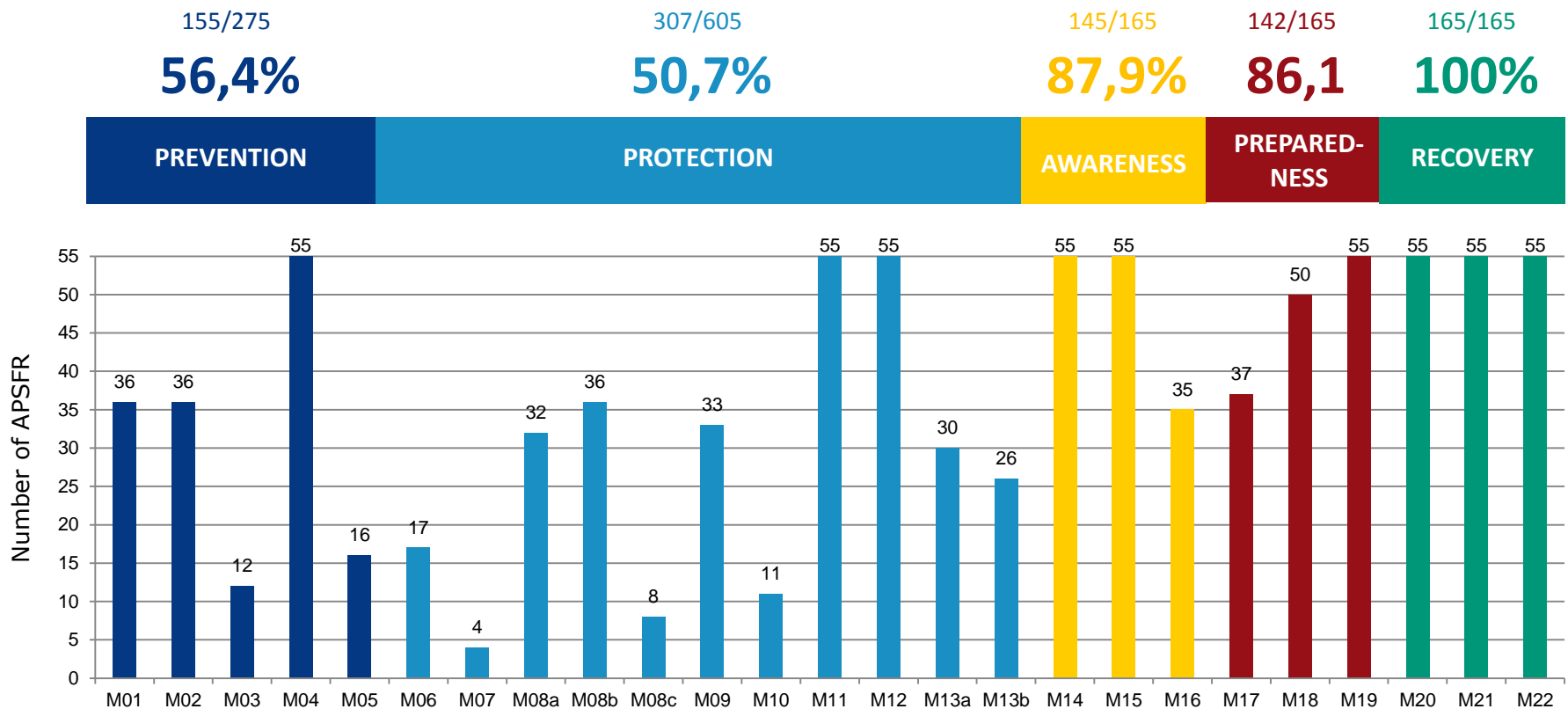
• Prioritization Styria



Results Styria



- Need for action / Number of selected measures





- Analogue and digital FRMP Styria
 - **Analogue FRMP**
 - Hazard and Risk maps
 - Selected measures
 - Documentation of participation process
 - Final report APSFR
 - Final report „lessons learnt“ per lot
 - Data carrier: Digitale FRMP
 - **Digital FRMP *additional***
 - Collection of checklists
 - GI-data: location of measures

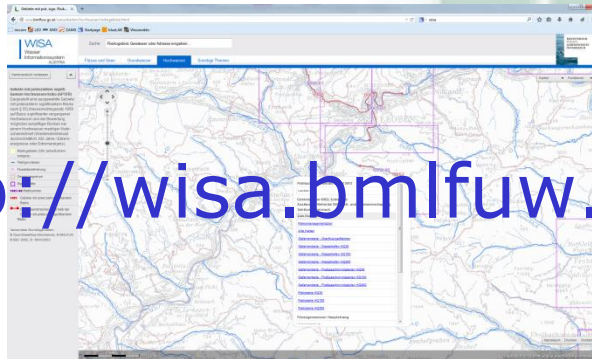
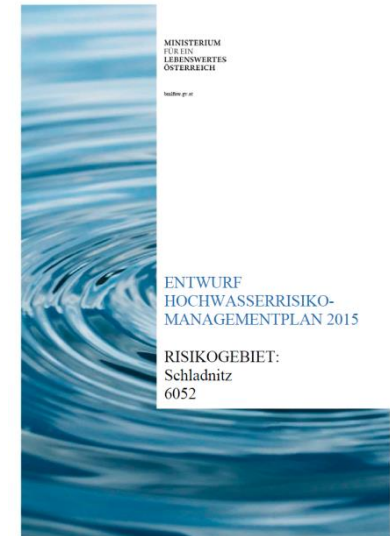


Further Information



- Water Information System Austria (WISA)
 - Draft of the national FRMP
 - Catalogue of measures
 - Environmental report
 - Leaflet public information

 - Hazard and Risk maps for each APSFR
 - FRMP for each APSFR
 - FRMP Donau, Elbe, Rhein



<http://wisa.bmlfuw.gv.at>



- FRMP on 4 levels
 - APSFR (one or more municipalities)
 - Types of measures, status, development, priority
 - Federal Province
 - Overview, strategy, priority
 - Federal State
 - By-law to water law (competence of BMLFUW)
 - Recommendations for spatial planning, emergency planning, building codes and other competences
- Level A (ICPDR, ICPR, ICPER)



THANKS FOR YOUR KIND ATTENTION!

Christoph Schlacher, MSc

OFFICE OF THE STYRIAN GOVERNMENT
Department 14 Water management, Resources and Sustainability
Protective Water Management Unit
Wartingergasse 43
8010 Graz
christoph.schlacher@stmk.gv.at