Harmonization and Requirements for Danube Floodrisk Mapping

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Danube Floodrisk
Stakeholder oriented flood risk assessment
for the Danube floodplains

Jointly for our common future

Outline (Outputs of WP3)

- Report on National Requirements
- Manual of Harmonized Requirements
- Harmonisation of Results

Report on National Requirements 1/2

- 8 Partners replied (AT, BG, CR, HU, IT, RO, SK, SR)
- Table of Content>
  1. Report on national requirements concerning the later <u>user groups</u> of the generated flood risk maps
  2. Report on national practice, requirements and availability of <u>data</u> and data management <u>in border regions</u>
  3. Report on national requirements concerning <u>methods</u>
  4. Report on national requirements concerning <u>map content</u> and publication means

Report on National Requirements 2/2

- FLOODRISK Homepage (WP 3 → Documents)

  - Final_Danube_Floodrisk_National_Requirements.docx

Manual of Harmonized Requirements

- Table of Content
  1. Contributors
  2. Introduction
  3. Summary of <u>good practice</u> from other risk mapping projects
  4. Harmonisation and <u>joint definition</u> of requirements
  5. Harmonisation of <u>data</u>
  6. Harmonisation of <u>methods for</u> processing of <u>hazard maps</u>
  7. Harmonisation of <u>methods for vulnerability and damage assessment</u>
  8. Harmonisation of <u>results</u>
  9. ANNEXES

5. Harmonisation of data

5.1 Data needs and minimum quality requirements (resolution, accuracy, up-to-datedness)

5.1.1 Overview on data needs

5.1.2 Extract of data to be integrated in the project data base

5.1.3 Digital Terrain Model

5.1.4 Transversal cross-sections

5.1.5 Roughness coefficient

5.1.6 Hydrological data

5.1.7 Austrian methodology for hydrological data

5.1.8 Decomposition of the flood waves

5.1.9 Discharge data

5.1.10 Meta data (minimum content)

5.2 Projection and reference systems

3-4/11/2011

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6. Harmonisation of methods for processing of hazard maps

6.1 Hydraulic modelling techniques

6.2 Boundary conditions for the hydraulic modelling

    6.2.1 General principles

    6.2.2 Hydrological methodology

6.3 Scenario definition for the hydraulic modelling

6.4 Simulation methods and model types used

6.5 Quality management

7. Harmonisation of methods for vulnerability and damage assessment

7.1 Requirement towards vulnerability indices

7.2 **BEAM**-methodology

7.3 Implementation of damage model in Danube Floodrisk Project

7.4 Glossary of common understanding concerning vulnerability and damage assessment

Manual of Harmonized Requirements

- FLOODRISK Homepage (WP → Documents)

  - Manual of Harmonized Requirements_
    Final_Report_Danube_Floodrisk.docx

Harmonisation of Results

- The task is (from the contract):
  - Harmonisation of results: The goal is to provide maps in high resolution + uniform GIS format. The standards will be defined by the PP. The results will be mainly presented in different map products (printed, digital and web based) also for the cartography standards need to be defined due to the user needs: map content, units used, legend classes, symbols + colours, languages, coordinate systems.
  - Deadline: 31 October 2011

Harmonisation of Results

- **HAZARD & RISK MAPS**
  - Atlas   → 1:100 000
  - Pilot areas   → 1:25 000

DIRECTIVE 2007/60/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
of 23 October 2007
on the assessment and management of flood risks

Chapter III. Article 6.

3. **Flood hazard maps** shall cover the geographical areas which could be flooded according to the following scenarios:

    (a) floods with a low probability, or <u>extreme event</u> scenarios;

    (b) floods with a <u>medium probability</u> (likely return period ≥ 100 years);

    (c) floods with a <u>high probability</u>, where appropriate.

4. For each scenario referred to in paragraph 3 the following elements shall be shown:

    (a) the <u>flood extent</u>;

    (b) <u>water depths</u> or water level, as appropriate;

    (c) where appropriate, the <u>flow velocity</u> or the relevant <u>water flow</u>.

Hazard Maps

Flood extent (3 scenarios on 1 map)

Austria

Elbe

Hazard Maps

Water depth	3 scenarios on 3 maps!!!!
Flow velocity	

Colours and classes

For **inundation depth**

> 4 m
2 - 4 m
0,5 - 2 m
< 0,5 m
HQx without indication of depth
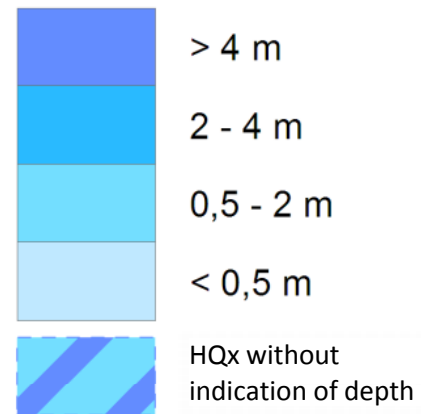
Colours

For inundation depth and velocities

LAWA, Germany

Water depth	0 1 2 4 m
Recommendation	
Systems without technical flood protection	
Protected systems	
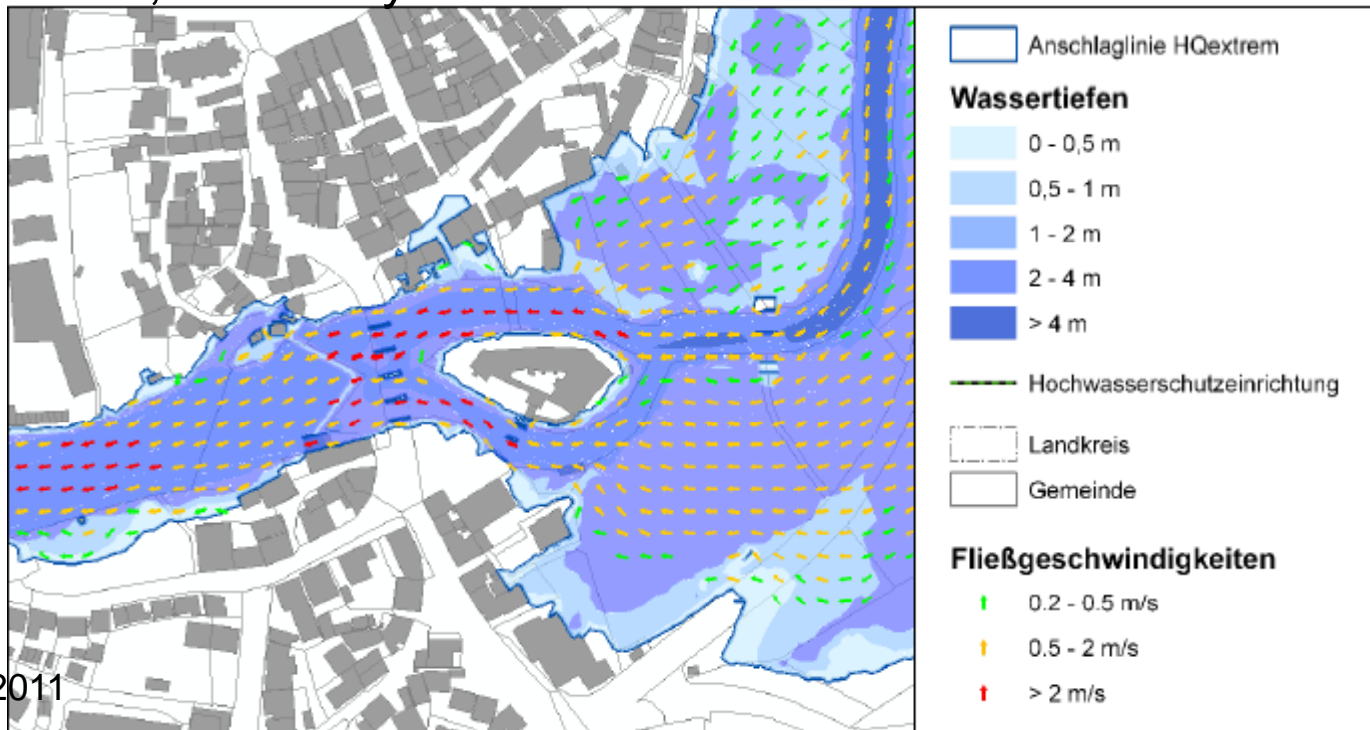
Agreements

- Use of two coordinate systems (European/World)
- Use of vector data for map background
  - ICPDR-river-network plus national Danube polygons
  - Roads/railroads
  - Dikes
  - Settlement areas (similar than asset layer)
  - Shaded relief from SRTM
- All maps with same orientation, calculation of best fit when inundation extent is available
- No integration of pilot maps, separate publication for pilots
- Colour scheme similar to Elbe-atlas

Chapter III. Article 6.

5. **Flood risk maps** shall show the potential adverse consequences associated with flood scenarios referred to in paragraph 3 and expressed in terms of the following:

   a) the <u>indicative number of inhabitants</u> potentially affected;

   b) <u>type of economic activity</u> of the area potentially affected;

   c) <u>installations as referred to in</u> Annex I to Council Directive 96/61/EC of 24 September 1996 concerning <u>integrated pollution prevention and control</u> (1) which might cause accidental pollution in case of flooding and potentially affected protected areas identified in Annex IV(1)(i), (iii) and (v) to Directive 2000/60/EC;

   d) <u>other information</u> which the Member State considers useful such as the indication of areas where floods with a high content of transported sediments and debris floods can occur and information on other significant sources of pollution.

Risk Maps

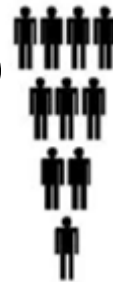|	
Number of inhabitants	
Type of economic activity	3 scenarios on 3 maps!!!!
IPPC installations	
Other information	

Risk element symbols

- Hospitals (human health)
- Airport
- Main train station
- Cultural heritage
- Nature protection sites   similar tree or bird symbol
- Industrial sites and waste water treatment plant (IPPC)

- Effected population (living place)

Structure of the atlas

- Content of text section of the Atlas
  - Project description
  - Description of assumptions
  - Description of methodology
  - Statistical analysis of results (effected areas, population, assets etc.) in tables and diagrams
  - 2 pages each language
- Cover / binding of the atlas?
- Include CD/DVD

Thank you for your attention