Danube Flood Action Programme
Basin-wide cooperation towards EFD Goals

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VITUKI
ICPDR FP EG
Courtesy Igor Liska
• 10% of Europe
• 83 mil inhabitants
• 19 countries

Most international river basin in the world
Economic Disparities

GDP per capita (PPP) in $, 2007

* 2005
The Danube River Protection Convention

2. Entry into force 22. October 1998
3. Permanent Secretariat since 1 October 1999

A legal frame for co-operation to assure the protection of water and ecological resources and their sustainable use in the Danube River Basin
Contracting Parties

- Germany
- Austria
- Czech Republic
- Slovakia
- Hungary
- Slovenia
- Croatia
- Bosnia & Herzegovina
- Serbia
- Montenegro
- Romania
- Bulgaria
- Rep. of Moldova
- Ukraine
- European Union
Observers to the ICPDR

Black Sea Commission

Navigation Commission

Die Donau – Tourism Commission

DEF

Friends of Nature

Danube Environment Forum

WWF

UNESCO - IHP

Ramsar

Europ. Angling Ass.

GWP CEE

REC

VGB Power Tech
ICPDR - International Commission for the Protection of the Danube River

Implement the Danube River Protection Convention:

- strengthen international cooperation
- ensure sustainable water management
- ensure conservation, improvement and rational use of surface waters and ground water
- reduce inputs of nutrients and hazardous substances
- control floods and ice hazards
- reduce pollution loads of the Black Sea
Organizational Structure under the Danube River Protection Convention
Minimizing the impacts of floods via an ‘Action Programme for Sustainable Flood Prevention’

(to be presented by the end of 2005 at the latest)
Flooding 2002

PLATTFORM HOCHWASSER

Ereignisdokumentation
Hochwasser
August 2002
ICPDR Response

• Establishment of the Expert Group on Flood Protection

• Action Programme on Sustainable Flood Protection in the Danube River Basin adopted at the ICPDR Ministerial Conference on 13 Dec 2004
  
✓ One year before the deadline set in JAP

✓ Based on EU Best practices on flood prevention, protection and mitigation / Communication on Flood Risk Management
1. Fully reflecting EU flood risk management policy – currently harmonization with EU Floods Directive
2. River basin approach (links RBM – FRM)
3. Floods: A concern for everybody (solidarity)
4. Joint action of government, municipalities and stakeholders
5. Reduction of flood risks
   1. Natural retention – give rivers space
   2. Structural flood protection
   3. Reduction of hazards
1. Improvement of flood forecasting and early flood warning systems (linking of national/regional systems, EFAS)
2. Preparation and coordination of sub-basin flood action plans
3. Creating forums for exchange of expert knowledge
4. Recommendation for a common approach in assessment of flood prone areas and evaluation of flood risk
Improvement of flood forecasting and early flood warning

Assessment report on flood monitoring and forecasting in the Danube River Basin in preparation

Hydrometeorological Metadatabase of the Danubian Countries
EFAS-Danube: Danube component of European Flood Alert System

- Complementary to MS forecasting systems
- Aimed at early warning (medium range flood forecasting)
- 25+ operational NHS members

ON-LINE!: http://efas-is-danube.jrc.it

Following the disastrous 2002 floods both in the Danube and Elbe river basin, the DG Joint Research Centre of the European Commission (JRC) offered the ICPDR to develop and test an early flood warning system for the full Danube river basin. In the ICPDR Flood Action Programme (ICPDR document 1C/092, http://103.153.94.60/icpdr-pages/pub_programmes.htm; http://www.icpdr.org/), launched on 14 December 2004, one of the basin-wide measures is the development and improvement of flood forecasting and early warning systems for the Danube River Basin. Within this measure, the further development and testing of a basin-wide Danube Flood Alert System was started as part of the European Flood Alert System (EFAS). The aim of this alert system is to provide complimentary flood information – focusing on early warning – to national and regional flood forecasting authorities.

The European Flood Alert System (EFAS) is being developed at the JRC with support of the national meteorological services (NMS) and national hydrological services (NHS). As to date, around 25 operational authorities across Europe, all together responsible for more than 85% of the major trans-national river basins, are receiving EFAS information as early flood warning reports for floods in the next 3-10 days. As for the Danube countries EFAS Memoranda of Understanding (MoU) have been signed with DE, AT, CZ, SK, HU, SI, RS, RO, BG and MD. Negotiations on membership are pending with BA and HR.

Through this online protected web service, registered EFAS users have 24/7 access to the pre-operational EFAS system. Feedback from the users will further help to tailor the system to the needs of the users.

The JRC – being a research organization without an operational mandate – will run the system until EFAS is transferred to an operational third party. Discussions for the transfer of EFAS to an operational entity are ongoing with DG Environment in Brussels, as well as with the
EFAS-DANUBE online:

Users have password protected access to:
- Rainfall forecasts
- Maps with rivers potentially reaching critical alert levels in the forecast period
- Flood Alert class forecasts for all tributary rivers to the Danube larger than 4000km²
- Forecast history (to check if forecast is consistent)

2x daily updated - example: rainfall forecast 27/11 – 4/12
Action Programme – sub-basin targets

• Development of a long-term flood protection strategy (including retention areas)
• Improvement of flood forecasting and warning
• Contingency planning / preparedness raising
• Elaboration of flood maps
• Harmonization of design criteria and safety regulations across border sections
• Prevention and mitigation of pollution caused by floods
• The basic **delineation of the sub-basins** (geographical reporting units) was agreed in 2008 and is still being refined; it reflects the specific needs of flood risk management. GIS-based map is under preparation.

• **Table of contents** of the action plans has been agreed by the FP EG - it reflects the chapter 5.2 of the ICPDR FAP on measures at the sub-basin level.

• Development of FAPs is an **interim step** in implementation of EFD
The delineation of the basins was agreed at the 13th FP EG meeting and further discussed and slightly modified at the 14th FP EG meeting - it reflects the specific needs of flood risk management;

- The action plans for all delineated geographical reporting units are under preparation and will be finished by 2009.
- Table of contents of the action plans has been agreed by the FP EG - it reflects the chapter 5.2 of the ICPDR FAP on measures at the sub-basin level.
The first drafts of the action plans were agreed to be developed at the national level by the end of February 2009 separately for each of the geographical reporting units a given country shares – this process is delayed.

In May – August transboundary harmonization should take place between the countries sharing a given geographical reporting unit with the view of preparing a common plan for each particular sub-basin – (important role of bilateral transboundary / international river basin commissions in this process).

Harmonization has to be executed for all delineated units and is planned to be finalized by the end of August.
1. Introduction
   • Motivation for elaboration & Basic principles & Basic approaches

2. Characterisation of Current Situation
   • Review and assessment of the current situation and of the predictable long-term developments (including the impact of climate change)

3. Target Settings
   • Regulation on Land Use and Spatial Planning
   • Reactivation of former, or creation of new, retention and detention capacities
   • Technical Flood Defences
   • Preventive Actions
   • Capacity Building of Professionals
   • Raising Awareness and Preparedness of General Public
   • Prevention and Mitigation of Water Pollution Due to Floods
## FAPs for sub-basins - measures

<table>
<thead>
<tr>
<th>Measures</th>
<th>Type of intervention</th>
<th>Institution in charge</th>
<th>Costs (k€)</th>
<th>Deadline</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4.1. Regulation on Land Use and Spatial Planning</strong></td>
<td></td>
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<tr>
<td>Target 1: Spatial plans of municipalities contain flood hazard maps and flood risk maps</td>
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<tr>
<td>Defining water estate</td>
<td>Administrative</td>
<td>MAFWM-RDW, PWC VV</td>
<td></td>
<td></td>
<td>Continuous</td>
</tr>
<tr>
<td>Introduction of flood maps into spatial plans of municipalities</td>
<td>Administrative</td>
<td>MESP</td>
<td></td>
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</tr>
<tr>
<td><strong>Target 2: Limitations related to land use in flood prone areas are defined</strong></td>
<td></td>
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<tr>
<td>Preparation of instructions for limitations on land use</td>
<td>Administrative</td>
<td>MAFWM-RDW, MESP</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Land use limitations applied</td>
<td>Administrative</td>
<td>LRSG</td>
<td></td>
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<tr>
<td><strong>4.2. Reactivation of former, or creation of new, retention and detention capacities</strong></td>
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<tr>
<td>Target 1: Retention capacities along the Tisza are re-considered.</td>
<td>Scientific</td>
<td>MAFWM-RDW, PWC VV</td>
<td></td>
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<tr>
<td><strong>4.3. Structural Flood Defences</strong></td>
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<tr>
<td>Target 1: Provide protection for the adopted design 100-year flood along the Tisza River</td>
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<tr>
<td>Reconstruction of levees on the right bank of Tisza</td>
<td>Technical</td>
<td>PWC VV</td>
<td></td>
<td>Started</td>
<td></td>
</tr>
<tr>
<td>Reconstruction of weak points at levees</td>
<td>Technical</td>
<td>PWC VV</td>
<td></td>
<td></td>
<td>Continuous</td>
</tr>
<tr>
<td><strong>Target 2: Provide permanent preparedness of the flood defence system</strong></td>
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</tr>
<tr>
<td>Maintenance of flood protection structures</td>
<td>Technical</td>
<td>MAFWM-RDW, PWC VV, LRSG, OTHER</td>
<td></td>
<td>Continuous</td>
<td>According to specific standards and norms</td>
</tr>
<tr>
<td>Maintenance of dam on Tisza and weirs on tributaries</td>
<td>Technical</td>
<td>MAFWM-RDW, PWC VV</td>
<td></td>
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<td>Continuous</td>
</tr>
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</table>
• Report on Achievements in Flood Risk Management in the DRB is a living document demonstrating progress in implementation of the ICPDR Flood Action Programme and EU Flood Directive on a basin-wide level as well as in particular sub-basins.

• It complements the action plans for sub-basins showing the achieved results to the public.

• It requires continuous feedback from countries.
Flood risk mapping

• The ICPDR Flood Risk Mapping Workshop was held in September 2007 in Budapest.

• Using the workshop outcomes the FP EG formulated the minimum recommendations for flood risk mapping in the Danube River Basin.

• the EXCIMAP Handbook on good practices for flood mapping in Europe will serve with optional solutions beyond the minimum requirements.
The FLOODRISK project supported by EU Transnational Cooperation Programme South East Europe focussing on the most cost-effective measures for flood risk reduction.

Project will bring together experts, authorities and stakeholders in developing jointly flood risk maps for the Danube including definition of a common methodology.

20 project partners: AT(2), BG(2), HU(3), IT(1), RO(5), SK(1), HR(1), RS(5)

5 Observers (ICPDR, EC-JRC-IES, BfG, LfU, Tuebingen).

Project Leader – Ministry of Environment, Romania.
Thank you for your attention