



1st meeting of the Core Group on pilot projects under the UNECE Water Convention

15-16 February 2011, Geneva

**Pilot project on climate change adaptation:
“Building the link between the Flood Risk Management
planning and climate change assessment in the SRB”**

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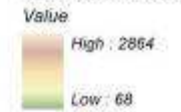
Overview

- Introduction on the Sava River Basin
- Framework Agreement on the Sava River Basin (FASRB)
- International Sava River Basin Commission (ISRBC)
- Achievements in the field of water management in the SRB
- Pilot project on climate change adaptation

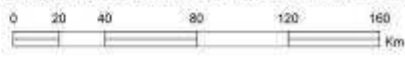
Sava River Basin overview map



- Sava RB boundary
 - State borders
 - Urban areas**
 - Continuous urban areas
 - Discontinuous urban areas
 - Industrial or commercial units
 - Green urban areas
 - Sport and leisure facilities
 - Urban centers
 - Reservoirs (V>=5 mil m3)
 - Sava RB rivers**
(Catchments >=1000 sq.km)*
 - Sava River
 - 1st order tributary
 - 2nd order tributary
 - 3rd order tributary
- *except Dobra/Šćitna, Lašva and Tinja



Data sources:
 DEM data: The NASA Shuttle Radar Topographic Mission (SRTM) processed by the CIAI-CISI (<http://srtm.csi.cgiar.org>), USGS
 CORINE land cover: EEA (<http://www.eea.europa.eu>)
 Other data: ICPDR, ESRI, the Parties to the FASRB (SI,HR,BA,RS)



1:2,000,000

Coordinate system: ETRS 1989
 Projection: Lambert Azimuthal Equal Area



Processed and compiled by the Secretariat of the ISRBC
 November 2009

Sava River Basin

- **Area:** 97 713 km² (the second largest Danube sub-basin; share: 12%)
- **Average flow** at the mouth: 1722 m³/s
(the largest Danube tributary; contribution: 25%)
- **River length:** 940 km (594 km of which is the waterway)
- **Population:** approx. 8.5 million

Country	Share of the basin (%)	Share of the territory (%)
Albania	0.2	0.6
Bosnia & Herzegovina	39.2	75.8
Croatia	26.0	45.2
Montenegro	7.1	49.6
Serbia	15.5	17.4
Slovenia	12.0	52.8

Sava River Basin

- **High environmental and social value**
 - High biological and landscape diversity (natural wetlands, parks, protected areas)



Sava River Basin

- **High environmental and social value**
 - Large retention areas



Sava River Basin

- **High environmental and social value**
 - High potential for transport



Sava River Basin

- **High environmental and social value**
 - High potential for tourism and recreation



FASRB

- **Key objective:**

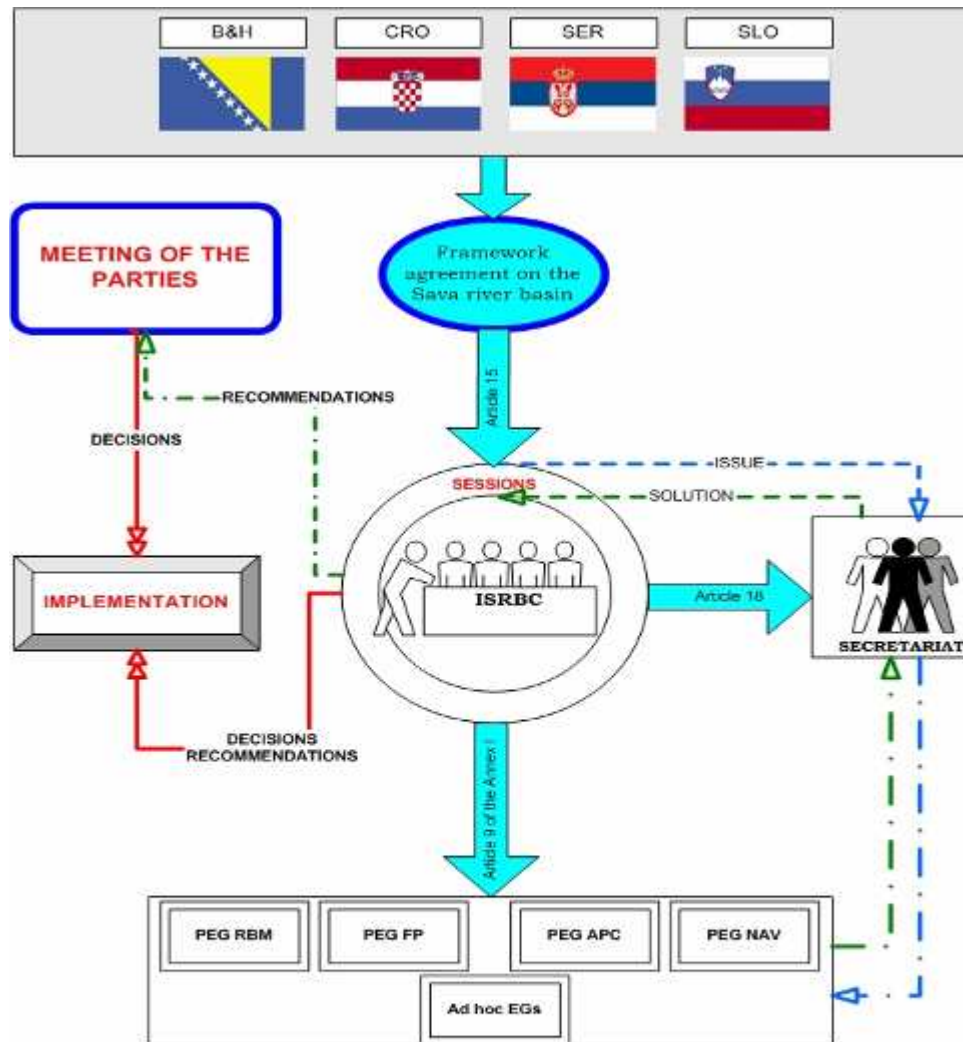
**Transboundary cooperation
for sustainable development of the region**

- **Particular objectives:**

- To establish an **international regime of navigation**
- To establish **sustainable water management**
- To **prevent/limit hazards** (floods, droughts, ice and **accidents**) and **reduce/eliminate** their negative **consequences**

FASRB

- Implementation **coordinated by the ISRBC** (BA, HR, RS, SI)
- **Fields of work** of the ISRBC
 - Issues of **sustainability**:
 - Improvement of water quality
 - Protection of aquatic ecosystem
 - **Protection against the harmful effects of water (due to floods, ice, droughts, accidents)**
 - **Development** activities:
 - Different kinds of water use
 - Navigation, hydropower, water supply, fishery, tourism, recreation)
- **Broadest scope of work** among European river commissions



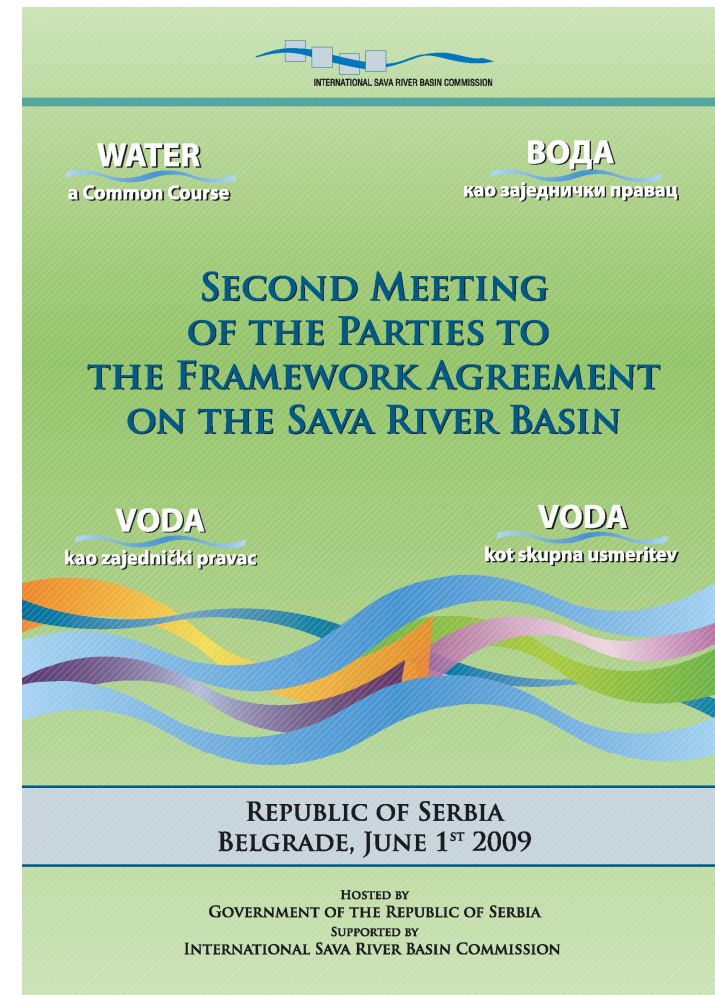
Acronyms and abbreviations:
 ISRBC - International Sava river basin commission
 PEG RBM - Permanent expert group for river basin management
 PEG FP - Permanent expert group for flood prevention
 PEG APC - Permanent expert group for accident prevention and control
 PEG NAV - Permanent expert group for navigation
 Ad hoc EGs - Ad hoc expert groups

Commitment of the Parties

- Sessions of the ISRBC
- Meetings of the Parties
- Other high-level meetings



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ISRBC

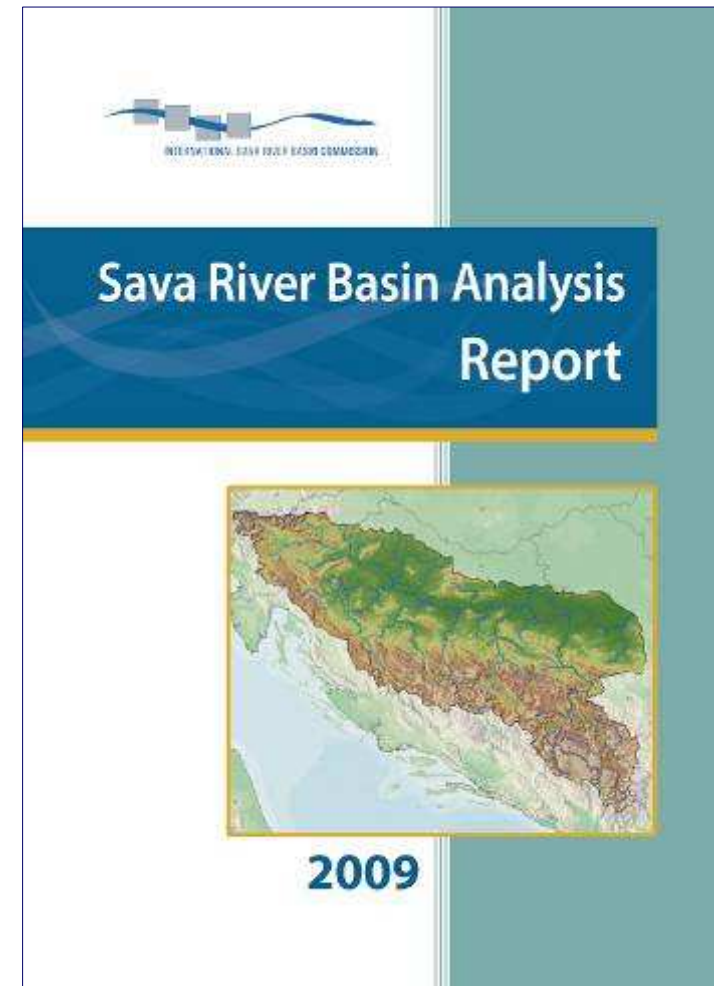
- **Coordination of:**
 - Development of joint / integrated **plans** for the SRB
 - River Basin Management Plan (according to the EU WFD)
 - **Flood Risk Management Plan (according to the EFD)**
 - Establishment of **integrated systems** for the SRB
 - GIS (according to INSPIRE Directive and WISE)
 - RIS – River Information Services (according to EU RIS Directive)
 - **Flood Forecasting and Warning System**
 - Accident Emergency Warning System (use of the ICDPR's system)

ISRBC

- **Coordination of (cont.):**
 - Harmonization of **regulation** (national → EU)
 - Creation of additional **protocols to the FASRB**
 - Navigation regime
 - Prevention of water pollution caused by navigation
 - **Flood protection**
 - Emergency situations
 - Sediment management
 - Transboundary impacts
 - **Cooperation and public participation**

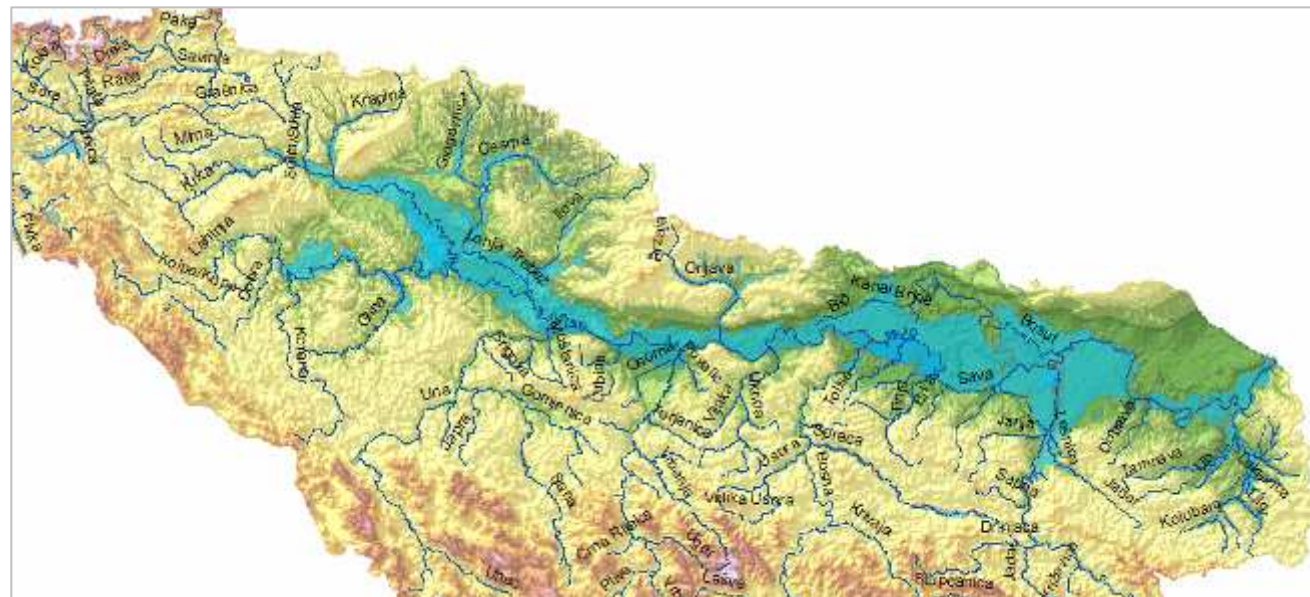
River Basin Management

- **Preparation of the Sava RBM Plan (EU WFD)**
 - **Sava River Basin Analysis Report**
 - **Annex II: Flood Management in the Sava River Basin**
 - First GIS maps of the basin
 - Available on the web-site
 - Further preparation of the Plan with the technical assistance financed by EC
- **Climate Adaptation Plan for the Sava River Basin**



Flood Management

- **Preparation of the Sava FRM Plan (EU Flood Directive)**
 - **Protocol on flood protection to the FASRB** (signed in 2010)
 - **Hydrological model** of the SRB and the **hydraulic model** of the SR
 - Linking **FRM** and the **climate change assessment** in the SRB

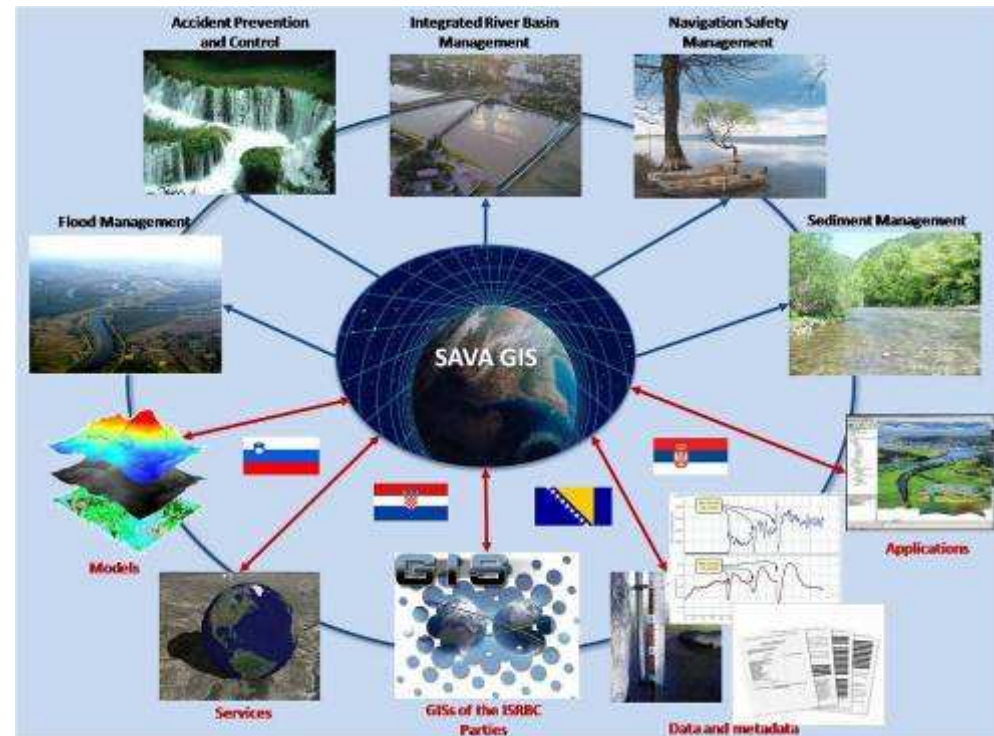


Accident Prevention and Control

- **Accident Emergency Warning System**
 - Participation in testing of the existing system of the ICPDR
 - Efforts to improve the work of PIACs in the Sava countries
- **Draft Protocol on Emergency Situations to the FASRB**
- **Water Pollution Contingency Management Plan**
 - Project proposal developed
 - Regional team established
 - Funding being sought

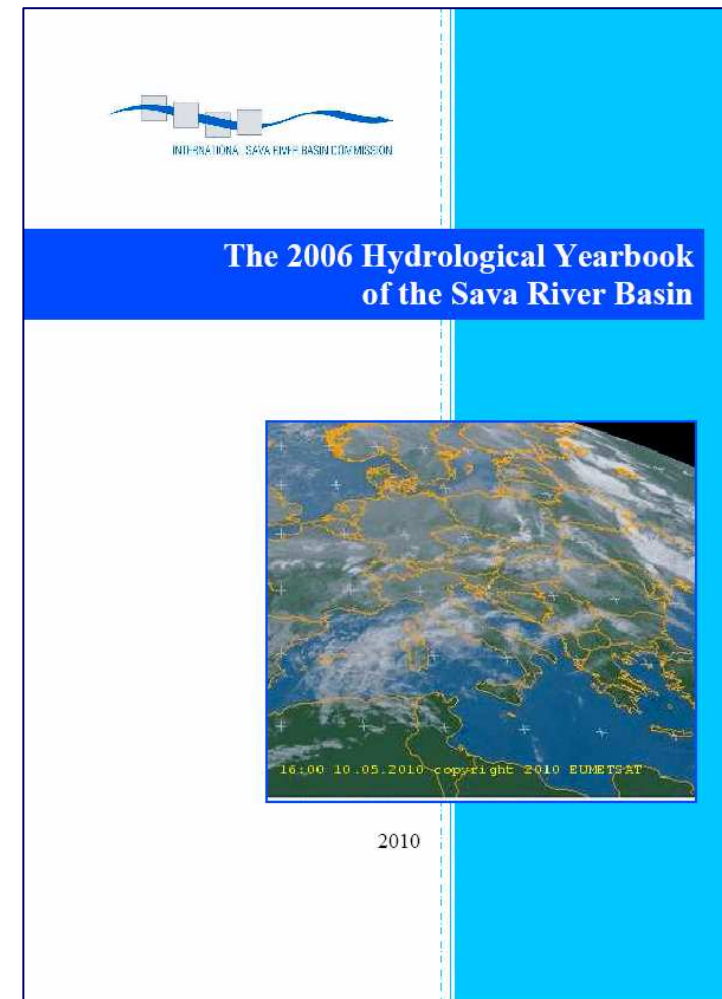
Sava GIS

- **Initial phase of the Sava GIS establishment**
 - Performed in accordance with the **Sava GIS Strategy**
 - **To be finalized** by the end of 2011
 - **Funding** for the initial phase secured
 - EC grant
 - Contributions of the Parties



Hydro-meteorological Issues

- Advances in the **exchange of hydro-meteorological information**
- **Hydrological Yearbook of the Sava River Basin** (the first since 1986)
- Plans for preparation of the **Hydrological Study** for the Sava River Basin (the first since 1976)
- Plans for development of the **Flood Forecasting and Warning System** for the Sava River Basin



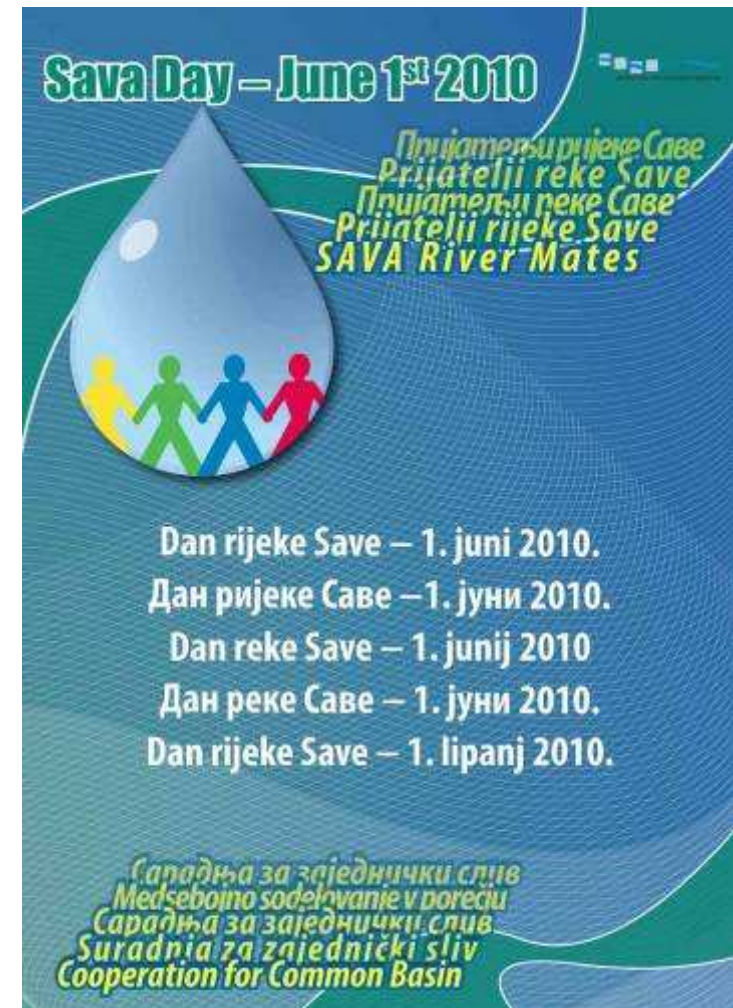
Public Participation

- “Sava NewsFlash” bulletin (bilingual publication in English and an official language of the ISRBC)
- Brochures and publications
- ISRBC web-site
- Press-releases
- Press-conferences & media briefings
- Consultation workshops
- Public presentations



Public Participation

- **Sava Day (1 June)**

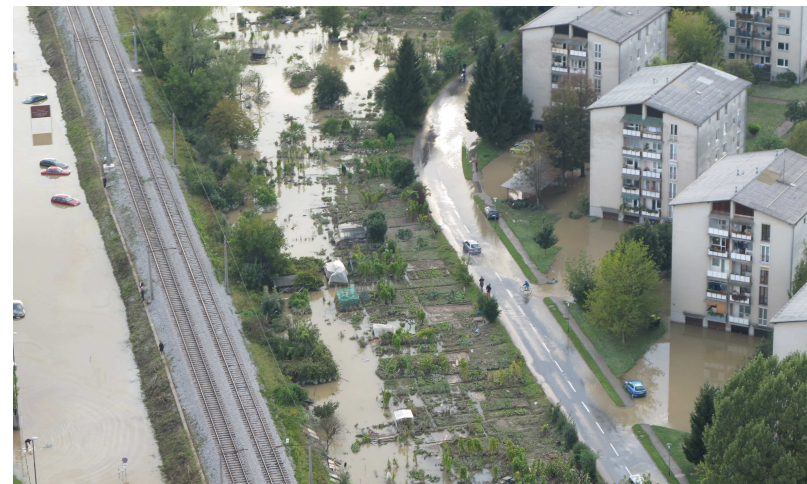


Public Participation

- **Project "Our beautiful Sava"**



Flood management in the SRB; Zagreb (2010), Ljubljana (2010)



Pilot project on climate change adaptation

- **Pilot project on climate change adaptation:
“Building the link between the Flood Risk
Management planning and the climate
change assessment in the Sava River Basin”**
- MoU between UNECE and ISRBC for grant in 2010 (project duration until end 2012)

Pilot project on climate adaptation

First assignment (start March 2011)

- A1 Preparation of an overview of already completed or ongoing activities and their findings regarding FRM planning in the SRB
- A2 Identification and assessment of existing legislation, strategies and plans related to the FRM planning and CC adaptation
- A4 Initial flood vulnerability assessment in the SRB and identification of the most vulnerable areas
- A6 Preparation of a detailed Sava FRMP Program
- A7 Assessment of data and information needs for preparation of joint FRMP for the SRB, identification of data sources, data gaps, strategy how to obtain missing data
- A8 Exchange of experience on the implementation of the project with other projects (partly)

Pilot project on climate change adaptation

Further assignment

- A3 Compilation of various existing climate change scenarios for the region, their expected impact on the water cycle and the extreme flood events
- A6 Assessment whether additional modelling of climate change impact on flood vulnerability is needed, preliminary identification and description of the possible adaptation measures, selection of package of measures

Pilot project on climate change adaptation

- Is in line with the **Protocol on Flood Protection to the FASRB**
- Fits well into the ongoing initiatives in the field of the FRM in the SRB
- Provides a strong support to the common activities in the field of the FRM in the SRB in time of climate change

Protocol on Flood Protection to the FASRB

- By the Protocol on Flood Protection to the FASRB, the riparian countries agree in cooperation, *inter alia*, in:
 - Preparing the *Program for development of the FRMP in the SRB*
 - Undertaking the Preliminary Flood Risk Assessment in the SRB
 - Preparing the Flood Hazard and Flood Risk Maps
 - Developing the FRMP in the SRB

Pilot project on climate change adaptation

- Essential input to the pilot project:

The Sava River Basin Analysis Report (2009), (Art.5 of WFD) - Annex II: Flood Management in the Sava River Basin

Hydrology report for the Sava RBA (2009)

Flood Action Plan for the Sava River Basin (2009)

Pilot project on climate change adaptation

- Ongoing activities
 - Hydrological model of the SRB and hydraulic model of the Sava River
 - Water and Climate Adaptation Plan for the Sava River Basin (WATCAP)

Pilot project on climate change adaptation

- The Permanent Expert Group for Flood Protection (PEG FP) of the ISRBC, as the coordinator in preparation of the FRMP and the *Program for the development of the FRMP in the SRB*
 - will serve as the central expert body for the project
 - will coordinate and overview through its regular meetings the project implementation
 - provide opinion on specific issues during the project course
 - provide a link to the other experts of the Parties and enable the tranboundary cooperation

Pilot project on climate change adaptation

- Final outcome of the project:
 - The *Program for Development of the FRMP in the SRB* will:
 - comprise all the elements relevant for the development of the Sava FRMP
 - encompass the outcomes of all project components covered by this grant
 - pass consultation and discussion process with the relevant stakeholders in the SRB to reach the common understanding on the goals, structure, area covered, content and deadlines for realisation of the activities in the Sava FRMP

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