

# Emerging understanding for climate change adaptation - the Sava river basin case -

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# Overview

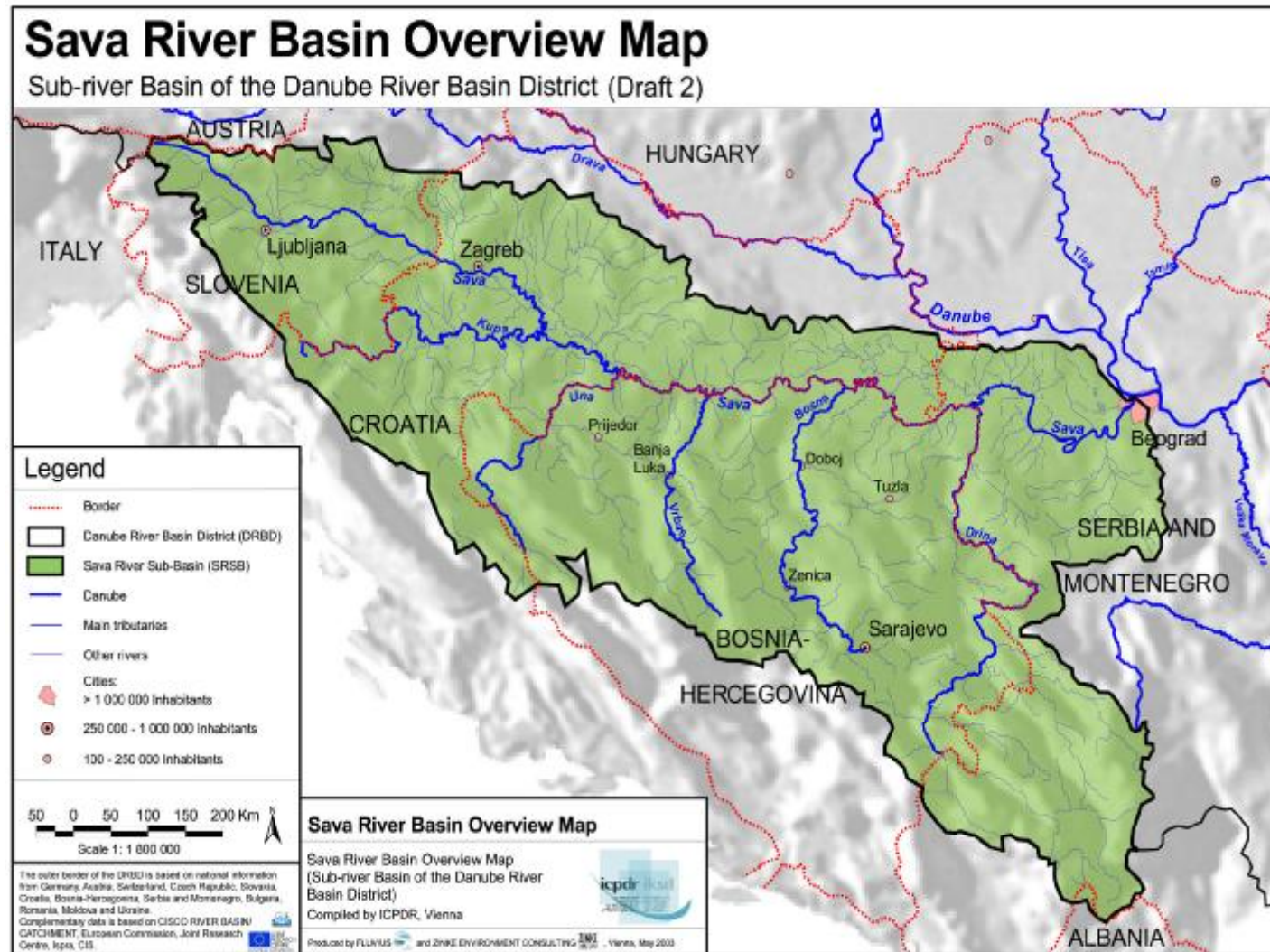
- Introduction
- Framework Agreement on the Sava River Basin (FASRB)
- International Sava River Basin Commission (ISRBC)
- Climate Change - Possible Effects and Adaptation Needs

## Introduction (1/3)

- **The Sava River Basin as a Danube sub-basin**
  - Basin area: 95 720 km<sup>2</sup> (the second largest, after the Tisza basin)
  - Average flow (at the mouth): 1722 m<sup>3</sup>/s (the largest tributary)
  - River length: 940 km (586 km of which were navigable before the war)

Country	Share of the basin (%)	Share of the territory (%)
Albania	0.2	0.5
Bosnia & Herzegovina	39.2	76
Croatia	26.0	45
Montenegro	7.1	52
Serbia	15.5	17
Slovenia	12.0	53

# Introduction (2/3)



## Introduction (3/3)

- **The Sava River Initiative**

- **Launch of the Initiative:** June 2001
- **Signing the Letter of Intent on Coop. in the SRB:** Nov. 29, 2001
- **Signing the FASRB:** Kranjska Gora, Dec. 3, 2002
- **Est. of the Interim Sava Commission:** Brussels, March 12, 2003
- **Ratification of the FASRB:** December 29, 2004
- **Est. of the Sava Commission:** Zagreb, June 27-29, 2005
- **Est. of the ISRBC Secretariat:** Zagreb, January 9, 2006

## FASRB (1/3)

- **The first multilateral agreement in the region signed after the Dayton Peace Agreement (1995)**
- **Regulates transboundary cooperation in the Sava River Basin**
- **Signed in December 2002, entered into force in December 2004**
- **Parties: Bosnia & Herzegovina, Croatia, Serbia, Slovenia (Montenegro to express the interest)**
- **Implemented by the Sava Commission, with the Secretariat as its executive and administrative body**

## FASRB (2/3)

- Key objective:

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

– **Issues of sustainability:**

- Improvement of water quality
- Protection of aquatic ecosystem

– **Development activities:**

- Different kinds of water use  
(navigation, hydropower, water supply, irrigation, recreation...)
- Protection against the harmful effects of water  
(due to floods, ice, droughts, accidents)

## FASRB (3/3)

- Particular objectives:
  - To establish an international regime of **navigation**
  - To establish a sustainable **water management**
  - To prevent / limit **hazards** (floods, droughts, ice, accidents) and eliminate / reduce the **consequences**

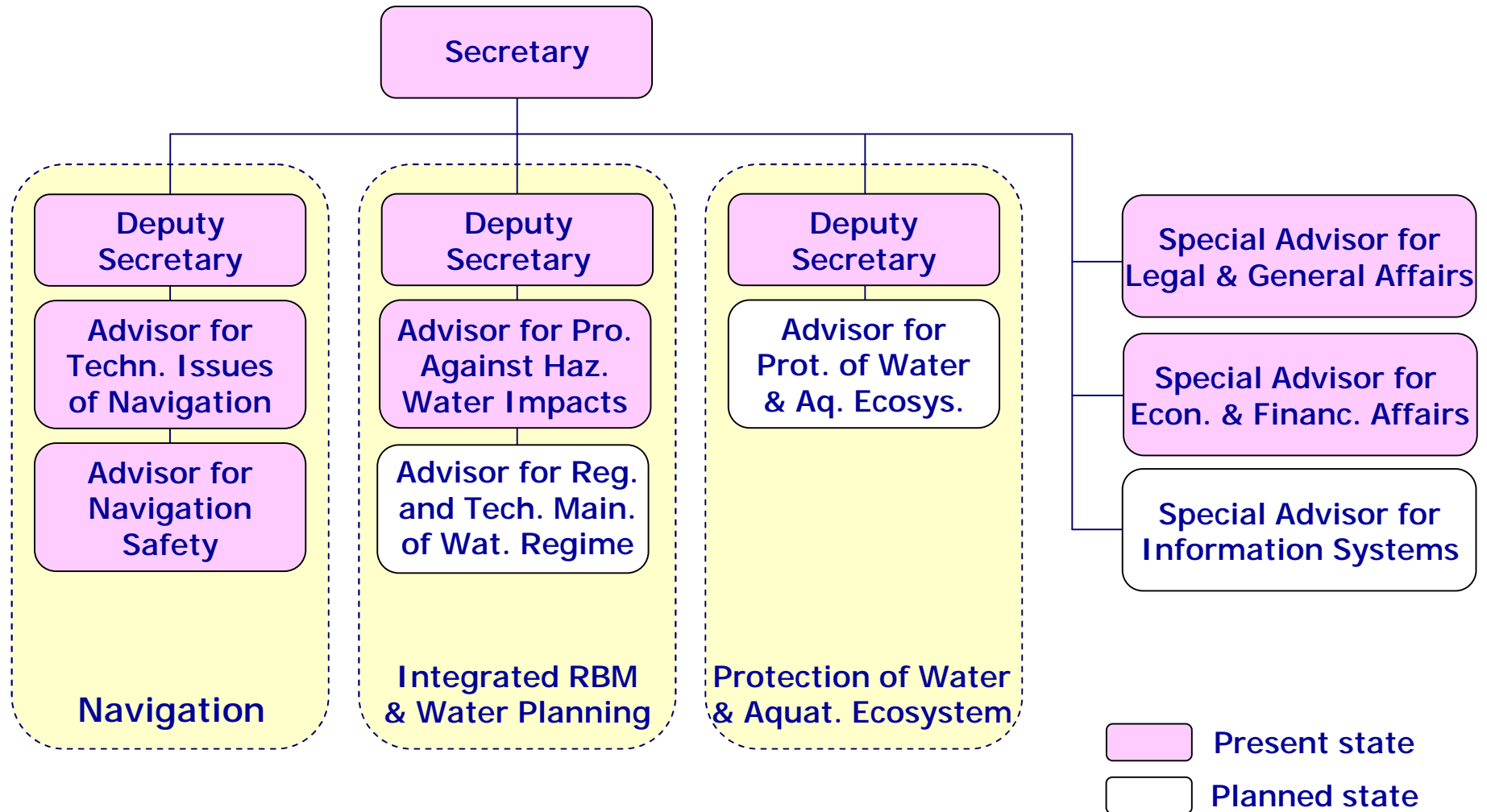
## ISRBC (1/6)

- Established for **implementation** of the Framework Agreement on the Sava River Basin (FASRB)
- Established in June 2005, seated in Zagreb (Croatia)
- Composed of 8 **representatives** of the 4 countries
- **Financed** through regular annual contributions of the Parties from their budgets
- Given the international **legal capacity**, for:
  - Making **decisions** in the field of Navigation
  - Providing **recommendations** on all other issues (i.e. WM)

## ISRBC (2/6)

- **Secretariat**
  - Permanent working body of the ISRBC (seated in Zagreb, HR)
  - Staff members: experts, not representing the countries
- **Expert Groups**
  - Meet quarterly
  - Group members: experts – national representatives
- **National Institutions of the Sava countries**
- **Projects**
  - Launched by the Sava Commission
  - External

# ISRBC (3/6)



## ISRBC (4/6)

- **Expert Groups**
  - **Permanent**
    - River Basin Management
    - Accident Prevention & Control
    - Flood Prevention
    - Navigation
  - ***Ad-hoc***
    - Legal
    - Financial
    - GIS
    - Hydrological and Meteorological

## ISRBC (5/6)

- **National institutions**

- **Ministries**

- Transport
    - Water management
    - Environmental protection

- **Directorates, agencies, ...**

- **HM Institutes**

- Establishment of the **web-portal** for the HM data exchange
    - Preparation of the **Hydrologic Yearbook** for the Sava River Basin

## ISRBC (6/6)

- **Activities:**
  - Development of joint / integrated **plans** for the SRB
  - Preparation and realization of **projects**
  - Establishment of **integrated systems** for the SRB
  - Harmonization of **regulation** (national à EU)
  - Creation of additional **protocols** to the FASRB
  - **Cooperation and public participation**

## CC effects and needs (1/4)

- **Relevant issues**
  - Sava River Basin Management Plan (according to EU WFD)
  - Flood Risk Management Plan (according to EU Flood Directive)
  - Contingency Plan
  - Monitoring, Forecasting and Early Warning Systems
    - Floods
    - Accidents

## CC effects and needs (2/4)

- **Issues possibly affected by CC**
  - **Navigation**
    - Rehabilitation of the Sava waterway
    - Dependence of the waterway dimensions on water levels
  - **Hydropower**
    - A number of low dams planned
    - Changes in capacity/demand ratio during the year
  - **Water supply & Irrigation**
    - Higher demand, lower capacity in general

## CC effects and needs (3/4)

- **Issues possibly affected by CC**
  - **Recreation**
    - Development of nautical tourism on the Sava river
    - Dependence of the navigation conditions on water levels
  - **Floods & Droughts**
    - Higher risks
    - What about uncertainty?

## CC effects and needs (4/4)

- **Questions:**
  - **Do we know enough – is the further research needed?**
    - New analyses,
    - Vulnerability and impact assessments,
    - Possible adaptation measures and strategies, ...
  - **Are there any other related needs?**
  - **Which activities should be undertaken for CC adaptation?**