INTERNATIONAL SAVA RIVER BASIN COMMISSION

Sediment Management in the Sava River Basin

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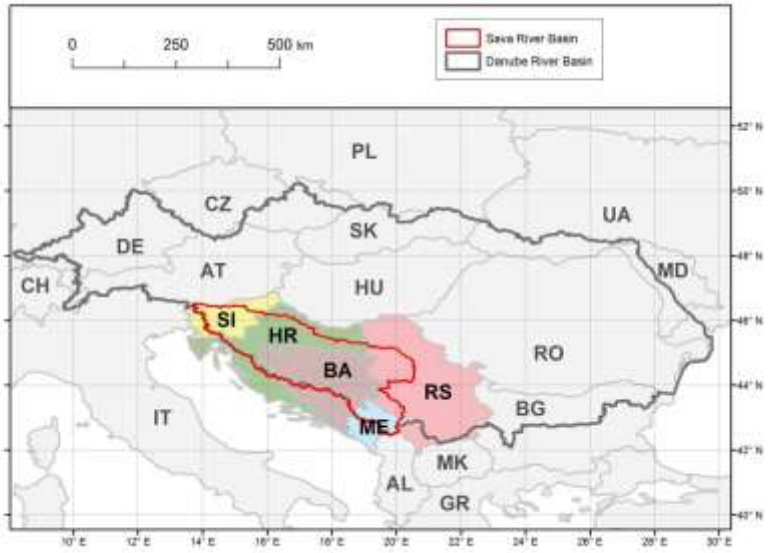
Sava River Basin

- **Main geopolitical facts**
  - **Area:** 97 713 km^2 (the second largest Danube sub-basin; share: 12%)
  - **River length:** 990 km (~ 600 km of which is the waterway)
  - **Population:** approx. 9 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



Background for cooperation

- **Legal Background in the Sava River Basin**
  - Framework Agreement on SRB

    (*entered into force on December 29, 2004, the framework for transboundary cooperation in WM, navigation, etc.*)
  - Protocol on Sediment management

    (signed in July 6, 2015 , enterend into force on October 8, 2017)

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Framework Agreement on the SRB

- **Main objectives – to establish:**
  - Sustainable **water management**
  - Sustainable **hazard management** (floods, droughts, accidents, etc.)
  - International regime of **navigation**

- **International Sava River Basin Commission (ISRBC)** (4 member countries + Montenegro)

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Framework Agreement on the SRB

Article 8

Transboundary Impact

1) The Parties shall **agree** on how **to regulate** all **issues concerning measures** aimed at securing integrity of the water regime in the SRB and the elimination or reduction of transboundary impacts on the waters of the other parties caused by economic or other activities**.**

Article 10

Regime of Navigation

4) The Parties shall **undertake measures to maintain the waterways** within their territories in navigable condition, as well as to undertake measures to improve the conditions of navigation and not to prevent or obstruct navigation**.**

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Framework Agreement on the SRB

Article 11

Sustainable Water Management

The Parties **agree to cooperate on management of the waters** of the SRB in a sustainable manner in a manner that shall provide for:

a) Water in sufficient quantity and of appropriate quality for the preservation, protection and improvement of aquatic eco-systems;

b) Waters in sufficient quantity and of appropriate quality for navigation and other kinds of use/utilization;

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Framework Agreement on the SRB

Article 30

Protocols

1) In implementing this Agreement, **the Parties shall**, in addition to the protocols referred to in other provisions of this Agreement, **conclude** other **protocols for regulating**:

c) Exploitation of stone, sand, gravel and clay;

Protocol on Sediment Management

The main **purpose** is **cooperation of the Parties** to achieve sustainable sediment management in the SRB by respecting:

- natural processes and water regime,
- quality and quantity conditions
  (i.e. biological, hydromorphological and physico-chemical elements)

Protocol on Sediment Management

The Parties will adopt **Sediment Management Plan** covering:

- evaluation of **sediment balance**, quality and quantity;
- **monitoring** of sediment;
- **measures** to
  - prevent impacts and pollution;
  - control erosion processes;
  - ensure integrity of water regime (quality and quantity);
  - protect wetland, floodplains and retention areas;
  - provide, ensure and maintain conditions for safe navigation;
  - control reservoir sedimentation;
- determination of **designated areas** for capital dredging;
- **guidance** for sediment disposal, treatment and use;
- **institutional arrangements** for implementation of SMP

Protocol on Sediment Management

The SRB Sediment Management Plan will be:

- adopted six years after the Protocol enters into force
- revised in the six year cycles afterwards
- harmonized with the SRBMP and other plans and programmes.

Protocol on Sediment Management

On the yearly basis the **Information on Planned Dredging** including of the report on realization for previous year will be developed.

The Parties will be informed on:

- planned locations and types of dredging, including assesment of quantity and quality of sediment;
- methods for sediment disposal and sediment treatment;
- summarized quantities for the tributaries.

Information on planned dredging for year xxxx at *location*

Location of dredging	River Basin	River	River km (upstream)	Longitude (upstream)	Latitude (upstream)	River km (downstream)	Longitude (downstream	Latitude (downstrem)
Data on contractor	Contractor	No. of permission	Date of permission	Permission issued by	Supervision by			
Type of dredging								
Type of dredging machine								
Assessment of sediment quality		Chemical (hazard assessment); Determination of contaminants	Bioassays (risk assessment); Determination of toxic effects	Field inventory (impact assessment); Determination of ecosystem impacts				
Assessment of grain size distribution		Very coarse soil	Coarse soil		Fine soil			
			Gravel	*Sand*	*Silt*	*Clay*		
Quantity of sediment to be dredged	Quantity (m3)	Start of dredging (date)	End of dredging (date)	Period of dredging (no of days)				
Disposal of sediment[7]	Into water body	Subaqueous depot	Permanent disposal site	Temporary disposal site				
Treatment of sediment	Relocation	Sub-aquatic disposal	In-situ treatment	Up-land treatment	Up-land disposal			
Remarks:								

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Project: Towards practical guidance for SSM

- **Main objectives:**
  - To develop and validate practical guidance to achieve SSM plan on the river basin scale
  - Sava River Basin used as a showcase
- **Partners:**

United Nations Educational, Scientific and Cultural Organization

International Sediment Initiative

SedNet

Project: Towards practical guidance for SSM

- **Outcomes**
  - **Development and execution of a practical SSM training course:**
    - Practical **SSM course**;
    - **Practical guidance** (document) on how to achieve SSM plan;
    - Draft **implementing program** for development of Sava SSM plan;
    - Draft **project fiches** for different modules of Sava SSM plan.
  - **Applying of the guidance in practice:**
    - **Overview** of monitoring and sampling gaps and data uncertainties;
    - Estimation of a **sediment balance** for the SRB;
    - Proposal for the **establishment** of an effective sediment monitoring system.

Project: Towards practical guidance for SSM

- **Project status:**
  - The practical SSM course was held on October 15-18, 2012, in Zagreb (HR).
  - Issues concerned on the SSM course:
    - Engineered river system;
    - Ecosystem functioning, biodiversity
    - Ecology
    - Sediment quality
    - Ecotoxicology
    - Geochemistry / Environmental chemistry
    - Sediment budget (including hydrology)
    - Sediment status in BA, HR, RS and SI

Project: Towards practical guidance for SSM

- **Project status:**
  - Application of the part 1 guidance in the Sava practice
    - Estimation of Sediment Balance for the Sava River **(BALSES)**
    - Proposal of the Establishment of the Sediment Monitoring System for the Sava River
      - Establishment of strategic goals and specific objectives of the monitoring
      - Review of technical international standards and technics of monitoring and assessment of their application in the SRB;
      - Establishment of on-line free database on sediment taking into account the initial functionalities of Sava Geoportal
    - Execution on sediment monitoring

Project: Towards practical guidance for SSM

- **Future steps:**
  - SSM course part 2:
    - Review of the application of part 1 guidance
    - Training of best practice on measures of SSM, sediment disposal, treatment and use, institutional arrangements and public participation.
  - Continuation of the application of part 1 guidance in the Sava practice
  - Final workshop for finalization of the guidance document

Implementation of the Protocol

- **Future steps:**
  - Development of the **Sava River Basin Sediment Management Plan** harmonized with the River Basin Management plan for the SRB;
  - Establishment of the coordinated system for **sediment monitoring**;
  - Exchange of sediment data within the Sava riparian countries through the existing **Sava Geoportal**

Project: INAS

- **Inter-sectoral approach with hydropower and navigation sectors for operative flood prevention measures in Sava River Basin – INAS**
  - Main objective
    - Development of **common approach** of **hydropower** and **navigation** sectors to implement the operative **flood prevention measures**, based on good governance practices for efficient flood prevention in SRB
  - LP: Institute for Water of SI
  - The project proposal has been submitted to the **DTP 3rd call**

Contact information

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