

Establishment of sustainable sediment management in the Sava River Basin

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Overview

- Introduction on the Sava River Basin
- Framework Agreement on the Sava River Basin (FASRB) and the International Sava River Basin Commission (ISRBC)
- Protocol on Sediment Management
 - Scope
 - Challenges addressed
 - Purpose
- Further steps

Sava River Basin

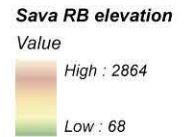
- **Area:** 97 713 km² (the second largest Danube sub-basin; share: 12%)
- **Average flow** at the mouth: 1722 m³/s (the largest Danube tributary; contribution: 25%)
- **River length:** 940 km (594 km of which is the waterway)
- **Population:** approx. 8.5 million

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 overview map



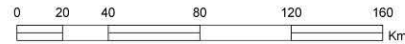
- Sava RB boundary**
 - State borders**
 - Urban areas**
 - Continuous urban areas
 - Discontinuous urban areas
 - Industrial or commercial units
 - Green urban areas
 - Sport and leisure facilities
 - Urban centers
 - Reservoirs** ($V \geq 5$ mil m³)
 - Sava RB rivers**
(*Catchments ≥ 1000 sq.km**)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



Processed and compiled by the Secretariat of the ISRBC
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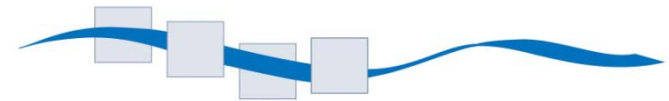


Data sources:
DEM data: The NASA Shuttle Radar Topographic Mission (SRTM) processed by the CIAT-CSI (<http://srtm.csi.cgiar.org>), USGS
CORINE land cover: EEA (<http://www.eea.europa.eu>)
Other data: ICPDR, ESRI, the Parties to the FASRB (SI,HR,BA,RS)



1:2,000,000

Coordinate system: ETRS 1989
Projection: Lambert Azimuthal Equal Area



FASRB

Natural basis for cooperation

(high environmental and socio-economic values of the Sava river)

- Natural beauty
- High biological and landscape diversity
- Large retention capacity
- High potential for different forms of water use (navigation, hydropower, water supply, recreation, tourism, etc.)

Framework for cooperation

- **FASRB** and its protocols
- Declaration of the 2nd MoP
- EU directives
- MoUs with ICPDR and DC

(recognition of the values)

"Engine" of cooperation

ISRBC
(Strategy on FASRB implementation)

IMPLEMENTATION OF PROJECTS

Key objective of cooperation

Sustainable development
of the region

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 and protection of water quantity
 - 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, irrigation, recreation, tourism)
- **Broadest scope of work** among European river commissions

FASRB

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.
- 2) For that purpose, **the Parties shall, by separate protocol, regulate the procedures** for the issuance of water law acts (licenses, permits and confirmations) for installations and **activities that may have a transboundary impact** on the integrity of the water regime.

FASRB

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.

FASRB

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;

FASRB

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

(ad-hoc TG for development of Protocol on Sediment Management)

Scope:

Geographical area:

- *Sava River Basin determined by the watershed limits of the Sava River and its tributaries*

Legal background:

- *FASRB (Article 8, 10, 11 and 30)*

Technical issues:

- **quality issues** (e.g. sediment pollution, control of source and deposition of polluted sediment);
- **quantity issues** (e.g. dredging, erosion and torrent control, reservoir sedimentation - damming and morphological changes).

Protocol on Sediment Management

Definitions:

- “Capital dredging”** means dredging in scope of activity or operation of civil engineering works such as a partly underwater way, the piers, gates and bottom sediments and disposing of the mass in different location with national law;
- “Maintenance dredging”** means dredging for maintenance and improvement of the waterway to ensure safe navigation, or dredging for maintenance and improvement of water regime;
- “Environmental remedial dredging”** means dredging of polluted sediments to solve environmental problems;

Protocol on Sediment Management

Challenges addressed:

- *Sediment may become a secondary sources of pollution;*
- *Contaminants in sediment may start to impact the ecological and chemical water quality status*
- *Reduction of sediment budget downstream (e.g. damming, use of sediment for construction material, flood measures)*
- *Impact to navigation (e.g. accumulation of material in navigable parts)*

Protocol on Sediment Management

The main purpose of the Protocol 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

High socio-economic and environmental value of sediment:

- **information value** (the possibilities for recreation to enjoy natural beauty and landscape),
- **tradable or production value** of sediment, which has the influence to economy,
- **regulation value** as a supportive feature of the eco-system, e.g. fish, birds, microorganisms, and
- **bequest value** to preserve natural assets for future generation.

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;
- measures to control erosion processes;
- measures to ensure integrity of water regime (quality and quantity) and to protect wetland, floodplains and retention areas;

Protocol on Sediment Management

The Parties will adopt Sediment Management Plan covering:

- measures to provide, ensure and maintain conditions for safe navigation;
- determination of designated areas for capital dredging;
- guidance for sediment disposal, treatment and use.

Protocol on Sediment Management

The **Sava River Basin Sediment Management Plan** will be:

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

Protocol on Sediment Management

On the yearly basis the Dredging Programmes (*Information on Planned Dredging*) will be developed.

The Parties will be informed on:

- planned locations;
- the dredged quantities.

Protocol on Sediment Management

Only **maintenance dredging** will be allowed in the SRB.

The **capital dredging** will be allowed on the designated areas (harmonized with the SRBMP).

The dredging will be performed by the **legal entities**.

The **monitoring system** will be established.

The Parties will exchange the information.

Protocol on Sediment Management

Each Party will designate:

- a competent authority (*responsible for implementation of the Protocol*),
- and its focal point for official communication.

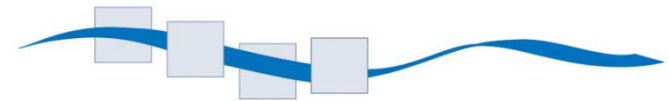
Protocol on Sediment Management

The Protocol was adopted by the ISRBC on **March 19, 2010** (Decision 06/10).

The Protocol was sent to the Parties for negotiations.

Further steps:

- Harmonization process is taking place
- Signature of the Protocol by the Parties
- Ratification of the Protocol (up to 2 years process).



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