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Sharing Basins, Sharing Destinies:
International River Commissions

How protocols benefit the Framework Agreement on the Sava River Basin: the example of the sediment protocol

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The Sava River is created from the Sava Dolinka and Sava Bohinjka rivers near Radovljica in Slovenia. Slovenian part of the basin makes approx. 12 percent of the total basin area and approx. 61 percent of the population of Slovenia live within the Sava River basin.

Left Sava River tributaries in Croatian part of the basin drain mostly flat areas and low hills of the Pannonian Plain. Lonjsko polje, one of the biggest protected wetland areas in Europe, is home to significant complexes of natural and preserved floodplain forests.

The most pristine river basin in Europe
 The Sava River Basin is widely known for its high environmental and social values, originating not only from a natural beauty, an outstanding biological and landscape diversity and large retention areas along the river, but also from a high potential for development activities, such as the waterway transport of cargo and passengers, or tourism and recreation. There are seven Ramsar sites, as well as numerous important bird and plant areas, protected areas and Natura 2000 sites.

Sava River Basin - a natural background for cooperation

The Sava River Basin is a major catchment of the South Eastern Europe covering the total area of 97.713,20 km² and is one of the most significant sub-basins of the Danube River Basin, comprising 12% of this basin. The basin area is shared among six countries: Slovenia, Croatia, Bosnia and Herzegovina, Serbia, Montenegro and Albania. The Sava River has a length of 945 km until it joins the Danube in Belgrade (Serbia). Together with its headwater, the Sava Dolinka River in the north-west, it measures 990 km. The population of the five countries (Albania is not included since only negligible part of the basin area belongs to its territory) of the region is approximately 18 million and half of this number resides in the Sava River Basin.

INTERESTING FACT
 There are 2 general types of climate conditions within the Sava River basin:

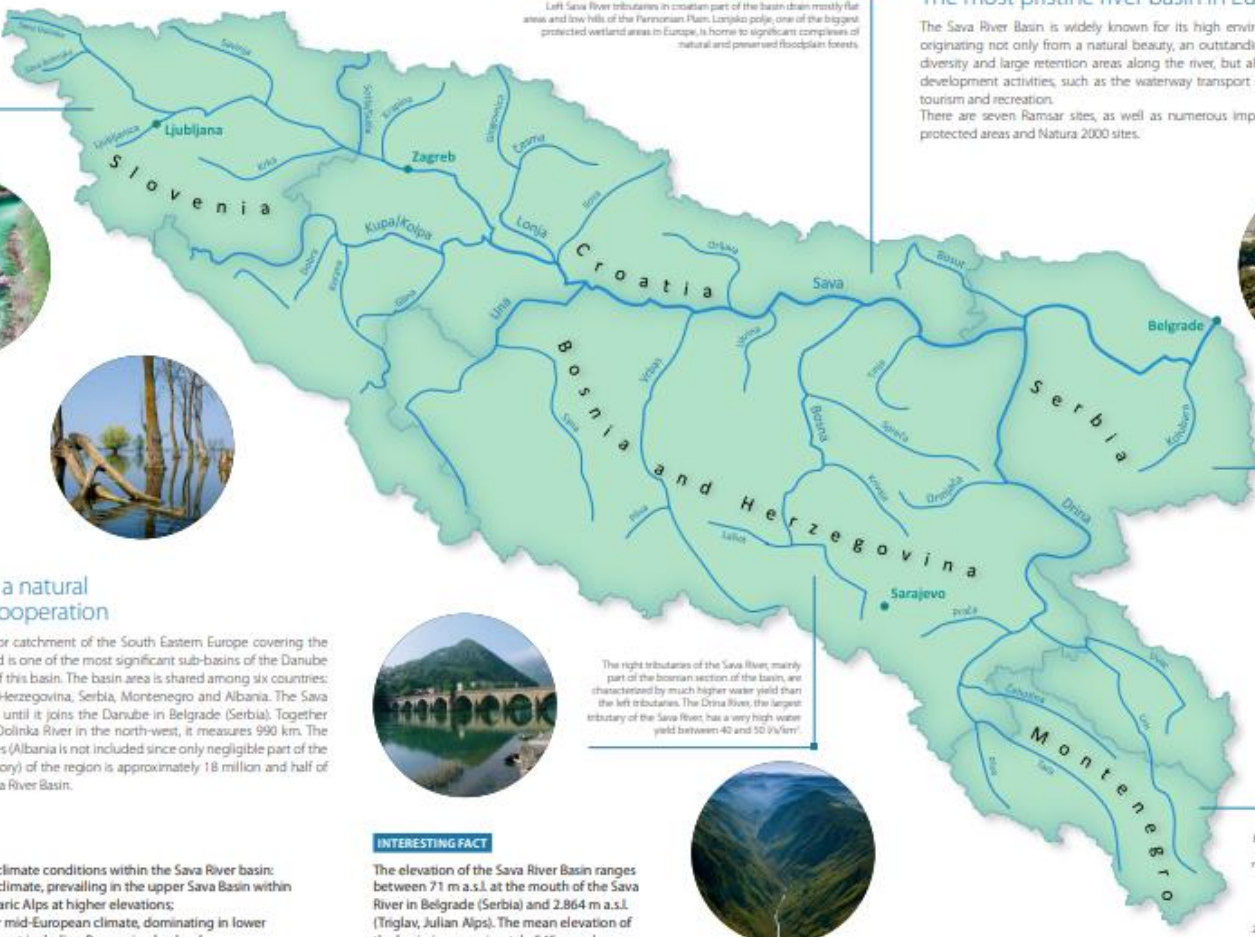
- Alpine or mountainous climate, prevailing in the upper Sava Basin within Slovenia and also in Dinaric Alps at higher elevations;
- Moderate continental or mid-European climate, dominating in lower elevations of the catchment including Pannonian lowland.

The right tributaries of the Sava River, mainly part of the bosnian section of the basin, are characterized by much higher water yield than the left tributaries. The Drina River, the largest tributary of the Sava River, has a very high water yield between 40 and 50 l/s/km².

INTERESTING FACT
 The elevation of the Sava River Basin ranges between 71 m a.s.l. at the mouth of the Sava River in Belgrade (Serbia) and 2.864 m a.s.l. (Triglav, Julian Alps). The mean elevation of the basin is approximately 545 m a.s.l.

The Sava is the Danube's largest tributary in terms of discharge and the second largest in terms of catchment area. Average discharge at the confluence with Danube River in Belgrade is approx. 3.200 m³/s.

Southern part of the Sava River Basin belongs to Montenegro and for the small part Albania. The mountains of Montenegro include some of the roughest terrain in Europe. They average more than 2.000 meters in elevation and occasionally exceed a height of 2.500 meters (the peak of Bobotov Kuk in the Durmitor Mountain).



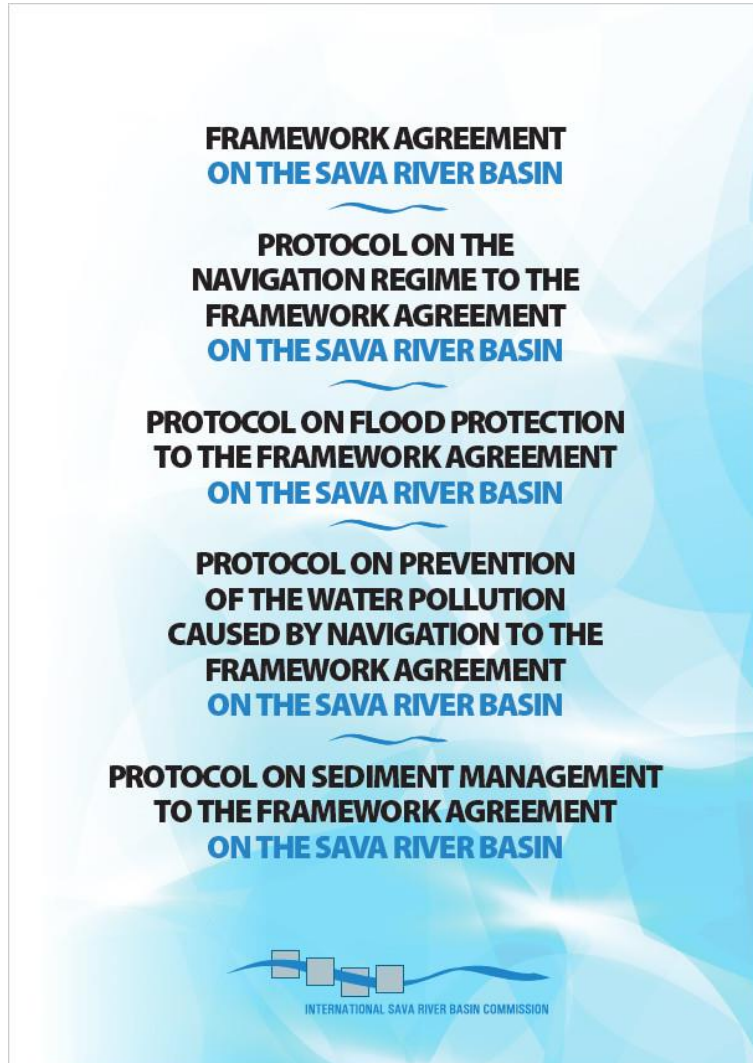
Sava River Basin – one of the „crown jewels” of European nature

- 176 sites important for biodiversity conservation
- Central Posavina region „mixed” heritage – nature and culture
- Largest complex of alluvial forests in Europe



Framework Agreement on the Sava River Basin (FASRB, 2004)

- **Key objective:** Transboundary cooperation for sustainable development of the region
- **Specific goals:**
 - To establish international regime of navigation
 - To establish sustainable water management
 - Undertaking of measures to prevent/limit hazards (floods, droughts, ice and accidents) and reduce/eliminate their negative consequences
- **Implementing body:** Sava Commission
- **Protocols:** In implementing the FASRB, the Parties may conclude protocols for regulating specific issues of interest



Protocols to the FASRB

➤ **Navigation Regime (2004)**

- institutional arrangements (rules of navigation, technical rules for vessels, marking of the waterways, etc.)

➤ **Flood Protection (2015)**

- regulates the issues of sustainable flood protection in the Sava River Basin with aim to prevent or limit flood hazard, to reduce flood risk and to reduce or mitigate detrimental consequences of floods

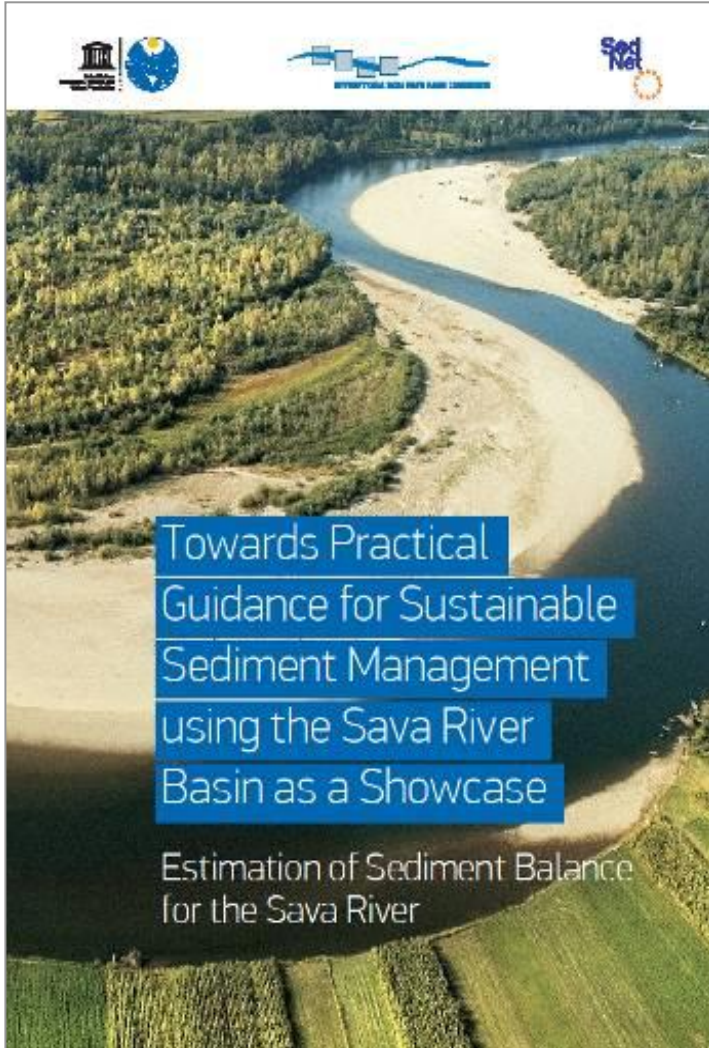
➤ **Prevention of Water Pollution caused by Navigation (2017)**

- prescribes measures to effectively prevent, control and reduce pollution from vessels and executing necessary measures for adequate pollution response, monitoring of water quality and enforcement
- **Sediment Management (2017)**



Protocol on Sediment Management to the FASRB

- **Scope:** to regulate the procedures of cooperation related to sustainable sediment management to protect the integrity of the water and sediment regime in the Sava River Basin, comprising quality and quantity issues
- **Sava River Basin Sediment Management Plan:**
 - sediment balance throughout the river system;
 - sediment monitoring;
 - evaluation of sediment quality and quantity;
 - measures to:
 - ✓ prevent impacts and pollution of water or sediment resulting from dredging;
 - ✓ control erosion, torrents and other sediment processes;
 - ✓ ensure and maintain integrity of water regime;
 - ✓ provide, ensure and maintain conditions for safe navigation;
 - ✓ protect wetlands areas and retention spaces;
 - ✓ control reservoir sedimentation;
 - designate areas for capital dredging;
 - guidance for the sediment disposal, treatment and use.



Towards Practical Guidance for Sustainable Sediment Management using the Sava River Basin as a Showcase

- **Objective:** To develop and validate practical guidance to achieve SSM plan on the river basin scale
- **Partners:** UNESCO Venice Office, UNESCO ISI, SedNet and ISRBC
- **Outcomes:**
 - ✓ 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;
 - ✓ Overview of monitoring and sampling gaps and data uncertainties;
 - ✓ Estimation of a sediment balance for the Sava RB;
 - ✓ Proposal for the establishment of an effective sediment monitoring system.

Current status in implementing Protocol on Sediment Management and next steps

- **Information on planned & executed dredging on yearly basis** *submitted regularly by the countries to ISRBC*
- **Program for Development of the Sediment Management Plan**, comprising main elements relevant for development of the plan, *adopted by ISRBC*
- **Outline of the Sava Sediment Management Plan**, aiming to provide a detailed analysis of existing sediment management practices in the Sava River Basin and to define further steps for development of full-fledged Sediment Management Plan, *in preparation (supported by UNESCO Venice Office)*
- **Joint Sava River Basin Sediment Management Plan**, *future activity.*

