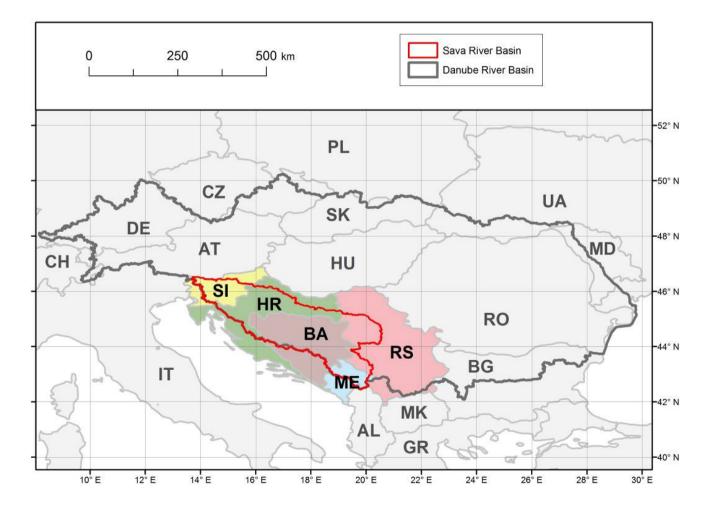


Developments in the Sava river basin relevant from the nexus viewpoint

Dr Dejan Komatina, Secretary, ISRBC





Sava Nexus Assessment Workshop, Zagreb, 4-6 March 2014



- 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. 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



• High environmental and socio-economic value

- Natural beauty







• High environmental and socio-economic value

- High landscape diversity











• High environmental and socio-economic value

- High biological diversity (natural wetlands, parks, protected areas)





• High environmental and socio-economic value

- Large retention areas











• High environmental and socio-economic value

- Potential for transport of cargo and passengers





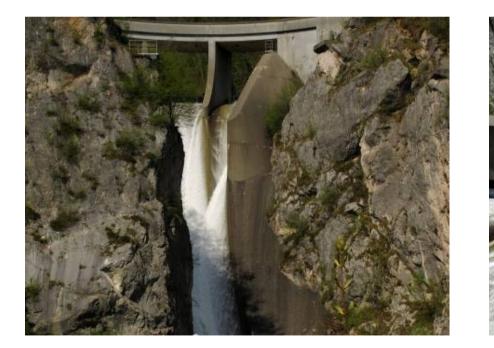






• High environmental and socio-economic value

Potential for hydropower use







• High environmental and socio-economic value

Potential for tourism and recreation







Why sustainable development?

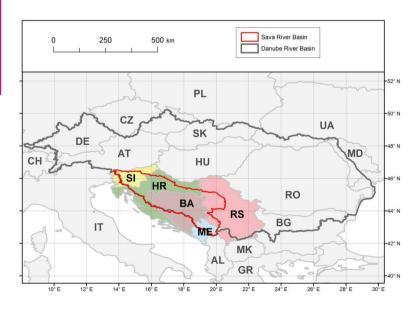
- Relatively low **degree of human intervention**
- Need (obligation) for **environmental protection**
- Need for **economic development**
- A balanced approach needed to use the potential and preserve the values simultaneously





Why transboundary cooperation?

- **Geopolitical changes** in the region in the 1990-ies the main challenge for the water resources management in the basin
 - − Sava: the largest national river → international river
 - Water management restricted to national level of the newly established countries
 - New, international framework required to manage water resources on the basin level







• Key objective:

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

- Particular objectives to establish:
 - International regime of **navigation**
 - Sustainable water management
 - Sustainable **management of hazards** (floods, droughts, accidents, etc.)
- Development of **other economic activities** related to water use



FASRB

- The first development-oriented multilateral agreement in the region signed after the agreements on peace and succession
- Implementation coordinated by the **ISRBC**
 - 4 member countries
 (Bosnia & Herzegovina, Croatia, Serbia, Slovenia)

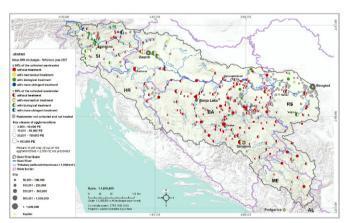
Montenegro

(cooperation on technical level until their full membership)



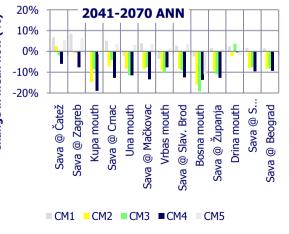


- Development of joint / integrated plans for the basin
 - River Basin Management Plan (according to EU WFD)
 - Flood Risk Management Plan (according to EU Flood Directive)
 - Other plans
 - Sediment Management Plan
 - Water and Climate Adaptation Plan



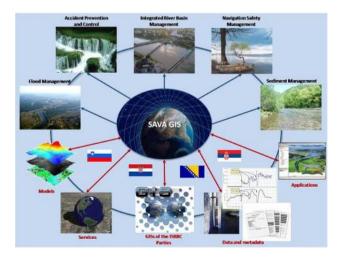








- Establishment of **integrated systems** for the basin
 - Information systems (GIS, RIS)
 - Data exchange system (hydrological and meteorological)
 - Forecasting and early warning systems (floods, accidents involving water pollution)



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MISSION	Hydrolo	gical station	is with	daily ob:	servation					
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FUNCTIONING ORGANISATION										
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DOCUMENTS AND PUBLICATIONS	🢐 Sana	Donji Pibnik	828	0.00	164	403	8.	3.2		
BASIC DOCS	Vebas	Banja Luka	638	838	50	2127		3.7		
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NOTICES	Sava	Zagreb	020	008	-5	2127	0.	0.7		
PRESS RELEASES	🕈 Sava	Ermac	020	020	-1	26		2.0		
SEE ALSO	Sava	Jasenovac Hačkovac	020	020	-9	403		3.2 3.7		
	Sava	Davor	838	838	-1	26	10.	2.8		
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	Kupa	J.Kinelica	626	020	-5	403	0.	2.0		
	Una	Kostajnica	020	030	-1	2127		3.7		
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	River	Hydrological	Water	Water level	Water level	Discharge	Decile of	Temp.		
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	Drina	Radali	838	020	-5	403		3.2		
	Lim	Prijepolje	0.20	020	-1	26	10.	2.0		
	Kolubara	Valjevo	030	028	164	403	0.	3.2		
	Nolubara 1	Slovac	020	838	50	2127		3.7		
	👌 Kolubara	Draževac	838	838	-8	26		2.8		
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	🗧 Savinja	Veliko Širje I	020	000	-5	2127	0.	0.7		
	💐 Krika	Podbočje	828	020	-1	26		2.0		
	🐧 Sava	Radovljica I	030	020	-9	403		9.2		



- Development of water-related **economic activities** in the basin (navigation, river tourism)
- Harmonization of **regulation** (national \rightarrow EU)
- Creation of additional **protocols to the FASRB**





- The broadest scope of work among int'l basin organizations (river/lake commissions) in Europe
- **Inter-sectoral coordination** an important task of the ISRBC

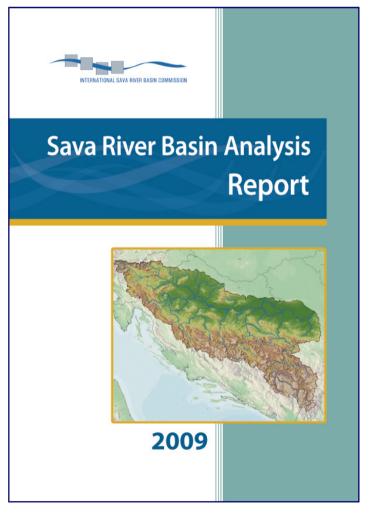
Activity / Field of work	E	F	Ν	Н	Α	Т	C
River Basin Management Plan (EU WFD)		+	+	+	+		+
Water and Climate Adaptation Plan		+	+	+	+		+
Integrated Information System (INSPIRE Dir.)	+	+	+	+	+		
Navigation	+		+	+		+	
Tourism	+	+	+	+		+	

- E Water and aquatic ecosystem protectionF Flood management
- N Navigation H – Hydropower A – Agriculture
- T Tourism C – Climate change



• Sava River Basin Analysis

- Requirements of Art. 5 and Art. 6 of EU WFD addressed
- Comprehensive nature
 - Water quality and quantity
 - Hydrology and hydromorphology reports
 - **Integration** with other issues (flood management, navigation development)
- First (ever) GIS-based maps of the basin





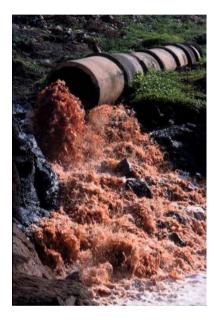
• Significant Water Management Issues

- Pollution

(organic, nutrients, hazardous substances)

Hydromorphological alterations (hydropower use, water supply and flood protection facilities)

- Groundwater quality













- Other issues addressed
 - **Groundwater** quantity
 - Sediment quant. & qual.
 - Invasive alien species
 - Protected areas
 - Integration with other policies
 - Flood management
 - Navigation
 - Hydropower
 - Agriculture
 - Climate change

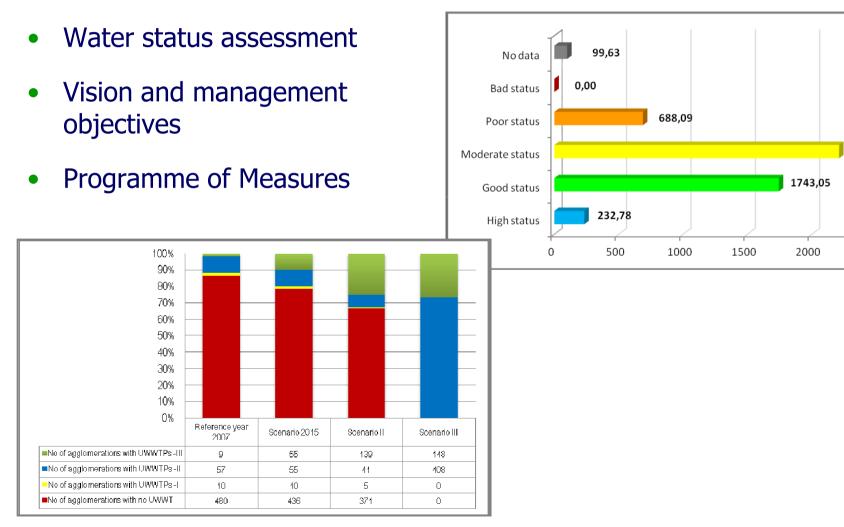












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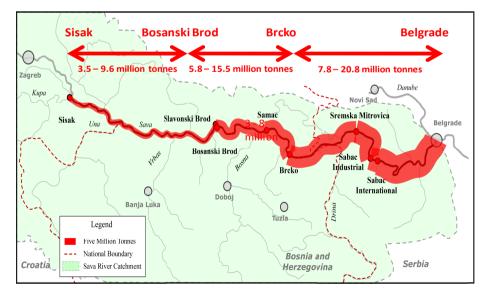
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Navigation development

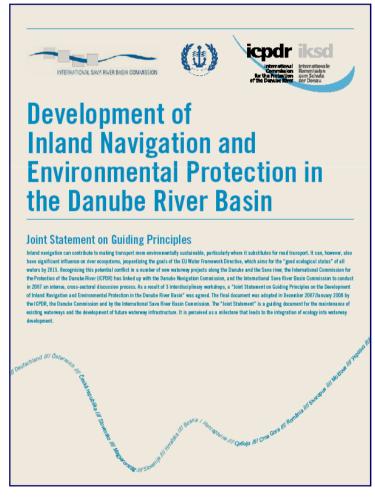
- Addressed in the Plans (RBM, climate, sediment)
- Integrated planning approach is applied
 - **Sustainable solutions** (administrative, legal and technical)
 - Improvement of technical standards and safety of navigation (harmonization with the EU standards)
 - Lower waterway class than economically feasible
 - No river straightening (one-way navigation in sharp bends)





Navigation development

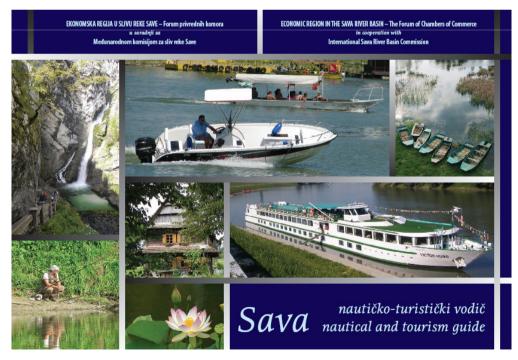
- **Integrated planning approach** is applied (cont.)
 - Based on the Joint Statement (ICPDR, Danube Commission; ISRBC)
 - Water, environ. and navigation sectors
 - Governmental, NGO, academic and business sectors
 - Sava navigation project monitoring and coordination committee
- "Top-down" being complemented by "bottom-up" approach

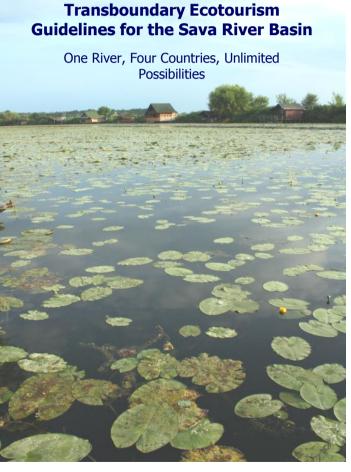




Tourism development

• Sustainable river tourism (integrating sustainability and development)







Tourism development

- New stakeholders (from all societal sectors) involved
- "Bottom-up" approach applied, stakeholder network created
- ISRBC recognized by the stakeholders as a good platform for coordination of further activities in the field



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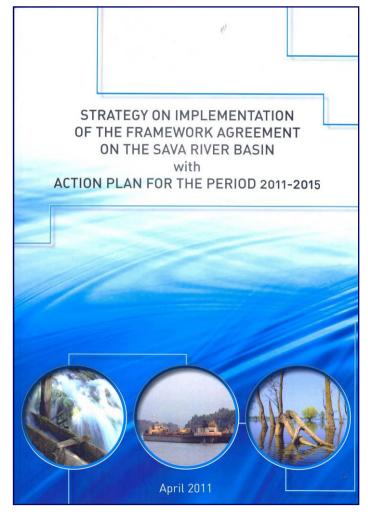
Hydropower and agriculture

- Addressed in:
 - **Sava RBM Plan** (only partially)
 - Water and Climate Adaptation Plan
- Involvement in the processes on the Danube basin level, led by the ICPDR
- **Future activities** to address the two sectors
 - Nexus assessment
 - 2nd planning cycle in accordance with EU WFD



Conclusions

- **Objectives** (in the nexus context):
 - Dialogue with sectoral stakeholders
 - Integration of policies
 - Inter-sectoral coordination
- **Progress** has been made (on national and transboundary level)
- Further improvement is needed
- **Nexus assessment** expected to contribute to the improvement





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