



**7<sup>th</sup> World Water Forum 2015**

April 12-17, 2015, Daegu & Gyeongbuk, Rep. of Korea

**Dr. Dejan Komatina  
Secretary**

**Int'l Sava River Basin Commission**

Session 2.2.3 - Putting the water-energy  
nexus into practice. Economic and  
policy incentives

Transboundary perspective



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# Transboundary representative

- How can information sharing, dialogue about transboundary impacts and agreeing about developments by institutions for transboundary cooperation support integrated investments?
- How are the risks managed?



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# Necessary elements for creating an enabling environment (also for investments)

- Transboundary platform for discussing WM challenges (ISRBC, RBM planning process)
- Agreed principles and objectives (protocols, guidelines)
- Knowledge base, harmonized information, timely exchange
- Common understanding of sectors' requirements — navigation, energy, etc. (UNECE nexus assessment)
- Engagement of stakeholders (consultation, active involvement)
- Clarity about where development projects/construction can be permitted; how to avoid increasing exposure to risks



# Inter-sectoral coordination in the framework of ISRBC

- FASRB & ISRBC: a multisectoral framework
- Protocols to FASRB (flood protection, sediment management)
- Joint Statement (navigation & environment) - ICPDR, DC, ISRBC
- Guidelines (river tourism & environment)
- Guiding Principles (hydropower & environment) - ICPDR

Activity / Field of work	W	F	N	H	A	T	C
River Basin Management Plan (EU WFD)	+	+	+	+	+		+
Water and Climate Adaptation Plan		+	+	+	+		+
Integrated Information System (INSPIRE Dir.)	+	+	+	+	+		
Navigation	+		+	+		+	
Tourism	+	+	+	+		+	

A – Agriculture  
 F – Flood management

W – Water and aquatic  
 ecosystem protection

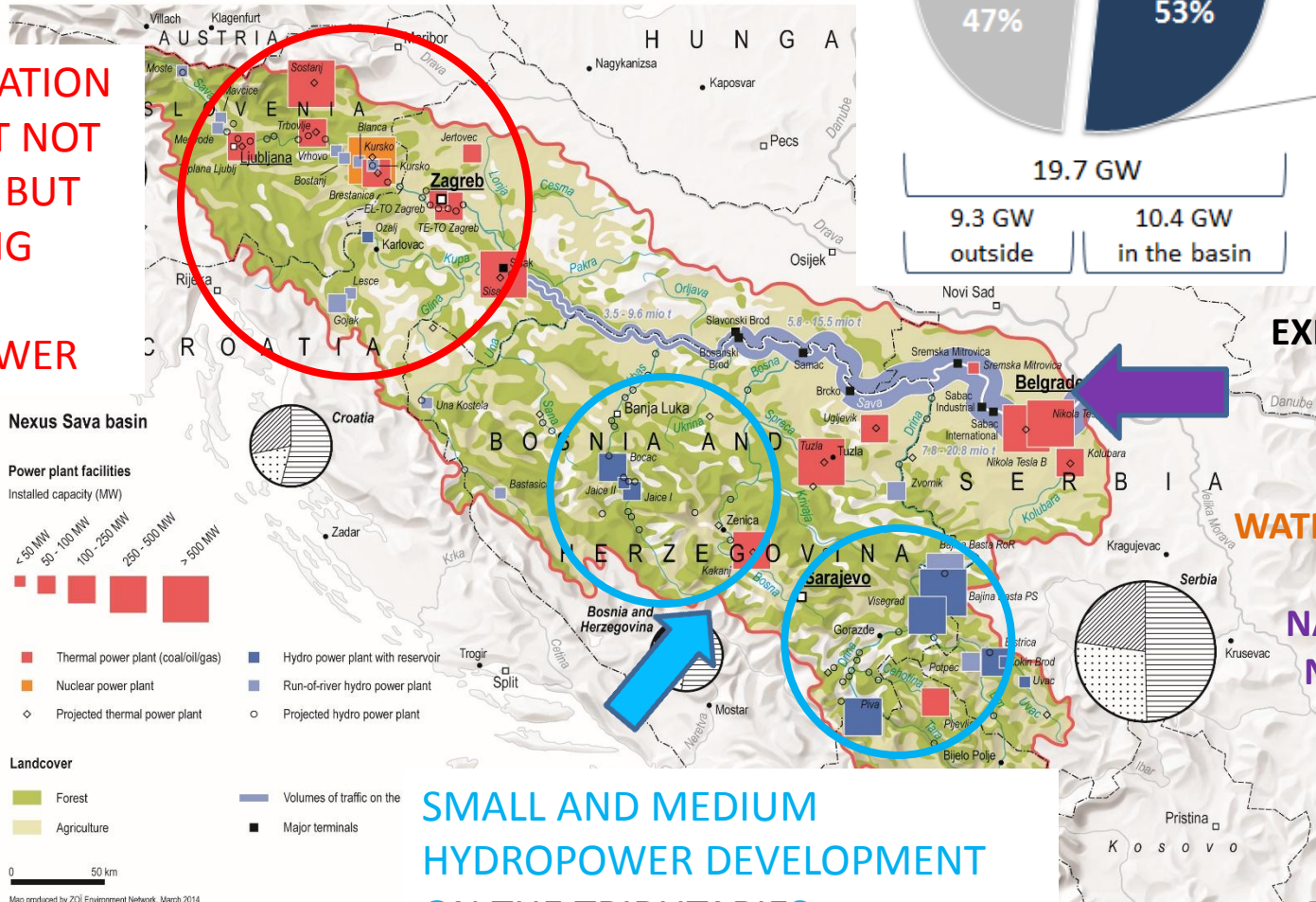
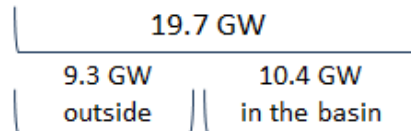
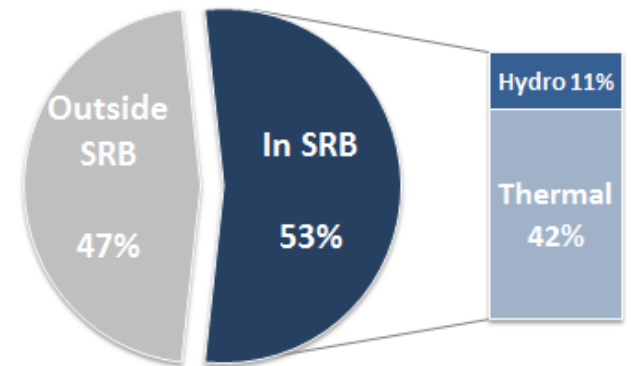
N – Navigation  
 H – Hydropower

T – Tourism  
 C – Climate change

# Balancing different water uses in the Sava Basin

Basin water resources are of paramount importance for the energy security

**FLOW REGULATION TO ACCOUNT NOT ONLY HYDRO BUT ALSO COOLING THERMAL & NUCLEAR POWER**



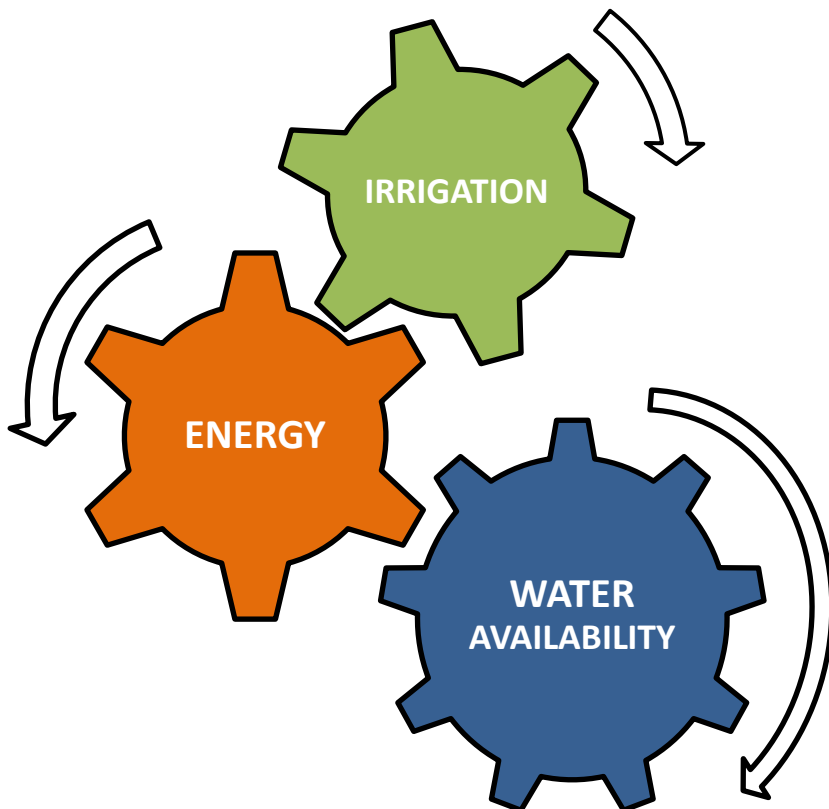
**EXPANSION OF IRRIGATION PLANNED**  
**INCREASED WATER SCARCITY PREDICTED**  
**NAVIGABILITY NEEDS TO BE ENSURED**  
**WETLANDS SERVE FLOOD PROTECTION**

**SMALL AND MEDIUM HYDROPOWER DEVELOPMENT ON THE TRIBUTARIES**

# Water-energy model

A multi-country model

- Focusing on the electricity generation facilities located in the Sava River Basin
- Providing the basis for identifying opportunities and preventing / managing risks



- Investigate the dependences between the SRB water resources and the energy sector
- Identify the **impacts of climate change on hydropower generation** through changes in water availability in the region and at a country level
- Assess the implications of an increase in **water demand for irrigation on electricity generation**
- Study the **trade dynamic-response of the multi-country energy system** under water availability constraints
- Environmental issues: **CO<sub>2</sub> emissions and water resources use** in electricity generation

# Hydro-economic model (EC JRC)

- Assistance in taking decisions on measures
- Advice on optimum combinations of measures to achieve multiple goals (e.g. reducing flood risk and providing sufficient water for essential economic sectors and the environment)
- Modelling **water availability** versus **water demand** (identifying areas and sectors with water scarcity) and how this might change, under
  - **Future climate** as compared to **current climate**
  - **Modified land use / measures** (e.g. increased irrigation) as compared to **current land use**
- **Water demands** (agriculture, industry, public sector) taken into account, and how they change under future GDP, population, etc.
- Addressing **ecological flow**
- Estimating **economic damage** for individual sectors (agriculture, navigation, industry etc) under water scarcity and how this changes after taking measures
- Including **investment** and maintenance costs

