

Transboundary water issues in a macro-regional context: the Danube basin

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11th September 2013, Budapest

Mutual goals of the conference

- To provide an overview about scientific results and methods
- To promote the implementation of the water-related goals of the EU Strategy for the Danube Macro-region
- To present new models and innovative methods which contribute to the Danube Strategy

History of the Danube

➤ Main function: source of food; road; and natural boundary

➤ 19th century:

1830: launch of the first steamboat

By the 1870s the regulation of the river had been completed north of the Iron Gates Dam

➤ 20th century:

Since the completion of the Rhine-Main-Danube canal in 1992, the Danube has been a part of the 3500 km long Trans-European waterway

Inland waterway transport



Repin: Trackers

In the inland, along the rivers, traction of the goods was the most important way of distance transport. For its goal the most important „infrastructure” element was to ensure the lengthwise traffic.

History











Lotz: Trackers

In beginning of the 19th century (by appearance of the steamship) the role of water transport became more significant, and its exclusion has been shocked for building out of the railway transport system. In the second half of the 20th century transport of the goods got from the railway forward the vehicular traffic achieving more and more market share, the role of the shipping was limited to some percentages as market share within the whole good-transport market.

Countries of the Danube Region



Countries of the Danube Region

Country	Right bank		Left bank	
	River kilometer	Length	River kilometer	Length
Germany 	2888,77 – 2223,20	659 km	2888,77 – 2201,77	687 km
Austria 	2223,20 – 1872,70	351 km	2201,77 – 1880,26	322 km
Slovakia 	1872,70 – 1850,20	22 km	1880,26 – 1708,20	172 km
Hungary 	1850,20 – 1433,00	417 km	1708,20 – 1433,00	275 km
Croatia 	1433,00 – 1295,50	138 km	none	none
Serbia 	1295,50 – 845,65	450 km	1433,00 – 1075,00	358 km
Romania 	374,10 – 0,00	374 km	1075,00 – 134,14 79,63 – 0,00	1020 km
Bulgaria 	845,65 – 374,10	472 km	none	none
Moldova 	none	none	134,14 – 133,57	0,6 km
Ukraine 	none	none	133,57 – 79,63	54 km





2013 Szeptember

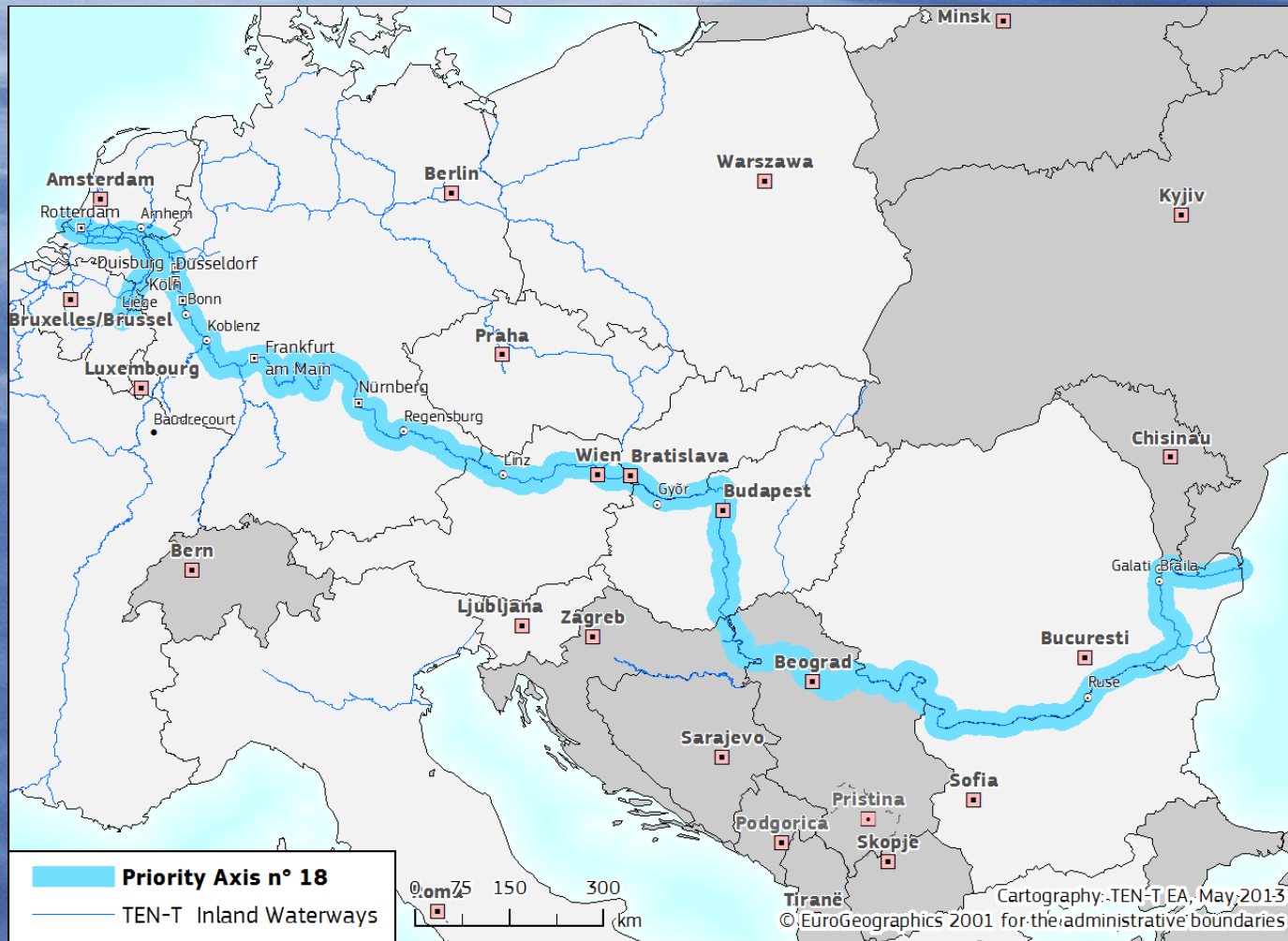
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Role of Waterscience



Transcontinental Waterway



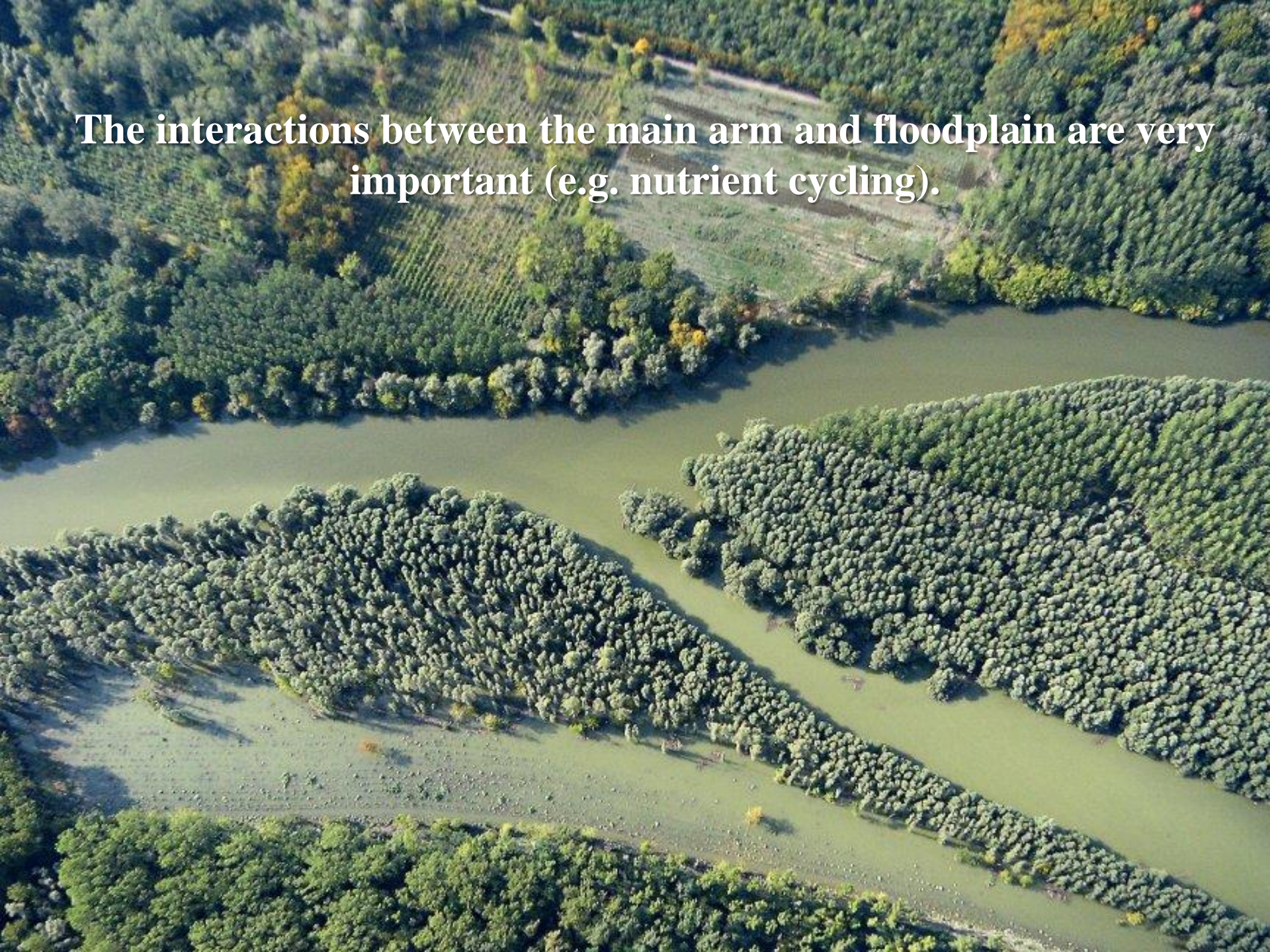
Hungary is approximately in the midpoint of the transcontinental waterway

Danube Researches



The Danube in Hungary is a typical lowland river
(420 km long with 5-7 cm/km gradient).

The interactions between the main arm and floodplain are very important (e.g. nutrient cycling).



At flooding the water quality of the floodplain and main arm are visibly different.





The side arm systems are important fish reproduction areas.

The fish richness with electrofishing method are recognizable.

EU Strategy for the Danube Region

Macro-regional approach - Why do we need it?

Danube River Basin:

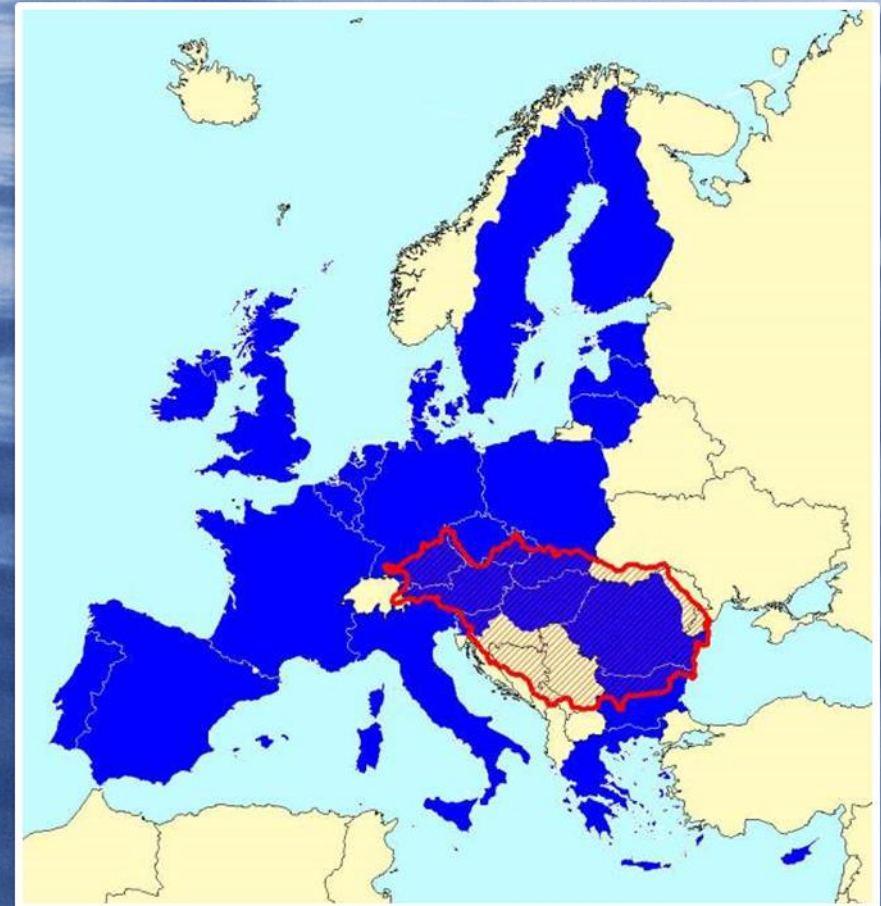
- Home to more than 80 million people
- Natural boundary / axis for enhancing sustainable development
- Common challenges (social and regional cohesion (*GDP: 1000-36000Euro/capita*), competitiveness, preservation of natural and cultural diversity, environmental safety)

win-win:

Adequately flexible answers - coordinated activities
Integrated approach / scope according to thematic issues

Chance for a change

EU enlargement + Neighborhood policy Existing legal & institutional framework



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Existing legal & institutional framework

Coherence with other EU strategies and programmes

- EU SDS, EU-2020 (Post Lisbon S.), EAP, WFD, Climate & Energy Package, Biodiversity Strategy)

Coherence with other regional programmes

- ICPDR / Danube River Basin Management Plan
- VASICA / Visions and Strategies in the Carpathian Area
- WWF / Saving Nature with EU Neighbourhoods
- ETC - European Territorial Cooperation

New initiatives

Take advantages of synergies
Contribute to more efficient implementation

What the overarching goal should be?

The big challenge: sustainability
How to integrate the 3 dimensions?

Social dimension
well-being

Economy
competitiveness

Quality of life
Healthy environment
Equality, solidarity
Culture, awareness

Environment
Natural resources
ecosystem services

Energy, Agriculture
Transport /
multimodality
Eco-efficient innovation

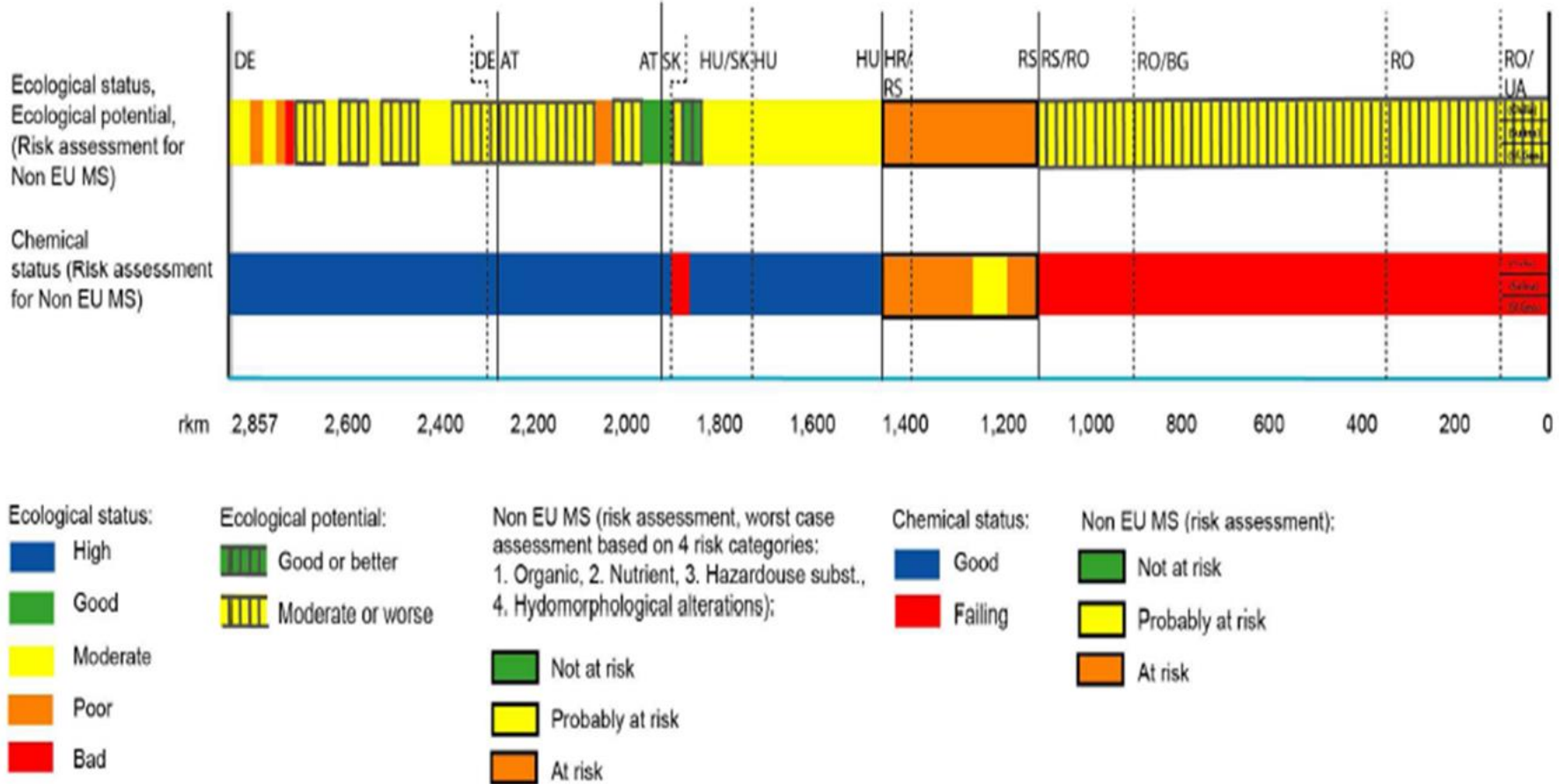
Horizontal approach
Special, multidisciplinary issue

Including:

- Sustainable use of natural resources
 - Protection of natural heritage
 - Environmental safety

Managing transboundary issues
enhancing cooperation

The environmental dimension



Source: ICEDR

The environmental dimension



The environmental dimension

Challenges & opportunities

For land use, energy, urban planning, sustainable use of waters, infrastructural and other developments, environmental security, conserving ecosystem services, adoption to climate change

Danube:

- over 80% length regulated
- 700 dams and weirs – *ecological barriers + hydromorphological & hydrological alteration*
- Floods & droughts: growing in frequency + destruction
- Water quality / ecological status → nutrient load – to be improved
- Over 80% of floodplains, wetlands lost / transformed (*95 with potential to be reconnected*)
- back-bone of the ecological network – 250 sites - nominated natural protection areas (Natura 2000, Unesco world heritage, national parks)
- ecosystem services - only water purification/nutrient retention worths 368 million EUR / year)

Development without compromising the sustainability
Upstream / downstream solidarity, shared / fair responsibility

Next steps...

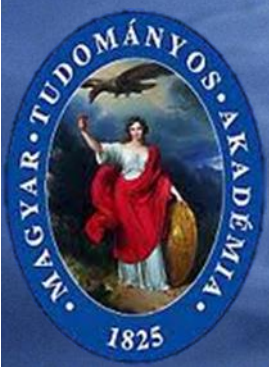
For the preparation:

- Proactive approach in the preparation and conciliation
- Contribution to / recommendation on the priority issues
- Analysis of the mutual effects, interactions
- Elaboration / integration of transboundary projects

For the implementation:

- Co-operation, public awareness and involvement
- Institutional and financial framework

Our role: providing background and depth to the process



Thank You for Your Attention!