

Transnational challenges in implementation of WFD – example from Slovenia

dr. Lidija Globevnik

Institute for Water of the Republic of Slovenia

(EurAqua Conference 2008, Oslo, 14. - 25.October 2008)

Slovenia:

20.256 km²

2 million inhabitants
(~100 inh./km²)

River/sea basins:
80%: Danube river
20%: Adriatic Sea

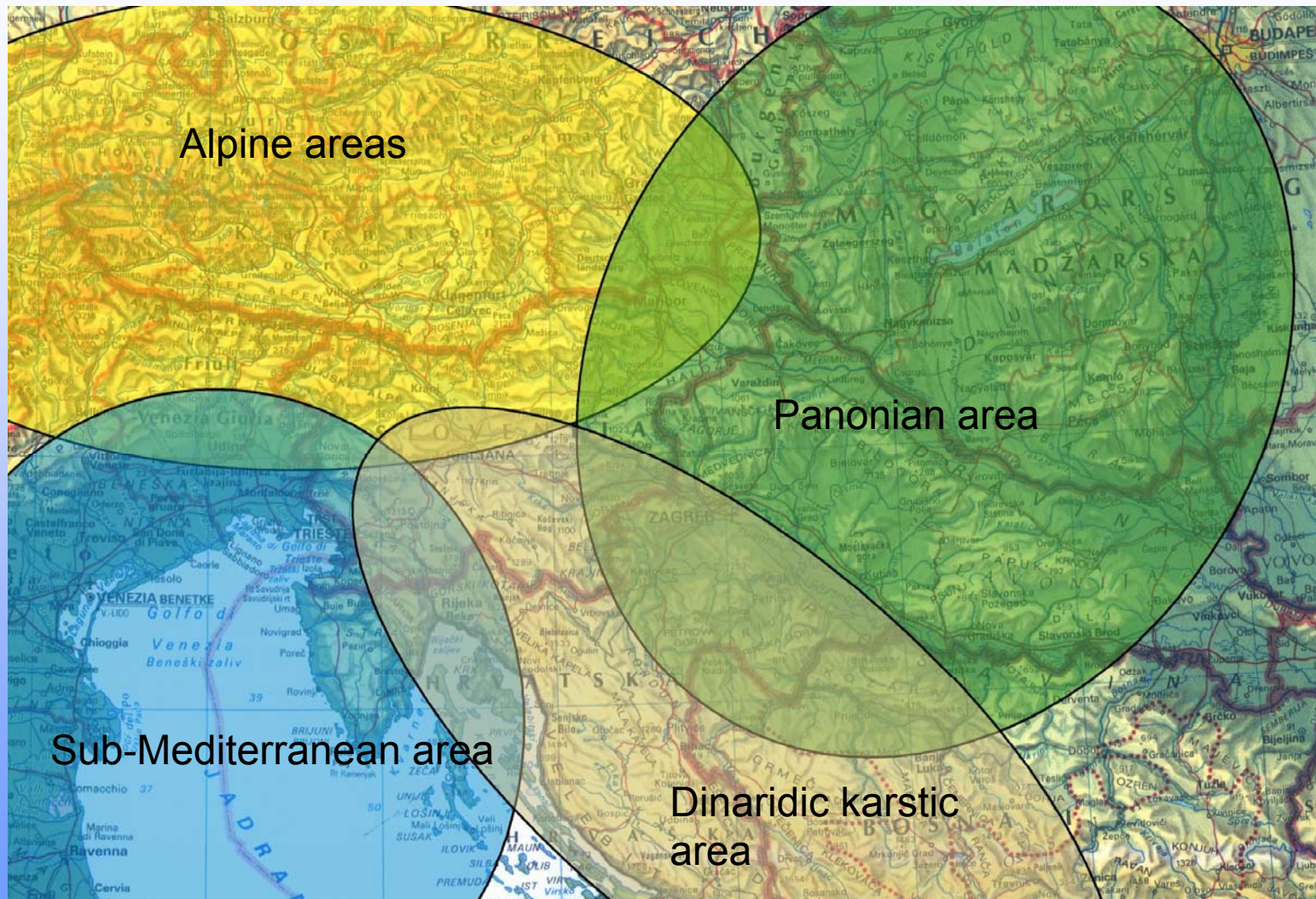
WFD: two River
Basin Districts
(Danube, Adriatic)

Land use/vegetation:

forest:	62 %
agricultural:	34 %
water, wetland:	1 %
urban:	3 %



Regional perspective



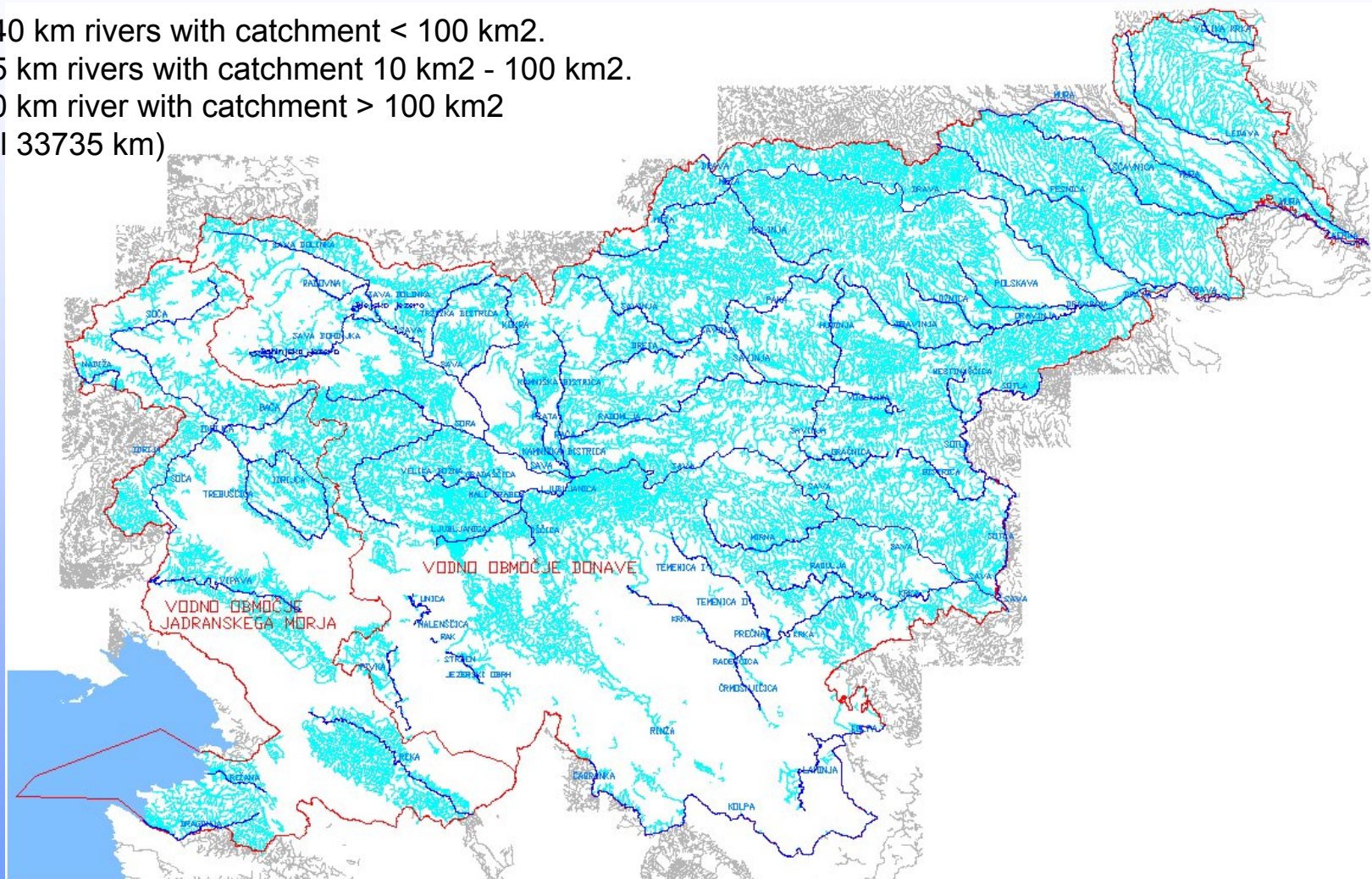
Slovenian river network:

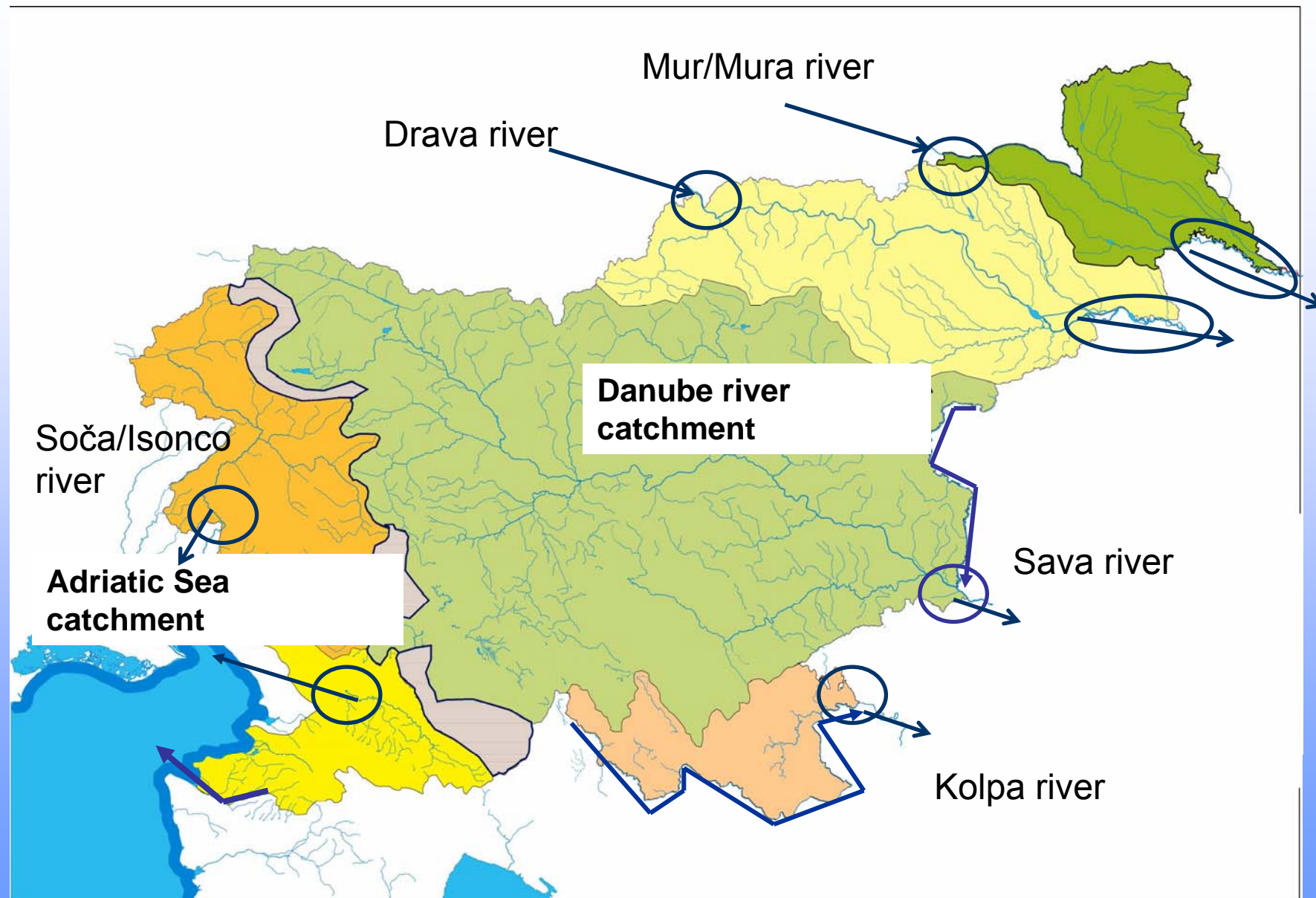
27840 km rivers with catchment < 100 km².

3035 km rivers with catchment 10 km² - 100 km².

2860 km river with catchment > 100 km²

(total 33735 km)





Transnational Water Management

- (1) Slovenia as a part of Yugoslavia Republic lead independant bi/three/lateral national water management comissions based on catchment approach
- (2) Slovenia as an independant (1991) continues with the same international practise in water mngt with the neighbouring countries:
 - SLO-Austria Mur/Mura river Commission (UI.FLRJ 10/56; UI. RS 4/93)
 - SLO-Austria Drau/Drava river Commission (UI. RS 4/93)
 - SLO-Hungary Commission for water management (UI. RS 2/95)
 - SLO-Italy Commission for water management (UI FLRJ 9/80; UI. RS 11/92)
 - SLO-Italy-Croatia Commission for protection of Adriatic Sea (UI. SFRJ 2/77; U.I. RS 11/92)
- (3) Slovenia ratified conventions:
 - Danube (UI. RS 12/98)
 - Barcelona (UI. SFRJ 12/77; UI. RS 5/92)
 - Helsinki (UI. RS 5/99)

Transnational Water Management

(4) The Sava river:

2004 - 2005 Slovenia proposed and supported the process of the Sava river protection act preparation

2005: the Sava river act signed (Bled, Slovenia) by 4 countries (SLO, CRO, BiH, Serbia)

2006: the Sava river Commission established (Zagreb, CRO)

(5) The Adriatic Sea:

2008: Slovenia started the same process as for the Sava river in the Adriatic Sea Basin (conference and letter of intent signed by Italy, Croatia, BiH, Monte Negro, Albania, Greece, Slovenia)

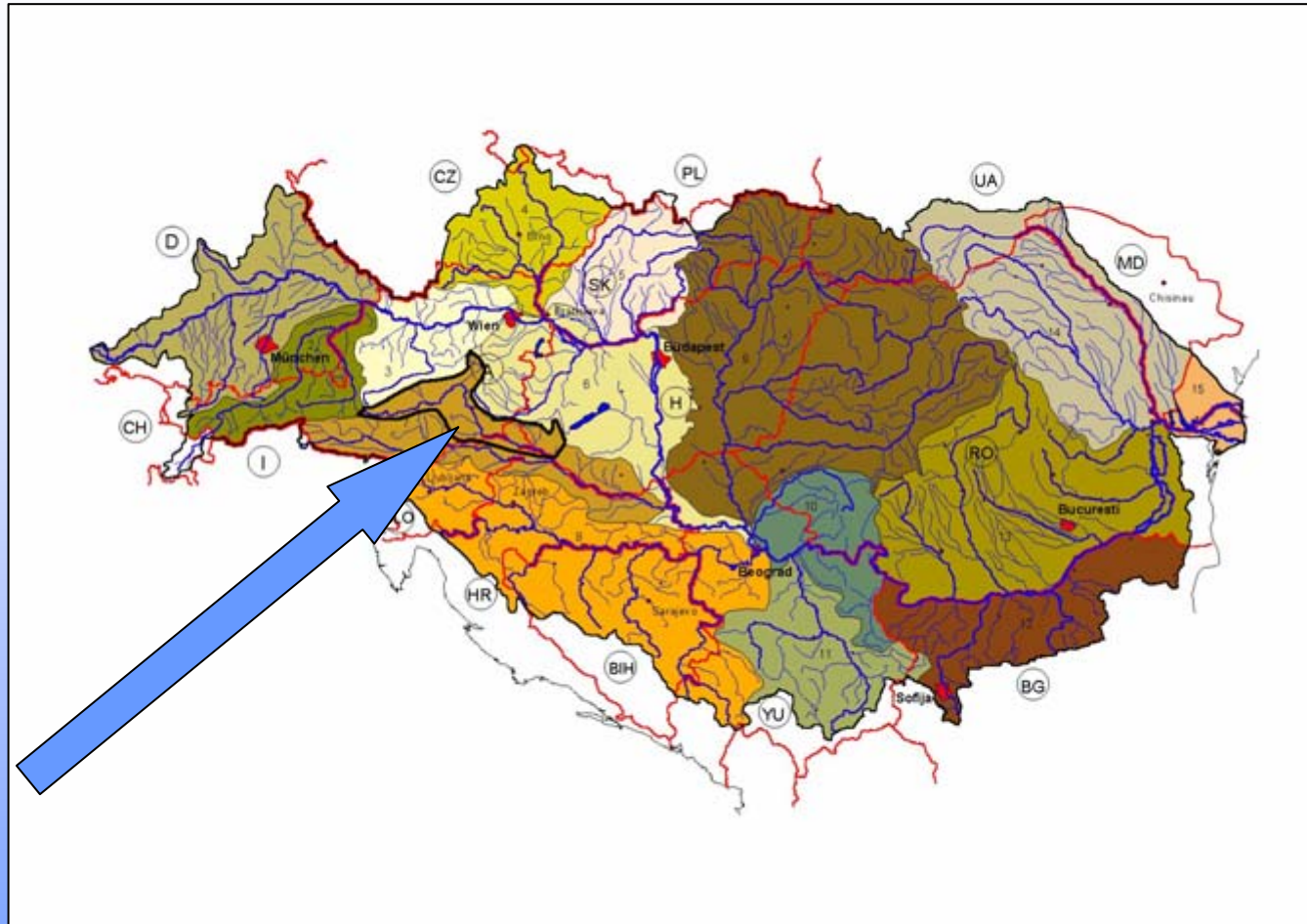
(1) Drava river:

SLO-Austria Drava river Commission

- water quality
- protection against damage cause by water regime
- maintenance works
- research
- planning
- design
- data exchange

(2) The River Mur/Mura

- belongs to the Danube river catchment
- it is the largest tributary of the Drava river
- 14304 km²
- 445 km
- outsprings in Lower Tauren Alps (Austria) at 1900 m a.s.l.
- Inflow to the Drava: 130 m a.s.l.
- Austria (10013 km²), Slovenia (1393 km²), Hungary (1911 km²), Croatia (987 km²)



CATCHMENT USES:

AUSTRIA: **urbanisation, hydro energy, agriculture:** regulation of the river due to hydropower plants (all 28, 16 more than 5MW) and flood prevention

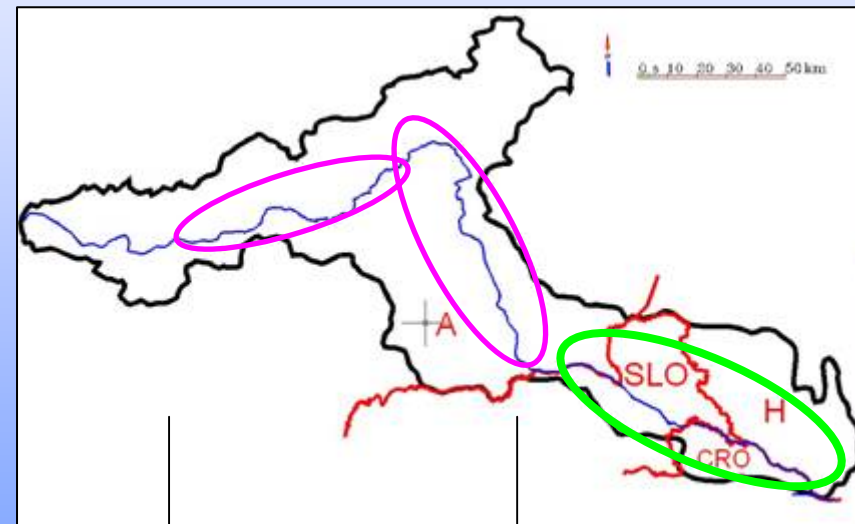
- SLOVENIA: **agriculture:** flood prevention of rural settlements with embankments (corridor ~1 km wide); groundwater use for supply; drainage systems, irrigation (from GW)

-CROATIA: **agriculture:** drainage, irrigation, river regulation

-HUNGARY: **agriculture:** drainage, irrigation, river regulation



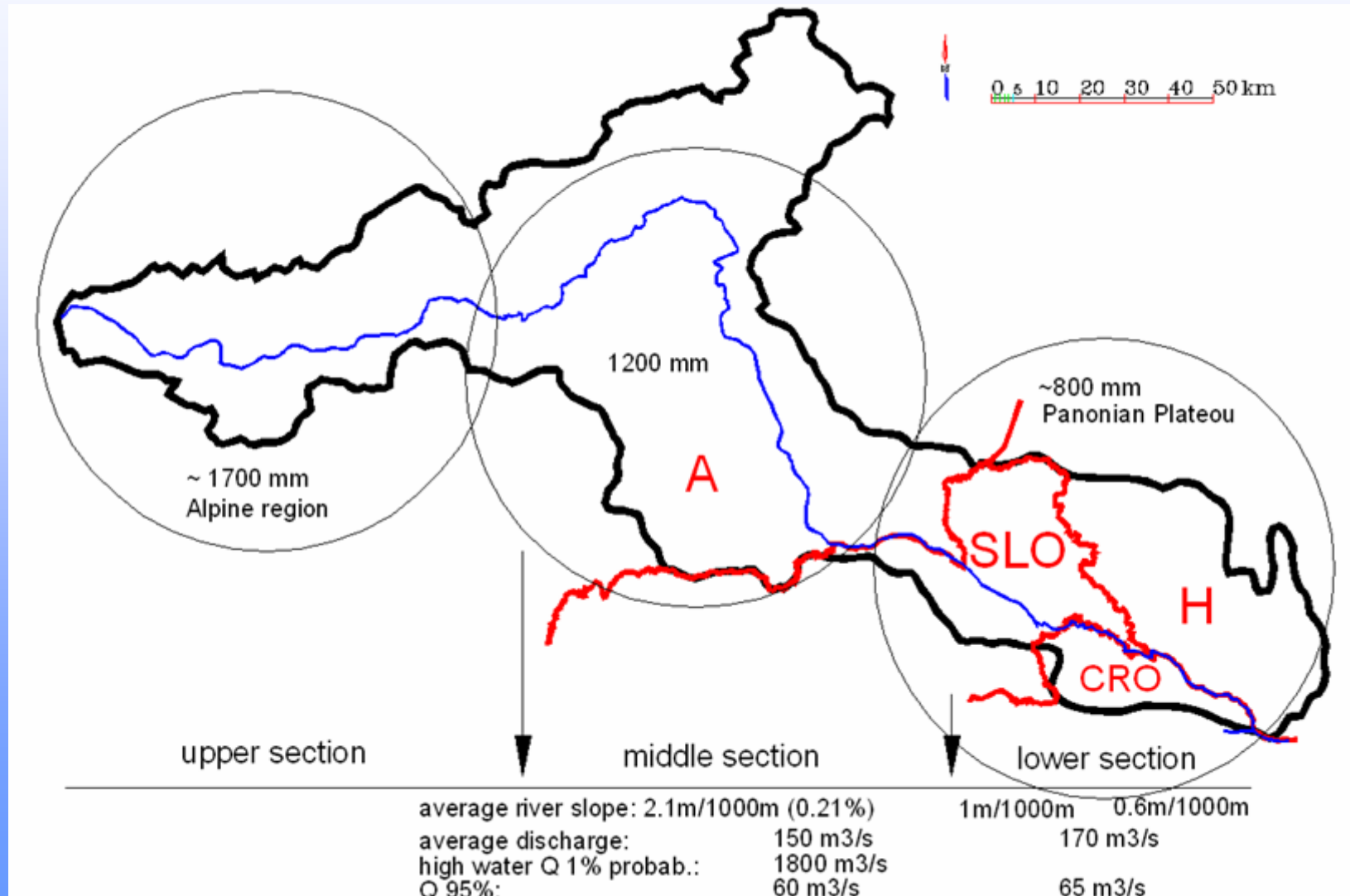
Mura position in Austria with locations of hydropower plants



**HYDROPOWER:
28 DAMS**

**GROUNDWATER
USE, FLOODS,
WETLANDS**

Hydrology depends on snow melting season in Austria (high water from March to May). Low water regime prevails from October to March.



PHYSICAL CHARACTERISTICS TODAY:



Middle section, Austria (Leibnitz):
regulated channel, narrow flood zone



Middle section, Austria-Slovene border:
regulated channel, wider flood zone

PHYSICAL CHARACTERISTICS TODAY:

Lower section, Slovenia: regulated channel, wide flood zone within embankments, old oxbox lakes and side channels, less active

Lower section, Slovene – Croatian border: regulated channel, wide flood zone, active oxbox lakes and side channels structure

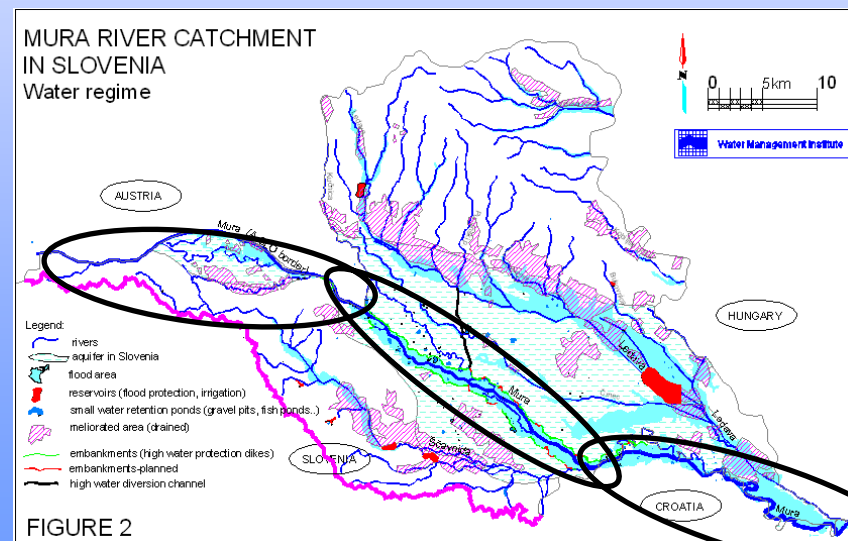
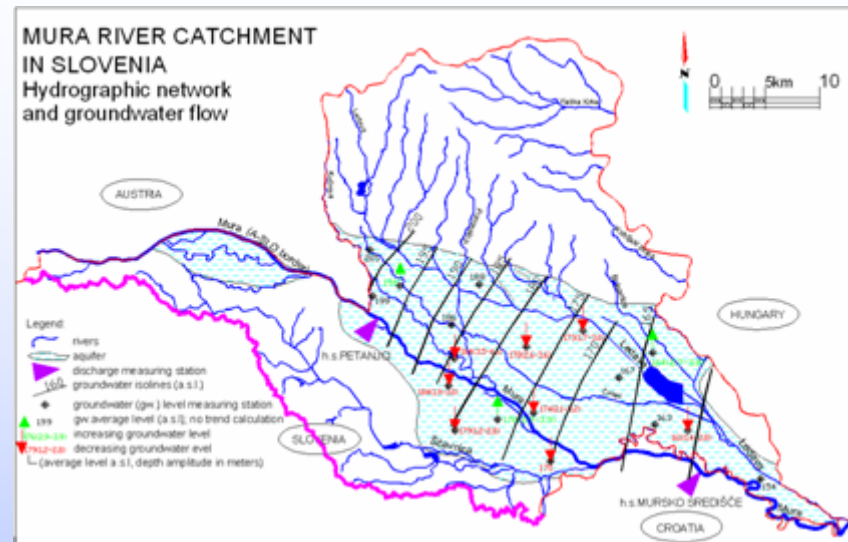


PHYSICAL CHARACTERISTICS TODAY:

Lower section,
Croatian –
Hungary border:
meanders, wide
flood zone, active
oxbox lakes and
side channels
structure



HYDROLOGY (surface water, groundwater):



Three hydromorphological sections of the Mura river in Slovenia:

- (1) SLO-A section (no hydropower stations anymore): average drop 0.33 m, max 0.88 m from 1971 to 1990
- (2) SLO section (drop and rise interchange; hinge point section)
- (3) SLO-CRO (stabilising section: more gravelbars as deposit sites of eroded materials from river banks upstream mostly)

The Mura/Mur river – Flood protection SLO-Hungary

- SLO-A Mura river border section
- SLO-H flood impact area (many flood protection projects, last implemented in 2008: Kobiljski potok)



The Mura/Mur river – Kobiljski potok project (SLO-H project)



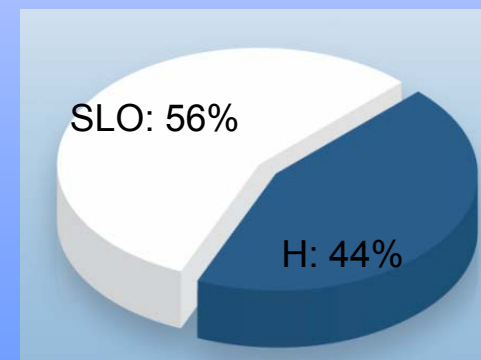
The Mura/Mur river – Kobiljski potok project (SLO-H project)

TIME SCHEDULE

- October 2005 common agreement on technical solution after 20 years of action development
- January 2006 - Agreement on project proposal
- February 2006 project submission
- August 2006 project approval
- May 2007 government of Slovenia approve financial support
- September 2007 last project agreement
- February 2008 project finished

COSTS, SHARE OF COSTS:

Actions	SLOVENIA	Hungary	sum	
	Value in EUR	Value in EUR	Value in EUR	ratio %
Preparation	0	8 458	8 458	0,3%
Administrative cost	3 602	9 809	13 411	0,5%
Management of the project	70 814	140 639	211 453	8,5%
Information management	3 797	10 280	14 077	0,6%
Preparation work	0	297 536	297 536	12,0%
Construction	1 291 721	390 734	1 682 455	68,0%
Final work	0	246 752	246 752	10,0%
Overool cost of the project	1 369 934	1 104 207	2 474 141	100,0%
Ratio 56:44	1 385 519,06	1 088 622,12		
construction	78,44	21,56		
other	9,45	90,55		



The Mura/Mur river – Kobiljski potok project (SLO-H project)

WHAT HELPS?

- Common interest and natural condition
- Trust and tradition in common actions
- External support - **EU financial mechanisms**
- Awareness in long time relations in integrated basin management

Source	EU contribution	National contribution	sum
Slovenia	400.819	969.859	1.370.678
Hungary	690.130	414.077	1.104.207
Total	1.090.040	1.383.936	2.474.885

The Mura/Mur river – nature protection Mura - Natura 2000 site in A and SLO



The Mura/Mur river – nature protection Mura - Natura 2000 site in A and SLO

(1) development of an action plan for wetland protection in the framework of Danube convention: 1995-2000 programme (ICPDR)

- to achieve and implement ecologically appropriate maintenance practices
- to design appropriate restoration schemes
- to strengthen co-ordination between planning organisations at the national and local level
- to raise public awareness and to seek to involve both the public and NGO's in the decision making process and
- to strengthen international cooperation on water management and wetland protection between Slovenia and neighbouring countries.

(2) Mura river declared as NATURA 2000 site in A and SLO

(3) LIFE NATURA 2006 project “Biomura” - Protection of biodiversity of the Mura river in Slovenia (LIFE/NAT06/SI/000066; “www.biomura.si”)

(2) The Mura river water mngt - conclusions:

- A-SLO: Joined flood protection measures/regulation of the bordering section of the river
- A-SLO (2000): Concept for more sustainable river management of the border section
- A (2007): widening of the river
- SLO (2007-2011): opening of side arm channels - wetland biodiversity protection)
- SLO-Hungary (2008): flood protection

CONCLUSIONS – lessons learned:

- (1) Political bases, integration in space (common interest)
- (2) Transnational water mngt is an issue of integration
 - Integration of decision making processes:
 - Integration of projects into catchment management plans
 - Integration of different decision-making levels in vertical direction
 - Integration of decision making in horizontal direction
 - Integration stakeholders and (NGO).
 - Integration of disciplines
 - Integration in time
 - Integration of interests
 - **Transboundary integration - integrated country interests**

CONCLUSIONS – lessons learned:

(3) gaps:

- a lack of responsibility, willingness and trust for common action
- The question is literacy and misunderstanding in communication between responsible services
- Hard negotiation and time consuming process - there is no free lunch and alternative solutions without negotiation predominate