

TRANSBOUNDARY INTEGRATED WATER MANAGEMENT

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- Water management is a very broad, sustainable and complex process. It is not an easy task to be implemented even inside national borders. The integrated approach of water management has different aspects. We could try to find solutions integrated in space, time, hydrologic cycle, professional disciplines, administration, services, stakeholders etc.

Integration!!!

- Integration in space.
- Integration multiple perspectives
 - Integration of project to watershed management plan (WMP-WFD)
 - 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

From disperse light to laser beam

Decisions

- strategic,
- action-based and
- operational



Gaps in integrated transboundary water management

- There is 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

Slovene - Hungarian Case

Legal structure

- 1994 Agreement signed between governments of Slovenia and Hungary for water management
- Permanent Slovene-Hungary commission for water management

The Commission is responsible for:

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

Map of the area



Probability of discharges of Kobilje creek

- $Q_{100} = 94 \text{ m}^3/\text{s}$

Watershed area: 177,5
km²

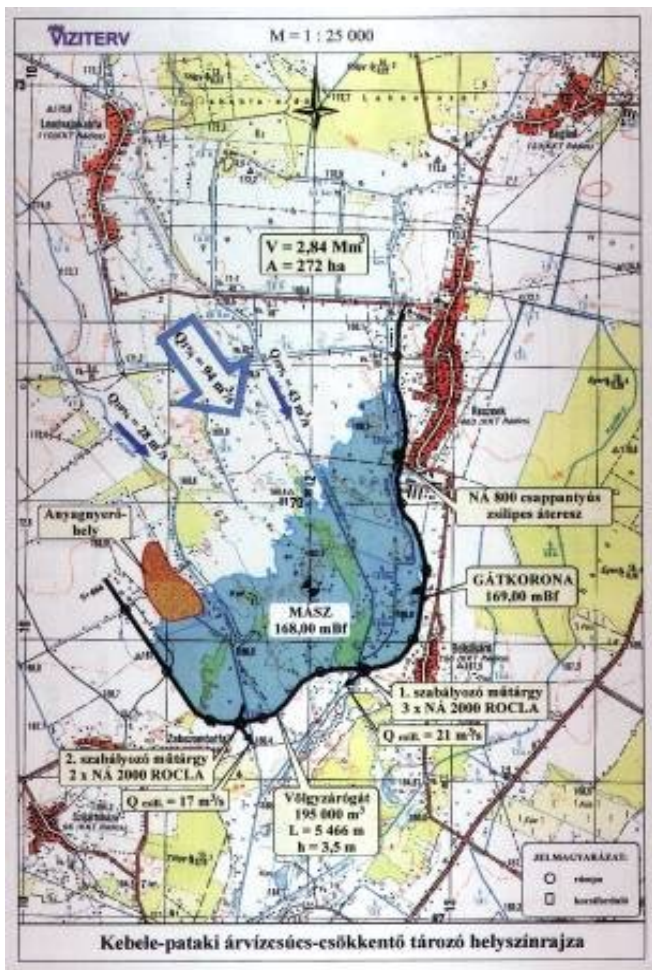
- $Q_{50} = 81 \text{ m}^3/\text{s}$

- $Q_{30} = 67 \text{ m}^3/\text{s}$

- $Q_{10} = 56 \text{ m}^3/\text{s}$

- $Q_5 = 45 \text{ m}^3/\text{s}$

- $Q_2 = 30 \text{ m}^3/\text{s}$





Results of the project

	<i>Description</i>	unit	Expected results		
			SI	HU	SKUPAJ
1	Flood discharge $Q_{1\%}$	M ³ /s	38	38	38 m³/s
2	Water storage	M ³		2,84 mil.	2,84 mil m³
3	Protected agricultural land	ha	1000	712	1.712 ha
4	Protected settlements	village	5	3	8 villages
5	Area of detention pond	ha		272	272 ha
6	Levies	m		5466	5.466 m
7	River stream reconstruction works	km	3	5	8 km
8	Increase biodiversity	%	40 – 60	40 – 60	40-60%
9	Groundwater level rise	%	10 – 30	10 – 30	10-30%
10	Environmental straitening	%	50	50	50%

Time scheme

- 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

The project cost shared by both sides depends on:

- Ratio of watershed area of stream
- Ratio of diminished damage cost by project
- Ratio in validation of previous constructions done to prevent flood on both sides and in benefit of both sides.

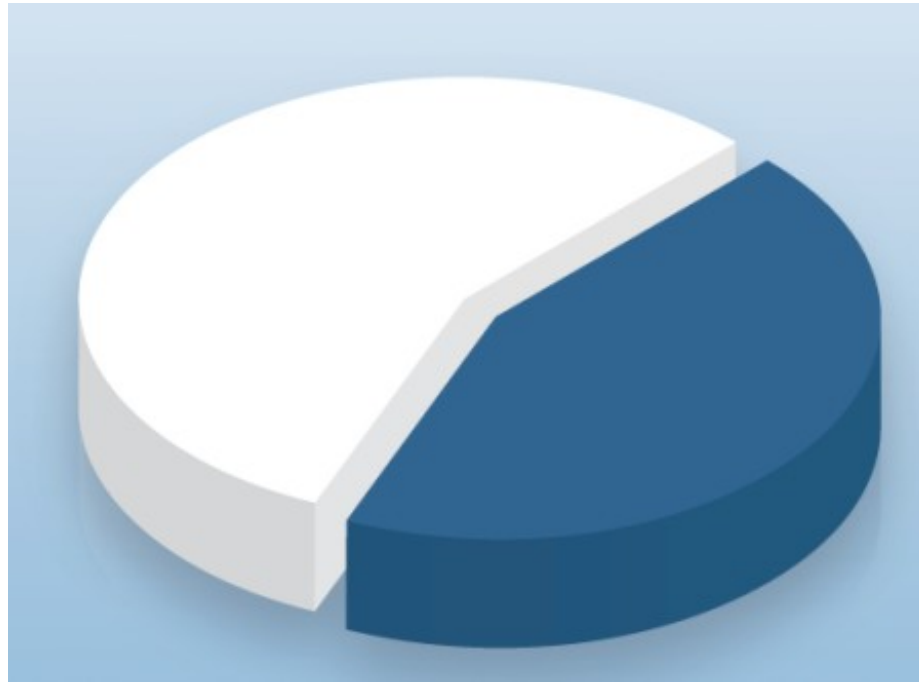
Structure of the cost

	Actions	SLOVENIA	Hungary	sum	
		Value in EUR	Value in EUR	Value in EUR	ratio %
P	Preparation	0	8 458	8 458	0,3%
SP	Administrative cost	3 602	9 809	13 411	0,5%
DS1	Management of the project	70 814	140 639	211 453	8,5%
DS2	Information management	3 797	10 280	14 077	0,6%
DS3	Preparation work	0	297 536	297 536	12,0%
DS4	Construction	1 291 721	390 734	1 682 455	68,0%
DS	Final work	0	246 752	246 752	10,0%
VII.	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		

Finance sharing

Slovenia 56%

Hungary 44%



Financial support in EUR

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

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



Distance learning course in

**"Mediation and negotiation in trans
boundary integrated water management"**

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