From Basic Research to Knowledge Society: the DREAM project Danube River REsearch And Management

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- 3. Ideas for the common implementation of the Danube Strategy
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Danube River - Pressures and Impacts

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Existing Situation

Driving forces and impacts – Danube River Basin



- Flood protection
- → Navigation
- ⇒ Climate change
- → Changes in land use
- ⇒ Point and diffuse source pollution



Hydroelectric Energy

Danube River Basin – Hydropower



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International Waterway

Danube River Basin - Navigation



2411 km navigable (Sulina-Kelheim)

Waterway transport in the Danube aims to be increased from 10 mio to 30 mio t / year (e.g. in Austria)

via donau, 2007



Flood Risk Management

Danube River Basin – Flood protection

Ecological potential of floodplains in the Danube River Basin





River Bed Degradation

Upper Danube - Consequences





River Morphology

Hydromorphological conditions

Overall total hydromorphological assessment in five classes – longitudinal visualisation



1/3 good hydromorphological conditions

1/3 strongly altered

Upper Danube - most affected by significant hydromorphological changes

ICPDR, JDS, 2008

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Danube River REsearch And Management DREAM

... from Basic Research to Knowledge Society

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Building two adequate hydraulic laboratories

Aims

- Improving computer based simulations
- Establishing field study sites for model calibration and validation
- Improving scientific progress by building cooperations with research institutions along the Danube River

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Transferring Basic Research to Knowledge Society

IM FLUSS



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Description of Activities

University of Natural Resources and Life Sciences Vienna,

- (1) Construction of two large Responsible River Modelling Centers/hydraulic engineering laboratories (>5000 l/s)
- (2) Cooperation of existing hydraulic engineering laboratories
- (3) Formation of a cluster/network of river engineering simulation tools
- (4) Establishment of a network of field study sites along the Danube River and tributaries
- (5) Construction and operation of a research vessel with diving shaft for the whole Danube
- (6) Establishment of a network of existing and extended Danube River Research Institutions throughout all riparian countries





IM Fluss Relevance for Danube Strategy

(1) Connecting the Danube Region

To improve mobility and multimodality

- (a) Inland Waterways
- (b) Road, rail and air links

To encourage more sustainable energy

To promote culture and tourism, people to people contacts

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(2) Protecting the Environment in the Danube Region

To restore and maintain the quality of waters

To manage environmental risks

To preserve biodiversity, landscapes and the quality of air and soils

(3) Building Prosperity in the Danube Region

To develop the knowledge society through research, education and IT

To support the competitiveness of enterprises, including cluster development To invest in people and skills

(4) Strengthening the Danube Region

To step up institutional capacity and cooperation

To work together to promote security and tackle organised and serious crime

PA 07 (Knowledge Society through research, education, IT)

Especially between **PA 07** (Knowledge Society), **PA 1A** (MobilityWaterways), **PA 02** (Energy), **PA 04** (Quality of waters), **PA 05** (Biodiversity, Landscapes, Quality of Air and Soils) and **PA 06** (Environmental Risks) strong synergies are given and win-win effects could be gained.

Within **PA 07** this project would contribute significantly to the Action -"To strengthen the capacities of research infrastructure" and Action -"To strengthen cooperation among universities and research facilities and to upgrade research and education outcomes by focusing on unique selling points".



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- All relevant universities and research institutions along the Danube River and tributaries are potential partners, in strong interrelation with public and private sectors (ministries, regions, hydroelectric companies, waterway administrations to NGOs)
- Consortium leaders: Austria, Romania, Serbia
- Idea and lead partner: BOKU, Austria
- Partner countries: Germany, Slovakia, Hungary, Croatia, Serbia, Bulgaria, Moldova, Ukraine, Romania, Czech Republic



Budget DREAM

Activities	Description	Costs	Outcomes
Act. 1	Construction of two large hydraulic and environmental engineering laboratories		
	Upper and Middle Danube Responsible River Modelling Center (suggested to be in Vienna, free flowing 5 m ³ s ⁻¹)	19.8 Mio €	Two large
	Personnel costs for planning coordination	0.5 Mio €	laboratories: large
	Lower Danube Responsible River Modelling Center (Romania, free flowing 5 m ³ s ⁻¹)	17.1 Mio €	discharge (5 m ³ s ⁻¹), free flowing water
	Personnel costs for planning coordination	0.5 Mio €	заррту
Act. 2	Network of existing hydraulic engineering laboratories and upgrade of instrumentation		
	a) Measurement devices b) Personnel costs	1.2 Mio € 1,5 Mio €	Measurement devices (laboratory instr.) One staff per org.
Act. 3	Formation of a cluster/network of river engineering simulation tools		
	a) Hardware (Cluster of 10 Servers)	1.7 Mio €	Hardware
	b) Software development and acquisition	1.1 Mio €	
	c) Personnel costs	1.9 Mio €	One staff per org.
Act. 4	Establishment of a network of field study sites		
	a) Measurement devices	2.3 Mio €	ADCPs
	b) Personnel costs	1.5 Mio €	One person per org.
Act. 5	Construction and operation of a research vessel with diving shaft and labs		
	a) Construction of a research vessel	16.5 Mio €	Research vessel
	b) Operation of research vessel	2.1 Mio €	Operation
Act. 6	Establ. of a netw. of Dan. River Res. Inst.	1.9 Mio €	One staff per org.
	Total Costs	69.6 Mio €	



PA07 Flagship **Project**

26.6.2012 DREAM 1st Scientific **Flagship Project** of PA07 EUSDR

EUSDR Priority Area 7: To develop the Knowledge Society through research, education and information technologies

In reference to the minutes from the fourth PA7 Steering Group meeting

LABEL PRIORITY AREA 7 FLAGSHIP PROJECT

The project proposal Danube River Research and Management - DREAM, proposed by Prof. Dr. Helmut Habersack and Prof. Dr. Herwig Waidbacher, the BOKU University, Vienna, with the partners from 13 Danube region countries (Hungary, Serbia, Bulgaria, Romania, Croatia, Slovak Republic, Czech Republic, Austria, Germany, Slovenia, Bosnia and Herzegovina, Moldova, Ukraine) was unanimously elected for the "Label Priority Area 7 Flagship Project" within European Union Strategy for the Danube Region, Priority Area 7, at the fourth PA7 Steering Group meeting held on 26 June 2012 in Vienna, which was attended by the official representatives of 7 EUSDR countries (Austria, Germany-Baden Wurttemberg and Bavaria, Bulgaria, Hungary, Slovenia, Slovakia and Serbia),

The Priority Area 7 Flagship Projects are outstanding projects which are expected to make a significant impact on the Danube Region as a whole in the field of research, education and/or information technologies. To be eligible for the Label the project must be jointly developed by a minimum of three Danube Region countries, having a decisive impact in at least five Danube regions.

The "Label Priority Area 7 Flagship Projects" acknowledges the extraordinary importance of a project for the Danube Region Knowledge Society.

Novi Sad, 7 September, 2012 no: 01-2+310

On behalf of EUSDR PA7 Coordinators Lubornir Faltan and Prof. Dr. Miroslav Veskovic Prof. Dr. Miroslav Veskovic.

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