

An aerial photograph of a wide river, likely the Danube, flowing through a dense forest. The river is blue and occupies the central and lower portions of the frame. On the left bank, there is a dam or weir structure. The surrounding landscape is a mix of green fields and brownish-yellow trees, suggesting an autumn or winter setting. The sky is a clear, pale blue.

DREAM

Danube River REsearch And Management

Helmut Habersack

presented by **Christine Sindelar**

**Christian Doppler Laboratory for Advanced Methods
in River Monitoring, Modelling and Engineering,
Institute of Water Management, Hydrology and Hydraulic Engineering
Department of Water, Atmosphere and Environment
BOKU – University of Natural Resources and Life Sciences, Vienna, AT**

Content

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1. Danube River – pressures and impacts
2. Danube River REsearch And Management – *DREAM*
3. Funding possibilities
4. Completed project SEDDON
5. Outlook

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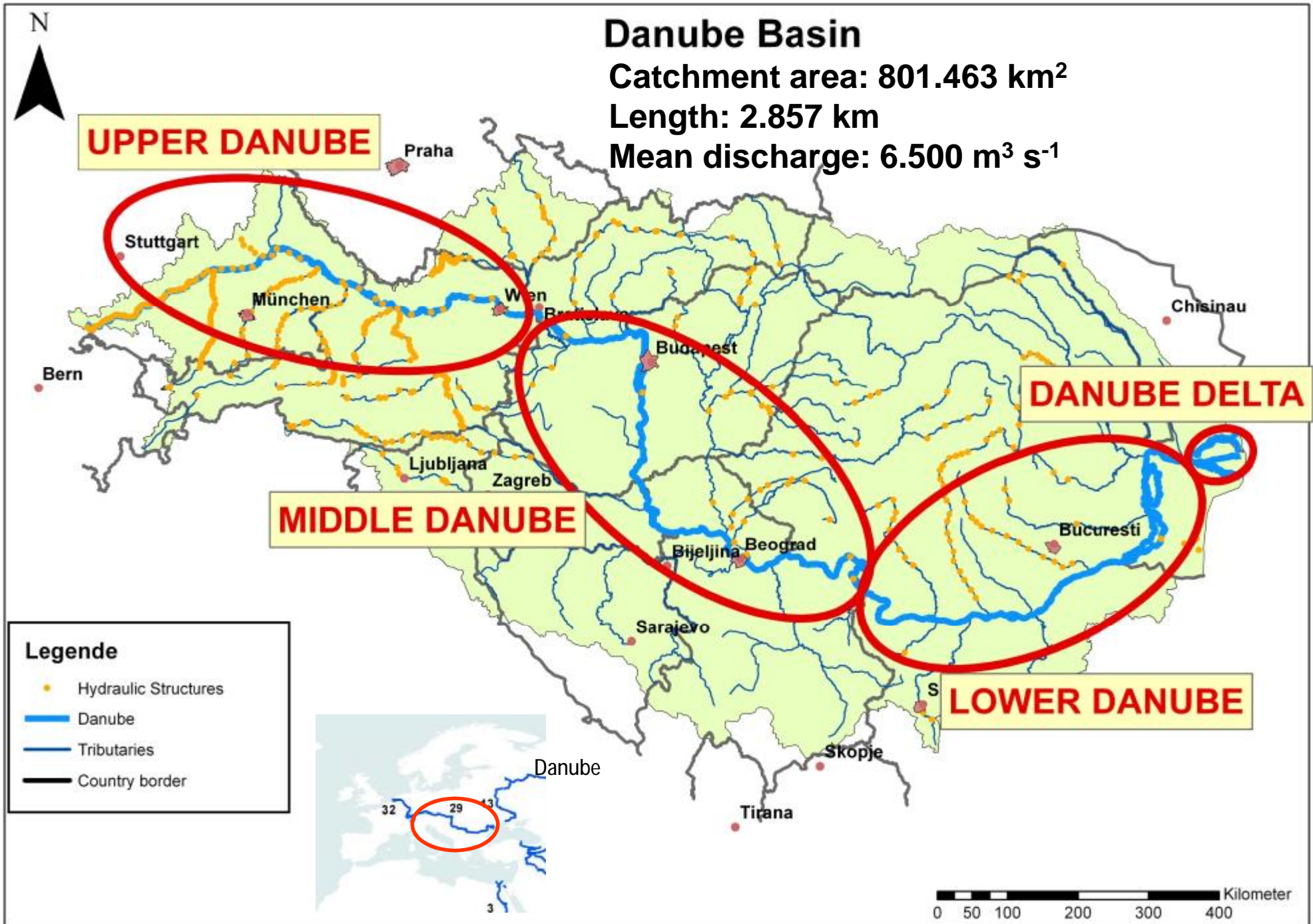
Danube River - Pressures and Impacts

Danube Basin

Catchment area: 801.463 km²

Length: 2.857 km

Mean discharge: 6.500 m³ s⁻¹



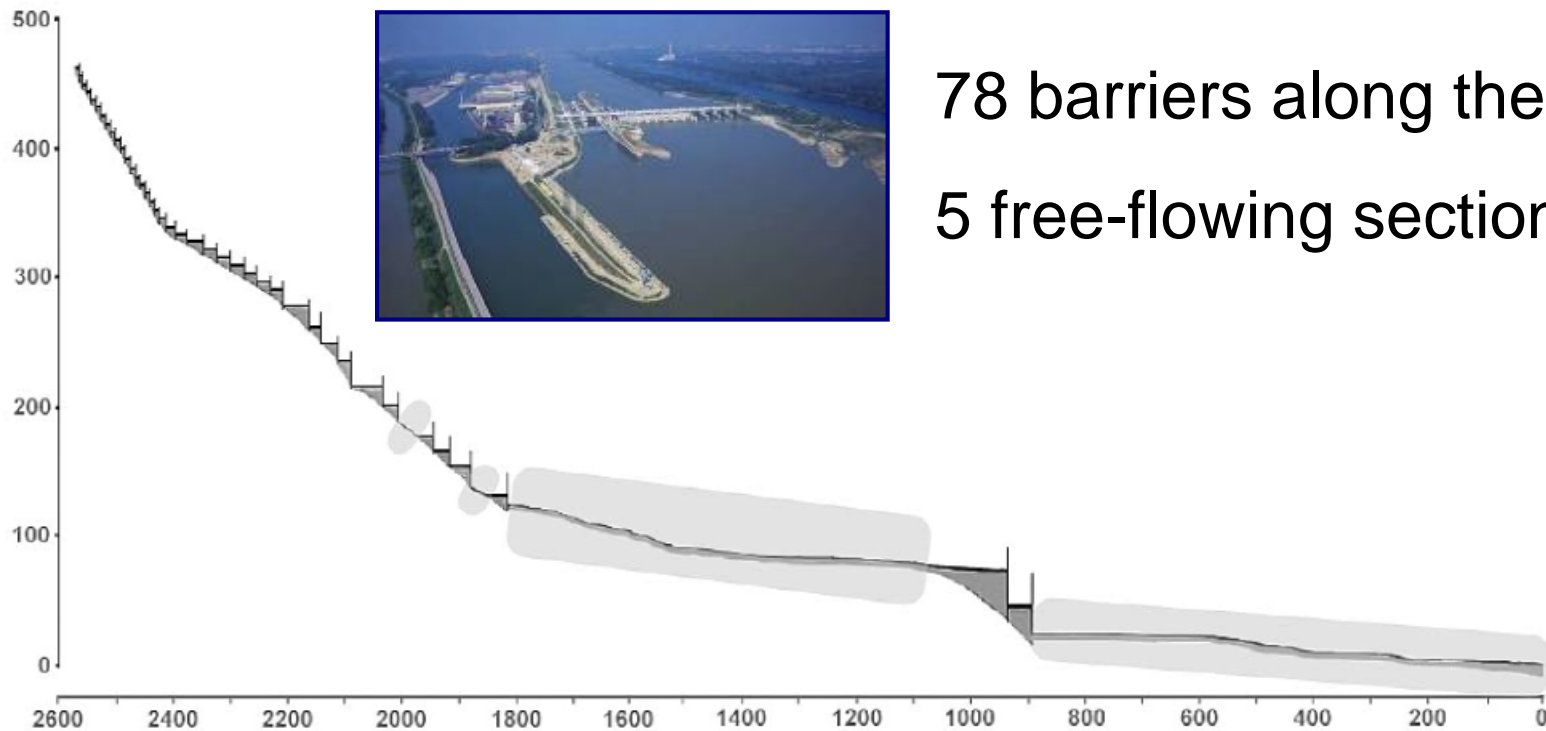
Existing Situation

Driving forces and impacts – *Danube River Basin*

- **Hydropower plants**
- **Flood protection**
- **Navigation**
- **Climate change**
- **Changes in land use**
- **Point and diffuse source pollution**

Hydroelectric Energy

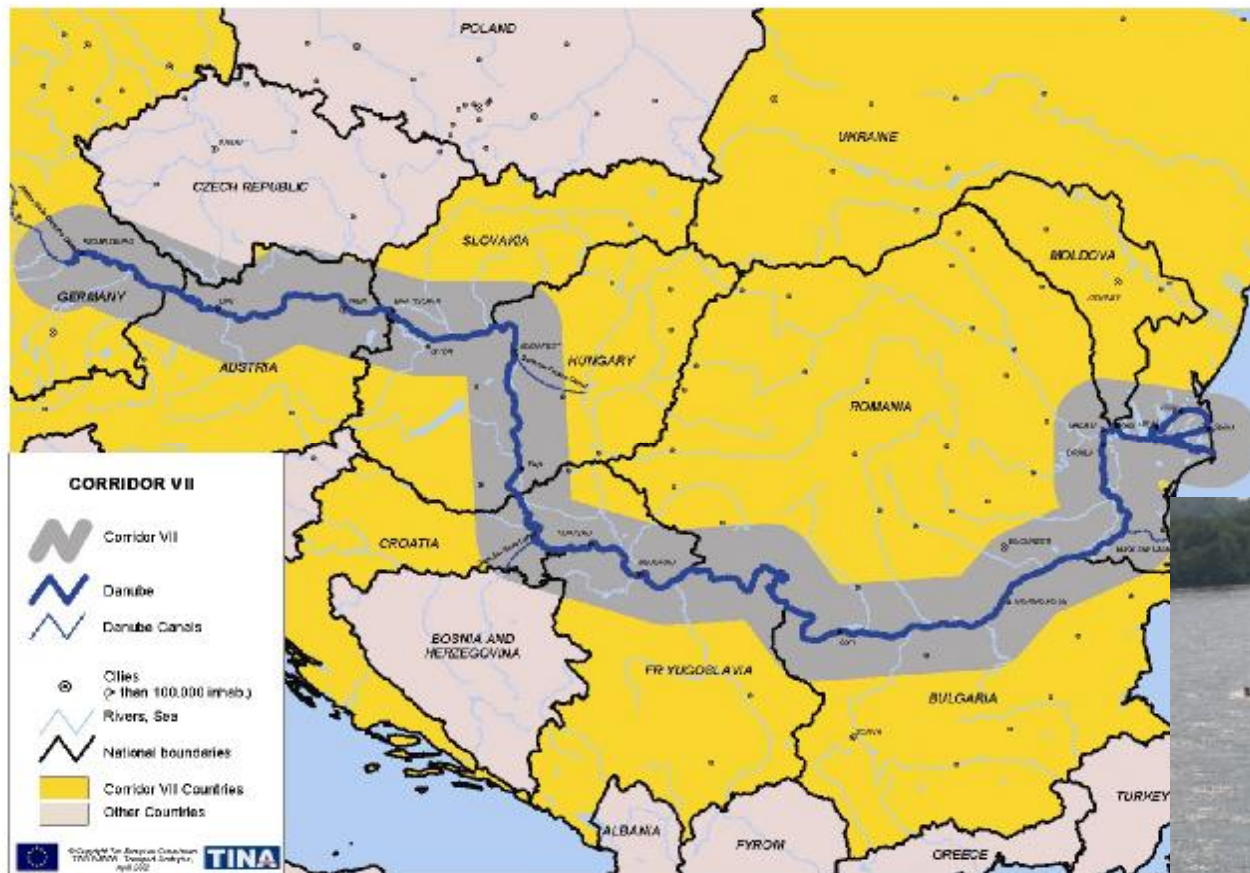
Danube River Basin – Hydropower



Schiemer et al., 2004

International Waterway

Danube River Basin - Navigation



2411 km navigable
(Sulina-Kelheim)

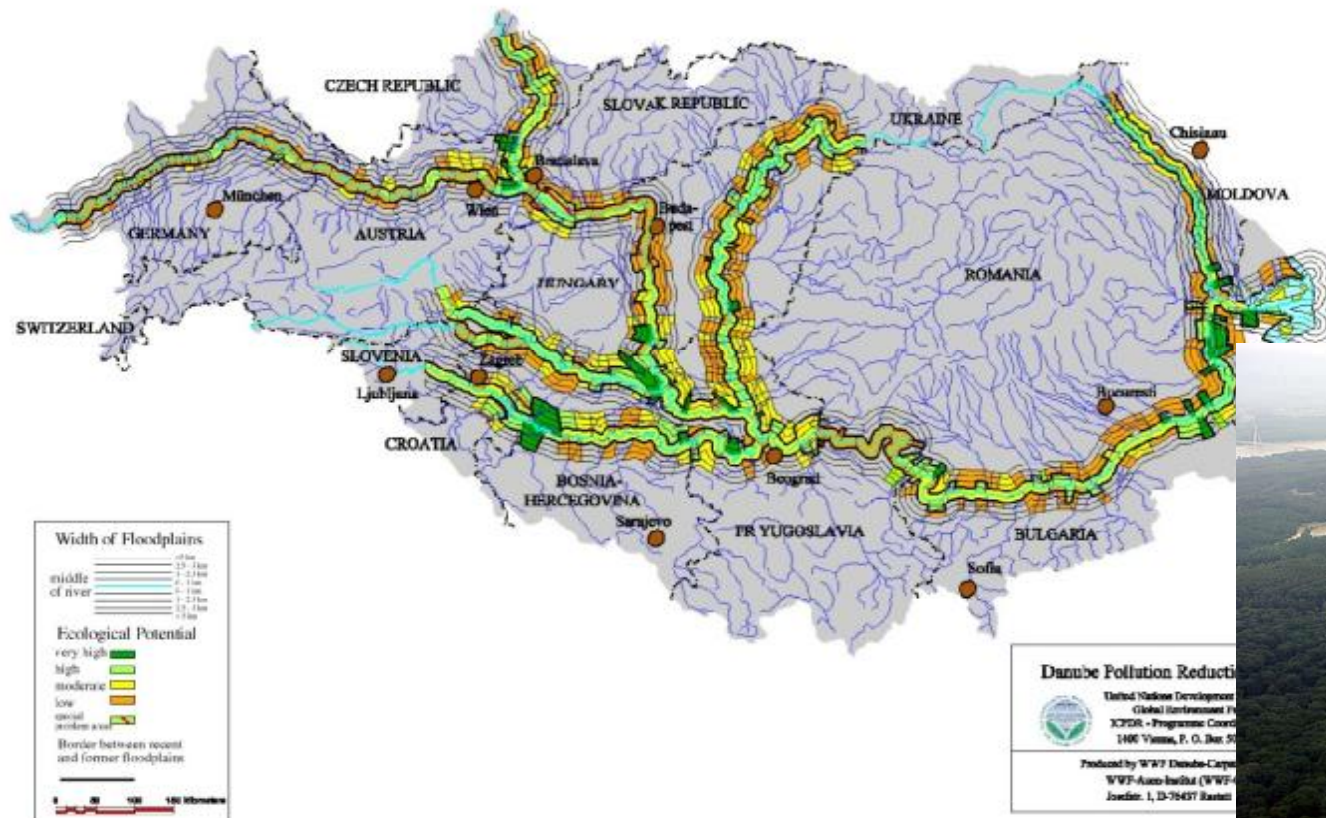
Waterway transport
in the Danube aims
to be increased from
10 mio to 30 mio t /
year (e.g. in Austria)



Flood Risk Management

Danube River Basin – Flood protection

Ecological potential of floodplains in the Danube River Basin

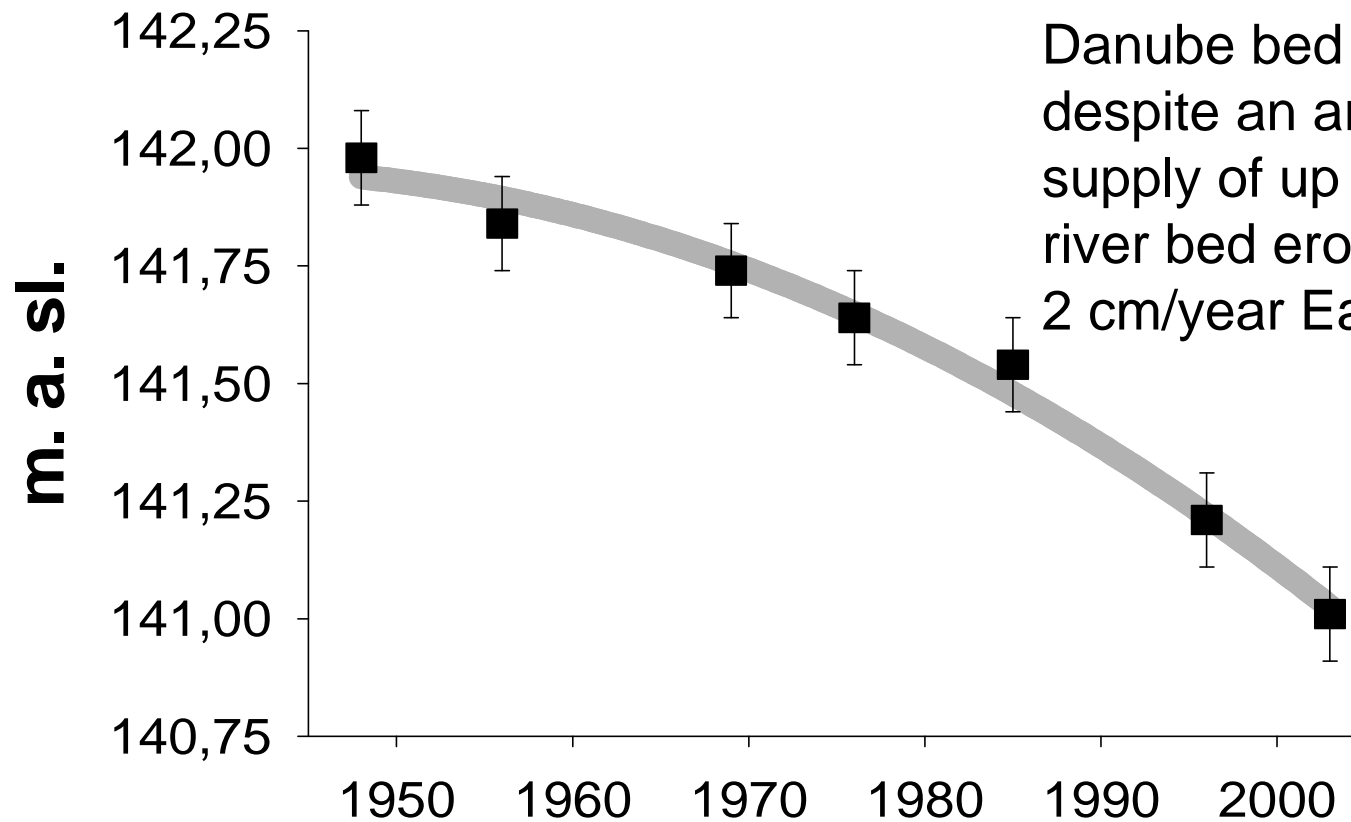


Loss of 80 %
of the original
floodplain
area



River Bed Degradation

Upper Danube - Consequences



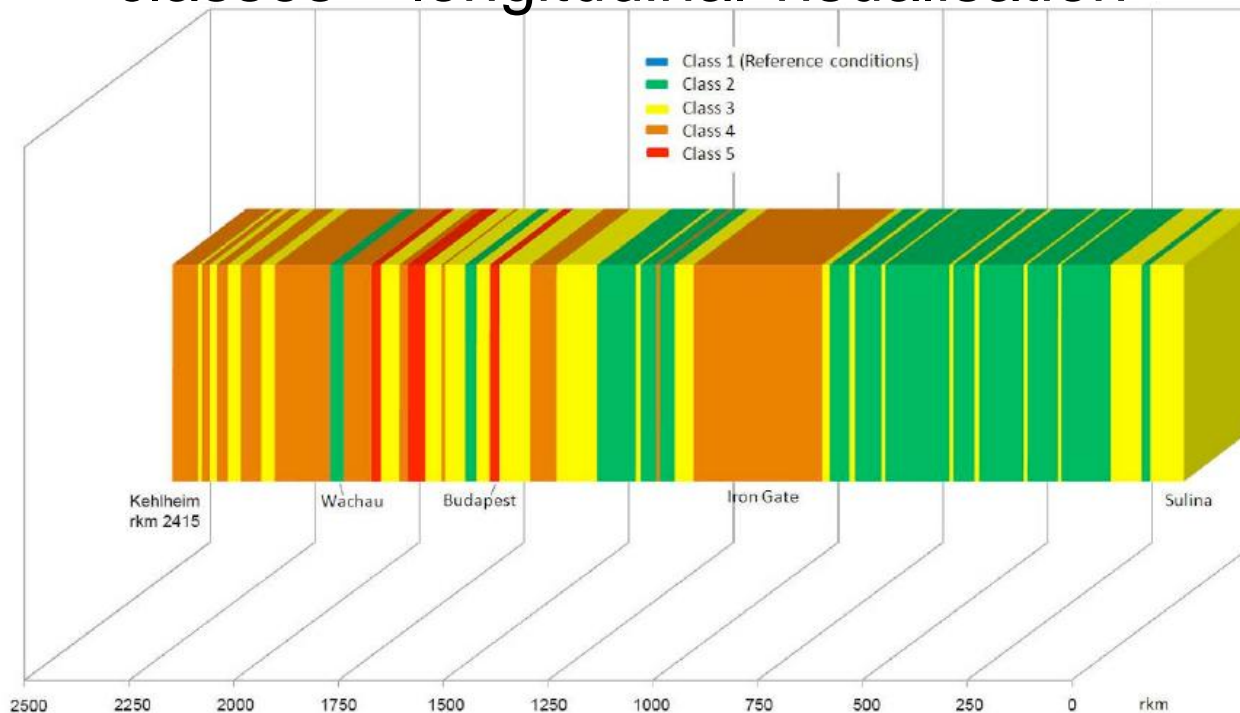
Danube bed degradation: despite an artificial gravel supply of up to 200.000 m³/year river bed erosion of 2 cm/year East of Vienna

DonauConsult

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

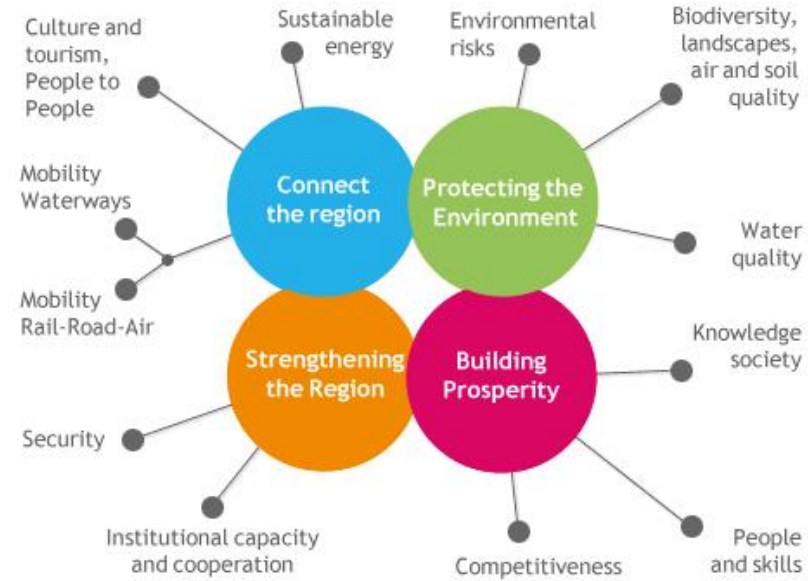
Structure of EUSDR



Country Participation



Pillars and Priority Areas



Macro-regional Strategies



[J. http://www.danube-region.eu/](http://www.danube-region.eu/)

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Danube River REsearch And Management *DREAM*

...from Basic Research to Knowledge Society

Aims

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- Ü Building two adequate hydraulic laboratories
- Ü Improving computer based simulations
- Ü Establishing field study sites for model calibration and validation
- Ü Improving scientific progress by building cooperations with research institutions along the Danube River
- Ü Transferring Basic Research to Knowledge Society

Description of Activities

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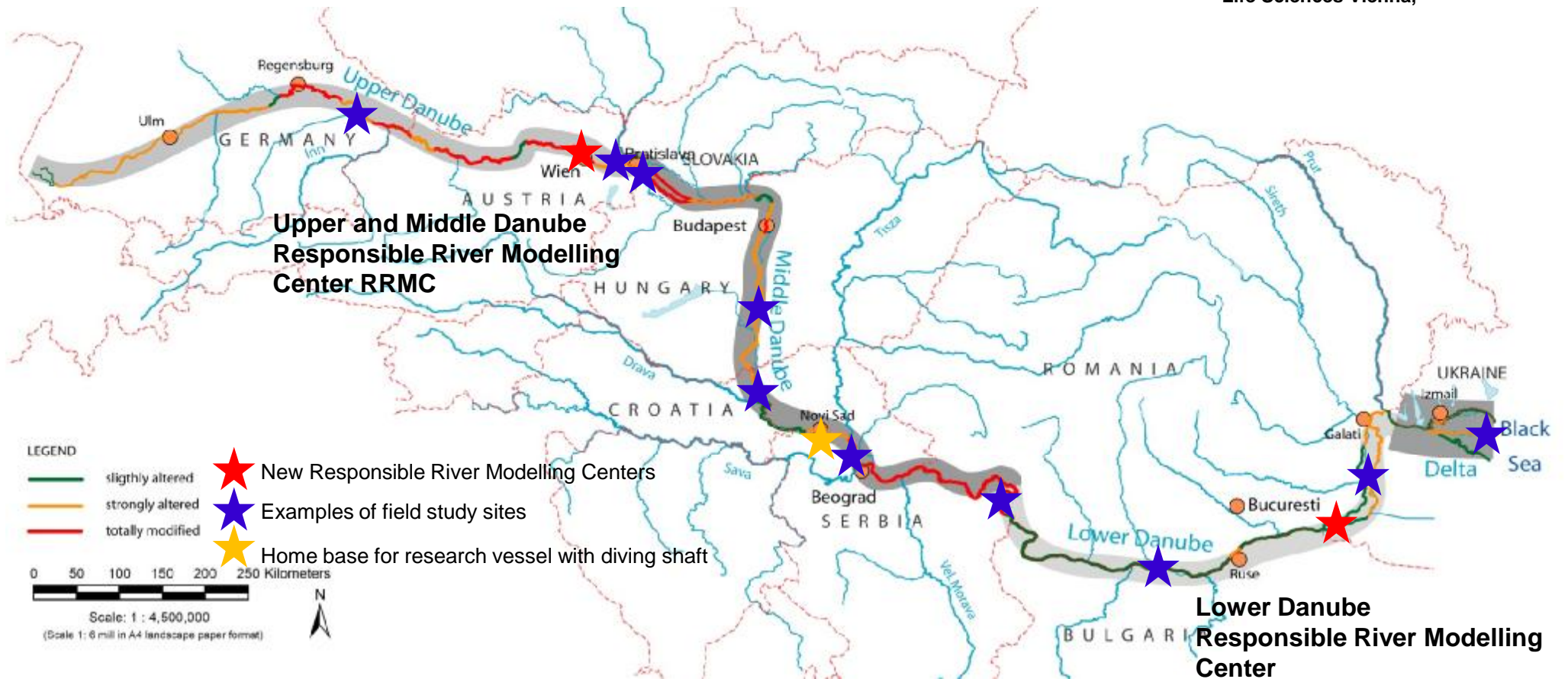
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- (1) Construction of two large Responsible River Modelling Centers/hydraulic engineering laboratories (up to 10 m³)
- (2) Cooperation of existing hydraulic engineering laboratories
- (3) Formation of a cluster/network of river engineering simulation 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

Implementation Ideas for Research Infrastructure



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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

(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



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



Especially between **PA 07** (Knowledge Society), **PA 1A** (Mobility/Waterways), **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**”.

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: 01-273/Q

On behalf of EUSDR PA7 Coordinators

Dr. Lubomir Falan and Prof. Dr. Miroslav Veskovíc



Prof. Dr. Miroslav Veskovíc,
Rector, University of Novi Sad

Partners



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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

European Regional Development Fund (ERDF)

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- § *DREAM network* Danube Programm
- § *DREAM infrastructure* Bilateral Programm (cross border cooperation)
- § *DREAM infrastructure* National EU funds

ERDF: CBC programmes in the Danube Region

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EU Projects



- § **SEDDON II (Sediment research and management at the Danube II): INTERREG V-A Austria-Hungary 2014-2020**
 - § Partner 1: Budapest University of Technology and Economics (BME)
 - § Partner 2: North-Transdanubian Water Directorate (EDUVIZIG)
 - § Strategic Partner: Bundesamt für Wasserwirtschaft Wien (BAW)

- § **DREAM SK-AT: ETZ Slovakia-Austria 2014-2020**
 - § Partner 1: Slovak Academy of Sciences, Institute of Landscape Ecology
 - § Partner 2: Water Research Institute Department of Hydrology and Hydraulics
 - § Strategic Partner: Bundesamt für Wasserwirtschaft Wien (BAW)

- § **DREAM RRMC VIENNA: "Investitionen in Wachstum und Beschäftigung" (IWB) EFRE 2014-2020 (Vienna/Lower Austria)**

- § ***Integrated River Basin Management for the Thaya and Morava (working title):* INTERREG V-A Österreich-Tschechien 2014-2020**
 - § Partner: Brno University of Technology

Project SEDDON

Sediment Research and –management
at the Danube River

HU-AT 2007-2013

seddon.boku.ac.at



EUROPEAN UNION
European Regional
Development Fund



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The following aims were achieved during the SEDDON project:

- § Achieve a scientific basis to analyze problems concerning sediment transport in Austria and Hungary
- § Development of integrative management solutions
- § Comparison between the different problem fields Upper/Middle Danube
- § Harmonized measuring and modeling systems, standardized field reports and manuals
- § Development of practical management solutions
- § Evaluation of the existing laboratory equipment and measuring systems
- § **Construction of a research channel with a free-flowing discharge of up to 10 m³/s**
 - > first step towards the RRMC in Austria**

Project SEDDON

Sediment Research and –management
at the Danube River

HU-AT 2007-2013

seddon.boku.ac.at

movie



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Project SEDDON

Sediment Research and –management
at the Danube River

HU-AT 2007-2013

Opening Ceremony on June 8, 2015



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Outlook RRMC



StadT Wien



bmwfw

Bundesministerium für
Wissenschaft, Forschung und Wirtschaft

bm vif

Bundesministerium
für Verkehr,
Innovation und Technologie

MINISTERIUM
FÜR EIN
LEBENSWERTES
ÖSTERREICH

Thank You



Vorabzug beyer.co.at



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