

iNNO SED - iNNOVATIVE SEDIMENT MANAGEMENT IN THE DANUBE RIVER BASIN

iNNO SED: New paradigms in Sediment Management for the Danube River Basin from mountains to coast. Bridging sediment researchers, policymakers, river managers, and users with sustainable and effective solutions to improve sediment quantity and quality in the river system.

Call: Danube river basin lighthouse – Demonstration of effective and sustainable management of sediments in the Danube river-Black sea system

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Lead Partner: Budapest University of Technology and Economics



SEDIMENT RELATED PROBLEMS IN THE DANUBE RIVER BASIN (DANUBESEDIMENT AND SIMONA)

- **RIVER REGULATION**, including flood protection, hydropower, navigation, and land use, **SIGNIFICANTLY IMPACTED THE SEDIMENT BALANCE** of the Danube River and its tributaries.
- **EXTENSIVE ENGINEERING** significantly **SHORTENED AND NARROWED** the river and made it more uniform.
- **BANK PROTECTION** measures **HINDER** the lateral exchange of **SEDIMENTS**.
- **TRANSVERSAL STRUCTURES**, like weirs and dams, **INTERRUPT SEDIMENT CONTINUITY** to a large extent.
- **AS A RESULT**, the **DANUBE RIVER IS OUT OF BALANCE**: free-flowing sections are exposed to erosion, while impoundments experience sediment deposition and only 10 % of the 2600 km length are in equilibrium.
- **SEDIMENT BALANCE ALTERATION** became a new sub-item under the existing **SIGNIFICANT WATER MANAGEMENT ISSUE** “Hydromorphological alterations” in the 2021 Update of the Danube River Basin Management Plan.
- Industry, urban sewage and agriculture demand sediment quality assessments in the Danube River Basin. Yet, **NO STANDARD SEDIMENT QUALITY MONITORING EXISTS**, limiting our understanding of risks.

iNNO SED ANSWERS

- ✓ **BRING TOGETHER** DanubeSediment and SIMONA lead and core partners, scientists, water managers, innovators and stakeholders from 15 countries (representing 95% of the Danube River Basin).
- ✓ **IMPROVE UNDERSTANDING** of sediment issues by developing research-based sediment monitoring and modelling methods.
- ✓ **CO-DESIGN AND SHOWCASE** innovative sediment management solutions along 8 Demonstrations Actions, e.g., sediment continuity improvement at river barriers, erosion mitigation at incised sections, measurable quality components, Digital Twins.
- ✓ **SCIENCE TO PEOPLE:** empower policy makers, stakeholders and the public for a better sediment management with e.g. interactive public laboratory, innovative Citizen Science tools, trainings.
- ✓ **SEDIMENT MANAGEMENT TOOLBOX**
- ✓ **DANUBE SEDIMENT ‘LIGHHOUSE’ KNOWLEDGE CENTRE**
- ✓ **LIGHTHOUSE APPROACH:** Co-implement sediment studies in five Associated Regions beyond the Danube River Basin.



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