iNNOvative SEDiment management in the Danube River Basin

Funded by the European Union

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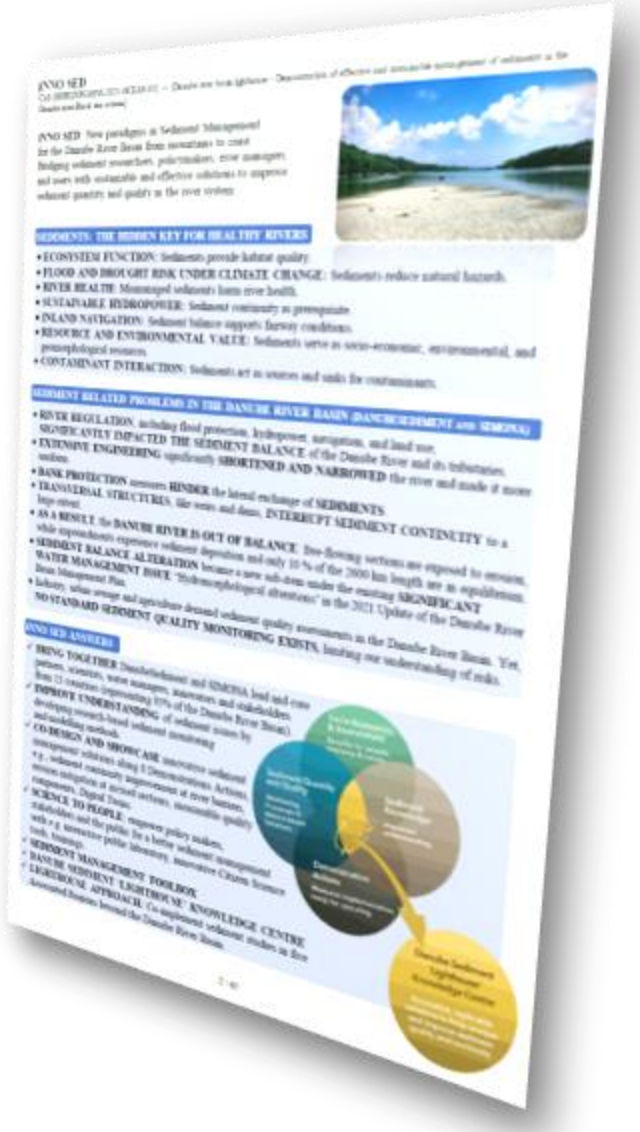
Introduction to iNNO SED

- **Call:**
  Danube river basin lighthouse – Demonstration of effective and sustainable management of sediments in the Danube river-Black sea system
  TOPIC ID: HORIZON-MISS-2023-OCEAN-01-02
- **Project start date:** **1 September 2024**
- **Project end date:** **31 August 2029**
- **Project duration:** **60 months**
- **Consortium:** **46 Funded Partners and Associated Partners**
- **Budget:** **8 765 402,50 € Overall budget**

  8 103 720,88 € EU contribution



iNNO SED

Consortium

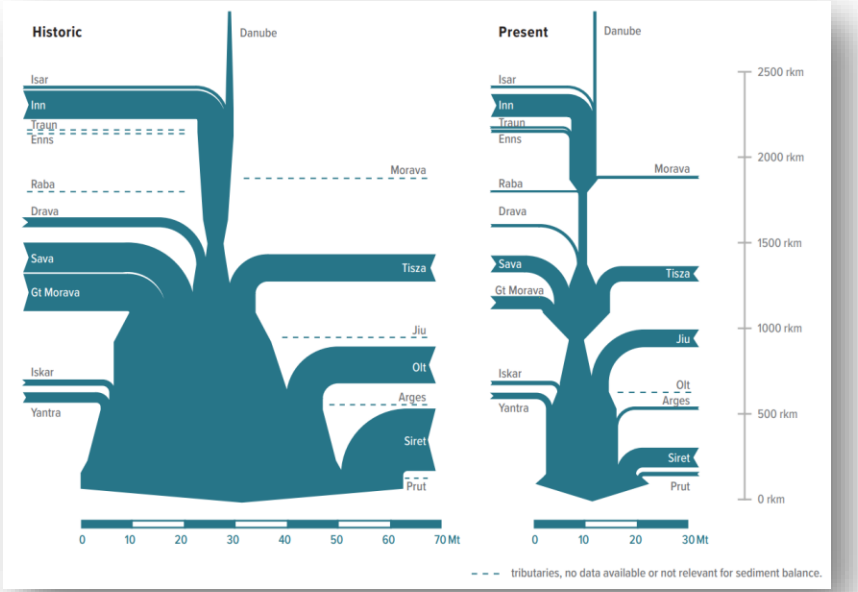
- **LP: Budapest Univ. of Technology and Economics**
- 24 partners + 22 Associated Partners
- **countries represented by the partners cover 95% of the DRB** area + UK
- **DanubeSediment** core partners (BME, BOKU, JCWI, OVF, VUVH, WWF HU, TUM)
- **SIMONA** core partners (GeoZS, HGI, JCWI, THC, GI BAS, CHMI, AQUA, MUS_ICH, BME)
- Universities, research institutes, water managers, NGOs, SMEs, national parks, hydropower operators, international river commissions like ICPDR and ICPER, ministries, and waterway administrations
- Direct connections through partners to, e.g.: **Danube4all, DanubeSediment_Q2, MERLIN, DOORS**, …

Sediments: the hidden key for healthy rivers

- **ECOSYSTEM FUNCTION**: Sediments provide habitat quality.
- **FLOOD AND DROUGHT RISK UNDER CLIMATE CHANGE**: Sediments reduce natural hazards.
- **RIVER HEALTH**: Mismanaged sediments harm river health.
- **SUSTAINABLE HYDROPOWER**: Sediment continuity as prerequisite.
- **INLAND NAVIGATION**: Sediment balance supports fairway conditions.
- **RESOURCE AND ENVIRONMENTAL VALUE**: Sediments serve as socio-economic, environmental, and geomorphological resources.
- **CONTAMINANT INTERACTION**: Sediments act as sources and sinks for contaminants.

Sediment related problems in the Danube River Basin

- River Regulation 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 interrupt sediment continuity to a large extent.
- Danube River is out of balance
- 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.
- No standard sediment QUALITY monitoring exists, limiting our understanding of risks.

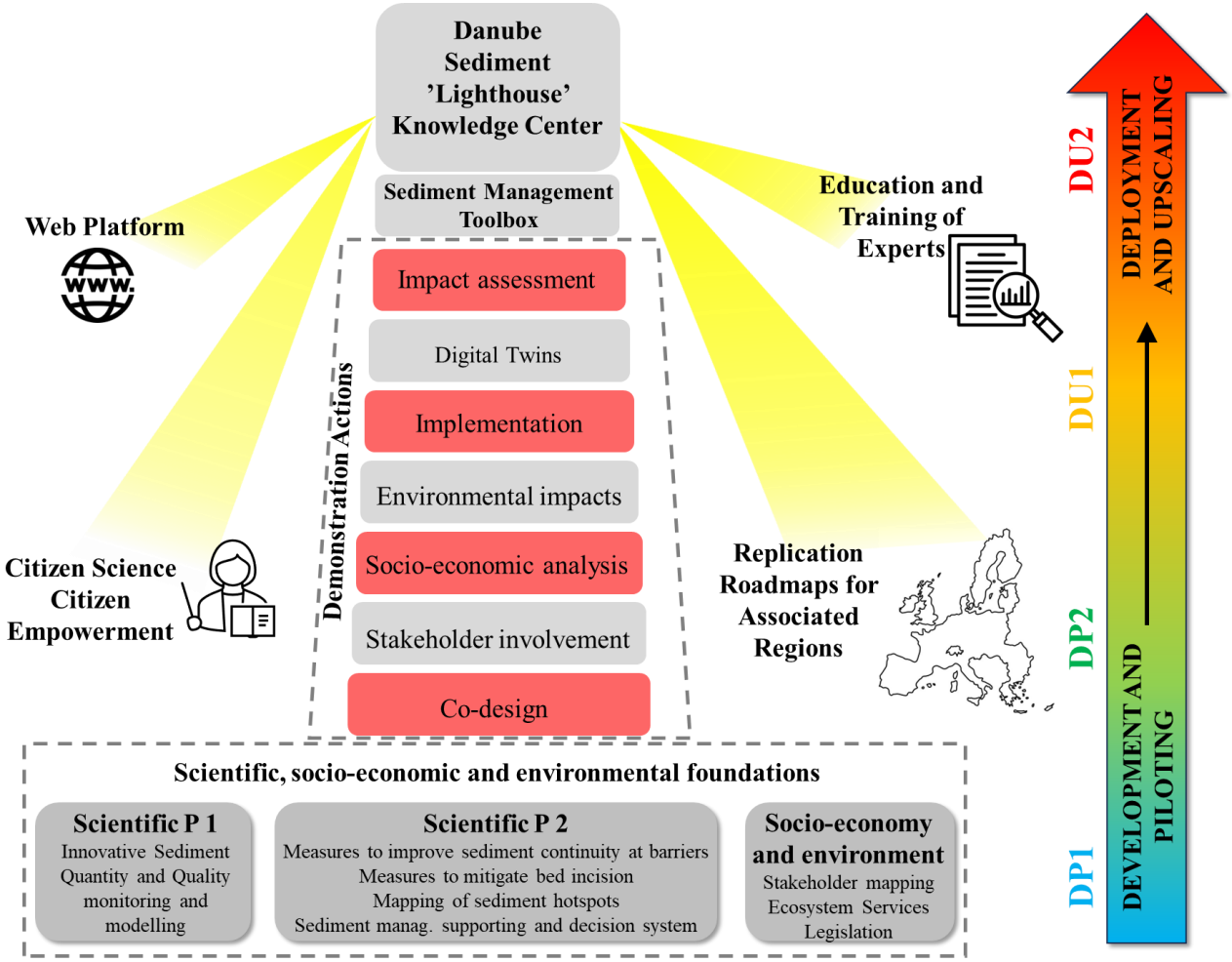


iNNO SED answers

- Bring together DanubeSediment and SIMONA lead and core partners, scientists, water managers, innovators and stakeholders from 15 countries.
- 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 ‘Lighthouse’ Knowledge Centre
- LIGHTHOUSE APPROACH: Co-implement sediment studies in five Associated Regions beyond the Danube River Basin.

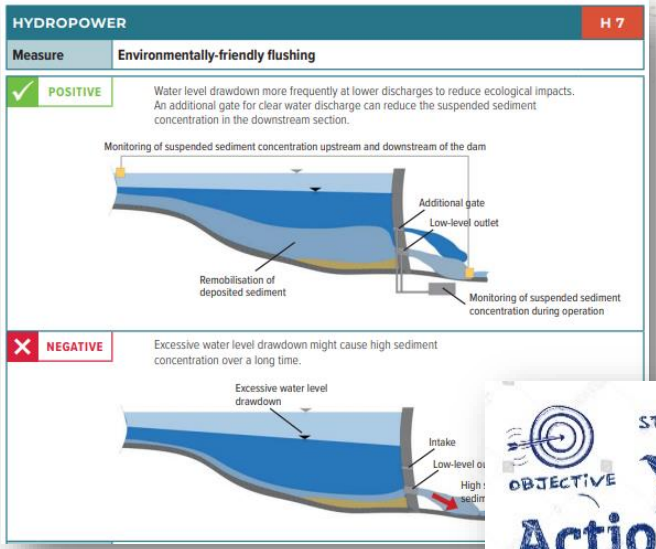
Project objective

- The primary objective of iNNO SED is to establish the **Danube Sediment 'Lighthouse' Knowledge Centre** and provide a generally applicable Sediment Management Toolbox, building on the outcomes and core contributors of the DanubeSediment and SIMONA projects, the CIS document, as well as engaging relevant stakeholders, to offer a range of innovative sediment management solutions, employing a holistic approach.



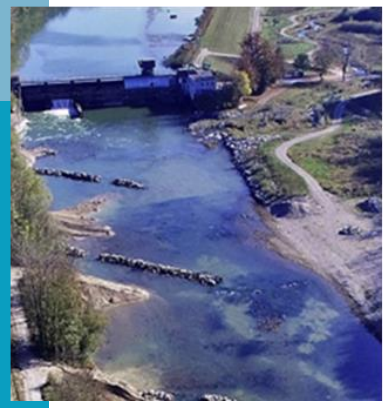
Specific objectives

- SO1: Achieve better understanding of fluvial sediment transport processes
- SO2: Improve (nature-based) sediment management solutions to increase sediment continuity and quality at sedimentation hotspots
- SO3: Minimize riverbed erosion at free-flowing river sections
- SO4: Contribute to an improved sediment quality management in the Danube River Basin
- SO5: Improve sediment continuity and river-sea sediment connections along complex sections of the Danube River
- SO6: Reduce costs and increase acceptance of needed sustainable sediment management by investigating social and economic effects
- SO7: Empower stakeholders and the public with knowledge on river sediment issues
- SO8: Boost upscaling and replication of sediment solutions within and beyond the DRB



Demonstration Actions

DS1: Iller River (Germany)



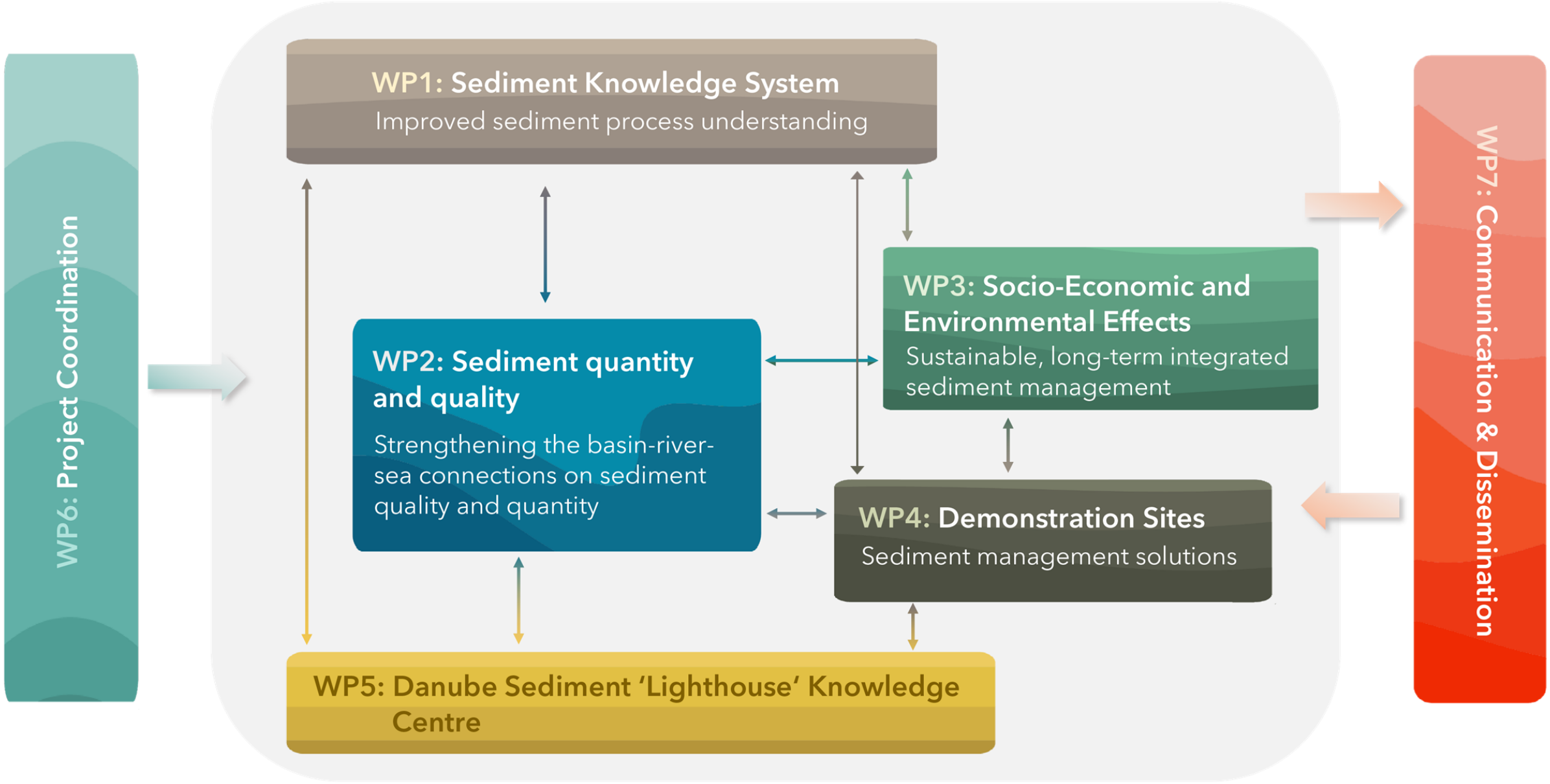
DS2: Danube River at Aschach (Austria)

DS3: SK-HU Danube section (Slovakia, Hungary)

DS4: Drava River at Barcs (Croatia, Hungary)

DT2: Danube Delta (Romania)

Project structure



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Thank you!

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