#### Interreg **Co-funded by Danube Region** the European Union

# **IPA** Hungary - Serbia Water Management Projects in the **Danube River Basin**

Interreg Danube Region Programme 2021 – 2027 | Interreg IPA Hungary-Serbia 2021 – 2027 Sustainable, integrated, transnational water and sediment management

The **Danube River Basin** (DRB), Europe's second largest river catchment, faces complex and interlinked water management challenges: from climate change-induced hydrological extremes to microplastic and hazardous substance pollution. Thus, sustainable and integrated solutions are critical. Supported actions focus on:



**PREVENTING AND MITIGATING WATER POLLUTION AND RESTORING WATER QUALITY** 

**FACILITATING TRANSNATIONAL COOPERATION** AND HARMONIZING PRACTICES ACROSS AND **BEYOND EU BORDERS** 



**BUILDING STAKEHOLDER CAPACITY** THROUGH JOINTLY DEVELOPED SOLUTIONS

By working beyond borders, sectors, and disciplines, the projects set a new standard for adaptive, forward-looking water management in Europe.

This joint newsletter highlights pioneering projects funded under Interreg Programmes, including AQUATIC PLASTIC, Danube Water DanubeSediment\_Q2, MicroDrink, MICROPLASTICS, Balance. SAFETY4TMF, RESTORIVER, and Tethys. Together, these initiatives contribute to a shared vision of improved water quality, balanced sediment transport, and enhanced climate resilience across Europe.

We invite you to explore each project's unique contribution, and together envision a resilient, cleaner, better-connected Danube Region!





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# **AQUATIC PLASTIC**

#### Initiating bottom-up management solutions to reduce plastic waste in the Danube Basin

#### AQUATIC PLASTIC (AQPLA) is a collaborative initiative aimed at combating riverine plastic pollution in the Danube River Basin.

80% of marine litter originates from land-based sources, including rivers. AQPLA's aim is to provide a thorough database and methodology to map riverine plastic waste, using artificial barriers, such as Hydroelectric Power Plants (HPPs) and implement remote sensing technologies as tools to measure, monitor and divert riverine plastic waste accumulations from nature to landfills.

Outputs of the AQUATIC PLASTIC project include a harmonised microplastic assessment methodology; a protocol to manage and recycle collected riverine litter at HPPs; an online pollution map about high-risk leakage points; a co-creation toolkit to facilitate active communication among stakeholders; a legislation package for the 4th update of the DRBMP to reduce riverine litter within the DRB. AQUATIC PLASTIC will divert riverine plastic waste accumulations from nature to landfills or rather back in the loop.



13 Project partners 9 Countries

2.166.494 € Project budget

20 Associated strategic partners 1.733.195 € Interreg funds

1/2024-6/2026 **Project duration** 





Project website



## **Aquatic Plastic main activities**

The first of two Community River Cleanup Coordinator Workshops was held in Kisköre Riversaver Center from 11<sup>th</sup> – 15<sup>th</sup> May 2025. These events provide handson training, practical experience and certification in river cleanup techniques. Certified river cleanup coordinators contribute to the long-term sustainability and health of our rivers and aquatic ecosystems.



Tune into Aquatic Plastic Podcasts featuring engaging guests who share their experiences in river cleanup efforts. You can find the podcast episodes on Spotify.











Facebook profile











quality analysis in the DRB.

National Roundtable Discussions will be organized in all partner countries with the goal of empowering stakeholders to start bottom-up legislative changes serving water protection and emphasizing the importance of the plastic threat towards EU level decision makers. The first roundtable event took place in April in Slovenia.







**Danube Water Balance** 

# **Danube Water Balance**

Development of a harmonized water balance modelling system for the Danube River Basin

The extreme climate change impacts cause significant water balance issues in the Danube River Basin (DRB), already posing major challenges for the environment, the economy and the whole society. Water management in the DRB is characterized by scattered data availability and various national calculation methods, ultimately leading to country-scale or sub-regional mosaics about the water balance. A jointly developed data management and a water balance model is needed to cope with the transnational water quantity challenges of the basin.

The project aims to overcome this situation and contribute to sustainable, integted transnational water management in the DRB

A tangible novelty of our proposal is the long-overdue common water balance calculation methodology for the whole Danube basin, tested in transboundary subbasins, using climate scenarios and a functioning data repository. This will improve river basin management planning measures required by the Water Framework Directive.



International initiative consisiting of 20 Project partners, 14 Countries and 13 Associated Strategic Partners

> 3.028.319,50 € Project budget

2.422.655,60 € Interreg funds 1/2024-6/2026

Project duration

#### https://interreg-danube.eu/projects/danube-water-balance

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General Directorate of Water Management A less tangible novelty of the proposed project is the extensive partnership and expert hub deeply committed to maintaining the framework and methodology for determining the water balance of the basin. This will also help find synergies between the water resource management and other ongoing environmental initiatives within the DRB



The hydrological model demonstrated strong performanceduring calibation runs conducted in spring 2025, with simulated river flows aligning well with observed measurements across key parts of the basin. These promising results already highlight the modes potential.

The impact of human activities, such as water use, reservoir operations, and other water management practices will need to be incorporated in the model in the next phase of development for even higher accuracy.





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Community Water Model (CWatM):

A state-of-the-art, open-source water balance model is used for the modelling the DRB, that allows the quantification of water balance components for the entire basin and for selected areas of interest. The foreseen afterlife of the water balance model is a fully functional water management model of the basin, by which a more reasonable, sustainable and adaptive water management can be achieved in the long run.







## DanubeSediment\_Q2

DanubeSediment\_Q2 is funded by the Danube Region Programme (co-funded by the EU) and aims to improve the management of sediment quantity and quality in the Danube River Basin to achieve environmental objectives. Our main objectives are:

- Improved sediment monitoring, data management and evaluation methods in the Danube River Basin
- Feasibility of practical solutions to address sediment alteration being co-created with stakeholders
- Developed transboundary Integrated Sediment Management Plan ISMP for the Danube River Basin



#### **Specific Objective 1**

SO1 aims at generating new data with help of an improved sediment monitoring network, an updated sediment budget for the Danube, new evaluation methods for hydromorphological (HYMO) and risk



#### **Specific Objective 2**

SO2 aims to develop and test technical solutions for sediment management and restoration at case study sites emphasizing their technical, economic using models to reverse sediment alteration.



#### **Specific Objective 3**

SO3 aims to establish a cross-sectoral, harmonized Integrated Sediment Management Plan (ISMP). The application of the "ISMP" is recommended in the CIS document appropriate scale and in an integrated manner, thereby namics and interactions.

DanubeSediment\_Q2 | Sustainable, Integrated Transnational Sediment Quantity and Quality Management in the Danube River Basin

DanubeSediment\_Q2 is funded by the **Interreg Danube Region Programme.** This 2.5-year project consists of a consortium of 54 Partners and Associated Partners from 14 European countries.

DanubeSediment Q2 aims to **improve the management of sediment quantity** and quality in the Danube River Basin to achieve environmental objectives. An improved and extended, combined sediment quantity and quality monitoring network will be set up. New methods for assessing hydromorphology and the risk of the effects of a disturbed sediment balance are being developed. Of central importance is the development of Sediment Management Measures in an innovative co-design. These are tested in case study sites. For this reason, stakeholders are heavily involved in the discussion from the start. Their needs flow directly into the project.

All results will conclude in an **Integrated Sediment Management Plan for the Danube River Basin (ISMP)**. Concrete solutions and upscaling options will be part of this plan and recommended to be taken up by the International Commission for the Protection of the Danube River (ICPDR) in the next Danube River Basin Management Plan as well as Flood Risk Management Plan.

2.893.187 € Project Budget

## 2.893.187 €

Interreg Funds

#### **Project Lead**

Helmut Habersack, Institute of Hydraulic Engineering and River Research, BOKU University, Austria.



**DanubeSediment Q2** is supported by the Interreg Danube Region Programme co-funded by the European Union under the grant number DRP0200029.

1/2024-06/2026

Project duration

@ danubesediment g2 🗿 @ danubesediment-g2-interreg in https://interreg-danube.eu/projects/danubesediment-q2





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**MicroDrink** 

# MicroDrink

### Capacity building for management and governance of **MICROplastics in DRINKing water resources of Danube Region**

Microplastics (MP) pollution is a growing concern, with 75,000-300,000 t of plastic released annually in Europe. The Danube carries 4.2 t of plastic daily to the Black Sea, crossing administrative boundaries. MicroDrink will strengthen the region's resilience by closing knowledge gaps via an open online MicroDrink Knowledge Base, consolidating expertise on MP sampling, analysis, mitigation, and prevention in drinking water.

MicroDrink will develop tools to strengthen policy and decision makers' knowledge and ensure their collaboration with practitioners and scientific community. The initiative will also engage relevant national and transnational stakeholders through targeted meetings, workshops, and events.

The project outputs and results will build a sound foundation for future activities in DRB aimed at assessing MP related risks, hazards and impacts on environment and human health.



11 Project partners 8 Countries

2.351.480 € Project budget



19 Associated strategic partners 1.881.184 € Interreg funds



9 Pilot areas







https://interreg-danube.eu/projects/microdrink

Facebook profile /MicroDrinkDRP



LinkedIn profile MicroDrink



Instagram profile @interreg\_drp\_microdrink



Youtube profile https://bit.ly/3VPNFCj







On October 9<sup>th</sup> 2024, the partnership conducted **Joint sampling** following the methodology described in the Commission Delegated Decision (EU) 2024/1441. National monitoring **campaigns** will be conducted throughout 2025. The sampling was recorded and a video is available on our YouTube channel.



To further fill in knowledge gaps, project MicroDrink organized two webinars, available on our YouTube:

- 1. Micro(knowledge) transfer webinar on the general state of the art of MP in drinking water resources
- 2. Micro(knowledge) transfer webinar for <u>MP sampling, laboratory instruments</u> and analytical techniques















National stakeholder workshops were organized in each partner country with the aim of collecting direct stakeholder experience, build capacities and identify best practices that will serve as input for the Decision-Making Support Tool (DMST). The DMST will include accompanying training courses and will aid stakeholders in choosing the appropriate method for the management of microplastics in drinking water resources.





# **IPA** Hungary - Serbia

# **Microplastics**

# **Microplastics**

**MI**nimizing **CRO**ssborder water contamination of micro**PLASTICS** 

### HUSRB/23R/12/089

**Microplastics** are ubiquitous on our planet. The main sources of microplastics in the water ecosystem are synthetic fiber materials, packaging, cosmetics, rubber, and household appliances that go down the drain. Most of the microplastic dust that settles in cities is washed into the soil and sewage network with the precipitation.

The project's overall objective is to enhance environmental protection and reduce pollution by identifying sources and reducing microplastic pollution in the water ecosystem within the cross-border (CBC) area Bačka/Bács-Kiskun.

The objectives are going to be achieved through:

-Sampling and identification of pollutants,

-Modelling and developing measures and tools to reduce microplastics pollution in water ecosystems (open surface water and wastewater) and sediments, and -Increase public awareness of the problem and develop solutions.

The project outputs and results are focused on implementation of the project, efficient long term cooperation between partners, building technical and knowledge capacities of partner organizations / public health experts to sample and analyse microplastics in water and sediments, mapping potential sources of microplastics in CBC area, developing protocols for future activities in monitoring of water ecosystem pollution on microplastics, implementing pilot action with developed adequate methods on filtration of two wastewater treatment plants in CBC area, and raising awareness of general population, school children, high school students, water managements, local authorities representatives and enviro NGOs, on the scope of microplastic pollution in the CBC area and negative impact that microplastics pollution has on nature and human health.

#### 7/2024-6/2026

Project duration

1.372.328.40 EUR Project budget

1,166,479.14 EUR

Maximum EU contributions



2 Countries

**3** Pilot areas











The Opening conference was held in Novi Sad, Serbia, on October 17th, 2024. It was an opportunity to present the project, partners, and other existing Danube Programme Transnational/ Region projects.

Further activities of the Microplastics project will be:

-Mapping the sources of microplastics pollution in the CBC area,

-Sampling and analyses for microplastics detection,

-Developing a protocol,

-Organising the conference and study tour for visiting the wastewater treatment plant, -Developing and implementing the filter solution for microplastics removal from wastewater in the CBC area,

-Education of partners, public health experts, and target groups.



### Stay in touch with Microplastics activities!



Education for partners/public health **experts** dedicated to building up capacities for sampling open surface water, waste water, sediments, sample preparation, and possible analytical methods for microplastics detection were held in Novi Sad, Serbia, on October 18th, 2024; in Baja, Hungary, on January 15th 2025, and in Sombor, Serbia, on March 10th, 2025.

Follow the latest news on project **MICROPLASTICS:** 



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### Interreg **Danube Region**



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# **SAFETY4TMF**

#### **Coordinated prevention and disaster management activities** on Tailings Management Facilities by authorities, municipalities and other stakeholders for solutions reducing transnational risks and hazards

The SAFETY4TMF project focuses on improving the prevention, preparedness and management of Tailings Management Facilities (TMF) related disasters in the Danube River Basin. The aim is to reduce the risks associated with these facilities through coordinated cooperation between authorities, municipalities and other stakeholders.

The project focuses on developing, testing and disseminating applicable solutions in the areas of risk modelling, spatial planning, monitoring and coordination, with an emphasis on improving local, national and macro-regional policies.

The safety of TMFs is not just a technical problem, but a complex issue that cuts across public health, the environment, economics and crisis management. Addressing this issue is crucial to protect current and future generations and to ensure sustainable development in Europe and worldwide.



16 Project partners 2.351.588 € 9 Countries Project budget



10 Associated strategic partners

1.881.270 € Interreg funds

6 Pilot areas





www.interreg-danube.eu/projects/safety4tmf

Find out more about the project on social media







A 2nd Transnational Partner Meeting and Workshop took place in Cluj-Napoca, Romania, bringing together 59 participants from across the Danube region to collaborate on improving TMF safety and disaster preparedness. Hosted by Babeş-Bolyai University, the event provided a platform for knowledgesharing and strengthening TMF safety and disaster response.

HARGHITA



The Partnership is currently focused on pilot activities. Three types of pilots are being implemented, across six sites located in Hungary, Romania, Slovenia, and Slovakia. Pilot concepts have been developed as part of the data collection process. To support smooth collaboration, TMF operators have been contacted by the Pilot Site Coordinators and asked to provide the necessary data. These efforts mark an important step in moving the project from planning to implementation.















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During Period 2 the Partnership has successfully continued to collect information and work on the baseline study of TMF's, which serves as the scientific base of the project, has collected good practices of collaborations in the Region, reviewed trainings in the countries regarding TMFs and started to prepare for the pilot implementations.







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# RESTORIVER

Climate resilient, natural water retention focused restoration of riversides and riparian areas adversely affected by human interventions along the Danube and its tributaries within the Danube Region

#### 2.412.655,60 € 1.930.124,48 € 1/2024 - 6/2026

Project budget

Interreg funds

**Project duration** 

#### **ISSUE:**

Human land-use, control and exploitation interventions severely damage the ecological and climate adaptation conditions of riverine landscapes. Regulation of riverbeds, cutting of floodplains and exchange of natural banks and riparian habitats with built surfaces and industrial flow control devices, fatally deteriorate water retention capacities and adversely affect the climate change adaptation potential of these areas and systems.

#### SOLUTION:

To increase climate adaptation capacities of riversides and riparian areas – potentially reducing the risk of droughts, floods and heatwaves - by harmonising, adapting and connecting higher-level water management, climate and flood protection policies with local interventions, effectively serving complex, transnational water and climate adaptation systems and stakeholder networks.

> Main focus is on NATURAL WATER-RETENTION MEASURES and their implementation in urban and periurban areas



## 15

**Project partners** 

### **SPECIAL PROJECT OBJECTIVES:**

1. Improving climate awareness & adaptation skills of stakeholders of riversides and riparian wetlands 2. Co-designing and testing feasible, high-potential NWRM by municipalities and relevant authorities 3. Improving planning and coordination frameworks to harmonise various level water and climate policies



### SOME OF THE FINALIZED ACTIVITIES:

- Stakeholder and citizen analyses
- Numerous national workshops for stakeholders and citizens
- Slovakian pilot area
- areas

















#### interreg-danube.eu/projects/restoriver

### **RESTORIVER** – Interreg Danube Region project

### 13

Associated partners

**Countries** 

7

6

**Pilot** areas

and regional • Peer-to-peer visit od project partners to

• Scoping analysis to identify intervention













**Tethys** 

**Tethys** 

Coordinated Danube Action for the titanic endeavour of tackling hazardous substances water pollution under changing pressures, challenges and targets

### Our aim at the end of the project

National authorities, ICPDR and the organizations supporting them will possess operative, fit-for-purpose and harmonized procedures, workflows and tools as well as coordinated strategies and prioritization of actions to effectively tackle new challenges, pressures and targets regarding the problem of trace contaminants in surface waters in the Danube River Basin, with special focus on aligning and bridging the gaps between EU and non-EU countries.



## Stay in touch with Tethys activities!

During the first year of the project's implementation, most of the activities were focused on achieving the specific goal SO1. Sampling started in September 2024 according to plan, chemical analyses and their evaluation are ongoing. So far, three campaigns have been conducted. All water samples will be analyzed in the same laboratory - metals in the laboratory of the Jožef Stefan Institute in Ljubljana, and organic compounds in the laboratory of the leading partner, TU Wien in Vienna.



#### Specific objective 1

Fit-for-purpose and harmonized data acquisition, management and assessment of HS water pollution



Specific objective 2

Fit-for-purpose and harmonized HS emissions modelling for emerging challenges and pressures



Specific objective 3

Future-oriented prioritization and coordination of actions for DRBwide transnational HS management



Duration: 01.01.2024 – 30.06.2026 Total budget: 2.937.185,18 € Interreg funds: 2.349.748,14 €

On June 12<sup>th</sup> – 13<sup>th</sup> 2025, a modelars workshop was held in Vienna for project partners, with hands-on practice with MORE model. Analytical data and accompanying information were previously organized into a database necessary for modelling and achieving the goals SO2 and SO3 in the upcoming periods of the project.





















# **Synergy Meeting in Zagreb**

As part of the Interreg Danube Region Programme 2021–2027, a synergy meeting of project partners from the Republic of Croatia was held on Monday, March 31st, 2025, organized by Croatian Waters. The meeting aimed to facilitate the exchange of experiences, present project activities within Croatia, and strengthen cooperation among project partners. Special emphasis was placed on developing a strategic approach to enhancing the impact of project results at both regional and transnational levels, as well as aligning efforts with the overarching Programme's objectives.









This event represents a significant step toward enhancing cooperation among Interreg projects, contributing to the advancement of sustainable water and sediment management in the Danube River Basin and fostering exchange of expert knowledge on unstable terrains.







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# **Final Remarks**

Closing words provided by Mr. Gusztáv Csomor, Senior Priority Officer, Managing Authority / Joint Secretariat of the Interreg Danube Region Programme 2021 - 2027

The Interreg Danube Region Programme intends to tackle common challenges and needs in specific policy fields where transnational cooperation is expected to deliver tangible results in the Danube Region. Considering its geographic area, covering mainly the whole Danube River Basin, an important objective is to support sustainable, integrated, transnational water and sediment management, ensuring good quality and quantity of waters and sediment balance, as well as promoting climate change adaptation capacities and disaster management on transnational level in relation to environmental risks in the Danube Region. This joint newsletter presents the first round of supported projects that contribute to these water management related objectives of the Programme.





While the presented projects are still under implementation, their first achievements already start to be visible. Through the actions of these transnational cooperation projects, the key stakeholders can gain improved capacities, integrated strategies and harmonised, joint solutions, which enable them to **better prevent and mitigate pollution** of transnational water bodies. These transnational actions improve cross-sector management practices contributing to improvement of the quality and balanced use of water, as well as the sediment balance in transnational rivers of the Danube River Basin. Harmonised approaches and jointly tested solutions improve capacities, data availability and allow better preparedness to adapt to the changing climate, as well as risk prevention and disaster management in case of accidental pollution affecting transnational rivers of the Danube River Basin.

These projects ensure also relevant contributions in connection to the European Union Strategy for the Danube Region, especially to the objectives and targets of the Priority Areas on Water Quality (4) and Environmental Risks (5).



# Interreg **Danube Region**



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# **IPA** Hungary - Serbia

# Next steps

### Interreg Danube Region Programme 2021 – 2027 | Interreg IPA Hungary-Serbia 2021 - 2027 Sustainable, integrated, transnational water and sediment management

This newsletter reflects the collaborative results and current progress of projects funded under two Interreg Programmes. Collaboration, data sharing, and cross-sector engagement remain central to advancing water management in the Danube Basin.

## **NEXT STEPS**

- Finalization of pilot actions
- Continued stakeholder engagement
- Dissemination of tools and recommendations • for crucial actors and decision makers
  - Cooperation with ICPDR, EUSDR



These projects are supported by the Interreg Danube Region Programme and the Interreg IPA Hungary-Serbia Programme, co-funded by the European Union.

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