

Initiating bottom-up management solutions to reduce plastic waste in the Danube Basin – Aquatic Plastic (DRP0200235)

About **80%** of all marine litter reaches the sea from land-based sources, transported by rivers, and the Danube River Basin is no exception. Plastics, which were once perceived as non-degradable, actually break down into microplastic particles when exposed to sunlight and fluctuating temperatures. This realization has prompted a heightened focus on addressing microplastic pollution in rivers.

The AQUATIC PLASTIC (AQPLA) project'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 remote sensing technologies as tools to measure, monitor and divert riverine plastic waste accumulations from nature to landfills or rather back in the loop.

The project also plans on identifying high risk waste leakage points via remote sensing methods and to find innovative solutions for large scale extraction and recycling of riverine litter and waste accumulated in front of HPPs.

AQPLA focuses on developing comparative monitoring methods to assess the overall size, volume, and combined mass of floating riverine litter accumulations. By providing reliable and user-friendly methods to estimate the size and composition of waste accumulations in rivers, AQPLA offers an additional tool for managing artificial water engineering structures. This helps estimate the costs of mitigation and river cleanup interventions more accurately. Additionally, AQPLA aims to assist the water sector by offering low-cost, high-efficiency professional river cleanup technologies. These technologies not only halt pollution waves but also utilize the renewable energy of the river's flow to separate riverine litter, thereby reducing the overall costs of cleanup operations.

Pilot river cleanup activities will be organised in downstream countries, in the Sava Basin to spread the successful approach of river cleanup actions and **prevention efforts in upstream countries** of the Danube Basin.

The project focuses on the following 4 areas:

- **Microplastics:** creating and testing cost-effective monitoring methods to detect microplastic pollution in fluvial systems enabling data comparison and collaboration among different entities across borders.
- **Macroplastics:** testing **remote sensing monitoring** and quantification methods for riverine waste accumulations to help the early detection of plastic flood events and environmental catastrophes; **Aiding HPPs manage large riverine litter accumulations** by providing guidance on monitoring and extraction while also making waste extraction profitable through game changing recycling protocols for intercepted and selected riverine plastics.
- **On-field commitment:** organising various type of pilot cleanup actions at high-risk leakage points and hotspots identified by remote sensing technologies including **small scale** (for inclusion of locals) **and large, industrial-scale cleanups** at landfills and dumps – where authorities will be notified to join and discuss possible ways of restoration.
- **Dissemination and capacity building:** by engaging stakeholders in data collection, methodology testing and cleanup pilot actions the solutions above can serve as **valuable evidence for policymakers**, while also expanding the **transnational RiverSaver community** through field-based trainings and interactive roundtable events to establish their strong commitment.

The Partnership

The AQUATIC PLASTIC consortium consists of 13 partners and 19 associated partners from 10 countries, representing a diverse range of stakeholders dedicated to address plastic pollution in the DRB. The consortium includes ministries responsible for legislative matters, NGOs actively involved in field activities, universities committed to scientific

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research, water authorities, national laboratories and public research institutions engaged in water quality monitoring and preservation.

Plastic Cup Society, the lead partner and the brain parent of the Plastic Cup initiative, leads the AQPLA partnership. Since 2013, the Plastic Cup has removed nearly 300 tons of riverine litter from natural waterways and diverted another 700 tons away from rivers and into the legal waste management system.

The International Commission for the Protection of the Danube River (ICPDR) and the Hungarian Ministry of Foreign Affairs and Trade (MFAT) as Priority Area Coordinator for EUSDR PA4 are key stakeholders of water quality issues within the DRB.

The below listed group of stakeholders represent diverse perspective and expertise, ensuring comprehensive coverage of the project's target areas, strongly focusing on the Balkans within the Danube River Basin.

Interreg DRP Financial Support

Total Project Budget: 2,166,493.5 EUR

Interreg Funding: 1,733,194.8 EUR

Project Partners

Country	Name
AT	University of Life Sciences and Natural Resources, Vienna
BG	Institute of Oceanology - BAS
BIH	Citizen association "Eko centar" Visegrad
HU	Plastic Cup Society (Lead Partner) Association of Environmental Enterprises General Directorate of Water Management
ME	Center for Ecotoxicological Research Podgorica Ministry for Ecology, Spatial Planning and Urbanism Directorate of Ecology and Climate Change
RO	Multisalva Association Mare Nostrum
RS	Faculty of Technical Sciences Novi Sad
SI	Institute for Water of the Republic of Slovenia
SK	Water Research Institute Slovakia

Associated Project Partners

Country	Name
AT	International Commission for the Protection of the Danube River via donau - Österreichische Wasserstraßen-Gesellschaft mbH
BIH	Institute for Water Management
HR	Croatian Waters Josip Juraj Strossmayer Water Institute
HU	Ministry of Foreign Affairs and Trade North Hungarian Water Directorate Middle Tisza District Water Directorate MMV Hydropower Plant Ltd.
RO	Satu Mare County Administrative-Territorial Unit Ministry of Environment, Waters and Forests
RS	Serbian Environmental Protection Agency
SI	Hydropowerplants on Lower Sava Ecologists without borders association Slovenian Environment Agency
SK	Slovak Environment Agency

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Slovak Environmental Inspectorate
Ministry of the Environment of the Slovak Republic

UA Recyclable Materials Collection Station, Proektna, 3

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