Interreg Danube Region

Co-funded by the European Union

MicroDrink

Output 3.2
Decision-making support tool for microplastics

Drafted by University of Ljubljana, Slovenia

with input provided by all project partners

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Project MicroDrink	
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Objective Leader:	University of Ljubljana
Output:	3.2 Decision-making support tool for microplastics
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1. Introduction

Project MicroDrink "Capacity building for management and governance of MICROplastics in DRINKing water resources of Danube Region" was approved under the 1st call of the Interreg Danube Region Programme, beginning with implementation in January 2024 and ending in June 2026. Under the Specific objective 3 "Capacity building for management of microplastics in drinking water facilities (from source to tap)" the project aimed to enhance and develop methodological approaches to microplastics (MP) management and governance at all levels. By closely engaging relevant stakeholders like policymakers at local, regional & national levels, and water practitioners, MicroDrink Board developed the Output 3.2 "Decision-making support tool for microplastics" (DMST). DMST is a practical solution informed by findings of two previous specific objectives SO1 "Developing transnational knowledge base on microplastics in Danube region drinking water resources" and SO2 "Developing transnational knowledge base on microplastics in Danube region drinking water resources", developed based on stakeholders feedback from national discussion consultations held across 8 countries (AT, BA, CZ, DE, HU, HR, SI, RS) and tested with the help of Associated Strategic Partners at 9 Danube River Basin pilot sites representing different drinking water resource types (karst aquifers, intergranular aquifers, surface water/river bank filtration). The tool offers scenarios, best practices and guidance for informed decision-making to mitigate and solve MP problems at different levels.

2. Download and installation

2.1. Download

Decision-Making Support Tool (DMST) for microplastics is available for download from the MicroDrink project website page https://interreg-danube.eu/projects/microdrink/news/the-microdrink-project-decision-making-support-tool-dmst (Figure 1) by clicking the "Manual & Decision-Making Support Tool (DMST)" button.

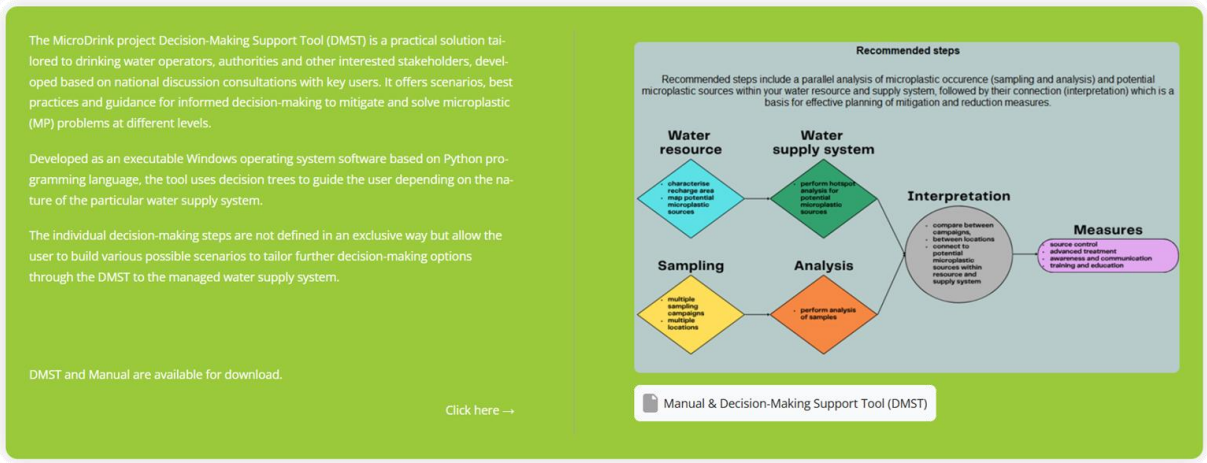

Figure 1 Website page with the download button

After clicking the "Manual & Decision-Making Support Tool (DMST)" button, a zip file with the same name is downloaded.

2.2. Installation

The downloaded zip file (Figure 2) contains the MD_DMST.exe file, the img folder, and the Instruction Manual (Figure 3). Installation of the tool is performed simply by extracting the contents of the zip file (Right-click→Extract All) (Figure 4). No other installation procedure or steps are needed.

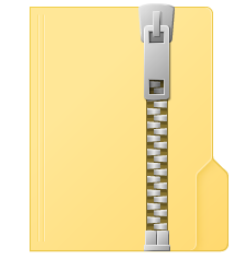

Figure 2 Downloaded zip file

Figure 3 Extracted zip file contents

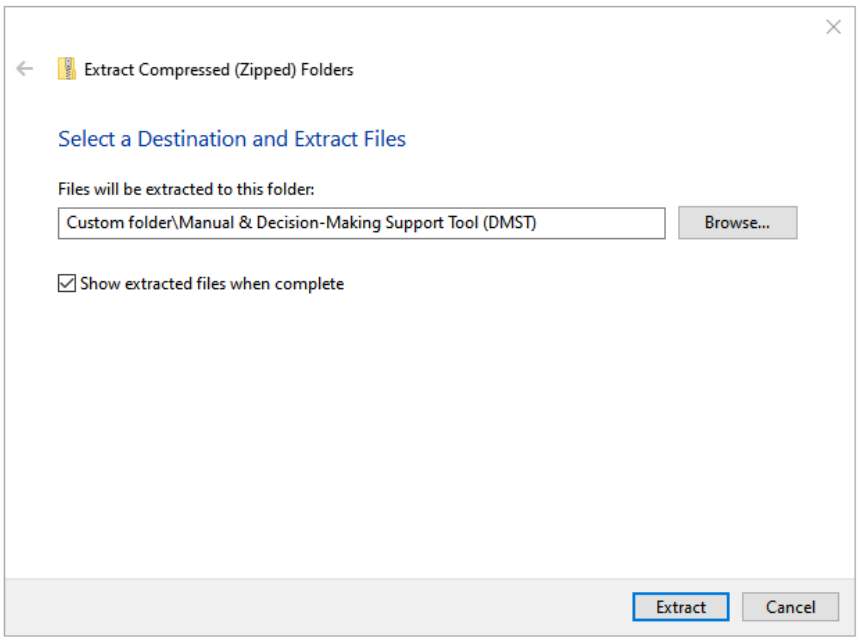

Figure 4 Extracting the zip file contents

2.3. Running the DMST

The DMST is opened by double-clicking the extracted executable file (MD_DMST.exe). To ensure proper execution of the tool, both the exe file and img folder need to be saved at the same location. The img folder contains files included in the tool as icons, images, or files that can be opened with other applications from within the tool.

After clicking the exe file, a pop-up window with security warning window might appear. If the security level of user's information infrastructure allows it, the file can be opened after confirmation. In some cases, the opening of such files might not be possible at all. Users are advised to consult their IT department.

The Main page of DMST is displayed when opening the tool file (Figure 5).

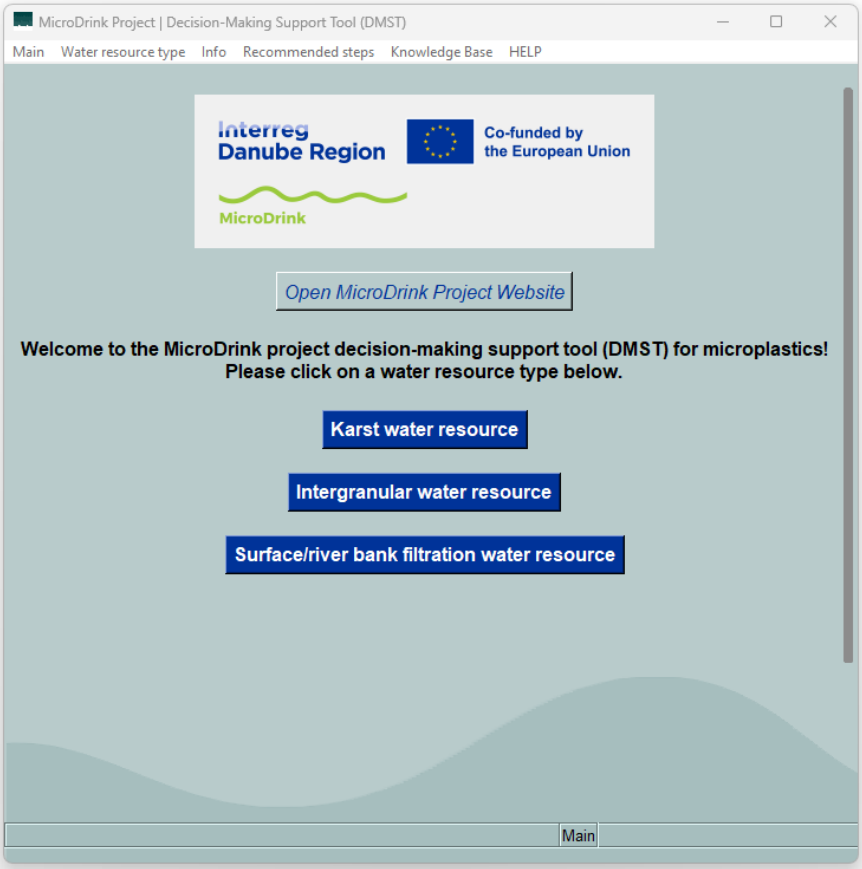

Figure 5: Main page of the DMST

3. DMST versions and release history

3.1. Beta version and testing

Beta version of DMST was finished in January 2026. It was distributed only within the project consortium. The MicroDrink project partners tested it during national Capacity-building training courses for stakeholders which were successfully held across 8 participating countries, bringing together a diverse and highly engaged group of experts, water practitioners, and representatives of relevant institutions and organizations. Training courses were held in each individual state according to the dates in the Table 1.

Table 1 Capacity-building training courses for stakeholders

Country	Place and Venue	Organizer	Date
Germany	Online	Friedrich-Alexander-Universität Erlangen-Nürnberg	26 February 2026
Serbia	Belgrade, Faculty of Mining and Geology	Faculty of Mining and Geology and Public Utility Service Company "Drugi oktobar" Vršac	27 February 2026
Slovenia	Ljubljana, Faculty of Natural Sciences and Engineering	University of Ljubljana and Kovod Postojna Ltd.	5 March 2026
Hungary	Online	Eurofins Analytical Services Hungary Kft	6 March 2026
Croatia	Zagreb, Hotel Esplanade	Croatian Geological Survey and Institute of Public Health Zadar	12 March 2026
Austria	Online	Environment Agency Austria	13 March 2026
Bosnia and Herzegovina	Mostar, Institute for Public Health of the Federation Bosnia and Herzegovina	Institute for Public Health of the Federation Bosnia and Herzegovina	13 March 2026
Czech Republic	Brno, VUV TGM	T. G. Masaryk Water Research Institute	26 March 2026

The high level of participation clearly reflects the relevance of the topic and highlights the need for strengthening capacities to manage microplastics in drinking water in the Danube region. The national training courses provided an important platform for exchanging knowledge and experiences related to the presence of microplastics in drinking water, as well as for discussing approaches to effectively manage this growing environmental challenge. Participants actively contributed to dynamic discussions, sharing valuable insights from their respective fields and sectors. A central highlight of the training courses was the presentation and testing of the DMST. Participants had the opportunity to explore the beta version and provide constructive feedback for its further improvement (Figure 6). Along with the partner's inputs, these were used for improving and refining the tool.

Testing the beta version of the DMST generated strong interest and positive feedback among the stakeholders who found the tool clear, accessible, and useful for supporting decision-making. Their feedback provided constructive suggestions for further development including improvements related to usability, content clarity, and functionality of the DMST. A significant portion of the suggestions was successfully implemented, particularly those concerning interface enhancements (e.g., scrollbars, navigation buttons, improved layout and readability), additional explanatory

content (e.g., definitions, disclaimers, methodological clarifications), and expanded supporting materials such as links, graphics, and guidance sections. Several structural additions, including new pages, help resources, and improved data interpretation elements, were also incorporated. However, a few more advanced or resource-intensive suggestions, such as interactive features, expanded questionnaires, multilingual support, and data export or mapping functionalities, were not implemented, primarily due to time constraints or design considerations. Overall, the final version reflects substantial integration of key feedback, with most critical usability and content-related improvements addressed.

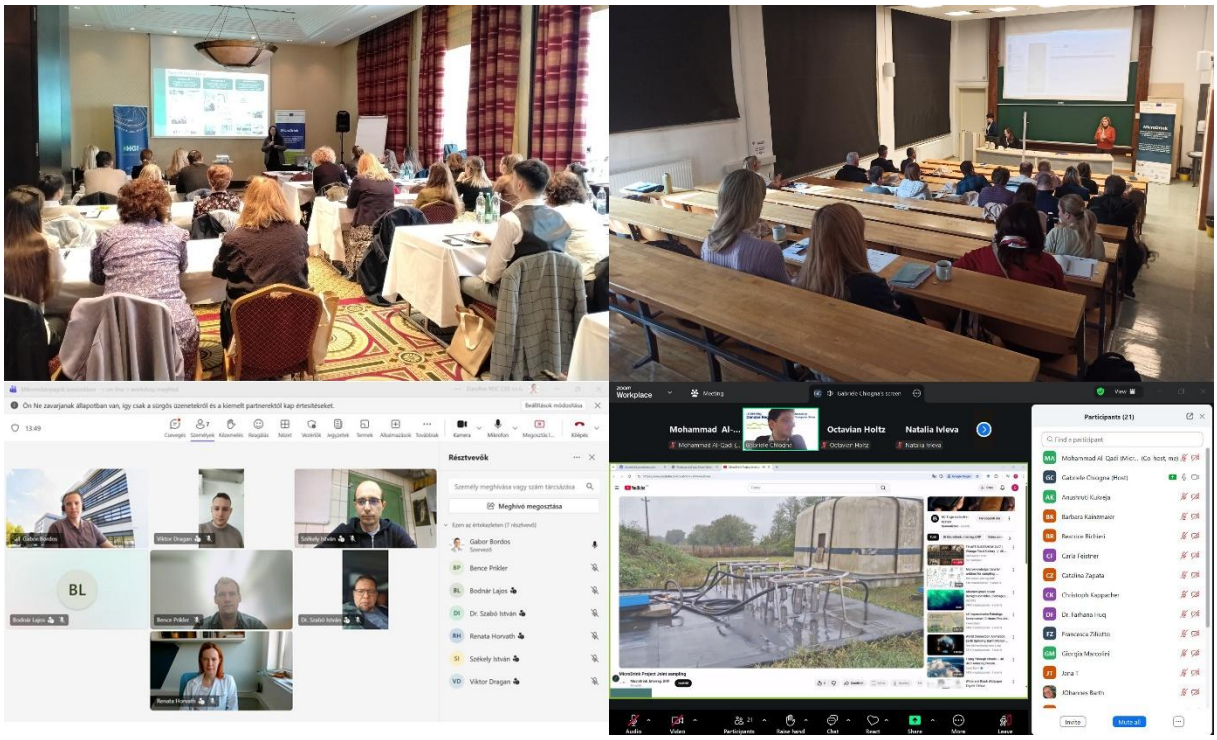

Figure 6 Testing of the DMST beta version during Capacity-building training courses for stakeholders in Croatia, Slovenia, Hungary and Germany

3.2. Final version (version 1.0) and testing

Final version of the DMST was published on the project website in May 2026.

This version of the tool was tested in close collaboration with Associated Strategic Partners, the findings of testing are given in Outputs 3.3 “Testing of DMST in drinking water obtained from karst water resources in Danube region”, 3.4 “Testing of DMST in drinking water obtained from intergranular water resources in Danube region”, and 3.5 “Testing of DMST in drinking water obtained from surface/river bank filtration water resources in Danube region”.

4. Open source

Decision-Making Support Tool documentation is free and open-source. The source code is published and available for download from the following website https://github.com/MicroDrink/DMST (Figure 7).

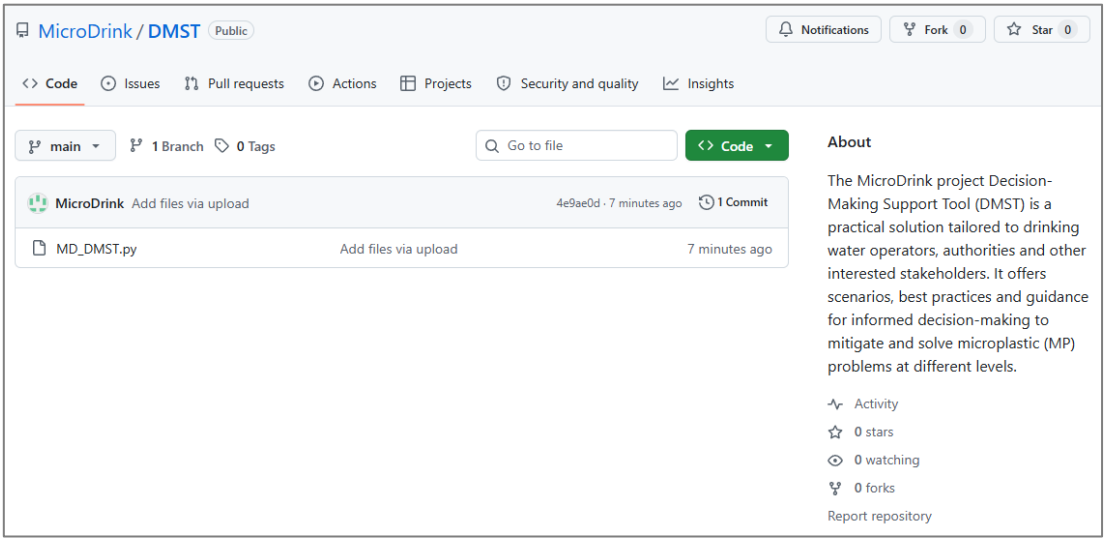

Figure 7 Source code of DMST on GitHub

Additionally, the documentation is created as a separate deliverable 3.2.3. "DMST documentation" (Figure 8) and is included as an annex to this Output. It includes a description of algorithms and decision support trees incorporated into the programme.

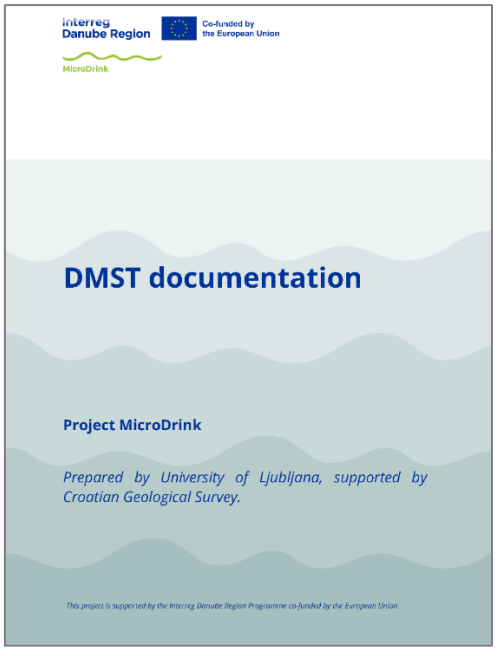

Figure 8 Front page of DMST documentation

5. User Manual

The User Manual is a guidebook with the instruction for tool application distributed along with the software. It is included in the downloaded zip file, as well as the img folder of the installed tool, and can be accessed from the first item of the tool's HELP menu (HELP → Instruction manual). The User manual is opened with the default application for opening pdf files on the user's individual system.

User manual was created as a separate deliverable 3.2.4. "Instruction manual for tool application – version 1.0" (Figure 9) and is included as an annex to this Output.

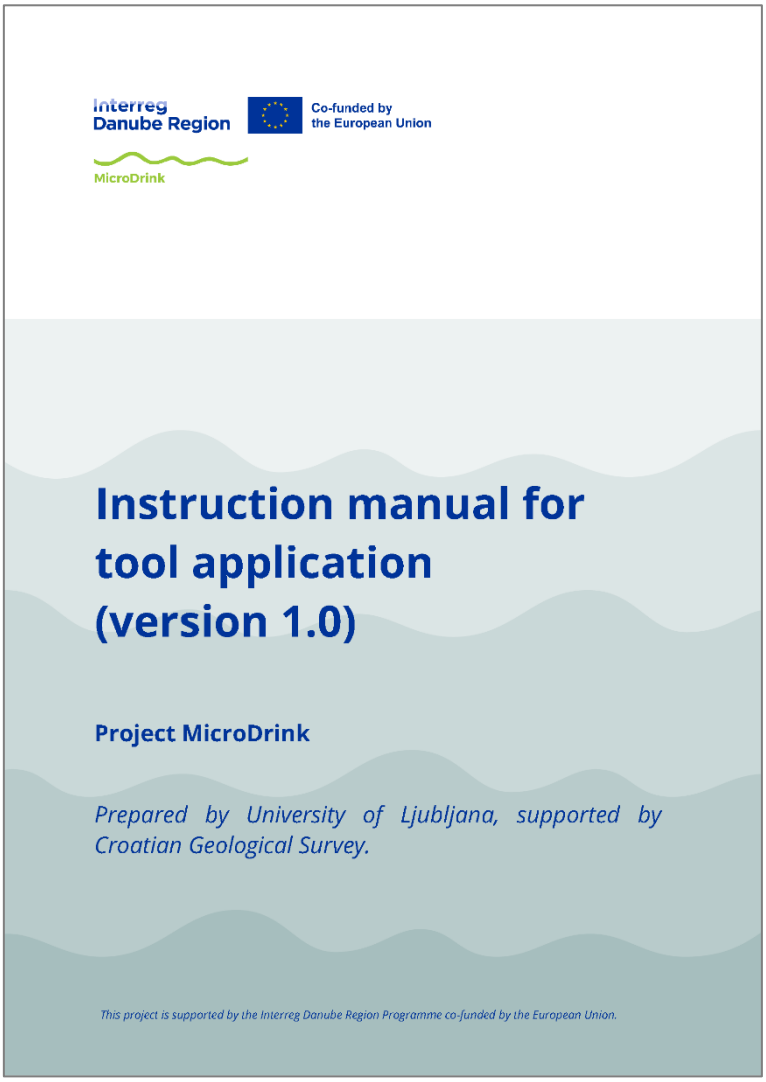

Figure 9 Front page of the user manual

6. Conclusion

The Decision-Making Support Tool (DMST) is an important contribution to advancing microplastics research and management in drinking water resources across the Danube Region. By translating scientific findings, stakeholder insights, and practical field experience into a structured, user-friendly decision-support framework, the tool strengthens the capacity of water suppliers, authorities, and other relevant institutions to understand, assess, and address microplastic-related challenges in a systematic and informed way. Its value lies not only in guiding users through tailored scenarios and best practices, but also in supporting the harmonisation of approaches across countries with diverse regulatory, technical, and organisational contexts.

The DMST supports capacity building by enabling more consistent risk evaluation, clearer identification of appropriate mitigation measures, and better alignment with emerging European requirements. Drinking water operators, public authorities, laboratories, and policy makers are expected to benefit most directly from the tool, as it provides a structured pathway for improving preparedness, planning monitoring activities, and strengthening governance related to microplastics in drinking water. Beyond individual institutions, the tool also supports transnational cooperation by offering a shared reference point for dialogue, comparison of practices, and coordinated responses to common challenges.

As part of the project's dissemination activities, the DMST and its accompanying documentation were shared with key macro-regional and international platforms, including the EU Strategy for the Danube Region (EUSDR) and the International Commission for the Protection of the Danube River (ICPDR), ensuring visibility and potential uptake beyond the project partnership. This contributes to broader awareness and supports ongoing discussions on integrating microplastics into future water management and policy frameworks.

Looking ahead, the DMST provides a solid foundation for further development of methodologies, monitoring strategies, and governance approaches related to microplastics. While the tool reflects the best available knowledge at the time of project implementation, the field of microplastics research is rapidly evolving, and future advancements may inspire new iterations or complementary tools developed by the wider scientific and water management community.

Disclaimer: The DMST and its documentation were developed within the MicroDrink project and are provided as is. The tool will not be maintained, updated, or further developed after the closure of the project in June 2026. Users are encouraged to consult the accompanying manual and documentation when applying the tool in their respective contexts.

Annex I.

Deliverable 3.2.3.
DMST documentation

Annex II.

Deliverable 3.2.4.
Instruction manual for tool application
(version 1.0)

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