

Danube Water Balance

CWatM modelling training strengthens the practical use of Danube Water Balance results

On 4 September 2026, the Danube Water Balance (DWB) project organised a dedicated training session for Hungarian water management experts, focusing on the practical application of the Community Water Model (CWatM) and the interpretation of water balance modelling results.



The training formed part of the project's wider capacity-building activities and aimed to strengthen the ability of Hungarian experts to independently explore, run and interpret the modelling tools and results developed within the DWB project. The session also provided an opportunity to demonstrate how the project's data management infrastructure, modelling framework and visualisation tools can support water resources assessment and management.

The programme opened with an introduction to the Danube Water Balance project, including its objectives, background and main results. Particular attention was given to the project's approach to developing a harmonised water balance modelling framework for the Danube River Basin and its pilot sub-basins. The presentation also highlighted the importance of transboundary cooperation and harmonised data management for understanding water availability and future water management challenges across the basin.

Participants were subsequently introduced to the project's Central Data Storage and WebGIS platform.

The session demonstrated how the project brings together national, European and global datasets and provides access to collected data, model configurations, modelling outputs and tools for their visualisation and analysis. The Central Data Storage was developed as an open-access repository supporting the long-term use and sharing of the project's data and modelling resources.

A dedicated session focused on the results of the CWatM modelling for the Tisza sub-basin. The participants were introduced to the modelling results and their potential interpretation in the context of water availability and water management. The Tisza is one of the four pilot areas of the project, where the model has been applied to assess water balance conditions and the potential impacts of climate change.

The afternoon programme was particularly practice-oriented. Participants were guided through the basic steps required to configure and run the CWatM model, including the use of settings files, notebooks and model outputs. CWatM is an open-source, process-based hydrological model developed in Python, which can be applied at both global and regional scales and is capable of representing the major components of the hydrological cycle.

The training also covered post-processing, visualisation and interpretation of modelling results. This part of the programme was designed to help participants move beyond simply running a model and gain a better understanding of how its outputs can be explored and interpreted for practical water management purposes.

The training is part of a broader DWB capacity-building programme that has included a virtual Water Resources Modelling Summer School, a Training of Trainers workshop in Sofia, stakeholder capacity-building activities in





Sarajevo and further national-level training. The project has also developed tutorial materials covering the installation and configuration of Python and GitHub, running CWatM, comparison with observations and model calibration.

By combining an introduction to the project's results with hands-on modelling and data analysis exercises, the training contributed to one of the central ambitions of the Danube Water Balance project: ensuring that the tools and knowledge developed by the project can continue to be used by water management institutions after the project's completion.

The ultimate vision of the DWB project is the widespread application of the Danube Water Balance Model to support more efficient and informed water management decisions across the Danube River Basin. The training therefore represents an important step towards turning the project's technical achievements into practical capacity and long-term use. In the second half of the workshop, KÖTIVIZIG experts presented their ongoing, related initiatives and activities.

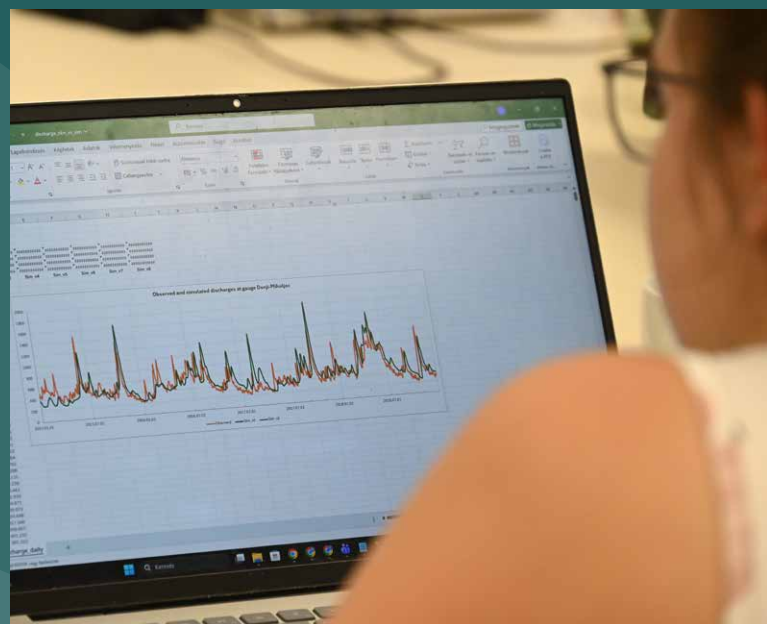
Gábor Harsányi, Deputy Technical Director (KÖTIVIZIG), presented the LAREDAR – Lakes and Reservoirs in the Danube River Basin – an international project supported by the Interreg Danube Region Programme, which develops a concept for the coordinated operation of lakes and reservoirs to support the management of flood and low-water periods. The project, which started in the spring of 2025, will be implemented under the leadership of KÖTIVIZIG and in cooperation with 11 partners.

In his presentation, Dávid Béla Vizi, Technical Secretary of KÖTIVIZIG, presented the operation of the Tisza–Körös–Völgyi Cooperative Water Management System (TIKEVIR) water re-

source sharing system and the experiences gained from the severe water shortages of recent years.

The professional presentations highlighted that the efficient and coordinated management of water resources is important in increasing the adaptability of the region.

At the end of the event, the participants discussed the possibilities of practical application of the modeling results and the directions for further development of cross-border cooperation in a workshop. One of the key goals of the Danube Water Balance project is to prepare the countries of the Danube Basin together, based on a coordinated methodology, to address the water management challenges caused by climate change.



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