

DANUBE WATCH

3/2021

THE MAGAZINE FOR THE DANUBE RIVER
WWW.ICPDR.ORG

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ICPDR **IKSD**

International Commission
for the Protection
of the Danube River

Internationale Kommission
zum Schutz der Donau

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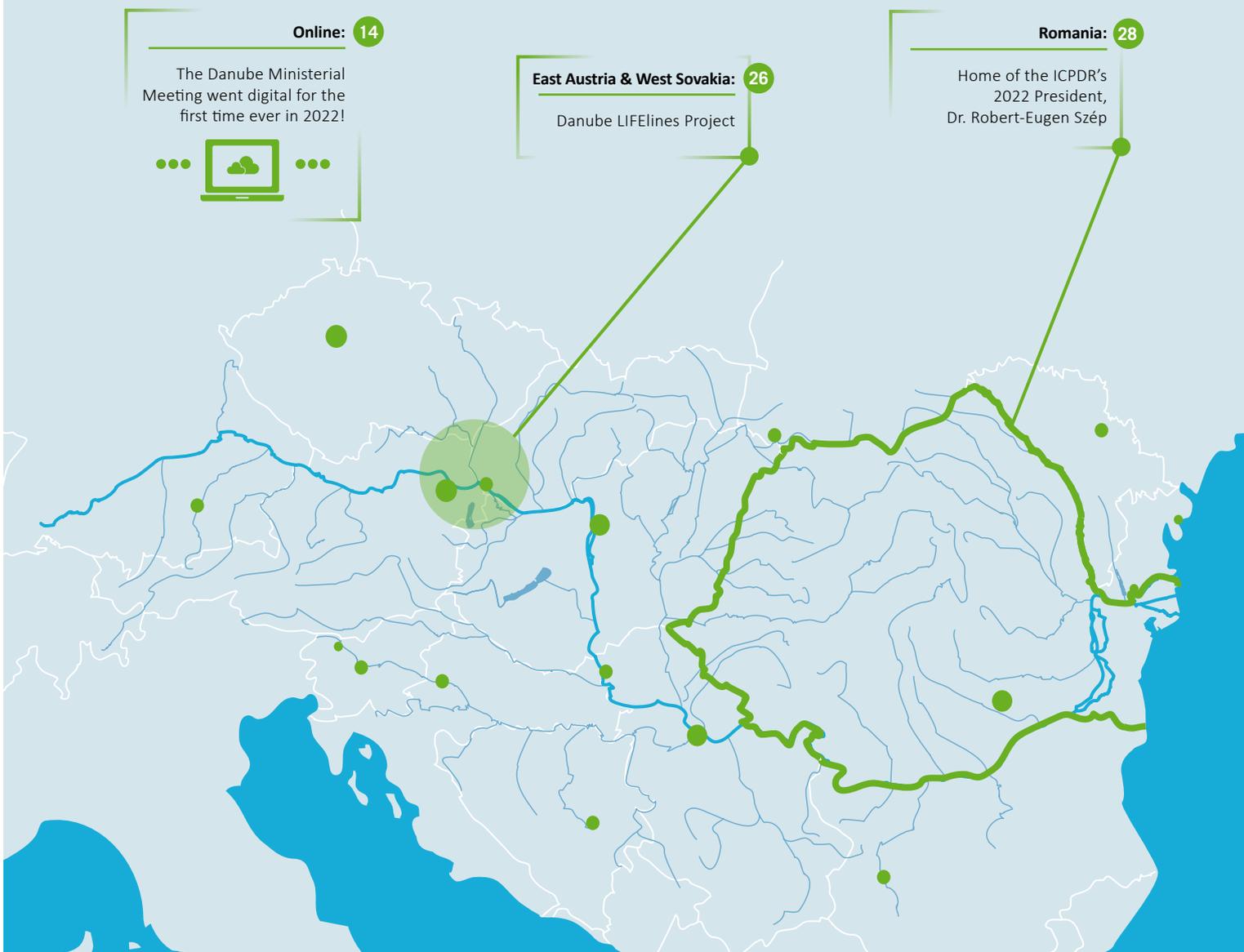


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Home of the ICPDR's 2022 President, Dr. Robert-Eugen Szép





Dear readers,

You are opening the last printed issue of Danube Watch, which accompanied the birth, childhood, and development of the ICPDR becoming one of the most successful and inspirational river basin commissions in the world for almost thirty years.

I have witnessed the growth in Danube Watch's quality, readership's interest, and impact it's made on the cooperation of Danube countries, their accomplishment in addressing key challenges of the Danube River Basin and progress towards broader management and political objectives, e.g., EU accession.

So, over all these years Danube Watch has been an excellent companion of the ICPDR by disseminating information, news, interesting stories from the entire Danube River Basin and contributing to the shared spirit of passion for the Danube both within and well far away from the Basin. The publication of Danube Watch pretty much covered the entire period of my engagement with the ICPDR in a variety of positions.

I am proud of all ICPDR activities and results, such as the TransNational Monitoring Network – which provides accurate scientifically sound data on the water quality of the Danube and its key tributaries – wastewater management improvement in cooperation with the World Bank, the improvement of safety in Tailings Management Facilities,

successful cooperation with both the hydropower and inland navigation sectors, and so much more.

Two key projects, however, truly stand out. Firstly, the pivot on making the Danube passable for migratory fish species, in particular Sturgeon, through the Iron Gates dams with indispensable support from the EU in the form of 'We Pass'. Additionally, our regular campaign of scientific excellence and innovation in understanding the status of Danube waters, morphology and biota: the Joint Danube Surveys. These are cornerstones of the ICPDR's status as a global role model for efficient and result-bearing cooperation – and Danube Watch has tremendously contributed to making these successes known around the world.

I'm also delighted to have seen the ICPDR successfully rise to challenge of a new era for organisations such as ours, embracing rapid digital change, social media's advent and other innovative new forms of dissemination. I'm proud to say that under my watch, we've become an active player in this realm via Facebook, LinkedIn, Twitter, Instagram, and YouTube.

Quite soon, by midsummer of 2022, I will leave my last professional engagements in my role as Executive Secretary of the ICPDR, a position I've had the privilege to hold for nine years. Here at the end of my tenure, I want to express my gratitude for the opportunity to assist and to support hundreds of outstanding experts from all 14 Danube Countries and the European Commission, in their commitment to deliver state of the art expertise, engaging ICPDR activities, and communications deliverables. I wish to acknowledge my colleagues throughout the Danube River Basin, who, in addition to their regular hard work in national institutes and administrations, go above and beyond, devoting their time to the ICPDR.

Ivan Zavadsky is the Executive Secretary of the ICPDR Secretariat in Vienna, Austria.

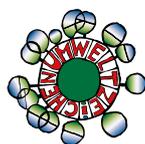


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Danube Watch is available on the web at www.icpdr.org



EU Ecolabel : AT/28/026



Printed according to the Austrian Ecolabel criteria for printed matter
Bernsteiner Media GmbH, RL-24, UWZ Nr. 785

Danube Watch is printed on Impact Climate (100% Recycling) 170 & 100 g/m².

IMPRINT

Owner/Publisher: ICPDR – International Commission for the Protection of the Danube River, Vienna, secretariat@icpdr.org;

Executive Editor: Hélène Masliah-Gilkarov; **Editor:** Tristan Bath;

Design: Wagesreiter Grafikstudio e.U.; **Print:** Bernsteiner Media GmbH;

Online publishing: Alex Höbart; **Front cover:** Danube Landscape;

Back cover: Danube Watch Over The Years (Collage).

Danube Watch is the official magazine of the ICPDR, the International Commission for the Protection of the Danube River. Danube Watch enhances regional cooperation and information-sharing on sustainable water management and environmental protection in the Danube River Basin. It reports on current issues affecting the Danube Basin, and on action taken to deal with challenges in the river basin. Striving for scientific accuracy while remaining concise, clear and readable, it is produced for the wide range of people who are actively involved in the Danube River Basin and are working to improve its environment.

The ICPDR accepts no responsibility or liability whatsoever with regard to information or opinions of the authors of the articles in this issue.

News & Events

DRBMP & DFRMP Updates 2021 Published



Following 2021's public consultation process, the ICPDR has published full and summarised versions of its Danube River Basin Management Plan (DRBMP) and Danube Flood Risk Management Plan (DFRMP) Updates 2021.

The two plans have now been made available in both digital and print formats, presented in a refreshed new format and

design. The DRBMP Update 2021 sets out further aims to protect and enhance the status of all waters in the basin, and to prevent their deterioration while ensuring sustainable, long-term use of water resources for the next six years. It establishes and strengthens several integrated principles for river basin management and connections to other sectors' policies like energy, transport and adaptation to climate change. This is the second update to the DRBMP, which was first adopted in 2009, and received its first update in 2015.

The DFRMP Update 2021 – the first such update to this plan, which was first published in 2015 – represents a key step forward in the ICPDR's work towards sustainable flood risk management. It strengthens various aspects of flood risk management focusing on prevention, protection and preparedness, including measures for achieving the established objectives and calls for solidarity among all ICPDR Contracting Parties.

Visit www.icpdr.org/main/publications/management-plans to discover the DRBMP & DFRMP Updates 2021

ICPDR Commitments Renewed at the 4th Danube Ministerial Meeting

On 8th February, the ICPDR held its first ever online Danube Ministerial Meeting, seeing all contracting parties endorsing six more years of plans for the Danube River Basin.

Ministers and Minister Representatives responsible for water management from the Danube River Basin countries Austria, Bosnia and Herzegovina, Bulgaria, Croatia, the Czech Republic, Germany, Hungary, Montenegro, Moldova, Romania, Serbia, Slovakia, Slovenia and Ukraine and the European Union joined the meeting, held online for the first time due to the ongoing pandemic. They endorsed the ICPDR's two updated Management Plans and adopted a ministerial "Danube Declaration" at the meeting, which also included a panel discussion with experts from ICPDR Observer organisations on lessons learned from their own relationship and cooperation with the ICPDR.

The Management Plans set out measures for the coming six years to ensure cleaner, healthier and safer waters for everyone to enjoy – an objective as relevant and urgent today as in 2016, when the Ministers of the Danube Countries last adopted these two Management Plans: the Danube River Basin Management Plan (DRBMP) and Danube Flood Risk Management Plan (DFRMP) Updates 2021. Both plans have been prepared as stipulated in the EU Water Framework Directive and EU Floods Directive.



"It can be easy to take water as a resource for granted," said Mr. Róbert-Eugen Szép, President of the International Commission for the Protection of the Danube River (ICPDR). "Especially in the context of climate change however, it's becoming clearer than ever just how important it is for us to protect the waters of our shared river basin. This isn't only important for us though – it's important for future generations too."

Romania takes over ICPDR Presidency from Montenegro for 2022

© ICPDR



At a ceremony held as a hybrid event both online and at the ICPR Secretariat in Vienna, Momčilo Blagojević of Montenegro handed the traditional bottle of Danube water over to incoming ICPDR President from Romania: Róbert–Eugen Szép.

The incoming President announced that the Romanian Presidency will be placing priority on the ICPDR Ministerial Meeting 2022, the implementation of the provisions of the Danube Declaration 2022, as well as initiating measures laid out in the Danube River Basin Management Plan and Danube Flood Risk Management Plan Updates 2021.

The Presidency handover event saw representatives from the Romanian and Montenegrin missions in Austria participating in the ceremony. As is the ICPDR tradition, Ambassador Veselin Šuković from the Permanent Mission of Montenegro to the United Nations, Organization for the Security and Co-operation in Europe (OSCE) and Other International Organizations in Vienna, along with Irina-Elena Donciu, Minister Plenipotentiary, Chargé d'Affaires at the Permanent Mission of Romania to the International Organisations in Vienna, met to exchange a bottle of Danube water on behalf of the respective incoming and outgoing Presidents. Passed over at every ICPDR presidency handover ceremony since the mid-90s, the bottle symbolizes the ways in which ICPDR Presidents hold the future of the basin's waters in their hands.

Wastewater Treatment Workshop

The ICPDR was happy to continue its workshop series jointly organised with the World Bank's Danube Water Program at an event discussing sustainable financing of wastewater management with experts from and beyond the Danube River Basin on 3rd February 2022.

This workshop, titled "**Financial sustainability of wastewater management in the Danube region**", aimed at providing government and utility representatives with knowledge and expertise on sustainable modernization efforts in the wastewater management sector, focusing on three thematic areas:

- ◆ Status of financial sustainability of wastewater management in the Danube region, based on existing analytical works and recent studies on the topic.
- ◆ The way forward to sustainable wastewater management at the policy level, based on practical experiences on the national level.
- ◆ Best practices of sustainable wastewater services development at the utility level, based on experiences from individual utilities or consultants, and focusing on O&M costs, technology choices, and longer-term business and investment planning.



© IAWD

Several key conclusions and outcomes from the event can be found via the event page online:

<https://www.iawd.at/eng/event/693/details/w/0/financial-sustainability-of-wastewater-management-in-danube-region/>

Danube Watched

Three Decades of Reporting on the Danube River Basin

Since 1994, Danube Watch has been putting news from around the Danube River Basin down onto paper three or four times a year. Leafing through hundreds of pages in the archive, it can seem both as if so much has changed and so very little all at once. “More Money For Pollution Reduction” blares the headline across page 3 of the first Danube Watch printed in 1999, with the following pages detailing projects to restore floodplains in the Danube River Basin, strategies to protect groundwater, and a mission to improve water infrastructure in Bucharest. While tremendous progress has been made since – Romania has certainly made improvements to its water infrastructure it must be said – many of the same topics remain priorities to this day. We seek to reconnect floodplains, and reduce pollution, to protect the groundwater that provides so much in our river basin. The scale, however, and the ambition, have grown.

As both the most international river basin in the world and home to some 79 million people, the Danube River Basin is always going to be bursting with stories to be told. With regards to river basin management too, the ICPDR is a trend-setter around the world, with the achievements in the Danube River Basin providing inspiration for generations of water resource managers.

Danube Watch is therefore ready and proud to be facing firmly towards the future, and taking the step to go paperless. By evolving into a new and purely digital form, Danube Watch can be more nimble and dynamic than ever.

Highwater Marks: Highlights

The importance of preserving and continuing Danube Watch beyond its third decade of activity is a no-brainer when one takes into account the connectivity and expertise it puts under one roof. The pages of this

magazine have offered a catalyst for conversation between a multitude of partners and voices from throughout the Danube region, including exceptional individuals, landmark EU-funded projects, groundbreaking private-public collaborations, and thousands upon thousands of schoolchildren participating in well over a dozen years of Danube Day celebrations from the Black Forest to the Black Sea. The mission of Danube Watch goes beyond simply science communication and public outreach, bringing together disparate facets of our culturally and biologically diverse shared basin.

1

Interview with Vasyl Gubal, Mayor of Kvasovo village in Ukraine (*Danube Watch 2/2017*)

One of our long-running People of the Danube articles focusing on extraordinary Danubians, this interview with the mayor of a small village in Ukraine has long been a favourite. At the time, Mr. Gubal was taking vital steps to upgrade the wastewater treatment in his village of 900 inhabitants, and to clean-up the local waters of the Borzhava River.

bit.ly/DW2-2017



2

Rediscovering Trajan's bridge over the Danube (*Danube Watch 2/2018*)

One of the many DW articles exploring the Danube's fascinating shared ancient history, this one takes a look at the legacy of Roman Emperor Trajan (53-117 AD), remembered as a successful soldier-emperor who presided over the greatest military expansion in Roman history – and for the construction of the first ever bridge to span the Lower Danube!

bit.ly/DW2-2018



3

Gold Panning in the Danube (*Danube Watch 2/2020*)

It was during JDS4 that the topic of gold in the Danube River first piqued our fascination for DW. The topic conjures images of prospectors in the old American West – but there are those who sift through the waters of Central and Eastern Europe to this day. Who knew?

bit.ly/DW2-2020



4

A Letter from Ban Ki-moon (*Danube Watch 3/2013*)

A clear highlight to have had some words lent to the pages of our magazine by the United Nations Secretary-General himself back in 2013, a tenure that, in hindsight, set much of the sustainable agenda leading our activity today.

bit.ly/DW3-2013



5

An Interview with Guangzhe Chen from the World Bank (*Danube Watch 3/2017*)

Sustainable development for water resources needs sustainable financing! And who better to fill us in on the details than Guangzhe Chen, Senior Director for the Water Global Practice (GP) within the Sustainable Development Vice-Presidency at the World Bank Group.

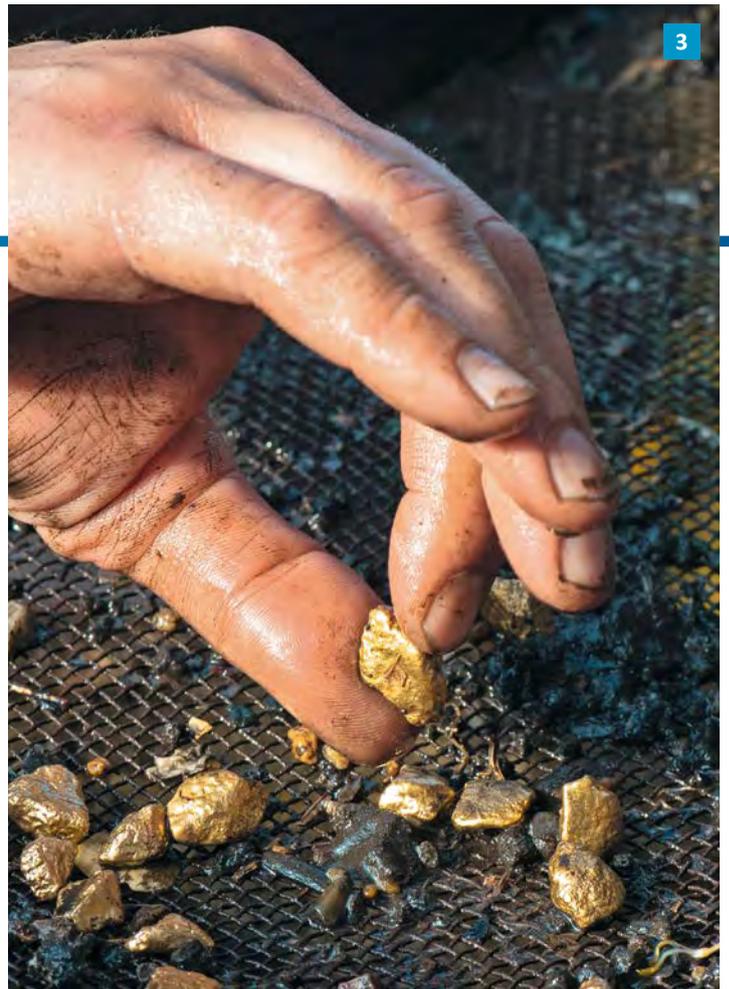
bit.ly/DW3-2017



6

A Favourite Cover Image (*Danube Watch 3/2018*)

This striking image is a true favourite, showing firstly the impressive beauty of the Danube's pelicans and the



0 km marking at the start of the river at the Danube Delta.

bit.ly/3v2h6lq



Danube Watch Editors Say Farewell to Print on the Danube River Basin

Hélène Masliah-Gilkarov (2016 –)

Gold diggers in the river, public participation, national park rangers, JDS4, “Deep Freeze On the Danube”...look at all the memories we’ve covered in the past 6 years! Since handling the position of Editor for Danube Watch – taking over from my colleague Benedikt – it’s been a roller coaster ride. The thing about editing this magazine, is that one certainly never runs out of topics to cover and material to publish. Over and over again we find ourselves having to trim down and choose between fascinating topics, as we’re so very lucky to have such a wealth of diverse expertise to cover.

In any case, our storytelling goes on, moving with the new wave of digitalized news. The paper aspect was incredibly important throughout this magazine’s history, helping us to reach our readers from Romania all the way to California. They’ve received their own Danube Watch on their doorstep every few months, keeping them in the flow of this unique river’s waters.

With our digital revival, new adventures will follow, and new intriguing headlines will pique your interest. New generations will discover Danube Watch, while faithful readers will stay with us on this journey into a different format.

Your collaboration, dear reader, remains important to us whatever the format, so please email with any stories you think will fit into our new, yet trusted online newsletter (press@icpdr.org). So long, paper Danube Watch, see you in a while crocodile (hopefully not in the Danube though!)

Benedikt Mandl (2010 – 2016)

I am a biologist, so when I took up the position with the ICPDR Secretariat, I

perceived the Danube and its tributaries almost exclusively as ecosystems. But of course, rivers also have a social dimension. As executive editor of Danube Watch, I immediately realized that the publication is mostly an echo of this social aspect and I felt great respect for this.

Taking over from Jasmine in 2010, I was also very lucky – under her guidance, Danube Watch had developed from a grassroots-NGO newsletter to a professionally produced magazine with an edition of over 20,000 copies and an almost global readership. I simply had to work towards maintaining the high standard for the next six years. Hard work for Jasmine, easy-peasy for me; I just hope I could pass on “DW” to Hélène in reasonably good shape.

But I don’t mind that the print production is coming to an end; media change and the fundamental mission of Danube Watch as the marketplace of the Danube River Basin will flourish in other channels. In this spirit: so long, Danube Watch – and thanks for all the fish!



4



5



6

Paul Csagoly (2008)

We've always loved the feel of the Danube's waters. My father rowed the Danube in his youth near Budapest. Living in Vienna, on the way home from work at the UN building, I'd rollerblade home and stop and swim across the Danube en route. And then there's wonderful Lake Balaton.

Some of us older generation types like the feel of paper. Magazine, book or newspaper, reading on the porch, beach or in the bath.

The paper Danube Watch had a nice mix of water stories. It was a good tool to make people aware of the marvelous scale and diversity of the basin.

I still tell people about how successful the basin is - its convention, secretariat, research, cooperation, and ability to unite so many countries around a common in-

terest, in a world where international cooperation risks breaking down.

It's hard to gauge how many people read Danube Watch. Subscription was free. But if it goes online, you'll be able to better gauge who is reading what, tailor content, and make it more interactive. I hope it stays around.

Jasmine Bachmann (2002 – 2010)

Danube Watch – 30 years!?

I hardly believe it. When I started to work for the WWF Danube Programme back in 1998, Danube Watch was already seen as the “Magazine for the Danube Basin”. It was packed with scientific and technical information – sometimes a bit hard to read though.

Starting my duties at the ICPDR in 2002, Tony Hare, an excellent communication consultant, outlined the goal clearly: “No

brown paper boxes stored under desks”. What Tony meant, is that the magazine needs to reach its potential readers and that it should provide more than figures and graphs. So, we transformed Danube Watch into a more colourful magazine, which is telling stories, connecting people and providing a forum where objective reporting is mixed with subjective opinions.

This approach has been successful, underlined by the fact that Danube Watch is still alive – and will start a new career as an on-line magazine!

By doing so, Danube Watch continues being a glue between individuals, organisations and countries. Now needed more than ever.

Hélène Masliah-Gilkarov is the ICPDR's Technical Expert for Public Participation & Communication and Executive Editor of Danube Watch

The SIMONA Sediment-quality Information, Monitoring and Assessment System:

A Danube Transnational Programme project to support transnational cooperation for joint Danube Basin water management: Results and Perspectives



The 3 Test Areas (Drava, Upper Tisza, South Danube) (coloured circles) and the National Baseline Points in each Danube Basin Country (red dots). Pictures show sampling by the trained national experts (left) and the on-site training events (right and bottom).

The SIMONA Project is the long-needed response to pressing demand for effective use of sediment quality assessment for EU River Basin Management Plans. SIMONA evolved from the pan-European FOREGS and GEMAS geochemical mapping projects and is based on a decade-long effort of promoting harmonised monitoring and assessment of sediments in the Danube Basin. 31 partners representing the whole Danube Basin have delivered the ready-to-deploy SIMONA Tool, consisting of harmonised sediment sampling, analysis and assessment protocols, practical guidelines, manuals, professional videos, solid case studies and training materials. SIMONA's methods have been tested, demonstrated and trained in three transnational Test Areas and applied by trained government experts in two designated monitoring points in each country. All the procedures are supported by the SIMONA IT Tool, an online application for transparent sediment quality monitoring data collection, management, visualisation, evaluation and reporting according to EU WISE standards. The knowledge generated this way is published in international scientific jour-

nals, and most of the main outcomes overlap with those of the independently running Joint Danube Survey 4, providing synergic support for ICPDR.

Main Outcomes

The inventory has shown that significant gaps exist in the sediment quality sampling, laboratory and evaluation procedures in the Danube Basin Countries. Harmonisation of sediment quality monitoring is essential for basin-wide transnational river basin management driven by informed decisions. Efficient harmonisation calls for a strict application of quality assurance and quality control measures. Regular international expert training is a major tool for harmonisation. Sediments are highly site-specific, requiring high-quality expert knowledge for monitoring site selection, monitoring network development and maintenance, site-specific sampling, analysis and assessment. The mobilisation of stakeholder and government agency personnel from all countries in various working groups was key to the project's success, and substantial value was added by the great number of actively participating experts in the intense hands-on monitor-

ing exercises, significantly **strengthening cooperation** in WFD-related monitoring and assessment among the countries in the Danube River Basin.

Main Recommendations

Capacity-building of laboratories responsible for monitoring is an immediate need, as is the introduction of **interlaboratory trials** and training on sampling and analysis. The development of a sediment quality **monitoring network should follow a tiered approach**, prioritising sites, and **sites need to be monitored** for movement of sediment appropriate for sampling. Significant gaps exist in the understanding sediments in relation to climate change and impacts of river basin management, calling for **long-term regular sediment quality monitoring at selected key sites** in the Danube Basin.

By **Gyozo Jordan**, PhD (SIMONA Scientific Coordinator) and the SIMONA Project Team

Find out more!

See the SIMONA Promotional Video, 2022: <https://www.interreg-danube.eu/approved-projects/simona/section/simona-promotional-video>

Project **TEACHER-CE** responds to an ever-increasing number of extreme weather events in Central Europe with enhanced risk management coordination.

Interreg Central

Join **T** Efforts to increase water management **A** daptation to climate **C** hanges in central **E** urope –

...was created with partners coming from four different central Europe (CE)-projects (RAINMAN, FRAMWAT, PROLINE-CE, SUSTREE), with the idea of preventing the ever more present detrimental water-related ecological consequences of a changing climate. Its main objectives arose out of the need to integrate and harmonize the results of already existing funded projects as part of the Horizon2020, LIFE and INTERREG programs.

The focus of **TEACHER-CE**, the two-year long project (2020 – 2022) funded by Interreg Central Europe, was to improve the integrated water management capacities of the public sector and related entities for risk prevention, water protection, and Circular City (CC) adaptation in Central Europe (CE), achieved through both action on a local level and transnational cooperation. To achieve this, the **TEACHER-CE** toolbox was created focusing on an integrated approach to climate-proofing management of water-related issues to prevent detrimental climate change-induced outcomes such on vital water-concerns, such as floods, droughts, and heavy rain. This project promotes the protection of water resources and their sustainable use by improving the capacities of local and regional stakeholders in the water management sector to adapt to climate change, aiming to make the regions in Central Europe more ecologically resilient.

Project **TEACHER-CE** has three central project-specific objectives. Firstly, to develop and validate a framework of tools for climate change adaptation and amelioration of related risks. Secondly, capacity development for stakeholders to adapt to a changing climate using this emerging toolbox and thirdly, to boost integrated participatory water management by interacting with target groups. The target audience for this project was therefore municipalities and other regional and national authorities with the mandate to change and adapt to emerging water-related consequences of climate change. The direct local and regional implementation of the toolbox will help regions to adapt their processes to changing climate conditions.

Step-by-step project development

12 project partners from 8 countries and different fields of action, including academic institutions, government authorities, consultants, enterprises, and NGOs joined forces and a broad range of stakeholders were actively involved during the development of this project.

- University of Ljubljana (UL)
- Saxon State Office for Environment, Agriculture and Geology (LfULG)
- Warsaw University of Life Sciences (SGGW)
- Euro-Mediterranean Center on Climate Change Foundation (CMCC)
- University of Natural Resources and Life Sciences, Vienna (BOKU)
- Federal Research and Training Centre for Forests, Natural Hazards and Landscape, Austria (BFW)
- Global Water Partnership Central and Eastern Europe (GWP CEE)
- Middle Tisza District Water Directorate (MTDWD)
- Po river district Authority (AdbPo)
- Institute of Meteorology and Water Management National Research Institute (IMGW-PIB)
- Czech University of Life Sciences Prague (CZU)

Given its rich previous experiences in stakeholder involvement, providing a neutral platform for dialogue and cooperation, organizing national/regional workshops and training for stakeholders from all spheres, GWP CEE provided assistance and coordination during every phase of the project. This included development of the tool itself, testing of the tool, organization of workshops and training for the stakeholders, gathering their input through questionnaires, and more.

The project's progress can be assessed through the implementation of four different work packages as follows:

Work package 1: Exploitation – Concept of CE tools integration

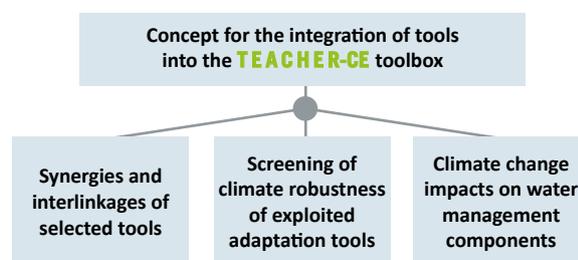


Figure 1: Concept of CE tools integration

During the project's first phase, a concept for tool integration into the **TEACHER-CE** toolbox was developed, based on three pillars as depicted in figure 1.

A unified overview of project tools and their interlinkages was created by evaluating 23 projects in total, with a special focus on the four projects RAINMAN, PROLINE-CE, FRAMWAT, and SUSTREE. Synergies between these approaches were then found, and so the stage for the **TEACHER-CE** toolbox was set. To add value to the understanding of stakeholder needs, a compilation of knowledge from existing studies and projects addressing the effects of climate change on water management was created. The core outcome of WPT1's three pillars is a fresh new paradigm for integrating exploited tools that triggers cooperation between diverse tools and satisfies the needs of users in the context of climate change.

Europe: TEACHER-CE

The Results and Fate of a Two-Year Journey

Work package 2: Integration – CC-ARP- CE Toolbox for climate change adaptation and risk prevention in CE

TEACHER-CE toolbox CC-ARP-CE is an important feature, acting as a central platform for the verification of the project's various objectives and deliverables in an actual and operational multi-institutional setting. The toolbox was created in the form of an online platform including a web map service that provides spatial orientation on all identified water management issues, information on climate change scenarios with key indicators, navigation through EU (European Union) and national data portals, links

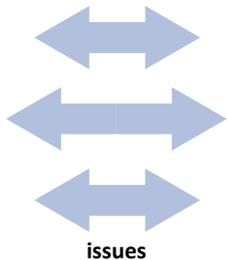
to tools developed in previous EU projects, and an integrated comprehensive catalogue of measures. Its design has been built for basic use, but also includes advanced features for expert use, and is purpose-built to communicate ideas/issues/problems within a given river basin (Figure 2) and share diverse perspectives on potential solutions with other users.

It can be found at www.teacher.apps.vokas.si/home

Users/stakeholders providing different perspectives
(cooperation/competition)

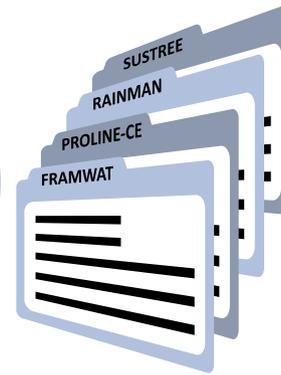


measures



issues

National tools for water management
(FWD, FD)



Simplified GIS:
issues, measures spatial
orientation, climate
change

Harmonized
catalogue
of measures

Link to existing toolboxes:
PROLINE, SUSTREE, RAINMAN, FRAMWAT, DRIDANUBE...

Figure 2: Conceptual scheme of the CC-ARP-CE Toolbox

Work package 3: Implementation and feedback – Toolbox verification

The integrated CC-ARP-CE Toolbox was evaluated through **national stakeholder training workshops**, as well as **applicability testing**. It was evaluated and validated in nine pilot actions across eight countries including Slovenia, Germany, Poland, Italy, Austria, Hungary, and the Czech Republic. Stakeholder workshops were carried out in each country, where user suggestions and proposals for enhancements were collected. For the applicability testing of the toolbox, a special Focus Group was established consisting

of Associated Partners and further key end-users of all partner countries. Overall, the feedback about the Toolbox was positive. However, further improvement is still needed in certain areas taking into account stakeholder feedback. The definitive version of the Toolbox – together with strategies for successful adaptation – is due at time of writing to be presented at a Final Conference of the project at the beginning of February 2022.

Work package 4: Joint strategy – Defining potential commitments in the improvement of planning process considering climate change

An integrated and collaborative joint strategy for improving existing water management practices is being developed by the partners, promoting the use of the CC-ARP-CE Toolbox. The gaps in existing strategies, policy documents and directives implementation at the operational level were identified. A group of representatives from all project partners examined over 100 policy documents containing water management and climate change adaptation strategies. The proposed vision for strategy improvement includes four general recommendations related to

the integration of assumptions from national/regional documents into the planning process, the integration of CC effects into the planning process, and the maximization of cross-sectoral benefits and prioritization of the implementation of nature-based solutions. Additionally, for operational level water management planning, detailed recommendations in the form of a step-by-step guideline were also prepared, with a focus on the CC-ARP-CE tool and cross-fertilized projects, as well as the assumptions of the European Climate Adaptation Platform "Climate-ADAPT."

onProject TEACHER-CE was an ambitious and exceptional combination of multiple preceding projects. The results, applied in the real world, have huge potential to help us better manage climate change and to prepare faster for any associated assessed risks. Due to a successful finalization of the project and its preserving value, the project partners have decided to continue further and submit a new project proposal very soon.

Article written by the entire GWP-CEE Secretariat Collective – visit www.gwp.org/en/GWP-CEE

The Danube Declaration



At the ICPDR's 4th Ministerial Meeting held on 8th February 2022, Ministers and Minister Representatives responsible for water management from Austria, Bosnia and Herzegovina, Bulgaria, Croatia, the Czech Republic, Germany, Hungary, Montenegro, Moldova, Romania, Serbia, Slovakia, Slovenia, Ukraine, and the European Union came together to endorse the ministerial "Danube Declaration".

So...What is this Declaration? What does it mean for the next six years of the Danube River Basin? Let's explore what makes the ICPDR's 2022 Danube Declaration such a powerful step forward towards cleaner, healthier, and safer waters for the entire Danube River Basin and all its inhabitants...

Every six years, a new and updated 'Danube Declaration' is signed and adopted by ICPDR contracting parties, updating, and extending the objectives and direction-of-travel for the River Basin. It's a vital part of the strengthening of the ICPDR's goals for improving and maintaining the Danube River Basin. Every Danube Declaration so far has of course highlighted the significance of the ICPDR as a coordinating mechanism within the basin for matters of transboundary water management – but each one also brings new issues to the table and revises old approaches for the future of transboundary water management.

Danube Declaration: Contents

- Adapting to Climate Change
- Addressing Pollution
 - Surface Waters
 - Groundwater
- Addressing Ecosystems
 - Hydromorphological alterations
 - Groundwater
 - Navigation
 - Nature protection
 - Hydropower
 - Marine Environment
- Addressing Flood Risks
- Cooperation and Public Participation
- Our Way Forward



Calls to action

2022–2027: A Renewal

Context

In its preamble, the 2022 Danube Declaration asserts the foundation upon which it – like the ICPDR itself – is built. The Declaration reasserts the Danube River Protection Convention, the document whose signing in 1994 led to the birth of the ICPDR. It appreciates the ICPDR's work as a body to ensure cooperation on the EU's WFD and FD while acknowledging how important it is for EU and non-EU states to cooperate on these important directives. It reiterates the ICPDR's three pillars of action: cleaner, healthier, and safer waters with a view to a healthier Black Sea ecosystem too. Finally, it welcomes the "transformative framework provided by the European Green Deal". This preamble demonstrates the nature of this Declaration as the keystone in the incrementally evolving framework of the ICPDR, and comprises a list of shared values and aims in the basin that grows every six years, broadening and strengthening a sense of fruitful transboundary cooperation in terms of both spirit and policy.

Ready for Change

In 2022, the Danube Declaration isn't mincing its words about addressing Climate Change. In 2018, the ICPDR already updated its own excellent Climate Change Strategy, laying out a way forward in the face of impending environmental shifts. Additionally, the ICPDR even recently added 'Effects of Climate Change' as a new, fifth SWMI (Significant Water Management Issue) – essentially making resilience to climate change one of the KPIs for the Danube. In this year's Declaration, measures are even more concretely built too. In the text, Ministers call for the development of "sustainable adaptation measures to urgently enhance resilience of aquatic ecosystems to climate change impacts", not to mention support for "water balance activities" and the enhancement of relevant good practices cooperation and exchange. It might be brief, but it's a forward-facing and bold declaration of intent ready to meet the expectations and aspirations of the world's most international river basin at a moment where we find ourselves at the thin end of the Climate Change 'wedge'.

Targeting Pollution

As shown in the results of successive Joint Danube Surveys (JDSs – visit danubesurvey.org for more) amongst other monitoring efforts, the ICPDR can be proud of the progress made on limiting hazardous and polluting emissions into the waters of the Danube River. Despite immense pressures, the surface and groundwaters are in large part healthy, with the results of JDS4 in 2019-2020 showing the benefits of restoration efforts in various key indicator species and the resilience of Danubian biodiversity. As with all things environmental however, there remains little time for self-congratulating – and the Danube Declaration makes clear a real sense of action.

Article 13 of the Danube Declaration 2022 commits the basin to implementation of additional necessary actions for surface waters, namechecking urban spaces, industry and mining plus agriculture as key candidates for future action. Article 14 highlights the determination of ICPDR contracting parties to implement policy recommendations on reducing pollution and improving both hazardous substances management and the safety of tailings management facilities (a continually quiet danger stemming from the vital mining industries in our region). Vitaly, article 15 of the 2022 Danube Declaration specifically commits to maintaining and updating as necessary key technical instruments including the the Danube Transnational Monitoring Network (TNMN) and Danube Accident Emergency Warning System (AEWS).

Multifaceted Actions to Preserve a Multifaceted Basin

Elsewhere, the Declaration turns its focus to biodiversity and protecting migration corridors and complex ecosystems disrupted by manmade developments. Sturgeons



↑ The moment at the 4th Ministerial Meeting when Ministers and representatives from throughout the Danube River Basin voted to adopt the Danube Declaration 2022

continue to be a priority species for example, providing a key indicator for a variety of riverine lifeforms under threat by river blockages such as the Iron Gates dam. Additionally though, upholding healthy and sustainable river-based sectors such as hydropower, inland navigation, and groundwater extraction remains a complex focus of the Danube Declaration. While connected to a variety of environmental impacts, industries such as these are still vital to maintain, and contribute to achieving a variety of Sustainable Development Goals in the Danube River Basin. In this sense, the nuanced approach to creating a sustainable future Danube described in this declaration is about forging fruitful partnerships with, say, hydropower as much as conservation bodies.

In short, the 2022 Danube Declaration goes a long way towards preparing for six years of facing down future challenges. Preparing the Danube River Basin to play its part in a broader European project is a priority for which we must make no half measures. This Declaration does just that, signalling a bolder programme of measures to be taken that could put the Danube River Basin at the forefront of an ever-greener European continent.

Tristan Bath is a consultant and editor of Danube Watch, who has been calling the Danube home for several years.

The Ministers of the Danube

One of the highlights of the Fourth Danube Ministerial Meeting saw Ministers and representatives giving statements on behalf of their countries, renewing commitments, and acknowledging progress in our shared river basin. The following texts are abridged extracts from longer statements given at the meeting by a variety of Ministers & Representatives from ICPDR Contracting Parties.



Austria
Ms. Elisabeth Köstinger

Minister for Agriculture, Regions, and Tourism

“ ... ”

“20 years ago, 14 states and the European Union joined under this umbrella. They all committed to sustainability and serving the people of the region, and our vision remains fully dedicated to the needs of a joint approach to solving the transboundary and cross-sectorial challenges of the Danube and its tributaries. All of this has to keep in mind Climate Change.”

...



Bulgaria
Mr. Borislav Sandov

Deputy Prime Minister & Minister of Environment and Waters

“ ... ”

“I would like to focus on an overarching issue: climate change adaptation. Adaptation needs commitment, and the involvement of different governmental and non-governmental actors is essential to building resilience. I would like to emphasise that the vision has been drawn, the goals have been set, and the tools have been identified. Now it is time for action because the mission is possible.”

...



Czech Republic
Ms. Anna Hubáčková

Minister of Environment of the Czech Republic

“ ... ”

“The Danube, and especially its tributaries, have always been near to my heart because I have spent most of my life on the banks of the Morava River – a major tributary on the Danube. Over the years I have seen both devastating floods and long periods of drought and water scarcity. But I have also seen pollution decrease and biodiversity thrive. It makes me very proud to see the ongoing cooperation of Danube countries to tackle these issues together.”

...



Bosnia-Herzegovina
Mr. Mirza Hujic

Assistant Minister of Foreign Trade and Economic Relations

“ ... ”

“There is a long tradition of international cooperation in shared river basins. The existence and role of the ICPDR is of great importance for Bosnia-Herzegovina, taking into account that 76% of the total area of Bosnia-Herzegovina belongs to the catchment area. Governing this catchment area has a direct impact on the development of the fields of water supply and agriculture, industry, fishing, electricity generation, tourism, and water protection.”

...



Croatia
Mr. Mario Siljeg

State Secretary in the Ministry of Economy and Sustainable Development

“ ... ”

“What we consider particularly important is the Danube Flood Risk Management Plan. We witnessed severe consequences of the devastating floods in Europe last summer. For this reason, we welcome every measure. We are aware that complete flood protection is not possible, it is however certain that climate change contributes to the frequency and intensity of floods, thus this issue is becoming increasingly important to us, and must be high on the agenda.”

...



Germany
Dr. Bettina Hoffmann

Parliamentary State Secretary, Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection

“ ... ”

“Solutions are only possible together, as rivers do not know borders. Nature-based solutions and restoration of ecosystems are important approaches, especially against the background of the UN Restoration Decade and CBD Kunming conference. We have come a long way, but our work is not finished. We must continue our efforts jointly to achieve our objectives and we will have to jointly address new challenges such as climate change.”

...



Hungary
Mr. Tibor Pogácsás

State Secretary of the Ministry of Interior

“ ... ”

“The United Nations has chosen groundwater as the theme for World Water Day 2022 under the motto “Let’s Make the invisible, visible”. Hungary derives almost all of its drinking water supply from groundwater, so it is of utmost importance that we take the right measures to sustainably use our drinking water and groundwater resources, improve their quality, and thus protect them for future generations.”

...



Montenegro
Mr. Aleksandar Stijović

Ministry of Agriculture, Forestry and Water Management of Montenegro

“ ... ”

“Based on climate projections and participation, it can generally be concluded that flood events are more frequent and more intense as a result of climate change. I believe our work will result in successful adaptation of the Declaration, which will be the basis for building the greater protection and health of people, environment, heritage, and economy.”

...



Romania
Mr. Barna Tanczos

Minister of Environment, Waters and Forests of Romania

“ ... ”

“Despite important progress towards our objectives, we still have more to do together. In this respect, reduction of water pollution is the result of large investments into wastewater treatment, particularly from urban settlements. In our opinion, we have to increase our cooperation related to water environment, and concerning this issue I would like to highlight our efforts done for the protection and conservation of sturgeons, including their passage at the Iron Gates dam. For these fish however, there will be no future without the participation of upstream countries too.”

...



Serbia
Ms. Jelena Blagojević

State Secretary – Ministry of Agriculture, Forestry, and Water Management

“ ... ”

“This process helped us gain insight into all that needs to be done, and has been the opportunity to examine EU directives in the Republic of Serbia. This will facilitate Serbian negotiations in connection with its accession to the European Union. Our country has fallen behind other Danube countries, since only slightly more than 10% of our citizens have access to wastewater treatment. Our priority is to construct wastewater treatment plants.”

...



Slovakia
Mr. Ján Budaj

Minister of Environment

“ ... ”

“Today we face the urgent challenge of linking water use with water protection. This is further complicated like other further challenges, namely adaptation to the adverse effects of climate change, protection of biodiversity, and the transition to a carbon neutral economy. Since the Autumn of 2020, more than 200 experts have participated in developing Slovakia’s water policy.”

...



Slovenia
Mr. Luka Štravs

Leader, Water Management Division

“ ... ”

“During the catastrophic floods in the Sava River Basin in 2014, we saw more than 100 casualties and enormous material damage. With the support and leverage of the international community along with local and regional development, conditions were soon restored. One of the most important achievements of the restoration process was the establishment of a contemporary Sava Flood Forecasting Warning System, which has already seen potential damage from floods reduced.”

...



Ukraine
Mr. Mykhailo Khoriev

Deputy Minister Environmental Protection and Natural Resources of Ukraine

“ ... ”

“Having recognised such issues as pollution by plastics and chemicals of emerging concerns, we would appreciate reinforcement of transboundary cooperation on these issues, as well as new basin-wide projects and initiatives. We appreciate all the efforts done by the ICPDR in the fields of cooperation, knowledge sharing, and public participation – and we reconfirm our commitment to implement the Danube Ministerial Declaration 2022 fully.”

...



European Union
Mr. Patrick Child

Deputy Director-General in charge of Coordination of Resourceefficiency policies and instruments in DG Environment (ENV)

“ ... ”

“We have a lot to celebrate today because, despite the known challenges, the Danube stands out as one of Europe’s best examples of successful transboundary cooperation. It’s taught us many lessons that we can apply in other contexts, and it gives me great hope for a better future. That said, the problems we’re facing are very real: we have droughts and floods brought by climate change, pollution from industry, pressures from infrastructure and hydropower, and other modifications to the river. Yet – the future is bright!”

...

DANUBE RIVER BASIN MANAGEMENT PLAN

A Joint Vision For Sustainable River Basin Management In Our Shared Basin

UPDATE 2021

BY THE ICPDR SECRETARIAT

“ **What is the Danube River Basin Management Plan (DRBMP)?**

As we've covered in the recent issues of Danube Watch, the ICPDR spent much of 2021 reviewing and consulting the public on updating the Danube River Basin Management Plan (DRBMP).

Since the publication of the first DRBMP back in 2009, the ICPDR updates the plan every six years. This management plan offers rich and comprehensive information about water management issues. The 2021 update identifies the priorities for joint water resources management throughout the Danube River Basin for the coming six years. They include assessments of the current situation and measures towards the achievement of “good status” in waters of the Danube River Basin until 2027. The DRBMP received its first update in 2015 followed by its second update in 2021. The third update is due for 2027. A closely related strategic document focusing on the assessment and management of flood risk in the Danube River Basin – the DFRMP – was first published in 2015, and received its first update concurrently with the DRBMP in 2021.

Why does the ICPDR update its Management Plans?

The ICPDR acts as a joint platform for the implementation of the Danube River Protection Convention (its founding legal document) along with the European Union's Water Framework Directive (WFD) and Floods Directive (FD). These docu-

ments, along with many more such as the EU Birds and Habitats Directive and EU Biodiversity Strategy 2030, call for the development of plans like these, and guide the work of the ICPDR towards achieving its three key pillars – cleaner, healthier, and safer.

More specifically, the ‘Joint Program of Measures’, which is part of the Danube River Basin Management Plan (DRBMP), focuses on five Significant Water Management Issues (SWMIs) – Organic Pollution, Nutrient Pollution, Hazardous Substances Pollution, Hydromorphological Alterations, and Effects of Climate Change. These can affect the status of surface waters like rivers lakes, transitional and coastal water bodies, and groundwater bodies. Importantly, our approaches to these issues require constant renewal.

The ecological situation evolves, supra-national policies continue to change, and our understanding of the possible causes of and solutions to imbalances in our shared basin's water status is always improving. This is why it's vital for us, the ICPDR, to review the DRBMP every six years. Additionally, we included an emboldened programme of public consultation during this update process. Along with information initiatives aimed at keeping our stakeholders and the public well-informed, such as Danube Day, this forges a

deep connection between the DRBMP and the public of the Danube River Basin.

Our Vision For The Future



The key question at the heart of the DRBMP Update 2021 is essentially: **what does the ICPDR hope to achieve for the future of the Danube River Basin and how will this be achieved?**

In the context of the European Green Deal the recent international mood has further heightened its focus towards the future, not only for the Danube, or for Europe, but globally. Against this backdrop, the ICPDR's many aims seem all the more relevant and urgent.

The ICPDR's “SWMI Report” from 2019 defined several key issues to be addressed by the DRBMP Update in 2021. Previous SWMI reports in 2007 and 2013 respectively had already focused on four key issues affecting the status of the Danube River Basin's waters:

Significant Water Management Issues (SWMIs)

Significant Water Management Issues, or SWMIs, are key issues that are jointly identified and reviewed as part of the river basin management cycle. SWMIs can affect the status of surface waters like rivers, lakes, transitional and coastal water bodies, and groundwater.

- 1 ♦ Pollution by organic substances,
- 2 ♦ Pollution by nutrients,
- 3 ♦ Pollution by hazardous substances
- 4 ♦ and Hydromorphological alterations (also including since 2019 alteration of sediment balance).
... then in 2019, the ICPDR agreed to add a new, fifth SWMI:
- 5 ♦ Effects of climate change (drought, water scarcity, extreme hydrological phenomena and other impacts).

Let's take a brief look at the key issues at the heart of the DRBMP Update 2021.

Organic Pollution



Wastewater contaminated with organic pollution – feces and household, agricultural, or industrial waste that can be digested by microorganisms – has caused big changes to the waters of the Danube and its tributaries, creating an unfriendly and unhealthy environment for many aquatic creatures. Efforts to clean up this waste to ensure much CLEANER waters for people to enjoy and HEALTHIER ecosystems for a better life began decades ago and are still underway.

Our Vision:

Zero emissions of untreated wastewaters into the waters of the Danube River Basin.



Nutrient Pollution

When wastewater or fertilizer nutrients such as nitrogen or phosphorus get into surface waters, they encourage algae growth, which can block sunlight from other aquatic plants with disastrous knock-on effects. Nutrient pollution entering water bodies via so-called point sources (urban and industrial wastewater discharges), and diffuse pathways (polluted runoff, sediment input and subsurface flow from agricultural fields, urban areas and natural land) can lead to massive algae blooms. A comprehensive international effort is currently underway to enhance wastewater treatment and establish good agricultural practices that will balance the needs of water and

agriculture to make water CLEANER and ecosystems HEALTHIER.

Our Vision:

Management of nutrient emissions via point and diffuse sources in the whole Danube River Basin ensuring that neither the waters of the Danube River Basin nor the Black Sea are threatened or impacted by eutrophication.



Hazardous Substances Pollution



When we hear the word “pollution”, we think of hazardous substances, such as toxic chemicals and metals that come from industry, mining, farming, and everyday household activities, including the use of garden pesticides, cosmetics, or medicines/pharmaceuticals. Chemical pollutants can find their way into the environment through municipal wastewater, runoff from agriculture, industrial facilities, air pollution, sewer overflows, and accidental events. Depending on their concentration, they can either cause immediate toxicity or slowly accumulate in the ecosystem over time. Both pose a serious threat to human and aquatic life. Aiming for CLEANER waters that are HEALTHIER and SAFER for both people and aquatic life, new technologies, updated regulations, scientific projects and practical measures are being implemented to reduce or halt the spread of hazardous substances in the waters of the Danube River Basin.

Our Vision:

No risk or threat to human health and the aquatic ecosystem of the waters in the Danube River Basin and Black Sea waters impacted by the discharge of hazardous substances.



Hydromorphological Alterations



Over centuries, human activities and constructions have led to fundamental changes in the physical structure and appearance of our rivers, lakes, and coastal waters. Along the course of the Danube

and its tributaries, natural habitats have been substantially decreased which is reflected in deteriorated water status and significantly reduced biodiversity. Migration routes for fish species have been blocked by diverse barriers. Today, however, Danube countries are working hand-in-hand to make our waters a

Our Vision:

Danube waters managed in such a way as to eliminate the negative impacts on hydromorphology and further on to the aquatic ecosystem and its natural development and distribution.



HEALTHIER home for aquatic life once again, with great benefits for society.



Effects of Climate Change

Climate change is already taking its toll on rivers such as the Danube, leading to increased water scarcity, and other meteorological and hydrological extremes. In 2019, the ICPDR added “Effects of climate change (drought, water scarcity, extreme hydrological phenomena and other impacts)” to its list of SWMIs, indicating it as a top priority issue for the Danube River Basin. Whilst preventive measures will be taken to mitigate impacts of climate change, it remains essential to adapt to its unavoidable impacts and minimise the related risks, thus increasing the resilience of aquatic and water-dependent ecosystems.

Our Vision:

To make full use of our wealth of knowledge to adapt, achieve resilience, reduce vulnerability, and ultimately sustain the inherent ecological and cultural value of the aquatic environment of the Danube River Basin.



Find out more!

You can read the full text of the DRBMP Update 2021, or read through our brand new and freshly redesigned brochure summarising these vital plans on the ICPDR Website! Just visit:
<https://icpdr.org/main/publications/danube-river-basin-management-plan-drbmp-update-2021>



DANUBE FLOOD RISK MANAGEMENT PLAN

A Joint Vision For Sustainable Flood Risk Management In Our Shared Basin

UPDATE 2021

BY THE ICPDR SECRETARIAT

“ **What is the Danube Flood Risk Management Plan (DFRMP)?** ”

The Danube Flood Risk Management Plan Update 2021 was created at the same time as the DRBMP Update 2021. While the latter is a document focusing on assessment and measures towards the achievement of “good status” in waters of the Danube River Basin, the latter is more specific in its focus on floods and related phenomena.

Floods are natural phenomena.

They have shaped natural landscapes, created habitats, and supported ecosystems in floodplains, wetlands, and other lowlands since time immemorial. Floods are impossible to prevent entirely, although measures may be taken to reduce their frequency and the damage they cause.

Every six years, the ICPDR updates its DFRMP (as well as its DRBMP) focusing on the assessment and management of flood risks in the Danube River Basin. 2021 marks the first update to the DFRMP, the first version of which was published in 2015. The second update is due for 2027. This management plan offers rich and comprehensive information about flood risk management measures to be taken in the Danube River Basin. Flood Risk means the combination of the probability of a flood event and of the potential adverse consequences for human health, the environment, cultural heritage and economic activity associated with a flood event.

Flood risk management plans have to define appropriate objectives and include measures to achieve these objectives. The following objectives of the DFRMP were agreed upon by the ICPDR in 2015, and continue to form the backbone of the updated plan as of 2021:

- ◆ **Avoidance of new risks**
- ◆ **Reduction of existing risks**
- ◆ **Strengthening resilience**
- ◆ **Raising awareness**
- ◆ **Promoting the solidarity principle**

These objectives focus on the reduction of potential adverse consequences of flooding for human health, the environment, cultural heritage and economic activity. They address all aspects of flood risk management focusing on prevention, protection and preparedness, including flood forecasts and early warning systems and taking into account the characteristics of the Danube River Basin.

Floods Directive

The ICPDR acts as a platform for the implementation of the EU Floods Directive (FD), key legislation on the assessment and management of flood risks. Its full name is Directive 2007/60/EC of the European Parliament and of the Council of 23 October 2007 on the assessment and management of flood risks. The FD is connected to the Water Framework Directive (Directive 2000/60/EC), stating that measures shall take into account the relevant environmental objectives in the WFD.

The ICPDR acts as a joint platform for the implementation of the Danube River Protection Convention, our founding legal document, along with the European Union’s Water Framework Directive (WFD) and Floods Directive (FD). The benefits of these important pieces of legislation are for the entire basin and its people.

Our Focus In 2021

The measures described in the DFRMP focus particularly on:

- ◆ **Prevention** For example, this could mean preventing damage caused by floods by avoiding construction of houses and industries in flood-prone areas, or by adapting future developments to the risk of flooding.
- ◆ **Protection** For example, this could mean taking measures to reduce the impact of floods in a specific location, including the restoration of floodplains and wetlands.
- ◆ **Preparedness** This could include awareness-raising activities and the provision of practical information to the public on what to do in the event of flooding, for example, by making flood risk maps available.

Objectives

As stipulated in the EU Floods Directive (FD), appropriate objectives for the management of flood risks should be established focusing on the reduction of potential adverse consequences of flooding for human health, the environment, cultural heritage and economic activity, as well as other initiatives reducing the likelihood of flooding. The following



objectives of the DFRMP for the Danube River Basin District were agreed upon by the ICPDR in 2015 – and continue to form the backbone of the plan’s 2021 update.

Avoid New Risks

New buildings in areas of potential flood risks present an easily avoidable risk. Inappropriate spatial planning as well as urban, rural and industrial development and construction in the areas of potential significant flood risk will lead to future increases in damages, losses and casualties. *All such activities shall be planned and carried out without having any impacts on increasing the risk of flooding.*

Reduction of Existing Risks

The purpose of the FD is to establish a framework for *the assessment and management of flood risks, aiming at the reduction of the adverse consequences associated with floods.* All FD implemen-



tation steps in the Danube River Basin have been accomplished following this principle, including Preliminary Flood Risk Assessment (PFRA), along with the development of both flood maps and of the Danube Flood Risk Management Plan (DFRMP).

Strengthening Resilience

To improve its resilience against flooding, society must have an *adequate emergency response both during and immediately following flooding events.* This helps to limit adverse effects and assists in recov-



ery to regain a standard of living comparable to – or perhaps even better than – how it was prior to the flooding event.

Raising Awareness

Public participation in decision-making is a cornerstone of successful implementation of integrated and comprehensive management plans, both to improve the quality and the implementation of the decisions, and to give the public the opportunity to express its concerns and to enable authorities to take due account of such concerns.



Promoting the solidarity principle

The solidarity principle is very important in the context of flood risk management. In the light of it, countries should be encouraged to seek a fair sharing of responsibilities, when measures are jointly decided for common benefit. The FD explicitly stipulates this principle with regard to EU members, and the DFRMP extends it to all Danubian countries.

What is the solidarity principle?

The ICPDR is fully aware of the importance of applying the solidarity principle; one should not pass-on water management problems from one region to another. That is why the ICPDR agreed that measures with downstream effects shall have key priority at the basin-wide level. According to the DFRMP: “Countries shall not apply measures which, by their extent and impact, significantly increase flood risks in the countries neighbouring upstream or downstream. Countries should take all possible steps not to export the flood problems to their neighbours.”

Find out more!

You can read the full text of the DFRMP Update 2021, or read through our brand new and freshly redesigned brochure summarising these vital plans on the ICPDR Website! Just visit:

<https://icpdr.org/main/publications/danube-flood-risk-management-plan-dfrmp-update-2021>



The Danube TMF Project

Towards sustainable management of the mining tailings storage facilities in the Danube River Basin



Mining is one of the most traditional and historically relevant industrial sectors in the world, providing valuable ores and minerals for further processing. Nowadays it is becoming even more important, as with the spread of smart and advanced technologies, a steep rise of connected mining activities is expected. However, mining also represents a significant waste stream generated by its operations. The safe long-term management of the fine-grained mineral processing waste needs to be ensured in appropriately designed, operated and maintained storage facilities.

The Problem

The dramatic accidents in the last two decades worldwide but also in the Danube River Basin (DRB) have shown that failures of Tailings Management Facilities (TMFs) can lead to major catastrophes for both human health and environment. TMFs are storage facilities for the so-called tailings, the fine-grained waste material derived from a mining processing plant. Tailings represent unrecoverable and uneconomic minerals, metals, chemicals and organic materials and are frequently transported by hydraulic methods to and deposited and handled at TMFs in the form of slurry. Due to the physical characteristics and/or chemical nature of substances that can be found in the tailings, but also due to the significant amounts that need to be stored, TMFs pose

a risk to the surrounding environment, population and economic values. Although their safety conditions have been significantly improved over recent last decades in many countries thanks to strict requirements and respective measures, the safety of a number of TMFs is still lower than expected, especially due to economic constraints and lack of management capacity.

Furthermore, a steep increase in mining activities over the next decades is expected, including an increase in the number of TMFs, as smart and advanced technologies will force a dramatic rise in demand for specific metals like cobalt, copper, lithium and nickel. Thus, society may also have to face an increasing risk of TMF failures with potential casualties and ecological damages if TMF safety is not managed appropriately, i.e., in compliance with standards and taking climate change impacts into account. The potential consequences of TMF disasters may have significant cost implications and the post-accident costs to be paid for rehabilitation and remediation are usually much higher than those of the preventive safety measures.

Situation in the DRB

More than 300 TMFs are located in the DRB, for which adequate safety conditions and measures have to be put in place. About 25% of these sites are associated with high accident hazard due to large amounts of hazardous substances stored in tailing ponds.

Another 25% of the TMFs are considered as high-risk accident hotspots where TMFs with significant hazard are located close to densely populated areas and/or a major water body. Past accidents at Baia Mare (Romania) in 2000 and Ajka (Hungary) in 2010 dramatically demonstrated how serious the impacts of inappropriate TMF operation might be on people, environment and water resources. These events call for the development and implementation of consistent and harmonised management strategies, practical safety assessment tools and suitable safety measures complying with a minimum set of standards throughout the DRB. The ICPDR, being the organisation in charge of transboundary water management in the DRB, has been dealing with accident prevention and control including disaster events related to TMFs since its establishment.

The Danube TMF Project

Recognising the importance of the issue, the ICPDR implemented the Danube TMF Project in 2019-2020 to help Danube countries cope with these challenges and improve safety conditions of the TMFs. The project was financed by the Advisory Assistance Programme of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety and was supervised by the German Environment Agency (UBA). The overall objective of the project was to contribute to strengthening the technical and management capacity at



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the concerned facilities and responsible authorities by providing them with practical tools for self-assessment and inspection, respectively. This will ensure that in the medium term a common set of minimum standards and safety requirements are respected in the DRB and the population and water bodies are protected.

Within the framework of former pilot projects of UBA, a TMF-Methodology was worked out to support regional and local assessment of TMF safety. It builds on the UNECE TMF Safety Guidelines, turning it into practical tools. The methodology comprises an index-based evaluation of the hazard potential for a large number of TMFs, the so-called Tailings Hazard Index (THI), and a detailed checklist for the safety analysis of individual TMFs. Building on the strengths of the methodology but also improving and adapting it based on up-to-date technical knowledge and best available techniques (BAT), Danube countries are provided with a set of practical tools to improve safety conditions of TMFs and to strengthen the capacity of operators and authority inspectors.

The THI has already proved its usefulness in directing limited country resources (financial and personnel) to TMFs representing the highest hazard potential. The underlying criteria used for the THI approach have been improved by taking up the results of a historical TMF failure analysis. As the THI takes only hazard potential into account, the potential impacts of individual TMF failures posing different threats to the environment and population are not considered. This problem has been solved by defining a potential risk zone in the vicinity of a TMF based on the dimensions of previous accidents for assessing the environment (aquatic ecosystem) and the population at risk. The result of this approach turns the THI into the Tailings Risk Index (TRI), which is even better reflecting the most dangerous TMFs in one country with regard to the potentially affected population and environment.

A preliminary TMF inventory was developed for the DRB based on open access data and official national information. The inventory includes basic data and a preliminary THI assessment for each identified TMF. Moreover, the TRI method was also tested and applied to all TMFs in the DRB. The results are demonstrated by an interim TMF mapping for the Danube region, accompanied with respective hazard and risk assessments.

The checklist for operating TMFs was revised and updated to ensure good harmony with EU legislation and better adaptation to the DRB conditions. Moreover, the safety evaluation tool was amended to make it more suitable for practical purposes. The checklist revision and update were in line with the relevant technical reports, EU legislation and BAT Reference Document and were based on an on-site expert visit carried out at the Baia Mare TMF. Competent authorities, TMF operators, concerned stakeholders and the public in the DRB and beyond are encouraged to apply the updated methodology, which is intended to contribute towards limiting the number of accidents at TMFs and minimising the severity of their consequences for human health and the environment.

Added value of the project

The outcomes of the Danube TMF project provide practical tools for risk-based TMF prioritization and detailed safety assessments, which have been adapted to the conditions of the DRB and could therefore be applied in several countries. The project started paving the way towards a consistent TMF safety assessment methodology at both regional and facility level and its results offer a reliable concept and sound technical basis for follow-up national activities. The ICPDR highly recommends adopting these tools at national level in the DRB and encourages the Danube countries to establish national or regional capacity building programs and conduct regular training events for TMF safety management. Moreover, the outcomes served the elaboration of a

for the DRB that provides recommendations for the Danube countries at both the technical and policy-making level on how to improve the safety conditions of the TMFs located in the DRB. Based on the project outcomes, the ICPDR developed a public brochure to further raise awareness of the issue.

Importantly, the project provided valuable inputs to the development of the Danube River Basin Management Plan Update 2021, currently published by the ICPDR. The preliminary TMF inventory was completed and integrated into the ICPDR data system based on officially approved TMF data from all countries. This made it possible, first time ever, that the TMFs are included into the basin-wide pressure assessment by presenting the hazard and risk associated to the TMFs located in the basin. Moreover, the Joint Program of Measures includes recommendations on how to ensure adequate safety conditions at the TMFs. With this, Danube countries jointly committed themselves to prevent transboundary pollution of waters related to TMF disasters.

Future Outlook

Bearing in mind the high number of TMFs in the DRB that may cause accidents even if appropriate safety measures are in place, the ICPDR intends to keep the TMF issue high on its agenda. To further promote and capitalize the results of the Danube TMF Project in the DRB, strengthen the practical aspects and the sustainability of the provided tools and address additional important aspects such as disaster management and preparedness, the ICPDR, in cooperation with the EUSDR PA5 is willing to implement a follow-up project in the coming years.

Further information

The final report of the project can be downloaded from the UBA website. The recommendation paper and the public leaflet are available on the ICPDR website.

Adam Kovacs is the Technical Expert on Pollution Control at the ICPDR.



WACOM:

Water Contingency Management in the Sava River Basin

By Primož Banovec, PhD, (University of Ljubljana), Robert Mikac, PhD (AZUR), Samo Grošelj (ISRBC)

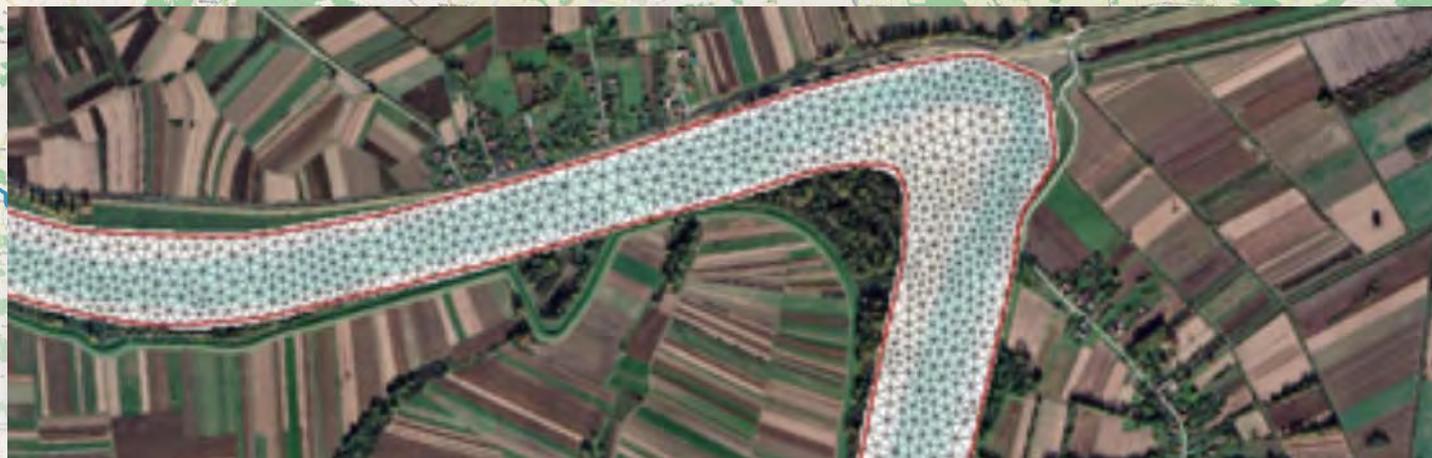


Figure 1: An example of a model mesh with the underlying terrain grid

Introduction

The risk of accidental pollution and floods is one of the major challenges in all trans-boundary river basins. The recent major accidental pollution in the Sava River Basin, which occurred on the Spreča River (BA-2018) and the Rižana River (SI-2019) including the worst floods in May 2014, showed that the system of coping with such events must be advanced with stronger cooperation between varying sectors, such as water management, civil protection, navigation, and hydropower. They triggered the implementation of the Water Contingency Management in the Sava River Basin (WACOM) project.

The lead partner is the University of Ljubljana (SI), while the other partners are water management institutions such as the Slovenian Water Agency (SI) and Croatian Waters (HR), hydropower company HESS (SI), the Ministry of the Sea, Transport, and Infrastructure (HR), along with national authorities for navigation. In addition,

the civil protection sector is covered by the Association for Risk Management (AZUR) and Civil Protection Administration of the Republic of Srpska (BA). The other partners are the Jaroslav Černi Institute (RS) and the Sava Commission.

The project commenced in July 2020, is due to finish in December 2022, and is co-funded by European Union funds (EDRF, IPA).

Main and specific objectives of the WACOM project

The project's main objective is to reduce environmental risks related to accidental pollution and floods. More specifically however, additional objectives are to ensure:

- ◆ Improved transnational procedures for response to accidental pollutions and floods;
- ◆ Improved transnational cooperation;
- ◆ More efficient joint response in the case of accidental pollution/flood emergencies.

The project strives to strengthen the transnational and trans-sectorial cooperation among institutions, responsible for water and flood management and civil protection in the phases of preparedness and response.

Legal Background

Recognizing the vital importance of trans-boundary cooperation, the Parties to the Framework Agreement on the Sava River Basin (FASRB), should undertake measures to prevent or limit hazards and reduce and eliminate adverse consequences of floods and incidents involving substances in the water. The Parties are obliged to establish a coordinated or joint system of measures, activities, warnings, and alarms for extraordinary impacts on the water regime.

In implementing the FASRB, the Parties have already concluded four protocols: Protocol on Navigation regime, Protocol on Prevention of Water Pollution Caused by Navigation, Protocol on Flood Protection

Implementation

The project is divided in six work packages as shown in the figure below:



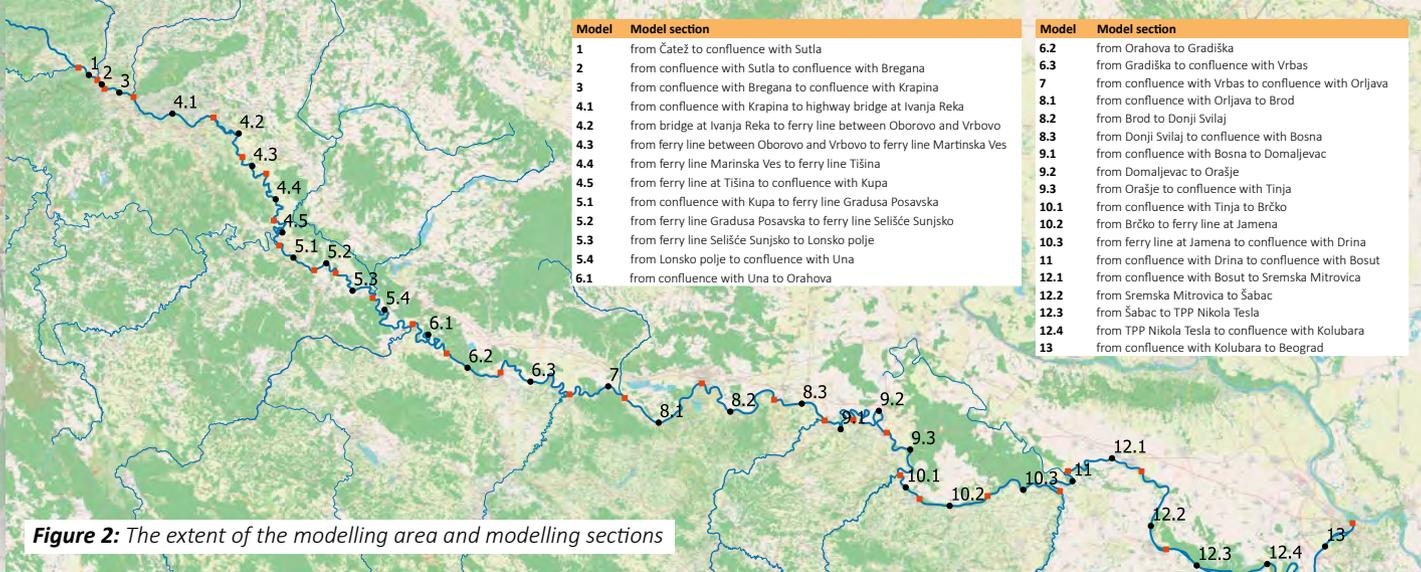


Figure 2: The extent of the modelling area and modelling sections

and Protocol on Sediment Management. Meanwhile, the Protocol on Emergency Situations is foreseen to be harmonized soon. Three of them formulate the basis for the implementation of the WACOM Project.

The process of mapping institutions, procedures and activities was completed in the first half of 2021 and carried out within three areas – civil protection, water management and river navigation, and at different levels (strategic, tactical, and operational) with a particular interest in current legislative procedures. However, the entire mapping process was also conducted and finished under extreme circumstances during the COVID-19 pandemic, with lockdowns in effect in all participating countries for most of the time. It was essential to strive to meet multiple functions in order to follow the initial project assumptions/settings and examine the current situation. This also served as a gap analysis

to identify specific areas where it was necessary to change and/or create new procedures. Four national workshops and three regional workshops were held in spring and autumn 2021 within this activity.

In the framework of the WACOM project a **rapid joint preparedness and response toolbox** will be created in line with the operational family of tools developed and used by the ISRBCL: the Geoinformation System for the Sava River Basin (Sava GIS), Hydrological Information System of the Sava River Basin (Sava HIS) and Flood Forecasting and Warning System in the Sava River Basin (Sava FFWS). The modelling module is based on the two-dimensional (2D) hydraulic and oil spill propagation modelling, with the oil spill modelling based on the precalculated hydraulics of the river sections. The extent of the modelling area and modelling sections are shown in **figure 2**.

for exchanging information and coordinating the plethora of identified institutions in the transnational context. For example, three out of four Sava countries follow the USA's example – National Incident Management System (NIMS), and its specific component, the Incident Command System (ICS) – in incident management processes. For that reason, the ICS was found suitable for the definition of the key transnational emergency processes, certainly with several adaptations necessary.

The toolbox will be verified at table-top exercises in May 2022 providing a unique opportunity for stakeholders involved in disaster rescue, protection, and rehabilitation, to learn, improve their skills and competences and form cross-sectoral links. The main purpose of exercises is to increase effectiveness in their rescuing, protection, and rehabilitation activities when disaster occurs.

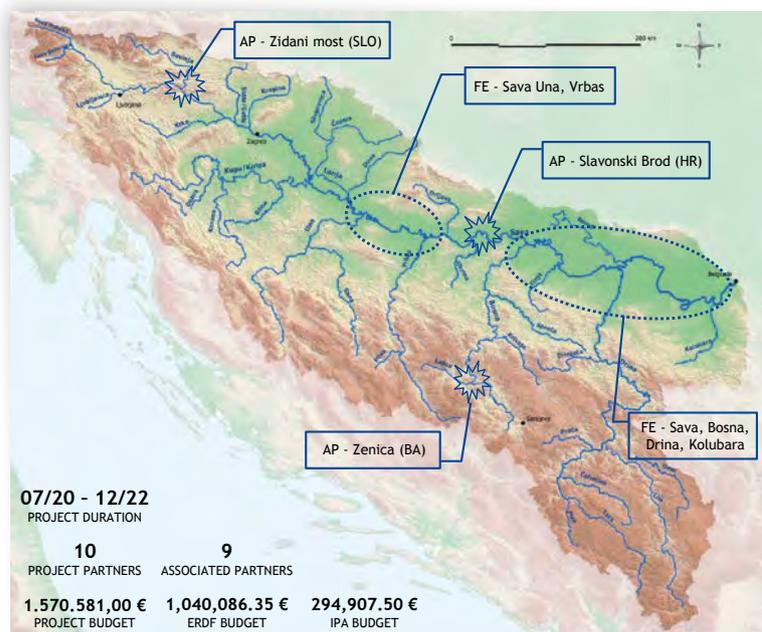


Figure 3: Locations of the emergency events at Zidani most (SI), Slavonski Brod (HR) and Zenica (BA).

The 2D hydraulic models are based on a flexible mesh system to provide an adequate level of resolution, thus allowing model simulations to be performed on a reasonable timescale. An example of the computational mesh is presented in **figure 1**.

All the same the specific challenge is identification of a suitable framework

The project will finish in December 2022, and the final public event will be organized at the end of November, tentatively. The basic aim of this event is that the public will be informed on the main project outputs and results – in any case it is expected that the stakeholders will recognize the potential of these exercises.



Further information

We would like to invite you to follow the activities on the WACOM project on the project website and social media, e.g., Facebook and Twitter where the information on the project is updated regularly. <https://www.interreg-danube.eu/approved-projects/wacom>



Danube Hazard m³c

Towards transnational control and reduction of hazardous substances water pollution in the Danube River Basin

What's the problem?

Human activities provoke the emission of hundreds of thousands of chemicals into the environment. Many of these substances are persistent, ubiquitous and bioaccumulative, and even at very low concentration levels their presence in water bodies can pose a risk to human and environmental health. In contrast to, e.g., nutrients, knowledge on hazardous substances in the Danube River Basin is very poor and fragmented, especially with respect to the identification and quantification of the pathways of emissions into water bodies. Without a good systemic understanding, it is not possible to design efficient management strategies, let alone harmonize their management beyond national borders. Based on these premises, the Danube Transnational Programme funded the Danube Hazard m³c project with the main objective of paving the path for a durable and effective transnational control and reduction of hazardous substances water pollution in the basin. The project started in July 2020 and will end in December 2022.

What's being done?

The project builds on the three elements of water governance: **M**easuring, **M**odelling and **M**anagement, accompanied by Capacity building.

Measuring: Key to better understanding the current levels of water pollution by hazardous substances, and the relevance of different emission pathways in the basin, is to merge the fragmented and dispersed available information into a database on concentration of hazardous substances in rivers, soils, wastewater treatment effluents and groundwater for all partners' countries. Besides the great value of the collected data and of their evaluation, the project is showcasing the development of a much-needed integrated, well-documented and harmonized inventory across compartments, which is the essential basis for any modelling activity and evidence-based decision process. The database will be made available for the Danube countries so that they can make use of the collected information at national level.

Secondly, it's vital to get out in the field and monitor the concentration of hazardous substances in different environmental compartments, to close critical gaps. Within the project, cost-efficient and integrated monitoring approaches are being tested in seven very different pilot regions across the basin. These are: Ybbs and Wulka (AT), Zagyva and Koppány (HU), Vișeu and Someșul Mic (RO), Vit (BG). Bearing in mind the large number of chemicals present in the environment, the project is focusing on 17 target substances of high relevance in the Danube River Basin and representative for different major sources and emission pathways.

Modelling: Two complementary modelling approaches are used in the project. The MoRE model (Modelling of Regionalized Emissions) is being applied to the seven pilot regions to quantify emission loads into surface waters via point and diffuse pathways. Building on the increased system understanding generated via this detailed analysis, the Danube Hazardous Substances Model (DHSM, an adapted version of the model developed in the SOLUTIONS project) is applied to model sources and emissions of hazardous substances for the whole Danube River Basin. Based on the preliminary results of the DHSM, the project's team was able to contribute to the development of the Danube River Basin Management Plan Update 2021, recently published by the ICPDR. The model results are being updated based on the experiences in the pilot regions and on the latest available data to provide as accurate as possible information on the emission patterns within the Danube River Basin.

Management: Every task in the project was conceived with management in mind. Both models are being used not only to assess the status quo and provide a better system understanding, but also to test the effectiveness of different management measures by means of scenario analysis. A critical review of policies and management structures related to hazardous substances water pollution has identified the most pressing gaps and inconsistencies across countries, which are expected to hinder an effective and coordinated transnational handling. The monitoring and inventorying activities aim to better channel national resources into cost-effective methods and tools to gather most needed information out of constrained available budgets. Finally, the results obtained and the lessons learned during the lifetime of the project will be used to derive policy recommendations and technical guidance.

Capacity building: To turn the project's vision into a reality and to achieve long-term changes in hazardous substances management, a tailor-made program of trainings and workshops, guided by the train-the-trainer principle, will transfer know-how and trigger constructive discussions among the different players in the field of water quality management across the basin.

Pilot regions

Seven pilot catchments, which were selected to cover differences and significant natural and anthropogenic aspects of the DRB for implementation of the targeted monitoring campaigns.



Who's behind Danube Hazard m³c?

The Institute for Water Quality and Resource Management of the TU Wien (AT) leads a consortium which brings together the expertise and perspective of scientific institutions, technical agencies and governmental bodies. Monitoring and inventorying activities are coordinated by the Budapest University of Technology and Economics. The Environment Agency Austria leads the modelling in pilot regions, whereas the

ICPDR coordinates the modelling activities at basin scale in collaboration with Deltares and the policy review together with the Bulgarian Water Association. The coordination of capacity building activities lies in the hands of National Administration "Romanian Waters". Jozef Stefan Institute (SI), University of Zagreb, Water Research Institute (SK), Center for Ecotoxicological Research Podgorica (ME) and Institute of Chemistry

(MD) complete the partnership. In addition, the project counts on the support of 13 associate strategic partners, which allow covering all basin countries and which strengthen the focus on management related aspects. Moreover, the project progress and results are regularly presented to the ICPDR at both technical (Pressures and Measures Expert Group) and policy-making level (Heads of Delegations).

Upcoming events

9 trainings and expert workshops on monitoring and inventorying of hazardous substances pollution

Austria, Bulgaria, Croatia, Hungary, Montenegro, Moldova, Romania, Slovakia, Slovenia

June - September 2022

3 transnational trainings on modelling of hazardous substances pollution

Budapest, Bucharest and Vienna

September 2022

Final conference and international workshop on management of hazardous substances pollution

Vienna

November 2022

Interreg 
Danube Transnational Programme
Danube Hazard m³c

- By **Ottavia Zoboli & Matthias Zessner**, Institute for Water Quality and Resource Management, TU Wien
- Stay tuned for final results, reports and announcements of exact dates and locations for upcoming events:
<https://www.interreg-danube.eu/approved-projects/danube-hazard-m3c>

Dynamic LifeLines for the Danube Floodplains

The Austrian-Slovak LIFE project, "Dynamic LIFE Lines Danube" focuses on the reconnection of tributaries to the Danube that were previously cut off for river regulation. The aim is to enable these waters to once again fulfil their functions as dynamic lifelines of the floodplains.

Dynamic
Life Lines
Danube

Spittelauer Arm



Planting-trees



Spittelauer Arm, Rückbau Spittelauer-Traverse

Of the once mighty floodplain landscapes along the Upper Danube, today only a few areas remain. In Austria and Slovakia, the floodplains have been largely regulated and separated from the river by stone-made bank protection and traverses. Drying trends and the loss of river dynamics are the consequence. But floodplains depend on dynamics - meaning that the flow of the river leads to erosion and sedimentation to shape the landscape and that water levels fluctuate naturally. Many endangered plant and animal species are dependent on these changing conditions. Typical trees such as willows and poplars cannot rejuvenate in an already established forest - they need open gravel areas, good connection to groundwater and changing water levels.

This is where the new LIFE project comes in. In the east of Austria and in the west of Slovakia, important riparian forests of the Danube will be restored during the course of the project. A total of 25 km of tributaries will be reconnected to the main river or dynamized and can serve as the lifelines of intact riparian forests again. In Austria, an additional 4 km of riverbanks will be restored by removing hard bank protection, while in Slovakia in particular, over 1,500 hectares of riparian forest will be restored to a natural state through reforestation.

Since last year, the first achievements can be seen in the wild. The Spittelauer branch opposite the town of Hainburg is once again flowed through by the Danube. Most of the construction work was already carried out in 2020. More than 150,000 m³ of stone material and deposited fine sediments had to be moved in order to upgrade a total of 4.3 km of tributaries as habitat. In addition to the creation of an inflow and an

outflow opening, all existing traverses were removed. About 700 m of bank restorations were implemented. After the construction work, the so-called "Thurnhaufen" has become a large island, now serving as a retreat for mammals and birds.

The success of the measures has been visible already since shortly after the reconnection. The tributary, which was subject to silting up before, is now developing as desired towards a dynamic lifeline for the Stopfenreuther Au. Steep banks, gentle gravel banks, scour- and ford areas have been forming. The water body offers fish a high-quality habitat protected from wave impact caused by inland navigation. The sea eagle, which breeds at the edge of the Spittelauer branch, also benefits from the reconnection. Protection provisions were developed for this large bird of prey for the construction period, which have proven very effective.

An interesting aspect of this renaturation site is that a large hydropower plant was in fact planned right on this very spot back in the 1980s. The construction project, which had already been approved, failed as a result of the emerging environmental awareness amongst civil society. The failure ultimately led to the establishment of the Danube Floodplain National Park in 1996.

All other river engineering works of "Dynamic LIFE Lines Danube" are currently at different stages of the preparation phase. They are to be implemented step by step in the coming years.

On the Slovakian side, the availability of land must be ensured prior to construction measures and the consortium has already

been very successful in this respect. Substantial progress has also been made in supporting native tree species. Notably, more than 14,700 seedlings of typical tree species of the Danube floodplains have been planted in the Istragov area.

Last but not least, the LIFE project also includes measures to involve local communities at the project sites and networking events for interested organisations in the Danube basin to exchange and discuss experiences on renaturation. Look out for opportunities to interact with the "Dynamic LIFE Lines Danube" team.

The ambitious renaturation effort is being coordinated by the Austrian waterway company viadonau and is being implemented together with the Slovakian NGO BROZ, the Comenius University Bratislava (Faculty of Natural Sciences), the Slovak National Forest Centre (NLC), WWF Austria and the Donau-Auen National Park. This dynamic partnership has to implement the measures until 2026. In total, about €10.7 million are to be invested in the improvement of the Danube floodplain habitat. The project is co-financed by the European Union, with contributions by the Province of Lower Austria and the Lower Austrian Fisheries Association.

By Robert Tögel – a trained business engineer working for viadonau since 2006, Robert is currently head of their "Integrated River Engineering" team.

More information:
www.lifelines-danube.eu #LifelinesDanube

Fold out for an interview with the ICPDR's 2022 President, Dr. Robert-Eugen Szép



Welcome! ICPDR Presidency 2022

Dr. Robert-Eugen Szép

Every year, an expert personality from one of the ICPDR contracting parties is nominated to represent their country, with all countries taking it in turns to shoulder this important responsibility. In 2022, it's the turn of Romania's Dr. Robert-Eugen Szép.



“ 1. You've already been involved in environmental policy in Romania during your career. How does it feel to now be taking responsibility for the entire Danube River Basin? Do you imagine any major differences in approach at this basin-level?”

Having the responsibility of steering activities for the protection and sustainable development of the most international river basin in not only Europe, but the world, even for one year, is an honour for me – but also a big challenge. The challenge is related to the moral obligation to continue the activities developed within the ICPDR at least at the same level they've been performed until now. And this high standard should be kept in a period in which new European environmental targets

have to be reached in the next decade, and I am referring here to climate change adaptation, the Green Deal, and the Biodiversity Strategy.

Developing and coordinating water management policy at the Danube River Basin level requires a larger effort to understand all challenges and opportunities specific to each Danubian country and have a comprehensive overview of the transboundary problems. On the other hand, working with 14 countries is a challenge related to the administrative aspects but also an opportunity due to so many experiences in providing solutions to the common challenges and problems. However, I want to say that I was impressed by the professionalism shown by the ICPDR Secretariat and the dedication of the national experts from the Expert Groups and I hope to benefit from your valuable support throughout this year.

2. What were your earliest experiences working with water and environmental policy in your career? How has it changed in recent years?

During my career of almost 20 years, I've had the opportunity to work in a wide range of environmental activities including air quality, hydrology and hydrogeology, sediment management and geochemistry. I started from the local level in the Harghita Environmental Protection Agency, where I was the head of the environmental monitoring and laboratory unit and then I was Chief Commissioner of the Harghita Environmental Guard. From 2014 I was the General Commissioner at the National Environmental Guard. I think that I've developed a comprehensive overview of the environmental policy at the local and national level starting with policy development and monitoring and ending with the implementation of the specific legislation of large number of envi-



ronmental fields including water management. In parallel with this administrative career, I performed an important number of environmental studies as a researcher and University professor, including a few covering the Lower Danube. As of 2021, I am Secretary of State in the Romanian Ministry of Environment, Waters and Forests, in charge of water management, environmental regulation and biodiversity protection. These last years gave me the possibility for a more integrative approach on how to better contribute to the environmental protection and to moderate some conflicts between different activities. It was also an opportunity to extend my view related to international cooperation – particularly in the Danube River Basin.

3. One of your main priorities as ICPDR President is to support the implementation of several important plans, including the DRBMP, DFRMP, and Danube Declaration, all recently endorsed at our Ministerial Meeting. Which activities stand out as the most important for you and your forthcoming presidency?

Indeed, the main priority of the Romanian Presidency is to support implementation of the recently approved plans, DRBMP and DFRMP, as well as the Danube Declaration. In this respect, it will be necessary to develop a framework for coordination of implementation able to support countries to overcome possible difficulties. Particular attention will be given to the actions and measures

postponed from the previous plans as well as to those measures which are new.

In relation to the Ministerial Declaration we will focus on the aspects derived from the Green Deal and Biodiversity Strategy. In this respect we want to continue activities related to the migratory species conservation, particularly related to sturgeons. Moreover, further attention will be given to the protection of the Black Sea environment in order to implement the Marine Strategy Framework Directive in this marine region. Specifically, we want to have increased involvement of the Danubian countries in reducing plastic and microplastic pollution, including a proper monitoring and assessment network.

Also, because this year will start another regional financing period, we want to continue some of the regional projects or to start new projects in the Danube River Basin which are helpful for the implementation of the plans and Ministerial Declaration.

4. You're a passionate Danubian and have worked a lot with water specifically. What, to you, is so special about the Danube River Basin?

The Danube River practically passes Europe from West to East, from the Black Forest to the Black Sea, and discharge its waters

through unique Danube Delta the most valuable wetlands in Europe.

In my opinion, the Danube River Basin is the most diverse river basin in Europe. And when I say diverse, I am referring here to the hydromorphological, cultural, economic and environmental aspects. For me this basin is my home and I have my family, my friends and my collaborators here.

I very much appreciate the involvement of the people and experts in our work, their kindness and readiness to cooperate and to share experience.

5. Finally, what do you hope to have achieved by the end of your Presidency?

I hope during our Presidency to bring our contribution to the further implementation of the Danube River Protection Convention for the benefit of the people living in the Danube River Basin. We want to keep the ICPDR as a global frontrunner within world organizations dealing with trans-boundary water management. ”



