

# DANUBE WATCH

1/2020

THE MAGAZINE FOR THE DANUBE RIVER  
[WWW.ICPDR.ORG](http://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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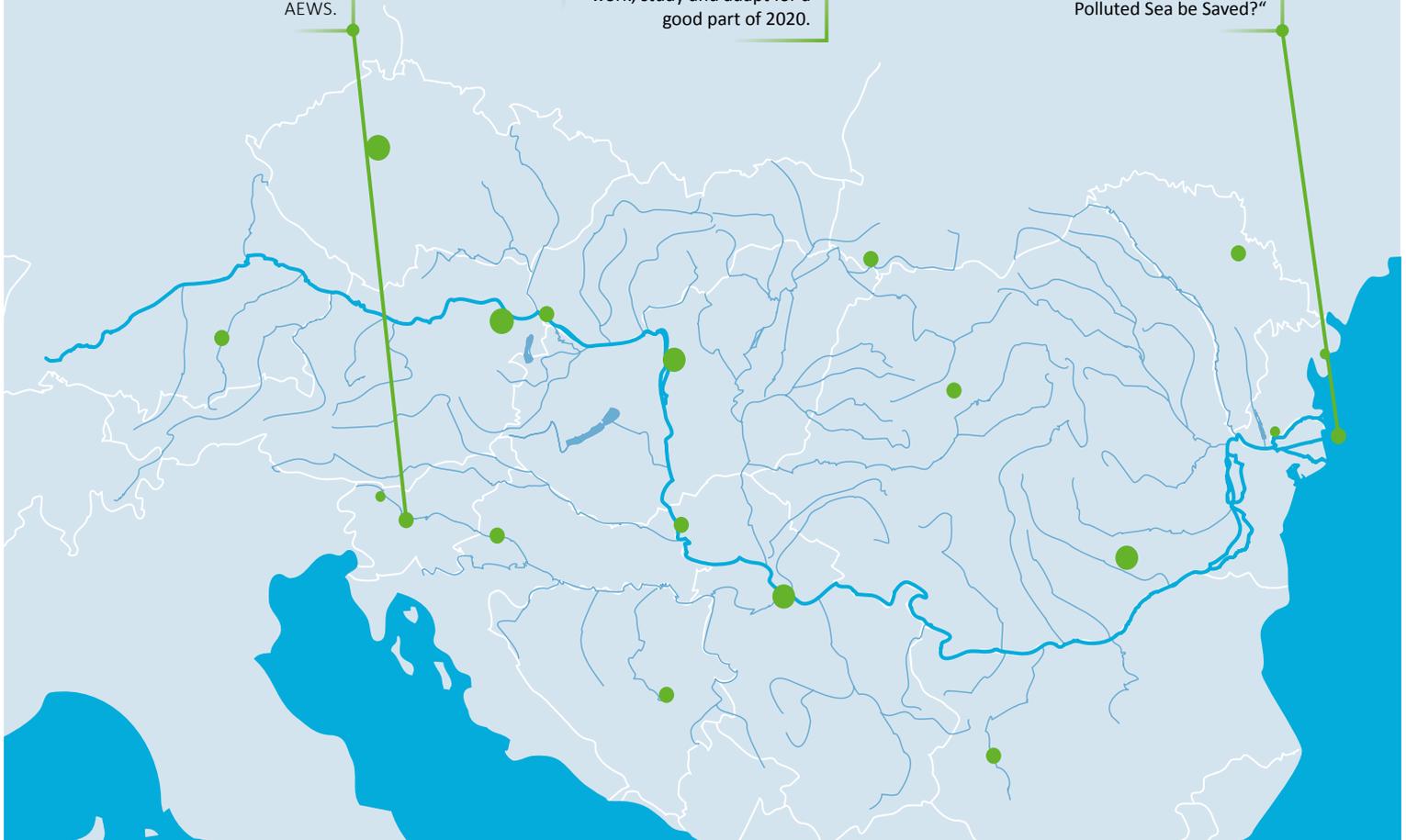
Location of the Slovenian Principle International Alert Center (PIAC), one of the many PIACs of the AEWS.

**Home:**

Wherever that may be, it is where so many have had to work, study and adapt for a good part of 2020.

**Mouth of the Danube: 20**

Where the Danube meets the Black Sea, one of the focal points of the BBC film „The Black Sea: Can Europe's Most Polluted Sea be Saved?“





## Dear readers,

Within a few short months, the COVID-19 crisis has upended our lives, and its impact on global health, livelihoods and education will be felt for years to come. We have entered a recession as bad as, or worse than, in 2008-2009. COVID could cost the global economy up to \$8.5 trillion over the next two years, according to the United Nations World Economic Situation and Prospects mid-2020 report. With inequalities on the rise, the crisis threatens to wipe out hard-won development gains.

The 2030 Agenda for Sustainable Development remains the key to addressing precisely those vulnerabilities that COVID-19 is exposing and aggravating in our societies. Global cooperation is needed more than ever before to initiate and sustain the inclusive recovery that the world needs.

One such example of solidarity across borders is the cooperation among nations and communities from the Danube River Basin region within the framework of the International Commission for the Protection of the Danube River (ICPDR). Danube river cooperation works because Danube states understand that sustainable, equitable use of shared resources protects the environment and people, thereby enabling economic growth and strengthening collective resilience, to the benefit of all.

Shared solutions to shared challenges rely on strong and actionable data. Having such a common denominator helps build buy-in around evidence-based decisions. Data collec-

tion and analysis has an essential role to play in the COVID response and recovery, and I am pleased that the ICDPR has made the importance of data and communication the focus of this issue of Danube Watch.

The Secretary-General has made the sharing and promotion of trustworthy information a priority of the United Nations. Solid data is our weapon in the fight against COVID misinformation, which continues to threaten safety and security worldwide. Fear and the need for answers have created the conditions for rumours to flourish as we all navigate the uncharted waters of living, working and learning in the COVID era.

That is why the Secretary-General has led with a three-pronged emphasis on science, solidarity and solutions, for a socio-economic recovery that truly leaves no one behind. Beyond the crucial public health dimension, understanding the impacts of the COVID crisis through a data-driven approach will help us target interventions to make sure that we protect the most vulnerable and preserve our shared resources, making good on the 2030 Agenda's commitments for people and for planet.

I encourage the ICDPR's members to continue showing the way on cooperation towards science-based solutions. Through your work to ensure the Danube's protection and the sustainable use of its shared waters, you have an important opportunity to contribute to local and regional efforts to build back better.

**Ghada Waly**, Director-General/ Executive Director, United Nations Office at Vienna/ United Nations Office on Drugs and Crime

**ICPDR** IKSD

International Commission for the Protection of the Danube River  
Internationale Kommission zum Schutz der Donau

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### IMPRINT

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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

## Sewers4COVID Solution Earns Five Water Europe Members European Commission Awards

*A team consisting of Water Europe members won first place in one of the six categories of the #EUvsVirus Hackathon, with their Sewers4COVID solution. Organised by the European Commission and led by the European Innovation Council, the goal of the #EUvsVirus Hackathon held from the 24th to 26th of April 2020, was to connect civil society, innovators, partners and investors across Europe to develop innovative solutions for coronavirus-related challenges.*

The Sewers4COVID concept to integrate sewer surveillance and machine learning for an early warning on pandemic outbreaks, emergency response and recovery decision-making in a timely and cost-effective manner was created by participants from the KWR Water Research Institute, Eurecat – Technology Centre of Catalonia, University of Thessaly, National Technical University of Athens and University of Exeter.

Participants were given 48 hours to build a solution within the challenge areas, working together via online platforms. Of the 2,160 coronavirus-tackling solutions thought up, 117 were selected as winners of the European Innovation Council-led #EUvsVirus Hackathon.

Sewers4COVID is a sewer surveillance platform for early virus detection to help decision-makers direct resources where they are most needed.

Solutions selected by the jury were weighted according to impact potential, technical complexity and novelty, prototype completion and efficacy of business plan. Not only was an overall winner selected for each challenge, but two runners-up as well. Partners will be offering cash prizes to the winners of their choosing. Currently, over €100,000 has been pledged overall as prize money for winning ideas.



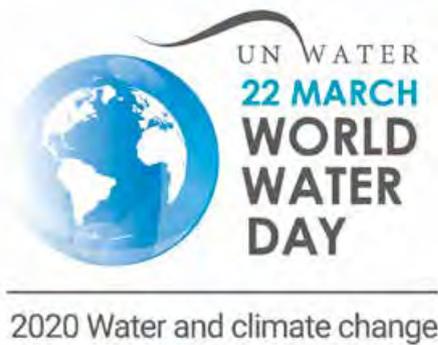
© EC

The necessary resources, including financing, for the winning teams to develop and scale their ideas will be determined and organised in the coming weeks. From the 22nd to 25th of May, a Matchathon event will take place to match outlined needs with available resources. Winning solutions will be invited to join an EIC COVID Platform – to be launched at the end of May. The goal being to facilitate connections with end-users, such as hospitals, and provide access to investors, foundations and other funding opportunities from across the EU.

### Team:

- ◆ KWR Water Research Institute (Dragan Savic FREng, Lydia Vamvakieridou-Lyroudia, Frederic Been, Gertjan Medema)
- ◆ Eurecat – Technology Centre of Catalonia (Gabriel Anzaldi Varas, Xavier Domingo i Albin, Lluís Echeverría, Marc Ribalta Gené)
- ◆ University of Thessaly (Chrysi Laspidou, Dimitris Kofinas, Alexandra Ioannou)
- ◆ National Technical University of Athens (Maria P. Papadopoulou)
- ◆ University of Exeter (Mehdi Khoury, Gareth Lewis, Albert Chen)

## World Water Day 2020: the ICPDR Adapts to Climate Change



*Vienna, 22 March 2020 – World Water Day 2020 is focusing on how Climate Change policy must put water first.*

As the impending Climate Crisis draws ever closer, it is increasingly clear how extreme water events are going to make water availability more unpredictable. World Water Day, held on the 22nd of March every year since 1993, is an annual United Nations Observance focusing on the importance of freshwater. In keeping with the aims of this year's World Water Day, the ICPDR

is consistently bringing water policy and climate change policy together throughout the Danube River Basin.

“Along with all of the impressive activities taking place around the globe for World Water Day 2020”, says ICPDR President for 2020, Dorin Andros, “the ICPDR is proud to be, at the Danube River Basin level, a partner in securing the future of water throughout the world as we face impending climate change”.

### **What is World Water Day 2020 About?**

World Water Day 2020 is about water and climate change – and how the two are inextricably linked. The impacts of climate change are amplified in water environments (too much or too little water), and it is increasingly clear that water is part of the problem as well as an important part of the solution. The campaign shows how our management of water will help reduce floods, droughts, scarcity and pollution, and will help fight climate change itself.

It is clear that using water more efficiently will reduce greenhouse gases. Furthermore, by adapting water resources management to the effects of climate change, we will protect health and save lives.

## Moldova Takes Over ICPDR Presidency for 2020 From Hungary

*Vienna, 31 January 2020 – Embassy of Hungary in Austria. Moldova takes over the annual Presidency of the International Commission for the Protection of the Danube River (ICPDR).*

“2020 will be an important year in terms of data and information collection by countries and their further analysis for the development of the next cycles of the Danube River Basin Management Plan and Flood Risk Management Plan”, said President Andros at his inaugural speech. “We do hope that our common initiatives and efforts will definitely result in cleaner water, and as a whole, in a better Danube environment, and let me assure you that Moldova will do all its best to contribute to achieving these results”.

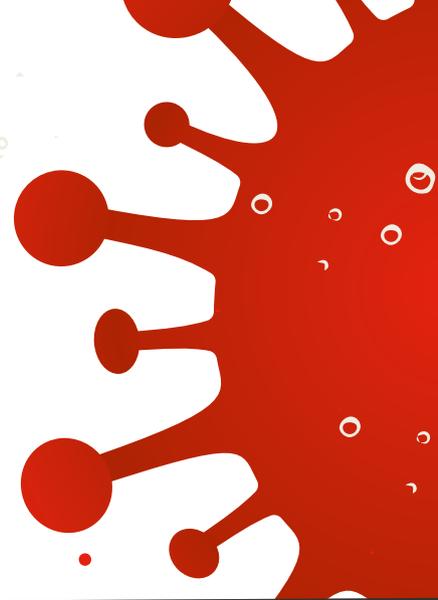
Having marked a 25-year milestone in the life of the ICPDR in 2019 (a quarter-century since the signing of the Danube River Protection Convention), the Moldovan Presidency wants to begin the new decade focusing on crossing borders in sectorial as well as geographical terms.

Dorin Andros congratulated the ICPDR on its success to date, describing it as a “world-wide recognised successful example of river basin management and transboundary cooperation”.



Furthermore, outgoing President Péter Kovács, from Hungary, was warmly acknowledged at the event for having achieved a tremendous amount during the extremely busy Presidency in 2019. Mr. Kovács wished his successor all the very best and extended his deep gratitude for his team's hard work throughout his presidency.

# Stay Safe, Stay Strong, Stay ICPDR:



## A Message from Executive Secretary Ivan Zavadsky

Welcome to the home-offices of some of our Joint Danube Survey 4 family. Physical separation has not kept them from connecting with each other or applying their various skills and working hard to complete this very important survey.

**Vienna, 17 March 2020 – Following recent developments of the COVID-19 virus, and in line with both the measures taken by the Austrian authorities, and the advice from the Vienna International Centre Medical Service, I have instructed all staff of the ICPDR Secretariat to work from home.**

It is important that we ensure continuity of our work at this difficult time, and thus all staff are well equipped to keep up their work at full capacity from home office. We have also taken some additional measures to set up a remote working environment to keep things running as smoothly as possible during this lock-

down. I have to take a moment to thank the entire team for their quick work in getting this contingency plan up and running under the circumstances.

The very core of the ICPDR was founded on a principle of cooperation and solidarity, and it's more important than ever to keep up that spirit at this time. It is vital that the ICPDR use our unique transboundary relationships and strong bonds to stay united in the face of an unprecedented international health risk situation.

One of the most important issues for us, is to assure the public that the drinking water in all Danube countries remains unaffected by this virus, and is safe to drink.

The WHO's official stance on this is that: "Currently, there is no evidence about the survival of the COVID-19 virus in drinking-water or sewage. The morphology and chemical structure of the COVID-19 virus are similar to those of other surrogate human coronaviruses for which there are data about both survival in the environment and effective inactivation measures. Thus, this brief draws upon the existing evidence base and, more generally, existing WHO guidance on how to protect against viruses in sewage and drinking-water".

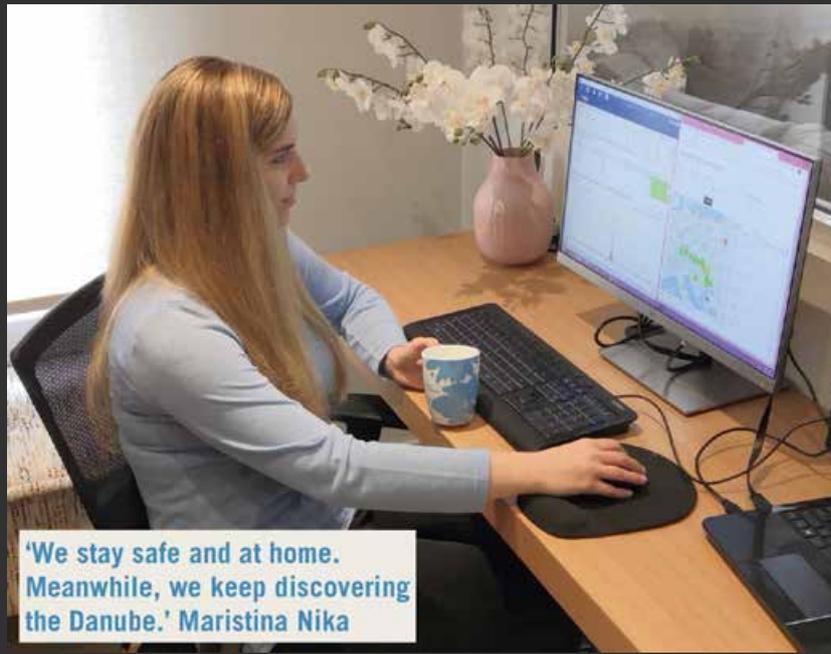
The ICPDR wishes all citizens of the Danube River Basin the very best throughout this strange and difficult time, and most importantly to keep safe and stay healthy.



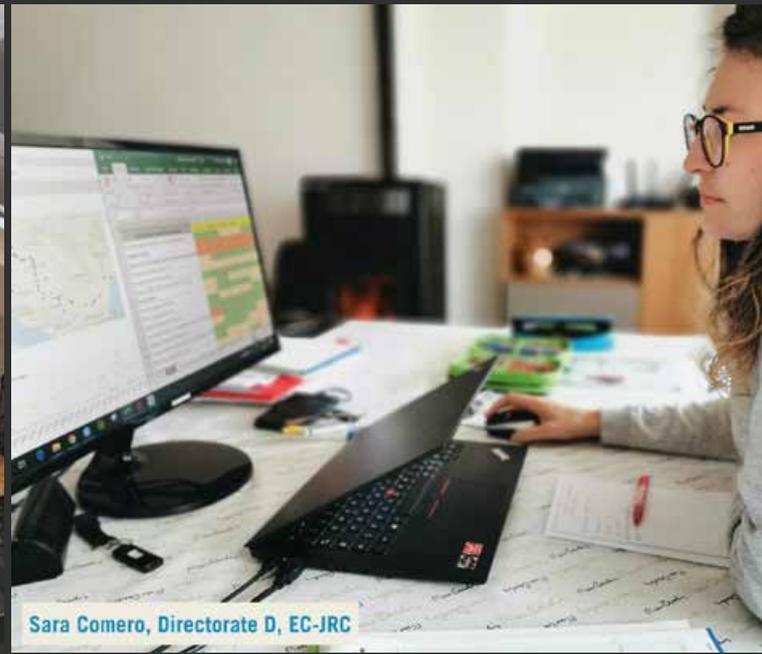
Bernd M. Gawlik, Directorate D, EC-JRC



'This picture reflects my home office situation at the moment.'  
Franz Wagner



'We stay safe and at home. Meanwhile, we keep discovering the Danube.'  
Maristina Nika



Sara Comero, Directorate D, EC-JRC



'This is Opium, a new 'Danube Keeper'. She is very interested in participating in the writing of my chapter of JDS4.'  
Pauline Louis



'My objective is to identify and prioritize the chemicals in the Danube to protect the ecosystem, all from home.'  
Nikiforos Alygizakis

# Communication in Times of the Corona Crisis: Finally Embracing Workplace

Beyond the economic and medical situation, COVID-19 has highlighted in different states around the world not only strengths and weaknesses, but also the requirements of the 21st century. So far, the 2019/2020 global pandemic has emphasized the necessity of a further endorsed digitalised workspace. Digitalisation in Europe, – and more particularly, internet speeds – is still a major issue. Therefore, it was hardly surprising to read in the news about governments' policies to reduce video

quality to prevent traffic overload on popular platforms such as YouTube and Netflix as a consequence of significantly growing digital traffic. Furthermore, the associated fear of internet capacity being wasted on leisure-time activities while employees and students still need to get their work and studies done online has been eye-opening. A lot of employers either had to or voluntarily offered home office possibilities, which boosted the popularity of video conferencing providers such as Zoom, and office programs to plan and distribute workloads among teams remotely. However, access to drives and databases is crucial for most employees too and while this seems to be such an elementary necessity, it was surprising how often one would hear from friends and family members that they had to head into the office during the COVID-19 lockdown solely because they were not able to access such resources remotely.

As not every employer has the means to hand out laptops or tablets to its employees, the latter are often forced to use their own private devices for work purposes. However, these private devices increase the risk of a com-

pany, institute, organisation or association getting hacked. Employers cannot be sure that the user has a suitable anti-virus program in place and a secure internet connection, for example via VPN. For this reason, safe internet and computer usage exercises and training are more important than ever before, especially if companies, institutes, organisations and governments are expecting to be spied on or tracked. This also highlights both employer and employee responsibilities to create a fair home-office working space that is not defined by illegal control mechanisms, arbitrariness, cyber bullying or such by either one side.

Another aspect the COVID-19 crisis highlighted is the high importance of good crisis communication, which is supposed to defend and protect the reputation of a company, government, individual or organisation. Additionally, good crisis communication regularly informs us about current status and addresses questions from the press and/or general public. The pandemic threw into sharp relief how crisis communication differs not only from state to state, but also within a single government, e.g. between different federal states, cities or provinces. In light of COVID-19, the worst-case has been when such different approaches lead to general confusion and misinformation – as well as disregard for essential public measures. When it comes to companies, institutes and organisations, COVID-19 has illustrated why a focal point



# ng a Digital



is indispensable and that there should be always a crisis-communication plan in place that defines how to deal with different scenarios.

A wide array of good and a bad examples of crisis communication have appeared throughout the pandemic: spreading authorised visuals or spreadsheets, plus links to generally accepted sources about COVID-19 facts via social media for example, is helpful and increases the spread of valid information. However, while a picture of colleagues wearing their masks in front of their computer screens during their teleconference doesn't do anybody any good per se, it still creates a sense of community in isolation, as do photo memories. Be they waiting to greet you on your office wall after lock-down is over, or included in an email attachment to other colleagues to say hi.

Nevertheless, these virtual meetings also highlighted the importance of knowing one's conference tool of choice and its basic functions. These include muting the microphone, adding multiple participants to the call, camera settings and consideration of ideal backgrounds, but also appropriate clothing. Lastly, the Corona lock-down forced most people to merge their private and business everyday-lives so that a well-chosen office space within the private home became a mandatory provision, albeit not everyone can consider themselves that lucky. Thus, many individuals were

forced to make the best out of a cramped space situation at home where also other individuals had to work and make business and/or private calls.

In some homes, lock-down looked like this: working moms and dads, who could not drop off their kids at the daycare, trying to do a split between their individual business meetings and caring for their offspring. Depending on their kids' age, these working parents had to ensure that their kids have meals, are doing their homework or are kept busy other ways, and to keep the little ones happy but quiet enough to be able to understand their colleagues while on the phone or in a virtual conference (sometimes both parents at the same time). On top of that, the background needs to look clean and put together enough while at the same time mom and dad need to look professional. Somewhere else, a virtual meeting is scheduled and everyone joins the video conference from their respective homes. Person A, B, C and D are perfectly dressed and set up at working desks or converted tables with little private items in the background; person D sits with dripping-wet hair and a cereal bowl spooning in front of the laptop camera; person E joins but leaves the room though forgets to turn off the camera; person F has a sick family member on the phone; person G permits insight into the messy living room; and person H misses the meeting completely.

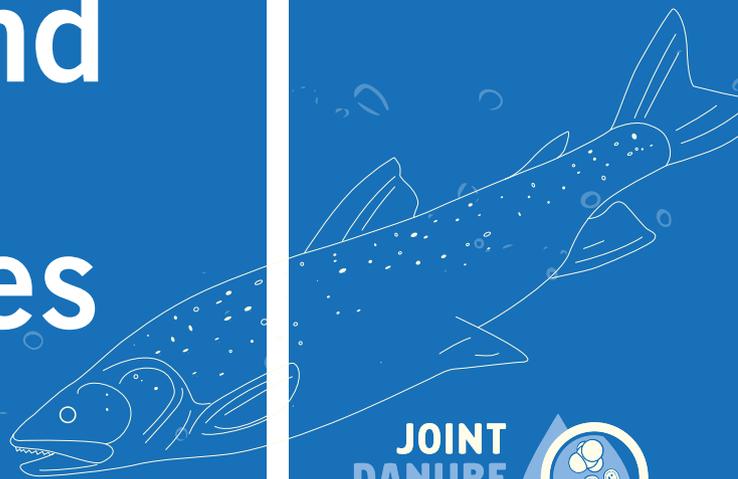
Even though COVID-19 also forced us to officially keep the offices closed temporarily, ICPDR was able to hold numerous (virtual) meetings during the lock-down situation with e.g. Slovak Minister of Environment Ján Budaj, the River Basin Management Expert Group (RBM EG), and the Accident Emergency Warning System (AEWS, read more about this on page 13) to ensure the sustainable and equitable use of waters in the Danube River Basin.

#### Basics for safe home-office communication & information exchange:

- VPN
- Anti-virus program
- E-Mail program
- MS Office
- Adobe Acrobat DC
- Task managing tool (MS Teams or Planner, Trello, ...)
- Conference call tool (Skype, Zoom, MS Teams, ...)
- If appropriate: encryption cipher

**Catherine Buchwald** is a communications professional with experience working for several international organisations and associations in diverse fields such as nuclear security, EU law, migration and health.

# Keep Calm and Science On: JDS4 in Times of Crisis



JOINT  
DANUBE  
SURVEY 4

**Mr. Giulio Mariani, please begin by introducing yourself to us, and explaining a bit about your speciality in JDS4 including the substances you work with.**

I am a technical analytical chemist who has been working in this field for 35 years. Since 2004, I have been working at the Joint Research Centre of the European Commission in Ispra (IT). I am specialised in gas chromatography coupled with mass spectrometry with a special focus on the analysis of persistent organic pollutants (POPs) such as Dioxins, PCBs, pesticides, flame-retardants and new emerging compounds.

During my career, I have analysed a wide set of environmental and industrial matrices such as soil, sediment, biota, human blood, air, inland and marine water, liquid and solid effluents from Waste Water Treatment Plants and incinerator plants, etc. I also gained experience in the creation of sampling equipment for their collection (see Mariani Box page 12).

I am currently working at the Sustainable Resources Directorate of the JRC in the Water and Marine Resources D.2 Unit.

Therefore, the focus of my actual activity is “water”.

The chemical cocktail of organic pollutants present in environmental waters makes the analysis of this matrix quite challenging due to their different chemical characteristics, the multitude of different analytical approaches available and the logistical aspects involved in the sampling exercises.

**What are some highlights so far of JDS4 for you? Why is it important too? What is special about JDS4 compared to the previous surveys?**

During my working time at JRC, I was fortunate enough to be able to participate in three Joint Danube Surveys (JDS) i.e. JDS2, JDS3 and JDS4. Throughout the different exercises, which have covered a time interval of 12 years, substantial scientific and technological innovations were made available and the most advanced approaches have been applied in the execution of JDS4.

Unlike in previous exercises, during JDS4, the research boat was not used to cruise the river and this made, in some ways, the

execution of the entire campaign more challenging. In response to these new challenges, the use of newly developed sampling devices and an increased collaboration among different teams provided new strategies for the accomplishment of the survey. Additionally, in JDS4, effluents of Waste Water Treatment Plants and underground waters coming from different countries were studied too.

Teams from different countries and research institutions applied different approaches both towards sampling and analysis, thus offering the possibility to produce wider datasets. Results from different sampling approaches (active vs. passive sampling techniques vs. extra-large volume sampling) and data obtained from both target and non-target analytical method applications could be compared. This increased the coherence of the entire scientific exercise.

Furthermore, chemical data will be useful for the characterisation of the newly developed effect-based monitoring tools.

Datasets derived from different approaches will serve the characterisation of the



Giulio Mariani & Simona Tavazzi, Directorate D, EC-JRC

health-status of the river, indicating any further need for intervention.

It is worth mentioning that since 2016, our laboratory has been involved in international water monitoring projects on the Black Sea. Being that this is a related activity to JDS4 in 2019, we decided to monitor the same set of chemical compounds in order to provide a useful dataset for the evaluation of possible input and correlation of pollution from the Danube River into the Black Sea.

JDS4 revealed itself once more an important “test-bed” for comparison among different approaches and technologies, thus bringing the scientific community towards continuous growth.

**How has working from home – or under lockdown conditions – during this crisis been affecting your work?**

It has been quite challenging, especially in the beginning. Suddenly we could not enter the JRC site and could not move anywhere. Restrictions regarded every aspect of our social lives, including schools and shops. Only food shops and pharmacies were open.

For a laboratory involved in experimental activities like ours, even a partial lockdown would have arrested any progress on the projects. A complete lockdown, like the one imposed on us, arrested all the experimental activities. Fortunately, the lockdown started just after the end of the analytical part.

In half a working day, we had to move our offices to our homes, including all the necessary documents, working stations, connections, etc. Considering that we were running several different projects, we had to be sure not to forget any important materials for following up.

From home, we could process all the collected analytical data and finalise different projects, including JDS4, while respecting the planned deadline.

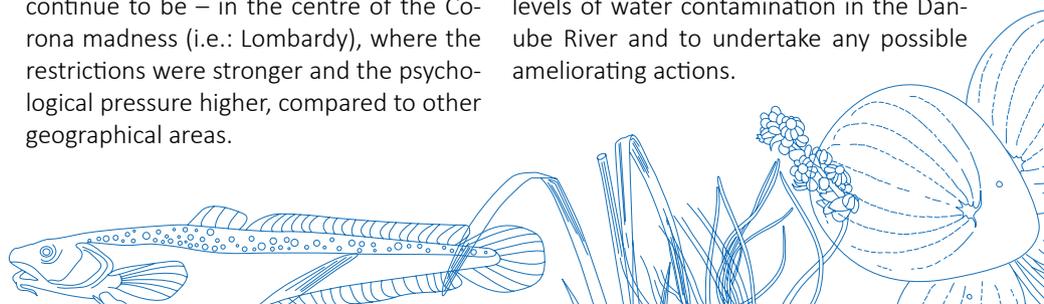
This latter aspect especially was quite critical because we were at that time – and continue to be – in the centre of the Corona madness (i.e.: Lombardy), where the restrictions were stronger and the psychological pressure higher, compared to other geographical areas.

**More generally, what are the specific concerns that have been facing the scientific community (and community generally) in Lombardy throughout this pandemic?**

Since February, Italian hospitals have been invaded by an indescribable number of SARS-CoV -2 patients, without having any clear idea on efficient treatments or therapies. After three months, some experimental protocols have been identified for the treatment of Covid-19. But the emergency is not over. Furthermore, other scientific fields started to study different aspects of the virus, including its environmental presence and spread.

**What are the key outcomes of your work so far in the survey? What do they mean?**

The dataset produced by the JRC (as an in-kind contribution) is available for use by the ICPDR and national regulators, and can help to improve their understanding of the levels of water contamination in the Danube River and to undertake any possible ameliorating actions.



# More Efficient Sampling with the Mariani Box

Technical analytical chemist, **Giulio Mariani**, explains the development and use of his “Mariani Box” to make water analysis more cost-effective and streamlined.

**So, a few years ago in our team, we asked ourselves a question: "How can the analytical costs of water analysis be lowered"?**



Sara Comero

To answer this question, I started the development of an “on-site water sampling device”, afterwards called the “Mariani Box”. This device can sample a wide range of water volumes (0.5-20 litres), simply by using a portable pump, while concentrating hundreds of organic chemicals with different characteristics on a single adsorbent filter. The device is a viable economic alternative for water sample collection and it is fully portable in the field, making its use easy and straightforward.

Combining the use of the Mariani Box and the development of analytical multi-residual methods allowed for the analysis of a variety of organic compounds in a single sample, reducing the number of duplicate samples and analyses, thus limiting the monitoring costs.

The use of the Mariani Box also streamlined the logistics of sample collection. It makes it possible to store samples “on” a filter, which itself can be easily and safely stored and can be shipped at lower prices (since it is smaller and lighter) compared to the traditional glass bottles.

This sampling device has already been used successfully in many projects.

In the context of the Fourth Joint Danube Survey (JDS-4), the JRC was asked by the ICPDR to analyse water samples for 54 contaminants selected from those listed on the EU-Watch list, from the list of Danube River Specific Pollutants (DRSPs), from the list of priority substances from the Directive 2013/39/EU and from the

flame retardants already detected in the previously JDS-3. In addition, the agreement foresaw the use of the Mariani Box for all water collection. The sampling included the collection of 51 river surface waters from the source of the Danube to the delta, 11 effluents of wastewater treatment plants and 7 groundwater samples collected in different countries along the river basin.

In order to support the sampling campaign and the analytical tasks, the JRC’s D.2 laboratory hosted 5 Visiting Scientists (VSs), selected by the ICPDR. The VSs were trained by myself on the use of Mariani Box with the scope of illustrating the operation of the device, including the flux calibration, the pre-treatment of filters, the collection of water samples, the cleaning methodology as well as filter extractions.

The training session represented an occasion for scientific exchanges on the quality criteria to be applied during the sampling campaign. The ICPDR decided to divide the Danube stretch in three portions. The trained VSs were allocated to three sampling teams to collect samples from the North, the middle and the South stretch of the Danube River. The sampling campaign and the collaboration with the Visiting Scientists was successful and we provided the ICPDR with the expected analytical results.



Helle Skejo



Giulio Mariani

Simona Tavazzi

# Emergencies:

## Testing the Accident Emergency Warning System During the Corona Emergency



PIAC-SI during AEWs test: 12.5.2020 located in the Notification Centre of the Republic of Slovenia, under the administration of the RS for Civil Protection and Disaster Relief.

© Janez Poljanar

The show must go on. This old adage is as true now as it ever was. Indeed, for those responsible for the safety of all Danube River Basin citizens, the show did go on. Despite the Coronavirus crisis being well underway, and emergency precautions in effect throughout most of Europe, the execution of a thorough test of the Danube's Accident Emergency Warning System (AEWS) was followed through with – albeit, with a few small alterations.

The AEWS is activated whenever there is a risk of transboundary water pollution, or threshold danger levels of hazardous substances are exceeded. The AEWS can be used to send out international warning messages containing the relevant details about such incidents to the respective experts in the downstream Danube countries. This helps the authorities to put environmental protection and public safety measures into action very quickly. The first stage of the AEWS came into operation in April 1997 in Austria, Bulgaria, Czech Republic, Croatia, Germany, Hungary, Romania, Slovakia and Slovenia. Ukraine and Moldova entered the system in 1999; and Bosnia and Herzegovina and the Republic of Serbia have been on board since 2005.

This year, the regularly scheduled test took place on the 12th of May 2020, beginning

at 10:00am. The ICPDR Secretariat - which not only maintains and operates the AEWS, but has overseen its development from a satellite to web-based, using SMS and e-mail alerts - system - distributed instructions before the test to the ICPDR Accident Prevention and Control Expert Group (APC EG) and the staff of the Principal International Alert Centres (PIACs) by email. Due to the cancellation of the 12th APC EG Meeting because of the Coronavirus crisis, the Secretariat supported the test via an online videoconference so that any APC EG and PIAC members who wanted to discuss the test proceedings and share experiences would be able to.

Danube Watch was able to sit in on a segment of the test proceedings (via online video conference, and from the comfort of home). This afforded us the chance to not only see the response to a spill warning in action, but also to have experts in a PIAC and other experts working from home explain the procedure and go through the steps for our sake. Many others were also active in the conference (almost all from their home-offices), though only observing with microphones muted. Obviously, these experts were already old hands at dealing with the technology and the decorum related to home-office video conferencing.

As for the test itself, it was divided into four incidents in order to involve all PIACs. Each PIAC had the tasks of confirming receipt of messages, creating a report to raise or follow-up on an alert, editing reports and closing alerts. The test simulated the case of a pollution plume in a river moving downstream before it could be eliminated and the danger subsided. When all PIACs ended their alerts, the respective incident was closed. The goal of this test was to check the functioning of the system and the cooperation of PIACs in handling an accident that propagates downstream a large international river.

From what we saw sitting in, the test appeared to go smoothly and without any major issues. While testing an alert system for major Danube accidents initially brought to mind any number of disaster movies, the very calm and even almost boring nature of the actual system was anything but a disappointment. Calm is good. Boring is good. If an outside observer can sit, watch and think that there is no excitement, it means that everything is working exactly as it should. It means that these regularly scheduled tests of the AEWS are proving their value – even as the 2020 Coronavirus crisis shakes the emergency preparedness of the world in a very different way.

# Technology and New Approaches to Cooperation are Vital

In the midst of the COVID-19 crisis, and the necessary changes to communication practices that have come with it, the entire way in which we approach outreach events must adapt just like work in general. The ICPDR itself, with its flagship event - Danube Day - is mostly moving to digital events in the Danube countries. An example of what is to come, the agency that works with the Austrian Federal Ministry for Agriculture, Regions and Tourism has used its future-orientated expertise to reinvent online communication for its two platforms: Wasseraktiv and Generation Blue.



The ability to work from anywhere is an essential ability and, as we are seeing, the future. However, it can be difficult to get everyone on board with the idea. A home-office situation does not immediately appeal to some people, especially those who enjoy the social aspects and structure of a more traditional office setting. However, these elements are key to a well set-up home-office experience. Regularly scheduled online meetings ensure daily face-to-face discussions as well as structured elements to a daily routine.

It can be difficult to individually maintain this structure throughout the day though. With the benefit of a more comfortable setting comes the downside of needing new perspectives on where personal and work elements should be separated.

While time management may remain similar to that of an office setting, more time may need to be dedicated to online meetings, simply due to their nature. They replace not only scheduled meetings, but also ad-hoc and quick conversations between co-workers in the hall or even quick emails.

In times of crisis, and in general, a decentralised work setting can also mean more time communicating with colleagues and partners in order to maintain positive working relationships and reassure key structural aspects. Structure on all levels is key to the success of technological utilisation and work evolution. This structure can only be achieved through progressive understanding, active management and a real capacity to adapt.



**The author Susanne Brandstetter** is Chairperson of the Public Participation Expert Group of the ICPDR. She is responsible for the PR agenda of the Water Department at the Austrian Federal Ministry for Agriculture, Tourism and Regions.



### Cooperation: Landjugend, Wasseraktiv and Generation Blue

The platform Wasseraktiv offers up-to-date information on a range of themes related to the valuable resource of water. The participation of citizens required by the EU Water Framework Directive was the reason for the launch of this Internet platform in 2009. Its aim is to prepare information in a comprehensible manner, so that any and all interested members of the public can participate. The information provided is meant to raise awareness of water as a resource in Austria and, by doing so, to provide foundational knowledge that enables participation in decision-making.

What distinguishes Wasseraktiv from Generation Blue is that the latter is a youth-oriented platform meant for teens and students with special aspects for schools. The focus is also on water-related topics including climate change. In Austria, the project is implemented by the the Federal Ministry for Agriculture, Tourism and Regions and organised by the agency better2gether.

### The Idea of Wassertalk

The Corona crisis presents us all with challenges and offers at the same time new chances to come into direct contact with citizens. In April, cooperation between Wasseraktiv and the Landjugend Vöcklabruck came into being. Their project of the year, “WonderWater – Our Elixir of Life, We’re Watching It”, could not take place as planned, and alternatives had to be sought out. Due to Corona-safety measures in place preventing gatherings of any size, alternative solutions would need to embrace the use of technology in order to allow participants and those interested to come together despite the virus crisis. With myself also working in the field of water, and requiring something that would allow for the work to be done from my home-office, everything fell into place rather quickly. This is how the idea of a Wasseraktiv-Talk on the subject of “Water in Austria” via online video-conference came into being. Invitations were sent out to those who may have been interested by the Landjugend organisation itself, as most of its members have backgrounds or interests in agriculture and/or water-related topics.

Luckily, I was, through sheer happenstance, available to lead the Wasseraktiv-Talk and share my expertise by

presenting an overview of the most important facts regarding water in Austria and Europe. The talk took place on the 16th of April with around 25-30 participants, and interest was very high, the response throughout was very positive. Personally, I had been excited about the concept of the talk, and was very pleased with the turnout. The success of this talk perfectly exemplifies the state of current technology and our ability through it to organise effectively. While gatherings of individuals via online video-chat from the comfort of their own homes may not replace face-to-face gatherings any time soon, the conditions present during the 2020 Corona Virus situation have shown conclusively that this is a real, viable and effective option when circumstance demands it.

Moreover, to see so many people embrace this utilisation of technology in order to organise the pursuit of their interests – in our case, the essential topic of our most valuable resource: water – has been a special experience. Enthusiasm is not limited to the young or to professionals, but can be witnessed among a swathe of demographics. I would also like to think that the subject of water is one that piques the interest of many, and

hopefully further Wasseraktiv-Talks will show this to be true.

Because of the wonderful response to the first instalment, I sincerely hope that there will be further Wasseraktiv-Talk sessions as a series in order to serve interested participants with any and all aspects of the themes of water and the work of the ministries. The hope is to be able to put together Wasseraktiv-Talks once a month on an array of water topics while putting online technology to use.

What we have all experienced in the recent months is the extent of the challenge that the Corona Virus has posed to our daily lives. In one way or another, every aspect of life has been affected and has required some level of innovation in order to adapt. This difficult time has also presented the tremendous opportunity to steer our adaptation toward fully embracing the potential of digitalisation. This welcoming of what digital technology offers can be applied at all levels – from personal to professional – and in response to any number of challenges. Our success organising the Wasseraktiv-Talk session with the Landjugend Vöcklabruck is just a small reflection of what is possible.

**Contributing authors:** Susanne Grof-Korbel and Helga Niemitz, better2gether. Together with Kristina Schubert-Zsilavec, they maintain the Wasseraktiv and Generation Blue platforms.

# Data, the ICPDR and DanubeGIS

Data is essential to all of the endeavours of the ICPDR. Without the data collected in the field, decision-makers would be unable to do their very namesake. In order to better make use of the large amount of data produced within the Danube River Basin, the ICPDR has its own web-based Geographic Information System (GIS), which it uses to collect, sort and work with data submitted by researchers and experts from respective ICPDR-affiliated countries.



## Alex Höbart

was born in Vienna, studied at the Vienna University of Economics and Business with a focus on information systems and environmental economics. He has been working for the ICPDR Secretariat since its beginning in 1999 and developed Danubis, DanubeGIS, DanubeAEWS and other websites and databases of the ICPDR. Technical Expert for IMGIS (since 2006)

sets within a file repository. From this, the geo-database is fed with separate schemas for final approved data reports and for the most up-to-date basin-wide data.

The concept of DanubeGIS began in 2003 when a needs assessment was completed followed by a conceptual design of the system. Between 2004 and 2006, a strategic

plan was developed along with a system definition by the Environmental Agency of Austria, and a prototype was financed by the UNDP/GEF Danube Regional Project and the EU. Version I of the system, developed by the Environmental Agency of Austria, and based on the ESRI ArcIMS server, was launched in 2007.

What is the purpose of DanubeGIS? Its role is vital for the work of the ICPDR. As a platform with many tools, it supports contracting parties in collection, analysis and visualisation of data necessary to meet the demands of the Water Framework Directive and the Flood Directive reporting at the Danube River Basin-Wide scale. This larger scale encompasses rivers with catchment areas greater than 4,000 km<sup>2</sup>, lakes with surface areas greater than 100 km<sup>2</sup> and important transboundary ground-water bodies larger than 4,000 km<sup>2</sup>.

DanubeGIS also helps to support the work of ICPDR Expert Groups such as those dealing with accident risk sites or the data feeding into the Transitional Monitoring Network (TNMN). Furthermore, sub-basin Furthermore, activities like those specifically focused on the Tisza sub-basin and others, can utilise the system to their benefit.

The data itself is provided and owned by the Danube River Basin countries and stored on the DanubeGIS platform as data-

Tools with which users can work with the data are also present, and consist of validation, analysis and retrieval tools. These make many things possible. Expert users can accomplish multi-level data quality checking as well as store queries in order to produce tables, graphs and views as a basis for layers. These layers are the basis for production of ICPDR thematic maps and are then published using open source software, and made accessible via OGC-compliant web services.

While the system offers a plethora of tools and possibilities for working with the available datasets, it has its limitations and restrictions. For example, DanubeGIS cannot replace cartographic software packages, as it cannot automatically produce high-quality paper maps. It also is not meant for tasks such as extensive spatial analysis that would be achieved by using the functionalities of a desktop GIS. Finally, it is not intended to act as a replacement for any of the existing ICPDR countries' national GIS platforms.

2009 and 2010 saw the first major basin-wide collection of data for the DRBMP and the first sub-basin data collection for the Tisza RBMP, respectively. Operations were then moved over to Version II (developed by the ICPDR Secretariat based on open source software GeoServer, PostGIS and Drupal) in 2012. The system is continuously improved based on guidance by the IMGIS EG of the ICPDR.

For the benefit of users, DanubeGIS contains many different kinds of datasets. The background datasets hold information such as river basin districts, rivers and canals, lakes, transitional and coastal waters, state and administrative boundaries and cities. Other datasets relate to specific initiatives and are updated regularly within the respective reporting cycle. Areas of potential significant flood risk and flood hazard areas are examples of those related to the EU FD (Floods Directive). Other datasets, concerned with issues related to the EU WFD (Water Framework Directive), include risk and status assessment

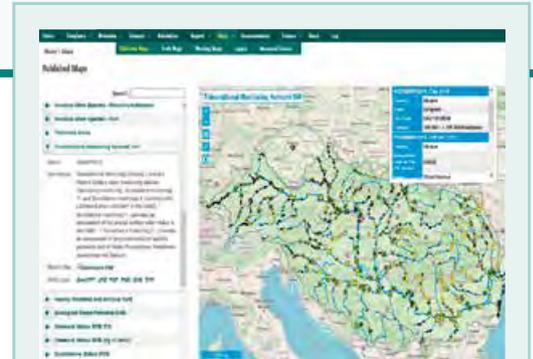
and other characteristics for surface water and groundwater bodies, as well as surface water monitoring stations, ecoregions and water-relevant protected areas (bird, habitat and other nature protection areas).

Organic, nutrient and hazardous substance pollution, the main industrial facilities, urban wastewater treatment as well as the point sources and diffuse nutrient pollution are also among the datasets. Finally, a number of hydromorphological alterations datasets also exist. These include a wide array of information on longitudinal and habitat continuity interruptions (dams and weirs), lateral connectivity interruptions (wetlands/floodplains with reconnection potential), hydrological alterations (impoundments, water abstraction and hydropeaking), morphological alterations and future infrastructure projects.

Of course, in order for data to be utilised, there must first be data. Several stages of collection lead to data being readily available via the DanubeGIS system. First, relevant expert and task group members in the countries provide content to their national IMGIS EG experts. These data experts then fill in data templates and upload them into the system, which triggers an automatic validation process. At this stage, the countries immediately receive the automatic validation results – enabling them to immediately correct any eventual errors. Secondly, once the data is uploaded to the DanubeGIS database, the Secretariat performs additional semi-automatic data quality checks, reviews completeness and provides feedback to the countries. If needed, the countries are able to repeatedly perform data updates and uploads, until the datasets are finally complete and satisfactorily error-free.

With so many datasets available, maps are produced that wonderfully highlight data in a visual way. The relevant expert and task groups first must discuss and define the lists and content of the maps. Then general mapping guidelines as defined by the IMGIS EG can be assessed. These guidelines include the base layout, base map layers and symbols. Draft maps are prepared by the Secretariat in at least two to three cycles, during which content and visualisation are discussed and commented on by all related expert and task groups. In case countries provide additional data updates, the maps are further refined by the Secretariat. Once final versions of maps are ready, they are approved by the Heads of Delegation for publication.

Who is able to access and use what data is clearly defined in the DanubeGIS data policy. Users are categorised into internal users and external users. Internal users are nominated by the Contracting Parties and include members of Delegations as well as members of Expert and Task Groups. External users are generally not affiliated with the ICPDR and can self-register by submitting a valid email address and agreeing to certain end user license agreements. Without registering, a public user can only view ready-made maps of final report datasets. Self-registered users may also view any combination of map layers of final report datasets. Internal users can view and query all datasets including all attribute data. Internal and self-registered users are able to access the many datasets and tools offered by the DanubeGIS platform as long as the data is not of a restricted nature.



**Data classifications are defined by each of the countries that submitted it. The different classification levels are as follows:**

**1. Unclassified**

- ◆ Available for for all users (free use).

**2. Restricted**

- ◆ Not for general disclosure/ for self-registered (and all higher-level) users.

**3. Confidential**

- ◆ Available for someone who can be trusted with information/ available for entrusted (and all higher-level) users upon request.

**4. Secret**

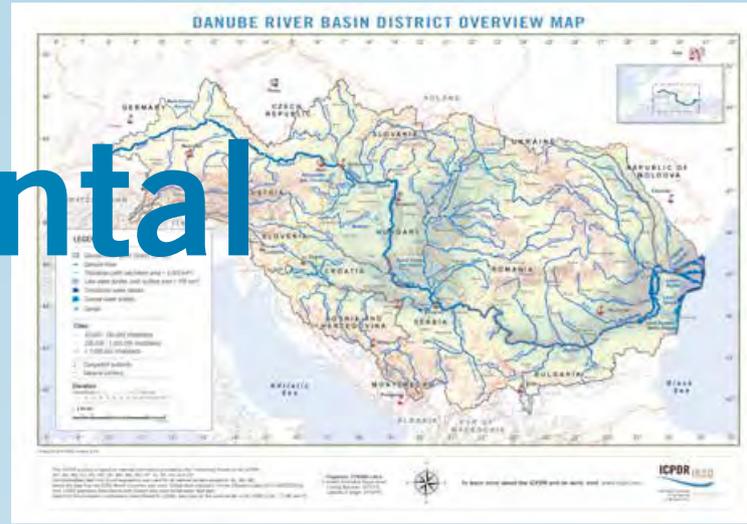
- ◆ Kept or meant to be kept private, unknown or hidden from all but a select group of people for available only for nominated (internal) expert users for ICPDR-related work.

Of course, public users may request access to otherwise confidential data if he/she fills out and submits a request form within the DanubeGIS system, giving information on who is going to use the data for which purpose. The respective national expert is notified about the request and can enable or deny access, based on the respective national situation. If access is granted, then the user will be able to download the data from the platform.

**For more visit:**  
[www.danubegis.org](http://www.danubegis.org)

# Mapping Environmental Protection:

## A Cartographer's View on Europe's Second-longest River



It is quite interesting to observe the great variety in scale, levels of data precision and variety of data sources one can experience as a cartographer. Starting from a very narrow focus on details and gradually widening the scope, the development of my cartographic experience was in a sense replicating the way the river starts in a very narrow stream and widens into a broad delta at its end. As a young geodetic engineer, I was focused on millimetre pre-

cision while monitoring the movements of hydropower dams in order to measure deformation in time to prevent dam failure. Soon this focus on extreme detail was replaced with a quite different approach, where the input data was at best described in centimetres, and many times with much less precision (sometimes decimetres or worse), while determining the position of minefields left behind after the war.

In both cases, the failure to properly determine and visualise the data could have led to significant consequences and, in the worst case, even to the loss of life. But in the case of the minefields, there were safety buffer zones that were used for cartographic representations of the data, making it clear that it is not only the precision of data that matters, but that it is equally or even more important to properly determine a readable and meaningful cartographic representation.



### **Zoran Major**

works as a Technical Expert for GIS, dealing with data management, mapping and GIS at the ICPDR Secretariat. Previous positions include Head of Unit for quality control of the Croatian National Mapping Agency and Head of Department for Database and GIS with the Croatian Environment Agency. Mr. Major also has extensive experience working in international organisations, on GIS and database issues from engagements in UN and NATO field missions (UNPROFOR and SFOR).

Today, when I am mapping the Danube River Basin, there are also some challenges dealing with potentially very serious consequences (e.g. flood hazard maps) that can affect very large areas and population, and in this context, it is again most important to maximize map readability. Visual clarity and readability is constantly the focus of discussions with my colleagues in the ICPDR Secretariat when we consider the layout and contents of the maps that I prepare (e.g. for the Danube River Basin Management Plan or for the Danube Flood Risk Management Plan updates).

Most of the ICPDR maps are thematic maps produced at 1:4,500,000 (A3), or 1:6,000,000 (A4) scale. The only exception being the large Overview Map of the DRBD, which is produced as a wall map in an A0 size, at a scale of 1:1,500,000, and which primarily shows the topography of the Danube River Basin District (DRBD) with emphasis on the relief of the basin, which helps to illustrate how the current river drainage pattern was established through the ages.

At these scales, the question of input data positional accuracy becomes almost unimportant. On the other hand, the importance of quality and comparability of the attribute data input becomes immediately recognisable in the cartographic representation. This means that any mismatch in the understanding of the meaning of data attributes, or any methodological differences in data collection between the countries, may become clearly visible for the first time only once the map is produced. As for positional accuracy, it is important to recognise that the data is cartographically generalised, and that we are using the thresholds that are filtering only the data which is relevant on the DRBD level, i.e. only the rivers with catchments larger than 4,000 km<sup>2</sup>.

As the Danube River Basin (DRB) has an area of more than 800,000 km<sup>2</sup>, and data is provided by the 14 countries (through

the ICPDR's own information system called DanubeGIS), there are considerable challenges in producing maps that ensure a homogeneous overview of the themes that are of relevance to the ICPDR. Selecting the appropriate symbols and suitable shading of thematic areas are just some of the crucial requirements for a satisfying cartographic representation that provides both reasonable levels of detail and ensures the readability of DRB maps.

The challenges and benefits of trans-boundary cooperation can be much more easily observed and analysed when we achieve this goal of providing uniform and readable cartographic representation of the data throughout the Danube River Basin. The process of ICPDR map production is ongoing and constantly developing - corresponding with the ICPDR's numerous tasks and activities.

Working with the data prepared and provided by the various ICPDR Member States is an interactive and intensive process. Updated data can be uploaded to the DanubeGIS system when required, but sometimes data changes and corrections can be necessary, leading to a situation where data uploads are repeated many times over. Consequently, the map drafts are also updated in order to reflect the changes in data. This constantly flowing stream of data can be likened to a river washing over the cartographer! It also can mean many map drafts get made again and again. It is not uncommon for a map to go through more than five drafts until a final version is made.

However, when a good map draft is prepared, it can be shown to ICPDR experts or Heads of Delegation who are often better able to consider the topic being mapped when able to visually take the information in. This can lead to the opportunity that a new approach to that particular topic can then be considered due to this new perspective that a good map visualisation provides. Sometimes there may be the situation that a map, once shown to a relevant expert or official, may show an unexpected result based on the newly updated data of the related theme. This can facilitate the consideration of various approaches

to the theme, and highlight a need for a certain managerial approach. Either way, visual presentations of data reflected on a map can help to facilitate and guide decision-making at various levels.

Being a cartographer that primarily deals with rivers these days implies being aware of the need to provide clarity of information not only through paper maps but also through online services which are currently the main standard for the exchange of GIS information.

New technology does not only allow data to be efficiently uploaded into ICPDR's system when required, but also allows dozens of finished data maps to be provided online as web map services, where they can be accessed at any time by members of the public or utilised by professionals and students. The potential that these GIS services create for an expanded understanding of the Danube River Basin is significant, and was not possible back in the early stages of the DanubeGIS development, but was made possible due to the constant improvements and updates of the system functionalities. Utilising a DanubeGIS information system that functions as a well-established data collection and processing machine, I must acknowledge that my work depends on the expertise and contributions of my many colleagues from various water-related fields and from numerous countries. I am, therefore, always trying to make sure that their work too can depend on reliable and accurate mapping.



# There's Nothing Small About This Short Film

## Insight into 'The Black Sea: Can Europe's Most Polluted Sea be Saved?'

**ICPDR wholeheartedly recommends that you take the time to watch the BBC report on pollution and the Black Sea by Abdujalil Abdurasulov and Jonah Fisher. Danube Watch was privileged enough to be able to sit down (via video-chat session) with this film team to get a little bit of back-story and some thoughts on their piece.**

Sitting down in person with these two was never really an option for Danube Watch (Covid-19 precautions notwithstanding) as they are normally something of a globe-trotting duo. Luckily for us, we were able to link-up in a video-chat with Abdujalil and Jonah while both are calling Ukraine their home-base and waiting to be able to travel again for new stories. “We were making plans early this year to go to Kyrgyzstan and look at lakes and glaciers”, explains Jonah. “Now everything is basically frozen until this is resolved. It's very hard to think beyond Covid-19, unfortunately, but that's the reality of the world we live in”.

Under normal circumstances, these two would not be in one place for this long. “We have both worked for the BBC for quite a long time”, says Jonah, “and before Ukraine, I was in Myanmar, Thailand, South Africa, Nigeria, Sudan and Eritrea”. Abdujalil adds: “I was based in Central Asia in Kazakhstan, but I was travelling around the world doing different stories too”. Both skilled in many aspects of film production and reporting, as a team they are able to cover all the bases needed. “We're the kind of people who get sent off on the more speculative, remote type stories for BBC news just because of our skill set and the fact that they know if they send us somewhere, we'll come out with something”, confides Jonah.

This helps to explain a bit of the 'how' regarding their Black Sea documentary. The 'why' is not shocking when already privy to the background of this duo: “Basically we were looking for a kind of story that hadn't necessarily seen a lot of attention before, something that would allow us to go and do interesting things outside the normal beat of what we do here in Ukraine”, says Jonah. “On top of that, we were interested in looking at environmental issues particularly”.

This is when Abdujalil reached out to Jaroslav Slobodnik, technical coordinator of all four of the ICPDR's Joint Danube Surveys (JDS) since 2001 and, as it happened, also a team leader of the EU/UNDP EMBLAS project organising the Joint Black Sea Surveys (JBSS) in 2016, 2017 and 2019. The biggest research vessel in the Black Sea, Mare Nigrum from Constanta, Romania was used to go across the sea from Odessa, Ukraine to Batumi, Georgia and collect samples for the follow up scientific analyses. The JDS4 and the third JBSS were happening almost at the same time in summer of 2019. “He mentioned this boat trip and that's what made it interesting because the water conservation science sounded quite boring to me initially”, acknowledges Abdujalil. “Once I heard that on this boat trip there would be scientists taking different measures, I thought along the way we would also see different things like the dolphins they were protecting, or some other nice visuals, like divers on the boat. That sounded generally quite interesting”, he continues, “so Jaroslav showed me this booklet that they had with 12 facts on the Black Sea which uses language understood to non-scientists such as ‘Black Sea: healthy or sick, how to make a diagnosis’. When

I read it, I thought it had very interesting things about this survey and what makes it so valuable”.

For example, the findings from the surveys show compliance with European environmental legislation (Marine Strategy Framework Directive and Water Framework Directive) by Ukraine and Georgia with 8 out of 11 descriptors within the MSFD having been covered by the surveys so far. The Danube river is considered, due to its size, to be the largest contributor of pollution to the Black Sea. The results of JBSSs, however, clearly demonstrate that the more than 13 billion EUR invested into the DRB by the EU in the past two decades resulted in the turning back of the trend of 'continuous silent death' of the north-western region of the Black Sea and has brought signs of its recovery instead.

Jonah sheds some light on how they then arrived at the story they wanted to tell: “We sort of worked back from that trip to try and think about how we could make it an interesting film and not too 'sciency'. We spent a lot of time on that ship and the kind of the balance we had to strike was to try to make the story relatable for people – not just endlessly show people doing tests, talking about the quality of the water – because after a few days, even we were losing our enthusiasm for it”.

“We always have a challenge to try and make people understand why they should care about the more complicated things in life”, elaborates Jonah. “That was part of what we were trying to do in this piece: go off on little tangents from what the experts were looking at on that boat and try to relate it to people's lives. We tried



Jonah Fisher and Abdujalil Abdurasulov

to connect it to things like the rubbish on people's beaches, or questions like 'can you swim in the river?', and 'where does your sewage go?'. Things like that to make it more relatable".

Achieving relatability when hard science is involved can prove tricky, and often other approaches were necessary. Along with trying to make the scientific work relatable to the every-man, Jonah and Abdujalil had to help the experts understand how to be understood. "We were with these guys for a week or so, and we would encourage them to try and speak in layman's terms as much as possible", confides Jonah. "There were a few moments when I had to say 'hold on, I understand this because I've been on your boat for a while, but you're going to have to boil that down into something which someone on the street might understand.' It's particularly easy when they're surrounded by other scientists to kind of forget what the baseline knowledge of these things is".

With limited space within the film itself, decisions on what to include were sometimes based on avoiding what could be too 'sciency' for many people. "To be honest, we filmed the large amount on the boat which was just too detailed and nitty-gritty that didn't end up getting into it", admits Jonah. But some of the scientific specifics were not the only content to be cut back. "The one thing that I really liked, which didn't get into the film very much, was the boat trip with the dolphin watchers", tells Abdujalil. "It was early morning, and there was beautiful light because, at that time, it was very calm so we had a wonderful sunrise. The visuals looked great".

Reminiscing further, both men shared their favourite memory during their time shooting the documentary. "Strangely", admits Jonah, "I really quite enjoyed going to the sewage plant in Budapest because I'm one of these people who really likes to see how things work, and the actual nuts-and-bolts of things we take for granted in every-day life. So, going inside a sewage plant like that and actually seeing where it all goes and how it's processed was great".

"For me", laughs Abdujalil, "it would have to be when I was trying out filming with my drone on the first day on the ship and crashed it"! He explains: "I thought it would be a challenge but that I could manage. I didn't calculate the how quickly the ship would be moving, and I was running out of battery. In the end, my drone was beeping, telling me the battery was dying. There was no time, it was either lose it – land it in the sea – or crash it onto the deck, so I crashed it. But I managed to save the footage"!

Great visuals and good memories can only have so much effect on the response to the film which, like most things dealing with environmental issues, had its fair share of detractors. "There were some governments in the region which did not like it", concedes Abdujalil. "They were not happy that we showed all the problems", he continues. "I guess they were expecting more of a PR film that would tell all about the good stuff that they're doing, all their efforts, and somehow avoid talking about the problems". This is far from the whole picture, however. "Many people did like it, including officials from those same countries and scientists in this field", says Abdujalil.

As for the general public, the impact on people's way of thinking is harder to judge. "But it's definitely raising awareness among people", states Abdujalil. "I can tell you that on that first day the film was posted on the BBC website it was one of their most watched videos". The popularity of it has even led to versions in other languages. "It was picked up by the Turkish Services Company that are translating it into Turkish", explains Abdujalil. "There are also Ukrainian and Russian versions of it, so in terms of the exposure it's been quite high".

Since then, the video has continued to be a popular watch on the website, reflecting that it must resonate with viewers. "I think people appreciated seeing a story that they've maybe not heard a lot about before", opines Jonah. "Also, crucially, they appreciated a story that wasn't unremittingly pessimistic. That there was a slight up curve at the end means a lot", he continues. "In a world where a lot is going wrong and problems seem too big for anyone to resolve, the prospect that maybe things are getting better, some solutions are being found and that people had worked together to actually find solutions for problems has an impact".

Danube Watch would like to thank Abdujalil Abdurasulov and Jonah Fisher once again for taking the time to discuss their film with us and share their experiences during, and thoughts on, the making of 'The Black Sea: Can Europe's Most Polluted Sea be Saved?'.

Follow the link below to view the film yourselves: [www.bbc.com](http://www.bbc.com)



# We're Getting to the Bottom of the Danube

by Robert Toegel

**It has been over 30 years since the composition of the riverbed east of Vienna was last systematically inspected. Now a major probing campaign has been completed.**

In the framework of the Catalogue of Measures for the Danube east of Vienna and the inclusive waterway management of viadonau, about 150 volumetric samples of the riverbed were taken in grid-like arrangements with an excavator-pontoon from Felbermayr Bau & Transport GmbH over the entire free-flowing section. The samples, which were packed in Big Bags, each had a weight of up to 300 kilograms.

Of course, this activity was also affected by the currently dominant Coronavirus pandemic. All participants had to adhere to strict safety guidelines such as wearing masks, keeping safe distances from one another, etc. With these guidelines, well-coordinated cooperation was necessary.



## **Important Groundwork for Bedload Management and River Engineering**

Knowledge of the state of the Danube riverbed is the solid foundation of a range of tasks at viadonau. Both the current bedload management in the free flowing sections as well as river engineering and ecological projects can potentially be better optimised and planned with the help of such knowledge. For example, the particle size distribution of the gravel is collected along the longitudinal course and over the channel width and the progress of the Danube riverbed over time. This way, the determination of riverbed roughness can serve as a basis for hydraulic modeling, areas with coarse sediment localised with regard to damage potential for shipping as sediment grain size also has a corresponding effect on natural bedload transport.

## **After the Sample-taking, Begins the Analysis**

After the sifting and analysis of the gravel samples, a comparative scientific analysis of the riverbed material for both of the stretches of the Austrian Danube will be created through cooperative research between the University of Natural Resources and Life Sciences Vienna (Institute of Hydraulic Engineering and River Research), the Engineering office Klasz and viadonau. In this way, a temporal comparison of the development of the Danube riverbed over the past 30 years is planned on the one side, while a spatial comparison between the two free flowing sections of the Danube around the Wachau and east of Vienna is planned on the other side.

## Joint Statement

The ICPDR linked up with the Danube Commission and the International Commission for the Protection of the Sava River Basin in 2007 to execute an intense, cross-sectorial discussion process, which has led to the 'Joint Statement on Inland Navigation and Environmental Sustainability in the Danube River Basin'.

The Joint Statement provides principles and criteria for environmentally sustainable inland navigation on the Danube and its tributaries, including the maintenance of existing waterways and the development of future waterway infrastructure. The process involves selected representatives of navigation authorities, environmental protection authorities, industries and environmental organisations throughout the basin.

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## The Differing Strategies of Bedload Management

On the one side, 235,000 m<sup>3</sup> of sediment is added annually to the riverbed east of Vienna by Verbund Hydro Power GmbH, below the hydropower plant Freudenuau. The other side, within the framework of conservation dredging, as well as by means of sediment management, is being operated by viadonau with sediment return (dumping the dredged materials as far upstream as possible).

In the Wachau, bedload-management takes place through the construction and current allocation of about 13 gravel islands/ gravel structures along the Danube – also out of materials from the conservation dredging for navigation. This approach has been led for over 10 years within the framework of the LIFE Nature Project Wachau, and has seen to ecological shore structures and free-flowing sections along the river ever since.

## viadonau and the ICPDR

Viadonau has enjoyed long-standing and intense cooperation with the ICPDR. The PLATINA Manual on Good Practices in Sustainable Waterway Planning, several Joint Danube Surveys, the Stakeholder Forum of the Bad Deutsch-Altenburg Pilot Project and Danube Day are among the many joint activities that have characterised a partnership which extends far beyond a simple observer role. For projects in the Danube region as well, the ICPDR has always been a constructive partner.



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For more visit:  
<http://www.viadonau.org/en/company/project-database/top-aktuell/integrated-river-engineering-project-catalogue-of-measures/>

More info on the many other viadonau projects:  
[www.lebendige-wasserstrasse.at](http://www.lebendige-wasserstrasse.at)



# Presidency 2020: Cooperation, Collaboration and New Perspectives in Times of Crisis

Moldova has taken over the ICPDR Presidency for 2020 only to be immediately met with the COVID-19 crisis and the need to completely alter the way in which the ICPDR operates on a daily basis. Luckily, one of the goals of this presidency is to pursue deeper cooperation and new approaches, especially to looming future crises like the effects of climate change.



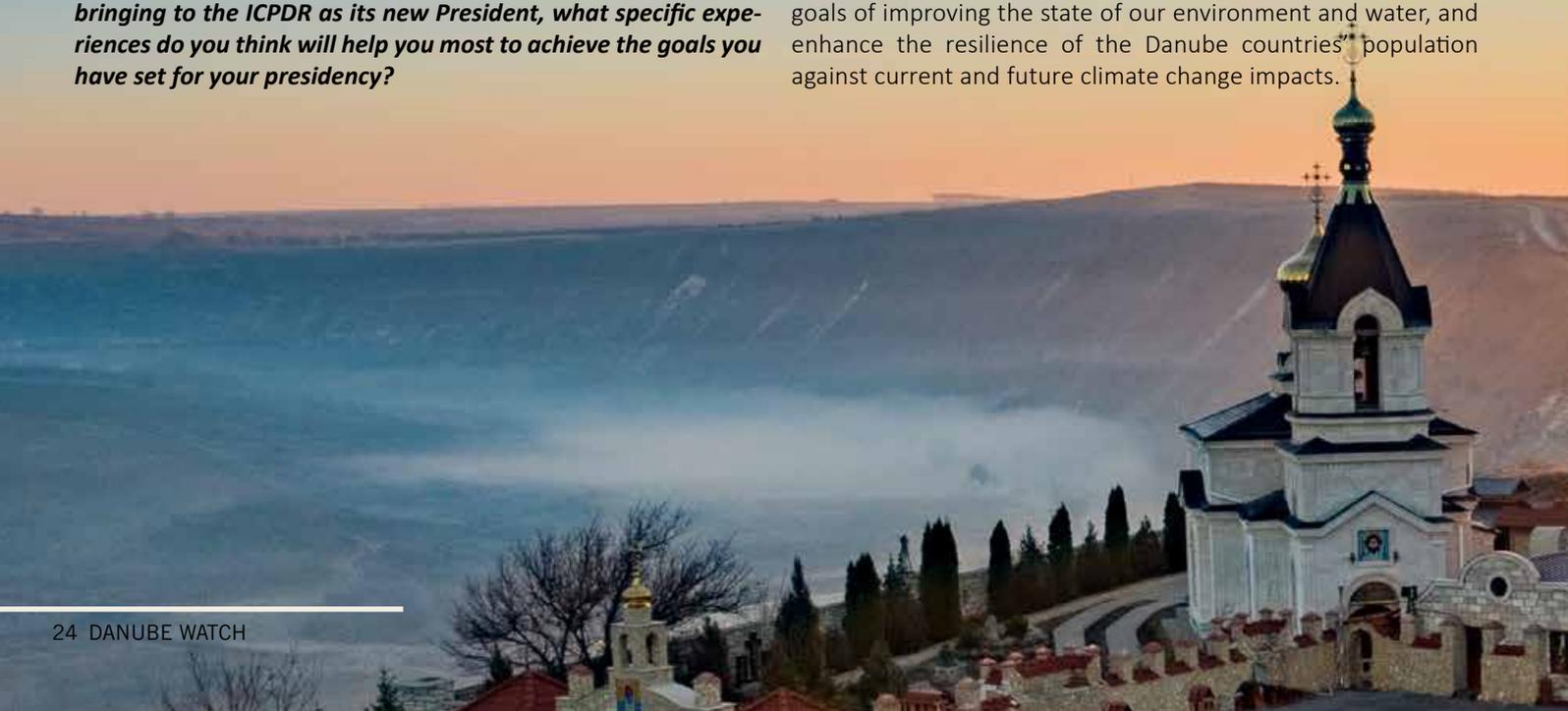
**“ Danube Watch: Welcome to the ICPDR from Danube Watch! How does it feel to be stepping into the role of President?**

It is a great honour, pleasure and responsibility to step into the role of President. During the previous Moldovan presidency, implementation of the Water Framework Directive was in its initial stages and there was a long time until the 1st Danube River Basin District Management Plan. Since then, through the joint efforts of the ICPDR, all Danube countries, the EU and funding organisations, a great step forward was made. Currently, the ICPDR is facing a lot of new challenging tasks - implying stronger consolidation and cooperation. Hopefully, in the position of President, I will contribute to the strengthening of these processes with the aim of achieving our common goals including the integration of water and environmental policy into other policy areas, particularly agriculture.

**Danube Watch: You have a wealth of experience that you are bringing to the ICPDR as its new President, what specific experiences do you think will help you most to achieve the goals you have set for your presidency?**

I graduated from the Academy of Economic Studies and International Management Institute in Moldova, and have also gained additional professional knowledge in the fields of environment, public policy and regional development. Before taking over the position of the State Secretary of the Ministry of Agriculture, Regional Development and Environment, I worked as State Secretary of the Ministry of Regional Development and Construction and as Head of the Directorate of Political and Regional Cooperation. In addition, I have consulted on the development of the national adaptation process to climate change and the improvement of regional statistics, among others. I also earned a Master's degree in European policies and public administration.

My past experience in the field of regional development and environment, plus my understanding when it comes to facing challenges, gives me the hope that we will successfully overcome some during my presidency. I also hope this experience will allow us to outline new perspectives to achieve the further goals of improving the state of our environment and water, and enhance the resilience of the Danube countries' population against current and future climate change impacts.



**Danube Watch: One of the many goals of your presidency is to increase cooperation and collaboration between ICPDR members with an increased focus on non-EU member states. What do you see as concrete examples of how to achieve this?**

These would be the successful implementation of the 2015 Danube River Management Plan; the joint elaboration of the 2021 Danube River Basin Management plans and other strategic documents, which undoubtedly contribute to the strengthening of national capacity building; technical and financial support in the development and implementation of the national river basin management plans, other projects aimed at improving trans-national cooperation - particularly, in flood risk and drought management -, providing and guiding know-how, as well as the application of innovative technologies, analytical methods, laboratory skill, etc.

**Danube Watch: Another aim of your presidency is to further develop a response to water-scarcity due to droughts within the region. What initiatives and/or steps would you like to see taken during your time as president?**

Among the initiatives, I would like to mention the elaboration of a Danube-wide water-balance paper that can significantly contribute to the development of national and trans-national Drought Management Plans, the promotion of strengthening cooperation between national and local water authorities, the development of relevant water profiles and broad public involvement in the discussion of climate change impacts and their consequences. Public awareness and involvement is extremely important because the effects of climate change are often experienced more intensely on a local scale. Risks and uncertainties create challenges to people's livelihoods and local development progress, and respectively, require a mix of top-down and bottom-up approaches, recognising that much of the implementation of adaptation occurs at the local level. In addition, there is a strong need for the practical implementation of structural ad-

aptation measures to properly respond to water related adaptation challenges to ensure population and ecosystems health and sustainable socio-economic development. I would also like to see further implementation of the ground water management measures to enhance resilience to the climate change risks.



**Danube Watch: You have stated that securing more investments for key ICPDR projects is vital and that strengthening cooperation between the ICPDR and financial institutions could be an important way to do this. What, if any, challenges do you foresee in fostering such cooperation?**

In the current conditions of a continuing pandemic, to be followed by setting investment priorities other than those related to water, e.g. overcoming of economic crisis, recovering and strengthening of health systems, recovery for small and medium business, etc., it is extremely important to continuously promote the importance of water issues in front of funding organisations and it is a strong necessity to support their solution as water issues are fundamental for meeting environmental, social and economic goals. Therefore, raising both available financial instruments from the EU and other funding institutions, and ensuring better alignment of funds to be used for the implementation needs of the Danube countries – in particular non-EU member states – seem to be among the main challenges in ensuring the implementation of the Water Framework Directive throughout the Danube Basin, as well as Danube River Basin Management Plan and national river basin management plans.

**Danube Watch: Finally, what do you hope to have achieved by the end of your Presidency?**

I like to hope that by the end of my presidency, water governance and, particularly, the state of the water in the Danube Basin will have been improved, the first draft of the 3rd Danube River Basin District Management Plan will have been completed and we will then move forward on solutions to other significant water management issues.



# Talking with Two ICPDR Dinosaurs

Two influential personalities reflect on the beginnings of the ICPDR. They were there then, back in the early nineties, working to put it all in place, and they are here now to explain the special circumstances that led to its success.

PEOPLE OF THE DANUBE

In the interview series "People of the Danube", Danube Watch presents personal portraits of individuals who are passionate about the Danube Basin and its waters.

“ Wolfgang Stalzer, Head of Delegation and two-time President of the ICPDR, as well as current Goodwill Ambassador and Ivan Zavadsky, current Executive Secretary of the ICPDR, sat down with Danube Watch to discuss the formation of the ICPDR from their first-hand experiences. 25 years since the signing of the Danube River Protection Convention, the fact the ICPDR was formed and has worked as successfully as it has over the years is surely a special case. In this second instalment of our multi-part sit down with Mr. Stalzer and Mr. Zavadsky, they focused on the special way in which the ICPDR operates and some of the personalities who have made the organisation a unique success story.

To begin with, the focus of the ICPDR itself has led to a unique set of circumstances. Water management and water-related issues demand long-term focus and commitment in order to see results. Mr. Stalzer sheds some light on the matter, “Water protection is not a political hot spot. It is amazing that the ICPDR has been able to get the focus and care for some of its activities that last 25 years

(well beyond normal politically advantageous timelines). Normally, these things would be limited to four years maximum, but one cannot limit water protection projects to the short term”.

One reason why the activities of similar organisations are often kept on short timelines has to do with relationships with donors and other external concerns.



Wolfgang Stalzer

Intimately close to the waters of the Danube since childhood, bathing and fishing along the banks of the river, Wolfgang Stalzer's career naturally followed a path to water management and international water conservation. Its singular high point? Twice sitting as Austria's ICPDR president in 1998 and 2012. In 2014, Stalzer was also made one of the two first ICPDR Goodwill Ambassadors.

“Among other organisations similar to ours, the divide between the highly politically motivated and decision-making processes is normally very large”, explains Mr. Zavadsky. “For example, donors often want to see results in a very short period of time”, he continues. Such outside pressures can lead to other organisational issues as well. “Within many organisations, political decisions and financing come from the outside and so participant countries do not feel invested”, explains Mr. Stalzer. “Furthermore, it is often the case that they rely on outside experts which further instils a feeling of lack of ownership among those participant countries”.

The ICPDR, however, operates differently.

“Part of what has made the success of the ICPDR possible”, says Mr. Zavadsky, “is that we were lucky not to fall into the trap of becoming addicted to outside donors. A decision within the ICPDR in 2007 led the organisation away from this trap. We realised that we had reached a certain level and that we would actually be able to accomplish our work ourselves, without having to rely on outside financing”. “The way the secretariat is structured really brought the states on board and also means that they cannot distance themselves from the work of the ICPDR because, in the end, it is their own work”, adds Mr. Stalzer.

“Exactly, the Danube countries see the ICPDR as a joint exercise and feel a real sense of investment in everything that is done here”, confirms Mr. Zavadsky. He continues, “the fact is, whatever is being developed here – new methodologies, agreements on parameters, awareness and warning systems, monitoring, River Bed Management Plans, flood discussions – is all done by the countries themselves”. Of course, here too the ICPDR works in an idiosyncratic way. “The work here is not done in the commission itself, but by the expert groups”, explains Mr. Stalzer. “It is important that the experts have their say because in their hands, ICPDR's approach to water management is dynamic and never stays static”.

Mr. Zavadsky points out that “because of this structure, our policy arch is very specific and efficient. If you go to technical expert groups or policy expert groups to look



We hope these personal insights into the unique modus operandi of the ICPDR have proved to be as enjoyable as they were informative. Needless to say, we could have dedicated an entire issue to the stories and thoughts we compiled during our interview. We here at Danube Watch can not stress enough how much we appreciated the opportunity to sit down with Mr. Stalzer and Mr. Zavadsky, and discover through their experiences what has made the ICPDR a special organisation from its beginnings.

## PART 2

at a technical issue, they discuss technical aspects and what can be done, and at the end of the day they make a proposal. The ICPDR thus has no problem approving such proposals because the countries themselves supply the experts and so there is no need for further bureaucratic consultation at different levels. When the decision is being made, it is smooth because all of our actions are being done at the national level". This again highlights the ability of the ICPDR to successfully tackle myriad water-related issues within the Danube River Basin over the last 25 years: a seemingly impossible task.

The concept of centring the work of the ICPDR around expert groups made up of experts supplied by the various participating countries was put into place very early on in the establishment of the organisation itself. The Danube Environmental Programme, which operated parallel to the ICPDR, was itself made up of many experts in the field, and the lines between the two organisations were often, thankfully, a bit blurred. "Early on, it was very important for us at the ICPDR to get the expert groups that already existed in the Danube Environmental Programme transitioned here once we were officially established", clarifies Mr. Stalzer. Due to a real feeling of investment and ownership among the Danube countries and the experts themselves, this was possible. "The expert groups received new names when they transitioned into the ICPDR, but they were the very same people", remembers Mr. Stalzer.

Of course, the people who were drawn to the ICPDR and who made up the staff and expert groups were always a special bunch. "Here, scientific-minded people of all levels discuss everything everywhere, not just in official sittings, and this brings people closer together through these sometimes work-related and sometimes personal discussions", elaborates Mr. Stalzer. "I think that it is also wonderful that many countries within the region have a real culture of hospitality. When there's an official meeting somewhere, there's also an invitation to dinner or something like that after", explains Mr. Stalzer. "All these unofficial moments together bring people closer personally, and the effect on working relationships is very positive".

Stressing the importance of the personal situation throughout the history of the ICPDR, Mr. Zavadsky says, "we were really lucky.

I can't imagine what anyone could have done differently in all this time. We had wonderful people around us in the beginning (and still do!). All the hard work at ICPDR has always been driven by the capacity of wonderful people". This nota-

ble personal commitment that bound the organisation together in the beginning was not limited to experts and permanent staff, however. "We were also lucky with political situation", remembers Mr. Zavadsky. "Including the level of cooperation and the political people – ministers, etc., from different countries - who were always pushing for things to help solidify the work of the ICPDR".



**Ivan Zavadsky**

Born on the Slovak banks of the Danube, Ivan Zavadsky came from a family of water managers. A vital part of his home country's EU accession process, and one-time project manager of the foundational Danube Regional Project – a key precursor to the ICPDR – Zavadsky has been our Executive Secretary since 2013.

With the help of Mr. Stalzer and Mr. Zavadsky, the ICPDR clearly operates differently from many other similar organisations, and the key to this difference has always been a sense of investment. Participating countries in the region are invested because they make important decisions directly. The special working structure of the ICPDR attracts dedicated experts who do not have to stress over needless bureaucracy, and who develop closer working and interpersonal rela-

tionships because of the region's wonderful hospitality culture. In the end, however, it is the people themselves who have always made the ICPDR work well for its 25 years of existence – and we hope that stays the case. ”



**Fold out to get a detailed overview of the Danube River Basin District.**

The DRBD is made up of many rivers and streams, each one feeding into the Danube itself - big and small, see them all!



Produced by ICPDR, Vienna, 2017

# DANUBE RIVER BASIN DISTRICT

This ICPDR product is based on national information provided by the Contracting Parties to the ICPDR (AT, BA, BG, CZ, DE, HR, HU, MD, ME, RO, RS, SI, SK, UA) and CH. EuroGlobalMap data from EuroGeographics was used for all national borders except for AL, BA, ME, where the data from the ESRI World Countries was used. Global Multi-resolution Terrain Elevation Data 2010 (GMTE2010) from USGS Seamless Data Distribution System was used as elevation data layer. Data from the European Commission (Joint Research Center) was used for the outer border of the DRBD of AL, IT, ME and PL.

**Projection: ETRS89-LAEA**  
 (Lambert Azimuthal Equal Area)  
 Central Meridian: 20°0'0"E  
 Latitude of Origin: 47°0'0"N





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**21st Presidential Handover**

Hungary to Moldova