

DANUBE WATCH

THE MAGAZINE OF THE DANUBE RIVER / WWW.ICPDR.ORG

I / 2012



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Dear readers,

GEF... Still watching after 17 years! As I face mandatory retirement age at the Global Environment Facility, I keep thinking about all the projects we have funded in the international waters area. The series of GEF Danube Basin projects over 15 years stands out as the highlight. My *Danube Watch* newsletters from the mid 1990's have all turned yellow, but they bring back great memories of the work that your countries have accomplished. I look back on the three GEF/UNDP regional projects; the \$US 70 million we provided for national investment projects through the World Bank for agriculture, municipal sewage, and industrial nutrient reduction; the Danube Environmental Forum; the Small Grants programme run by NGOs; the Aarhus Convention support; the emergency response computer modelling that served well during two spills; the Danube Box; Danube Day; partnerships with the business community; pilot work on the Sava Basin institutions; the Tisza Basin project – your countries and your citizens should be proud! And when your institution won the Thiess River Prize in 2007 for excellence... well that was just icing on the cake! The ICPDR has come a long way to serve your communities and show the way for the rest of GEF.

I feel privileged to have visited the office over the years, to see the projects on the ground, and to have participated at ministerial meetings. Your staff have spoken at GEF sessions all over the world, sharing your experiences for at least 12 years now. Our first

GEF water project approved at the start of GEF in 1991 was the UNDP Danube Regional Project, so GEF and the Danube effort are now both two decades old. Over the years, we have spent \$US 1.3 billion GEF grants on 250 projects worth \$US 8 billion in total cost, helping 149 GEF eligible countries work together on their shared water systems. GEF invested a little more than \$US 100 million in the multiple Danube projects, more than any other basin, so we have a large stake in your continued success. The world still needs you to make even more progress, so we are still watching!

We hope you will make progress to reach good ecological status, restoring floodplains and reducing agriculture nutrient pollution. Cost-effective flood damage reduction and pollution reduction benefits will come from restoring flows in floodplains. Agriculture will move east in Europe and subsidised fertilisers and large livestock operations will return once again to degrade the Danube and Black Sea. We all need the countries and the ICPDR to lead the way on reducing agriculture pollution. You must succeed in sustaining the costly improvements you and GEF have invested in. The world community is watching... and I am still watching through *Danube Watch*. I hope you succeed!

Alfred Duda
Senior Advisor on International Waters for the UN's Global Environment Facility



For a free subscription to Danube Watch, or to contribute to Danube Watch, please contact icpdr@unvienna.org

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

IMPRINT

Owner/Publisher: ICPDR – International Commission for the Protection of the Danube River, Vienna, icpdr@unvienna.org; **Executive Editor:** Benedikt Mandl; **Editor:** Kirstie Shepherd; **Design:** Agentur 7, Sylvia Kostenzer; **Cover photo:** Man on the river; **Print:** Druckerei Janetschek, Vienna

Danube Watch is the official magazine of 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 for the improvement of 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.



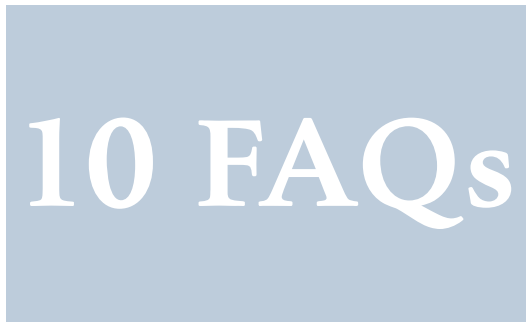
Danube Watch is printed on Arctic Volume, 150 & 100 g/m². Arctic Paper holds a FSC traceability certificate.



COOPERATION BETWEEN ICPDR AND INTERNATIONAL RIVER FOUNDATION

On 27 February 2012, the ICPDR and the International River Foundation (IRF) signed a Memorandum of Understanding (MoU) to cooperate in programmes and activities that promote and strengthen efforts towards good river basin management in Europe and throughout the world. The MoU is part of the ICPDR's commitment to share experience from the Danube with other regions of the world. A key element of it is the commitment from the ICPDR to help establish a European River Prize.

Learn more about the IRF at: www.riverfoundation.org.au



FREQUENTLY ASKED QUESTIONS ABOUT THE ICPDR

To facilitate an exchange of information with other river commissions, the ICPDR has compiled a set of ten frequently asked questions (FAQs) with extensive answers. They were published on the ICPDR website and should serve as a model for collecting similar information. The questions range from general organisational ones to more specific ones such as issues related to conflict resolution.

Read or download the ten FAQs here:

www.icpdr.org/icpdr-pages/10_faqs_river_commission_icpdr.htm



EU-WIDE PHOSPHATE CAPS IN DETERGENTS

Danube Watch has followed the issue of phosphate caps for detergents in the EU for years. The European Council has now adopted a regulation limiting the total phosphate content of laundry and dishwasher detergents in a move that will contribute vastly to lowering the phosphate loads in Europe's rivers. The ICPDR has worked towards formalising this policy for years.

Read the full text of the regulation here: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2004:104:0001:0035:en:PDF>

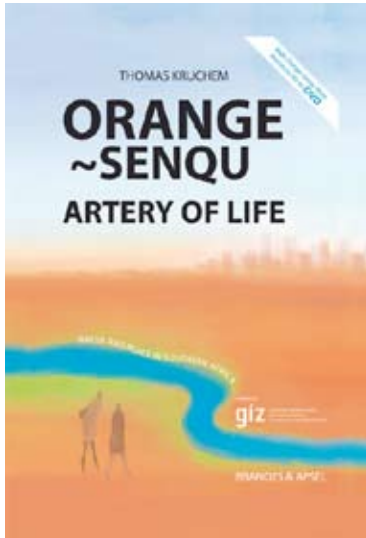


SAVA RIVER BASIN MANAGEMENT PLAN - PUBLIC CONSULTATION

The draft Sava River Basin Management Plan is available for public consultation until 21 April 2012. The Sava Commission has set up a website that offers the public the opportunity to respond to the consultation online. The public can help create an effective and achievable Sava River Basin Management Plan by responding to this consultation, and giving suggestions or comments.

Find the consultation form here:

www.savacommission.org/srbmp/en/consultation_form



ORANGE-SENQU: NEW BOOK ON 'PARTNER RIVER'

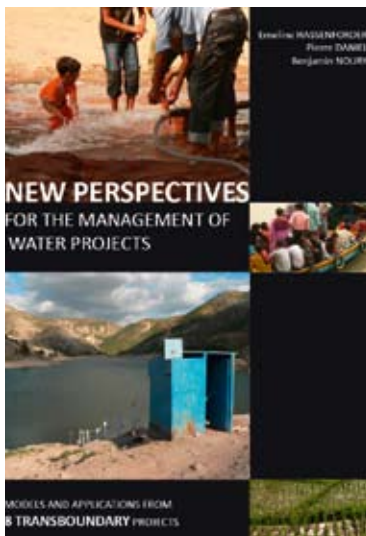
For several years, the ICPDR has cooperated with the Orange-Senqu River Commission on a range of subjects. The twinning of the two commissions led to the alignment of efforts in monitoring, education and use of GIS. Now there is a book that opens up an opportunity to learn more about this fascinating river basin in Southern Africa: Thomas Kruchem's 'Orange ~ Senqu: Artery of Life – Water and Peace in Southern Africa' is an account of an extensive journey through the basin. Based on the global issue of dwindling freshwater reserves, Kruchem set forth to explore the Orange River Basin's responses to this pressure and the way people deal with them. Water shortage is one of humanity's greatest challenges. It comes into sharp focus through the real-world issues faced along the river named Orange in South Africa and Senqu in Lesotho. In addressing these issues this compelling and beautifully illustrated book is part travelogue, part in-depth analysis and part a compendium of touching stories.

Order this book online at: www.brandes-apsel-verlag.de



BOOK ON CROATIAN RIVERS

Tomislav Šolić and Goran Safarek recently published a book that aims to give an overview on the unique and often very natural river systems of Croatia: 'Rijeke Hrvatske'. Both authors have been active in Croatian river basin management for more than ten years. The first part of the book provides general information about hydrology, hydrogeology, relief in function of river net development in Croatia. The second part looks into more specific aspects of lowland rivers and Karst rivers. The book was published in Croatian, but contains English summaries of each chapter and many colour photographs and illustrations.



NEW BOOK ON MANAGEMENT OF WATER PROJECTS

The book 'New perspectives for the management of water projects' was published by Emeline Hassenforder, Pierre Daniel and Benjamin Noury. It provides a mix of theoretical background information, practical manuals and eight case studies including work in the Danube River Basin with contributions of the ICPDR. The other case studies presented in depth are on the Tigris and Euphrates, Jordan, Mekong, Guarani Aquifer, Okavango and Nile. The book aims to provide water managers and decision makers with pragmatic approaches for tackling the complexity of water projects. It is also of interest for project managers involved in complex projects in other domains such as agriculture. The editors have compiled a great deal of information from various fields and tied it together into a highly readable and useful resource on topics ranging from public participation to hydromorphology.

You can order the book here: <http://oxyo-water.com/publications>

The future of the Danube River Basin

Adaptation to environmental change is not a new concept; throughout history societies have shown a strong capacity for adapting to different climates and environmental changes. Nevertheless, human-induced climate change represents a new and rapidly progressing challenge, one that society and the natural environment are not entirely protected against.

A reduction in water availability, changes to river regimes, drought or flood events and an increase in water temperature could result in water bodies being more vulnerable to pollution and lead to a decrease in water quality.

A healthy river basin is the foundation for economic, social and cultural development. More than 80 million people living in the Danube region depend on rivers and their ecosystems. Human activities have placed pressure on waters in the Danube Basin: households, industries and agriculture have all contributed to a decrease in water quality, leading to the establishment of the ICPDR to address these issues. Now, Danube countries must come together to better understand and prepare for the effects of climate change.

The Danube Declaration, adopted by the Danube countries at a Ministerial Conference in February 2010, acknowledged that “the impacts of climate change will increase and develop into a significant threat in the Danube River Basin”. Furthermore, through the Declaration the ICPDR was asked to develop a Climate Change Adaptation Strategy by 2012 to address these impacts. In addition, climate change adaptation issues must be fully integrated into the second Danube River Basin Management Plan as well as the first Flood Risk Management Plan, both due in 2015.

Getting a picture of future impacts. Germany was nominated as the lead country to steer the process under the framework of the ICPDR, and is supported by a team of experts in this field. To provide a basis for discussions on the strategy, the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety supported a Danube Climate Change Adaptation Study. The study began in December 2010 and was completed in January 2012 by Professor Wolfram Mauser and scientists from the Ludwig-Maximilians-Universität in Munich, in continuous exchange with the ICPDR. The results provide the foundation for a common, Danube-wide understanding of water-related climate change impacts.

CLIMATE CHANGE: WHAT TO EXPECT

The Danube Climate Change Adaptation Study presents expected climate change impacts throughout the basin.

Agriculture

Warm and dry regions are expected to experience a higher demand of water for irrigation with the decrease in precipitation in summer. The upper basin might benefit from a longer growing period, but the middle and lower basins might experience a shorter growing season with yield losses.

Biodiversity

An increase in air and water temperature might lead to a decrease in biodiversity and changes in ecosystems in the Danube River Basin in the long term. While some native species are expected to disappear, invasive species might increase.

Hydropower

Impacts on hydropower are connected to changes in water availability. Therefore, future hydropower generation is likely to decrease, especially during summer months.

Navigation

Low water levels, in combination with a reduced flow velocity, are expected to reduce cargo and limit navigability, especially in the middle basin. However, high winter temperatures could result in less frost and icing.

Water quality

A reduction in water availability, changes to river regimes, drought or flood events and an increase in water temperature could result in water bodies being more vulnerable to pollution and lead to a decrease in water quality.

Though no new modelling was done, the study summarises existing information available from more than 90 ongoing and completed research and development projects and studies, as well as 60 adaptation strategies, EU activities and guidance documents, national communications and reports. This information was then analysed for commonalities, contradictions, dependencies, knowledge gaps and competing interests for possible conflicts in order to provide an overview and assessment of state-of-the-art knowledge for the Danube River Basin.

“The study provides a really comprehensive overview of the status quo of what we know at the moment



Credit: Stefan Kuehn / GFDL

about climate change and climate adaptation in the Danube River Basin,” says Knut Beyer, Co-Chairperson of the ICPDR River Basin Management Expert Group. “It is a sound basis for the ICPDR to elaborate its Adaptation Strategy.”

Preliminary study results were presented during ICPDR meetings and international workshops and conferences to establish contacts with experts in the Danube River Basin and to gather further information from projects and climate change adaptation activities. In particular, a special roundtable discussion for the Team of Experts was organised in Munich in September 2011 to discuss the initial results and determine further project steps.

Expected effects of climate change. According to the study results, air temperature is expected to increase with a gradient from northwest to southeast. From 2021 to 2050, an annual increase of 0.5° C in the upper basin to 4° C in the lower basin is expected. Between 2071 and 2100, an increase of 2.5° and 5° C is expected. At the end of the century, the increase is expected to be particularly large during summer for the south-eastern region of the basin.

Precipitation is expected to increase for northern Europe and decrease for southern Europe. For the Danube region in the middle, this means that annual precipitation for the whole region will probably remain constant, but seasonal changes are expected to occur, with a decrease in summer and an increase in winter. For south-eastern Europe in particular a reduction of about 25% to 45% is expected.

Although the study does not reveal a clear picture of the floods, periods of drought, low-flow and water scarcity are likely to become more intense, longer and more frequent. A general increase in water demand due to socio-economic developments is expected for households, industry and agriculture, which could lead to high water stress. All this, together with an increase in water temperature, could further endanger water quality.

From study to strategy. An ICPDR Climate Change Adaptation Workshop will be held in Munich on 29–30 March 2012 to discuss the study results and possible adaptation measures. This will provide important input for the elaboration of a concrete Danube Climate Change Adaptation Strategy in 2012, with a first-draft table of contents to be discussed at the River Basin Management Expert Group meeting in May 2012. The strategy is expected to be adopted by the Heads of Delegation to the ICPDR in December 2012.


Once in place, the Climate Change Adaptation Strategy will define the next steps towards integrating climate adaptation issues in the first Flood Risk Management Plan, as well as the second Danube River Basin Management Plan to be finalised by 2015.

The Climate Change Adaptation Strategy will also be a concrete step toward the implementation of the EU Danube Strategy, which includes a call for action to “anticipate regional and local impacts of climate change through research” in that Strategy’s Priority Area 5 ‘Managing Environmental Risks’.

For more information or to download the Danube Climate Change Adaptation Study, please visit: www.icpdr.org.

Kirstie Shepherd is a freelance journalist living in Vienna and has called the Danube River Basin home since 2000.

“The study provides a really comprehensive overview of the status quo of what we know at the moment about climate change and climate adaptation in the Danube River Basin,” says Knut Beyer, Chairperson of the ICPDR River Basin Management Expert Group.



EU GRANT SUPPORTING HYDROPOWER ACTIVITIES

In 2010, the ICPDR received a grant from the European Union for a two year period to implement a project for the 'Implementation and follow-up of the first Danube River Basin Management Plan'.

The main objective of the project is to support key actions needed in the implementation and follow-up of the first Danube River Basin Management Plan and Tisza Sub-basin Management Plan, and includes a work package on integrating environmental concerns and water aspects in the development of future hydropower projects and in agricultural practices. This will be done by organising dialogues with specific sectors responsible for the development of the sector in the Danube River Basin. It will build on the agreed Joint Statement on Navigation and Ecology for the Danube.

The Gabčíkovo Dam in Slovakia is the second largest dam on the Danube (after the Iron Gates dam), and is situated downstream of Bratislava.

Can hydropower and river eco-systems get along?

Global energy needs are rising rapidly, as are greenhouse gas emissions from economic developments. Hydropower may seem an obvious choice for the provision of clean electricity, yet the negative environmental impacts of hydropower make it necessary to find solutions that will balance energy needs with those of the river.

For most Danube countries, hydropower is important. Countries are turning to clean energy sources to meet renewable energy targets, all the while trying to achieve 'good quality' status for water bodies in the Danube River Basin. How can Danube countries bring these seemingly conflicting goals together?

All Danube countries – even non-EU states – have committed themselves to implementing the EU Renewable Energy Directive, which is part of a package of energy and climate change legislation that provides targets for greenhouse gas emission savings. The directive encourages energy efficiency and the use of renewable energy sources. Growing energy demands, increased electricity prices as well as international climate protection targets are a major driver towards the expansion of hydropower generation and the construction of new facilities in some Danube countries



Credit: Vodohospodárska výstavba š.p.

Negative effects for the environment. However, hydropower – and the hydromorphological alterations through the construction of required facilities – can have negative impacts on the environment. The Danube River Basin District Management Plan endorsed by the Danube countries in 2009 identified hydromorphological alterations as one of the four most significant water management issues in the Danube River Basin.

Hydromorphological alterations can cause river and habitat interruptions, disconnect wetlands and floodplains, interrupt sediment transport, provoke changes in the natural structure of rivers such as river depth, width and flow regimes as well as interrupt natural fish migration routes.

In addition, these effects work against efforts to meet the requirements of the EU Water Framework Direc-

tive and its river protection goals to ensure that all waters achieve the ‘good status’ by 2015, a goal all Danube countries have committed to. The big question for countries is how to balance the seemingly conflicting needs of both the EU Water Framework Directive as well as the EU Renewable Energy Directive.

“The main – and extremely demanding – challenge is to find the right balance between increasing energy demand as well as energy savings and the protection of waters and ecology,” says Karl Schwaiger, Head of the Austrian Delegation to the ICPDR.

Working toward guidelines. The Danube Declaration, signed by Danube countries in 2010, asked the ICPDR to work in close cooperation with the hydropower sector and all relevant stakeholders to integrate the needs of energy and the environment. Specifically, the Declaration called for “a broad discussion process with the aim of developing guiding principles on integrating environmental aspects in the use of existing hydropower plants, including a possible increase of their efficiency, as well as in the planning and construction of new hydropower plants”.

Three lead countries – Austria, Romania and Slovenia – were nominated to steer the process of developing these guiding principles on hydropower in the frame of the ICPDR. These countries are supported by a Team of Experts, which includes representatives from the energy and environmental administrations of different Danube countries, as well as NGOs and other stakeholder groups. The team supports integration of the different objectives, and provides knowledge and input on the process.

For the ICPDR hydropower activity to succeed, the full participation of key players from both the environmental and energy sectors is vital. “It is necessary that this process is an inclusive one, so that all stakeholders have the possibility to contribute in this shared process to develop sustainable and viable solutions,” says Schwaiger. “Thus the involvement of all stakeholders is really crucial to achieve viable and environmentally acceptable solutions.”

Gathering data. The first step in the process is to develop an Assessment Report on Hydropower Generation in the Danube Basin, an advanced version of which was presented and discussed in February 2012. The report is based on answers to questionnaires sent to all Danube countries in August 2011, as well as on data from reports, documents and other databases (such as those of the ICPDR and the European Union).

The Assessment Report summarises key information on hydropower generation in the context of water management, flood protection, biodiversity and nature

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protection. In parallel, the collection of case studies and good practice examples on hydropower is ongoing. This input provides the basis for discussions and facilitates the development of the Guiding Principles on Hydropower.

Getting all stakeholders together. A first ICPDR Workshop on Hydropower and Water Management, organised by Romania, was held from 21 to 22 Febru-



All Danube countries – even non-EU states – have committed themselves to implementing the EU Renewable Energy Directive, which encourages energy efficiency and the use of renewable energy sources. Depicted here is Kraftwerk Vohburg in Bavaria, Germany.

ary 2012 in Timisoara, Romania. Representatives from water management and the energy sector, including representatives from the International Hydropower Association, European Small Hydropower Association and Energy Community, discussed the draft findings of the Assessment Report as well as ways to develop a common framework to implement the requirements of renewable energy and hydropower with those of water and environment protection. Participants shared practical experience in balancing these two goals, and discussed the elaboration of the Guiding Principles.

“The workshop has given the team of members more suggestions than expected to work toward the Guiding Principles,” says Aleš Bizjak of the Institute for Water of the Republic of Slovenia and representing Slovenia as one of the lead countries steering the activity. “The core group countries together with the ICPDR Secretariat are looking forward to work on issues and to finish the process next year in the best possible way.”

A second workshop will be organised to present the results and outcomes of the work achieved to that point, and to pave the way for broad acceptance and practical implementation of the main outcomes and findings.

Looking to models of cooperation. The Assessment Report and the work towards the Guiding Principles

build on experiences in other processes throughout the region. In particular, it builds on the work under the Common Implementation Strategy (CIS) ad hoc activity ‘Hydromorphology’. The CIS is an EU process supporting the implementation of the Water Framework Directive, and various activities under this process, including two EU workshops on hydropower and the Water Framework Directive.

Furthermore, the ICPDR activity on hydropower builds on the Danube River Basin District Management Plan, as well as the outcome of the activities of the Alpine Convention regarding Hydropower Generation in the Alpine Region focusing on Small Hydropower. In addition, the collaborative work on the ‘Joint Statement on Guiding Principles on the Development of Inland Navigation and Environmental Protection in the Danube River Basin’, published in 2008, has been a model for cooperation between sectors.

Shared solutions. Progress toward the Guiding Principles will link to the ongoing activities under the European Strategy for the Danube Region, which aims to improve coordination and cooperation between countries to address challenges in the Danube region. It focuses on eleven priority areas, which are also related to hydropower and environmental protection. Specific actions under Priority Area 2, ‘Encourage More Sustainable Energy’, requires comprehensive action plans for the sustainable development of the hydropower generation potential, to allocate suitable areas for new hydropower plants as well as to develop and set up a pre-planning mechanism for the allocation of suitable areas for new hydropower projects. The ICPDR process, therefore, also contributes toward the implementation of the EU Strategy for the Danube Region.

Close contact with coordinators for Priority Area 2, as well as for Priority Areas 4 and 5 (‘Restore and Maintain Quality of Waters’ and ‘Manage Environmental Risks’) will be crucial to ensure that there is no duplication or overlapping of work regarding hydropower generation in the Danube River Basin.

Meeting the challenge of satisfying global energy needs while reducing greenhouse gas emissions and protecting freshwater ecosystems requires new approaches. Decisions about hydropower plants can no longer be made in isolation as they are part of a suite of solutions for meeting energy needs. Through the collaboration of all stakeholders, Danube countries are working to find a balance between these needs.

Kirstie Shepherd is a freelance journalist living in Vienna and has called the Danube River Basin home since 2000.

Man on the river

Giacomo De Stefano is travelling 5200 kilometres from London to Istanbul, living 6 months on a row boat to build a new relationship with nature, water and rivers.

An open mind, open eyes and a relatively open-ended mission: 44-year-old Giacomo De Stefano is a traveller who advocates a responsible relationship with the matter he travels on – water. For about ten years, the Italian architect has dedicated his life to the protection and sustainable use of water and all associated resources world-wide. In an attempt to draw attention to environmental pressures, he set out to travel from London to Istanbul by boat. Although this journey itself might not be too unusual, the route and means definitely are: Giacomo rows and sails across the continent, relying purely on in-kind donations and the hospitality of the people he meets.



A fair share of his 5,200 kilometre journey is spent on the Danube. In late September 2011, the 'Man on the River' visited the ICPDR Secretariat in the UN Office Vienna to learn more about the work of the commission, but also to ask questions about environmental pressures, challenges and shortcomings. But how does such a journey work – travelling across a continent without a single Euro in cash? The answer to this question is also the underlying idea of the trip: Giacomo travels sustainably, tries to keep his presence

in nature as non-invasive as possible, and his use of resources at the minimum.

A sustainable journey. The boat was transported from Giacomo's native city Venice to London by a courier who offered to take it on board a truck that would have enough free space, beside the goods being taken to London anyway – to optimise transport and avoid any additional environmental impact. Giacomo sleeps in the boat under a canvas tent made from old truck tarpaulins. He uses a wood stove from a beer mini-keg to cook, warm the boat and dry his clothes. He also uses this stove to bake bread, using flour given by people he meets on the way. Fish and fruit complement his diet, as well as any other food given to him by locals he encounters.

Using both low and high technology. Giacomo uses no satellite navigation instruments, only the sun and the stars. At the same time, thanks to some technology partners, Giacomo is able to broadcast live from various locations he stops at, to tell people what he has seen in the preceding kilometres. The electricity needed on board to charge the telephone necessary for talking on the radio is supplied by a small solar panel. For this, he primarily uses personal encounters – but also technical support. He records, films and takes photographs of many encounters with the assistance of an accompanying camera team.

In October, Giacomo was forced to temporarily suspend his journey to return home for a family emergency. But he will be back on the river in spring to resume his journey, picking up where he left off in Budapest. Giacomo will be all the more devoted to listening, observing and sharing information with those who know more than he does.

Frequent updates and the current status of his journey – including a post on his visit at the ICPDR secretariat - can be found on the tour website: www.manontheriver.com

Benedikt Mandl is the Technical Expert for Communication and Public Participation in the ICPDR Secretariat, and is the Executive Editor of Danube Watch.

From every country, Giacomo takes a dry leaf and collects some drops of water, which will have become a collection of 15 small glassbottles by the time he reaches Istanbul.

Putting the Danube at the centre of EU policies

The Danube region plays an important role in the EU's transport and energy infrastructure, and the EU Strategy for the Danube Region will combine those sectors with economic, environmental, social and cultural elements.

The EU's new approach for the Danube region aims to increase the sustainable development of the region while protecting natural resources, landscapes and cultural heritage. Here, Danube Watch speaks to Romanian MEP Silvia-Adriana Țicău about the changes the Danube Strategy will bring to the region, and how to balance the river's needs.

Danube Watch: What is the significance of the EU Strategy for the Danube Region?

Țicău: The EU Strategy means that the development of the Danube Region is an EU priority. The Danube region is an important crossover point between the EU's Cohesion Policy programmes, programmes for countries covered by the European Neighbourhood Policy and potential candidates for accession, and therefore represents an area where enhanced synergies between different EU policies can be developed: cohesion, transport, tourism, agriculture, fisheries, economic and social development, energy, environment, enlargement and neighbourhood policy. In addition, the Danube, together with the Main Canal and Rhine River, connects the North Sea with the Black Sea and has the potential to enhance the geostrategic position of the Black Sea region.

The Danube Strategy has an important role to play in improving intermodality in the whole region and increase connectivity with the Black Sea through inland navigation, as well as road and railway routes (highways, rail freight corridors and high-speed railway lines).

Considering that the EU Danube Strategy promotes regional and cross-border cooperation for further economic growth and identifies joint responses to common challenges into the region, we expect that the strategy will contribute significantly to improve coordination between regional and local authorities and organisations operating in the Danube region and will bring prosperity, sustainable development, job creation and security in the area.

It is important that all riparian countries and Member States, especially, will continue to invest in common strategic projects related to the EU Danube Strategy priority actions. In this respect, I would emphasize the important role that priority area coordinators have in implementing the EU Danube

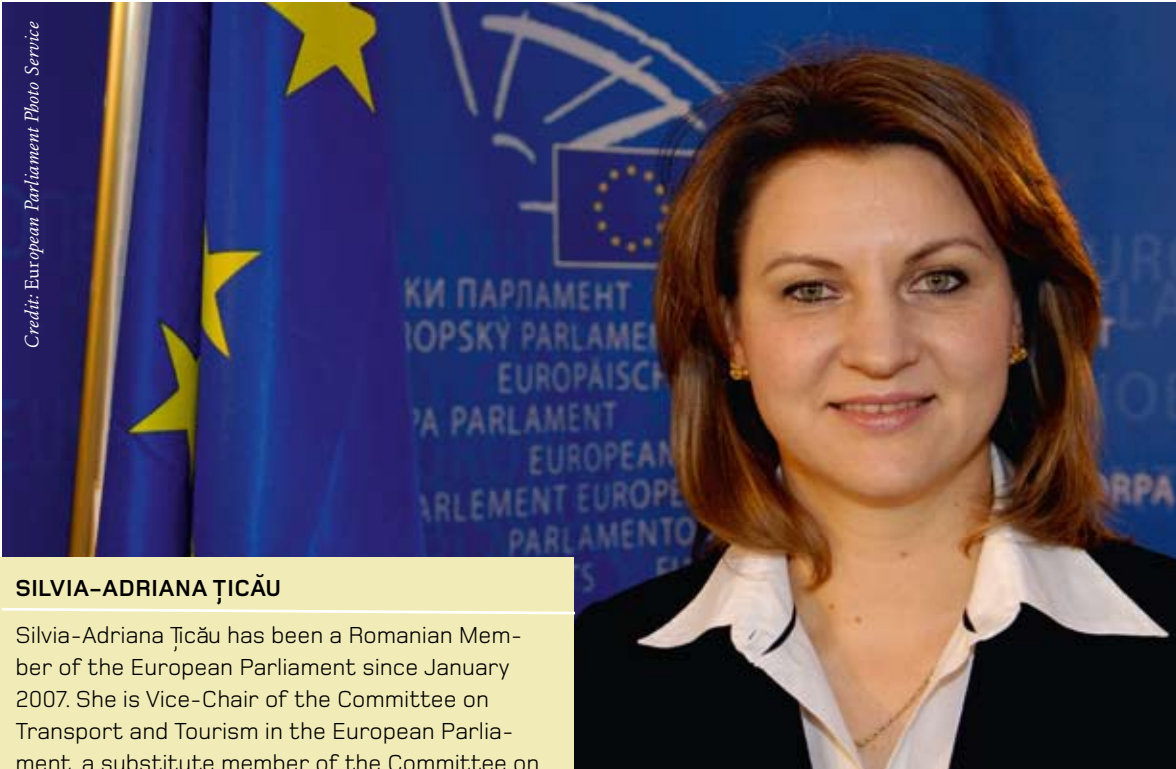
Strategy and we urge Danube riparian countries to continue to give a high priority to the common strategic projects and to the key priority actions of the EU Danube Strategy. EU citizens living in the Danube region expect the EU Danube Strategy to improve their lives and, therefore, we have the obligation to succeed.

Danube Watch: The EU Strategy for the Danube Region has the potential to push development in economy, society and nature – yet, some of these development goals create conflicting interests. Where do you see the biggest challenges in this regard?

Țicău: The biggest challenge is cooperating to develop and implement common strategic projects in order to fully exploit the potential of the Danube River and region. The successful implementation of the EU Danube Strategy depends on the ability, capacity and preparedness of municipal actors to intervene on the regional labour markets with project initiatives triggering local demand of the labour force, creating the basis for smart and environmentally friendly growth, improving cooperation between border regions of different Member States, and ensuring long-term development of the European water transport network. From this perspective, it is of paramount importance to integrate the Danube Strategy in the frame of a long-term vision of the European environmental, social and industrial development strategy, and to ensure that it enjoys a strong and determined political support of all Member States.

Green technologies and ecological modernisation, such as improved energy efficiency and better waste management, can contribute to the sustainable development of the region and to the reduction of the negative environmental impacts of economic activity.

Environmental impact assessments, including assessments of effects on the entire ecosystems of the river, should be a prerequisite for all transport and energy-related infrastructure projects, in order to guarantee that international standards of environmental protection are met, after consulting those partners which might be affected by those decisions. If there is a common wish to have successful strategic projects for the Danube Region, there is a common way to succeed.



SILVIA-ADRIANA ȚICĂU

Silvia-Adriana Țicău has been a Romanian Member of the European Parliament since January 2007. She is Vice-Chair of the Committee on Transport and Tourism in the European Parliament, a substitute member of the Committee on Industry, Research and Energy and a member of the Science and Technology Options Assessment. From the beginning of the 7th EP legislature, Țicău has chaired the “MEP Danube Forum”, established in 2009, bringing together MEPs from all political groups within the European Parliament.

Prior to becoming an MEP, she was Member of the Romanian Senate (Nov 2004 to Dec 2006), Minister of Communications and Information Technology (July to Nov 2004) and Secretary of State for Information Technology (Sept 2001 to July 2004). She also served as a General-Director for Information Technology and Information Society Development Strategy at the Ministry of Communications and Information Technology (Jan to July 2001). Before 2001, Țicău was Director of Operations, Director of Information Technology Department, Software Director, and analyst-programmer in the private sector.

Danube Watch: How can we balance the needs of inland waterway transport with those of the river?

Țicău: The ‘Joint Statement on the Development of Inland Navigation and Environmental Protection in the Danube River Basin’ guidelines call for an integrated planning team to assess needs and to propose as many win-win measures as possible to improve the navigation and ecological status of the Danube River. The Parliament recommended that the Commission should respect the commitments under the Joint Statement and pointed to the need to encourage the development of clean and efficient vessels under the Seventh

Framework Programme for Research and Technological Development, with a particular focus on information and communication technologies and the design, eco-efficiency and equipment of vessels.

All transport modes should be updated to EU standards and environmentally friendly transport modes should be assigned priority where appropriate while planning the transport system of the region.

Danube Watch: The cap on total phosphate contents in laundry and dishwasher detergents will lead to a major decrease in the phosphate loads of the Danube, but came only after years of lobbying for the cause. What can MEPs like you do to accelerate such processes?

Țicău: Responsibility for the pollution of the Danube lies with the Member States and the other riparian countries through which the Danube flows. Protecting the environment in the Danube Basin is an important aspect which will have a bearing on the agricultural and rural development of the region, and riparian states should give top priority to the establishment of shared hydrological and water quality testing facilities.

Preserving the quality and quantity of water reserves under control and ensuring their sustainable use, preserving biodiversity, landscapes and the quality of air and soil is extremely important. It is also important that we all push for European, national and local campaigns in order to raise awareness of the environmental impact of residues.

MEP Silvia-Adriana Țicău is Vice-Chair of the Committee on Transport and Tourism in the European Parliament, a substitute member of the Committee on Industry, Research and Energy, and a member of the Science and Technology Options Assessment.

Achieving peace through water management

Future wars may well be fought over scarce water resources, but in the Southern African Development Community that threat is disappearing through transboundary water cooperation.

As human populations and their economies continue to grow, pressure on limited water resources is also bound to grow. Time and again, there has been talk that conflict may erupt over these limited water resources.

At the heart of the SADC cooperation, is the philosophy of 'Ubuntu', that all people are interconnected, and therefore interdependent.



Credit: GIZ/SADC Water

Countries in the Southern African Development Community (SADC) region, however, are successfully using transboundary water cooperation as a conflict prevention initiative. The SADC Water Division, supported by the GIZ, serves as a role model for cooperation rather than conflict over scarce water resources using proactive awareness-raising and multi-level collaboration.

The spirit of social justice. At the heart of the cooperation, is the philosophy of 'Ubuntu', that all people are interconnected, and therefore interdependent. "Ubuntu is one of the tenets of all cultures in the SADC region and represents a social contract of mutual respect, responsibility and accountability that members of society

have towards each other," says Horst M. Vogel, Programme Leader for GIZ Transboundary Water Management in the Southern Africa Development Community. "Ubuntu defines a process for earning respect by first giving it, and to gain empowerment by empowering others. It encourages social justice for all."

Leading through collaboration. At the local level, stakeholders can already see this conflict prevention in action. The Kunene Transboundary Water Supply Project is developing and rehabilitating water supply and sanitation infrastructure in southern Angola and northern Namibia for communities and towns along the border region between the two countries. The project benefits each country, but is also having a positive effect on the neighbouring Cuvelai Basin.

The success has been possible through all stakeholders participating in the philosophy of Ubuntu. "The challenge for us in development cooperation, or as temporary guests to the region, has been to first see and comprehend this unique ethical philosophy, which runs counter to our Western system of individualism, and then try to apply it to day-to-day cooperation, to work on the ground," says Vogel. "Slowly but gradually this fosters trust and mutual understanding, which in turn creates win-win situations and propels cooperation."

Model of cooperation, not conflict. The Orange-Senqu River Commission, which is cooperating with the ICPDR on several projects and activities, has been involved in an information and study tour exchange programme with the Transboundary Water Management in Central Asia programme, engaged in the establishment of river basin organisations for the Isfara and Khodzhabakirgan Rivers that are shared by Kyrgyzstan, Tajikistan and Uzbekistan. To further share their experiences, SADC has developed a report on conflict prevention and peace dividends through transboundary water management in the SADC region.

For more information or to read the report, please visit the SADC-ICP collaboration portal at: www.icp-confluence-sadc.org

Kirstie Shepherd is a freelance journalist living in Vienna and has called the Danube River Basin home since 2000.

Business Friends show corporate responsibility



How can leading agricultural companies protect water and ecosystems in the Danube River Basin? On 23 March 2012, the ICPDR and the Business Friends of the Danube will address this question in an Agricultural Forum in Budapest.

The forum demonstrates efforts to strengthen cooperation between the ICPDR and business in meeting the goals of the EU Water Framework Directive and fostering corporate commitment in water stewardship. The forum is an opportunity to showcase achievements as well as future intentions related to water management.

To combat agricultural pollution, the ICPDR has compiled recommendations on best agro-industrial techniques for all relevant point discharges of agriculture. These serve as tools for decision-makers and local environmental and agricultural authorities to decrease pollution. A major topic of the forum will be the Danube Strategy and the opportunities it creates.

The forum will offer an exchange between the international agricultural sector, leading companies with a special interest in water use or with a great impact on water resources and non-governmental organisations. The forum will also attract key EU institutions and government representatives of Danube countries dealing with environment and agriculture.

For more information, please contact the ICPDR Secretariat at icpdr@unvienna.org. (BM)

Reinhard Liepolt Award for Danube research



Alexander Kirschner, one of the recipients of the Reinhard Liepolt Award for Danube Research, working in the course of JDS2.

The international 'Reinhard Liepolt Award for Danube Research' was awarded to members of the Joint Danube Survey team in December 2011. Two out of three distinguished publications were based on findings made in the course of JDS1 (2001) and JDS2 (2007). The ICPDR congratulates the scientists, primarily Georg Reischer, Andreas Farnleitner and Branko Velimirov, for this great success and is looking forward to continuing important research in the JDS3 next year.

The first publication (Reischer et al., see below) describes the first application of a new concept of source tracking human faecal markers in a large river system. The second publication (Velimirov et al., see below) provides new and surprising insights into the development of bacterial communities along large rivers.

Reischer and Farnleitner are based at the Institute for Chemical Engineering of Vienna University of Technology, ICC Water and Health; Velimirov works at the Medical University Vienna, Department of Cell Biology and Ultrastructure Research. The Liepolt Award is presented annually through the Austrian Committee of the International Association for Danube Research.

1) Reischer GH, Kavka GG, Kasper DC, Winter C, Mach RL & Farnleitner AH (2008) Applicability of DNA based quantitative microbial source tracking evaluated on a large scale in the Danube River and its important tributaries. *Large Rivers* 18 (1-2): 117-125

2) Velimirov B, Milosevic N, Kavka GG, Farnleitner AH & Kirschner AKT (2011) Development of the bacterial compartment along the Danube River: a continuum despite local influences. *Microbial Ecology* 61: 955-67. (BM)



Presidency 2012: Austria – strengthening the core

In its continuing series, *Danube Watch* presents portraits of the leaders whose passion and commitment help determine the future of our river basin. In this issue we speak to ICPDR President for 2012, Wolfgang Stalzer.

Diplomatic representatives from all Danube Basin countries joined outgoing president Mykola Melevskiy as he presented a bottle of Danube Water to Wolfgang Stalzer in Vienna on 25 January 2012. With this symbolic gesture, the ICPDR Presidency for 2012 has passed to Austria.

Danube Watch: You were the first President of the ICPDR in 1998. What has improved the most since then – in the Danube River Basin and the efforts of protecting it?

Stalzer: When I started my work – effectively in 1999 – we focused on two areas. On one hand we had to develop the ICPDR with its Expert Groups and Secretariat into a functional, operational mode. Support from the EU or UNDP/GEF helped a great deal for this. On the other hand, we had to stay closely aligned

with the convention and the legal framework. We united these two aspects and soon we could see the benefits of this. Monitoring improved tremendously; think of the Transnational Monitoring Network or the unique Joint Danube Survey, the Accident Emergency Warning System or the milestone of the Danube River Basin Analysis; the degree to which data could be standardised for efforts such as harmonised Geographic Information System for the Danube; and above all, of course, the Danube River Basin Management Plan.

The associated achievements, especially the tremendous investments in the field of wastewater treatment, decreases in the pollution loads, of organic pollution, for example, and nutrients like phosphates or nitrogen; the revitalisation of floodplains and wetlands; even a widespread awareness of environmental issues. All of these improvements are enormous and were possible due to the commitment of the Danube countries.

Danube Watch: How much of this change do you attribute to the work of the ICPDR?

Stalzer: The achievements that I have outlined are based on results affecting people at a very personal level. For this, we need experts in the countries! The cooperation that is coordinated by the Secretariat is essential for this. It was the recognition that water quality had to improve that allowed us to start the ICPDR, not the other way round.

But there were also other important factors for achieving improvements in the Danube River Basin. The help of UNDP/GEF was essential, as well as the framework conditions. The collapse of the Soviet Un-

WOLFGANG STALZER, ICPDR PRESIDENT 2012

1961–1968	University of Natural Resources and Applied Life Sciences, Vienna Water Management Branch, Diploma examination Technical University Vienna, Faculty for Civil Engineering, Doctorate in the field of wastewater treatment and water protection
1977–1989	Water authority of Burgenland, Austria, Head of the Water Management Division
1989–1992	Water management division within the Ministry for Agriculture, Forestry, Environment and Water Management
1992–2006	General Director of the Water Management Division in the Ministry for Agriculture and Forestry, Environment and Water Management
1992–2007	Head of several Austrian delegations of bilateral and multilateral water commissions
1995–2006	EU–Water Director of Austria
1999	President of the ICPDR
1999–2006	Head of the Austrian delegation to the ICPDR
Since 1982	Visiting Professor at the University of Natural Resources with lectures on selected chapters on water protection and water management
Since 2006	Senior Expert for River Basin and Water Management in cooperation with the ICPDR

ion opened a window of opportunity for re-starting many things in a harmonised manner. Without this, the voluntary commitment to the Water Framework Directive (WFD) would not have been possible. Last but not least, the ICPDR addressed the importance of communication and public participation and installed a dedicated expert group at an early stage. For this work of public participation and also for the involvement of NGOs, the ICPDR is well recognised. Together with the efforts mentioned above, the ICPDR is a story of success.

Danube Watch: Which challenges do you see today that were less pressing during your first term 13 years ago?

Stalzer: The implementation of the EU Floods Directive (EFD) is a lot more urgent today, basically since major floods occurred in 2002 and 2005. Economic conditions make our work difficult; they shift priorities, often away from the environment. The conflicting interests of nature on one hand and navigation or hydropower on the other. The sustainable use of resources, in agriculture for example – especially in the Lower Danube Countries where agriculture has a great potential to develop in the years to come. Issues concerning connectivity, think of our own sturgeon activities. And of course finding cross-links to the EU Strategy for the Danube Region.

With challenges like these ahead of us, it is crucial to focus our resources on the core business: the implementation of the Danube River Protection Convention, WFD and EFD; but also activities of integrative water and nature protection in the ongoing develop-

ment in sectors like agriculture, hydropower, navigation or flood protection.

Danube Watch: How will your presidency be different?

Stalzer: Of course every presidency has its own flavour. My focus will be first of all on the core activities and the work done by the expert groups, but I will also emphasise activities and initiatives like cooperation with the hydropower sector and the improvement of the ecological status of the Danubian water bodies through projects such as the studies on the free passes of the sturgeons. Last but not least, we intend to share actively the experiences of the ICPDR in ‘Excellent Integrated River Basin Management’ with other International River Commissions together with the International River Foundation and GEF IW Learn.

Danube Watch: Can we count on you for the next Austrian presidency 2026?

Stalzer: (Laughs). I see that you haven’t saved the most serious question for last! What I hope for 2026 is that the dynamic nature of the ICPDR will be preserved and carried on by the society of the entire Danube River Basin. The people involved with this task have to be matched with the needs of the time, not the other way round. Therefore, a change in the protagonists is desirable until Austria takes on the presidency again.

“It was the re-cognition that water quality had to improve that allowed us to start the ICPDR, not the other way round.”

Project 'East of Vienna': public participation for in-situ tests

A stalemate between supporters and adversaries of 'East of Vienna' now appears to be over. A series of tests for the project to develop the Danube between Vienna and the Austrian–Slovak border is now monitored and influenced by a new stakeholder forum.

Through development of the forum, Via Donau learned to refrain from being too active in steering its course.



In 2011, things looked bleak for the project 'East of Vienna'. The administrative permission to allow even an initial set of in-situ tests was still pending. In addition, project owner Via Donau faced vicious criticism from some NGOs and local stakeholders, backed by the negative stance of Austrian media. Even once the permit was finally granted in early December, underlying trust issues continued to cast a shadow on the project. But with the new year, a more positive spirit has allowed the project to start moving.

In early 2012, initial steps towards the in-situ tests called 'Pilotprojekt Bad Deutsch-Altenburg' were taken; but even more importantly, Via Donau took a new approach to public participation. This new approach

relies on an ambitious plan to involve civil society in both monitoring and managing the project through a stakeholder panel called 'Akteursform' (Stakeholder Forum). The forum consists of ten delegates: four representatives from the business and navigation sectors, four from environmental and angling NGOs, one from the Donau-Auen national park and one from the ICPDR. Delegates are supported by a panel of experts who act as an advisory board.

Forum meetings are public and observers are encouraged to share their views. The forum can give recommendations to the project owner or ask for information and make formal enquiries. Minority views are considered for enquiries to ensure no one feels overruled. The project team is obliged to respond to enquiries and recommendations in cooperation with the ecological and technical site supervision and under consideration of results from continuous monitoring. The work of the forum and project team is available online and remains open throughout the project's implementation.

Through development of the forum, Via Donau learned to refrain from being too active in steering its course. Instead, the waterway company put its role as project owner in the background. It provides funding for forum administration and all running costs (which are transparent at the request of the forum), but the company's representatives attend meetings only as observers.

At the initial meeting in January, forum delegates agreed their terms of reference and approved science board advisors. They requested information on the pilot project and made one point very clear: the Forum's goal is not to ensure smooth implementation of the project, but rather to endorse dialogue and partnership,

including criticism.

Meanwhile, international corporations and river commissions have expressed their interest in the forum. "We are very excited about this," says Josef Semrad of Via Donau's environmental department. "For years, we have dealt with so much criticism – it is good to see appreciation and a friendly interest in our work now."

For more information, please visit:
www.donau.bmvit.gv.at

Benedikt Mandl is the Technical Expert for Public Participation and Communication in the ICPDR Secretariat, and the Executive Editor of Danube Watch.

A legacy of strengthened bonds: the Ukrainian Presidency of the ICPDR

2011, the year of the Ukrainian presidency, was characterised by a dialogue between eastern and western initiatives that will shape and benefit the work of the ICPDR for many years to come.

The 2011 presidency of the ICPDR was held by Ukraine, and the Head of the Delegation of Ukraine to the ICPDR and Ambassador at Large of the Ukrainian Ministry for Foreign Affairs, Mykola Melenevskiy, served as President to guide the activities of the ICPDR to strengthen bonds with all parts of the Danube River Basin.

Supporting the sub-basins. The adoption of the Integrated Tisza River Basin Management Plan was a milestone for the ICPDR and for Ukraine, and was ushered into force under Ukraine's presidency. A ministerial meeting of the five Tisza Basin countries – Hungary, Romania, Serbia, Slovakia and Ukraine – was held in Uzhgorod, Ukraine, in April 2011 where the heads of delegations endorsed the Plan and presented their visions of further cooperation in the region.

Ukraine's close involvement in the development of the Plan is an important step towards bringing Ukrainian policies to EU environmental legislation and fostering Ukraine's move towards the European Union.

Highlighting the Danube Delta. One of the goals of Ukraine's Presidency was to dedicate increased attention to the Danube Delta and strengthen international cooperation in the region. To achieve this, Ukraine has been part of a project to improve cross-border cooperation in the region and introduce a river basin approach to water management in the Danube Delta. The project is implemented by the ICPDR in the framework of the Environment and Security Initiative in cooperation with UNEP, UNECE and regional partners, including representatives of the three countries sharing the Danube Delta Sub-basin: Moldova, Romania and Ukraine. The project is managed at the regional level by the Centre for Regional Studies in Odessa, Ukraine.

The first output of the project, the Joint Danube Delta Survey, will significantly improve knowledge about water quality, the environment, current management of water resources and human activities in the region. The survey – the first of its kind for the Delta – was undertaken by 23 researchers from the Delta countries and the final results will serve as an important step to develop a river basin management plan for the Danube Delta Sub-basin.

Ushering in the Danube Strategy. In taking over the Presidency, Ukraine placed a high priority on the EU Danube Strategy. The goal of the strategy is to ensure socio-economic development of the region without jeopardising the ecological values of the area for the future. The Danube Strategy was the focus of the Ninth Standing Working Group Meeting in Kiev in June where participants adopted a resolution endorsing the EU Danube Strategy. The resolution emphasises that the Strategy's cross-sectoral approach and the involvement of non-EU Member States in its development and implementation provide opportunities to combine efforts and collaborate equally. The Ukrainian Presidency helped ensure the full participation of non-EU countries in implementing the Strategy.

In taking over the ICPDR Presidency, Ukraine placed a high priority on the EU Danube Strategy, thus helping to ensure the full participation of non-EU countries in implementing the Strategy.



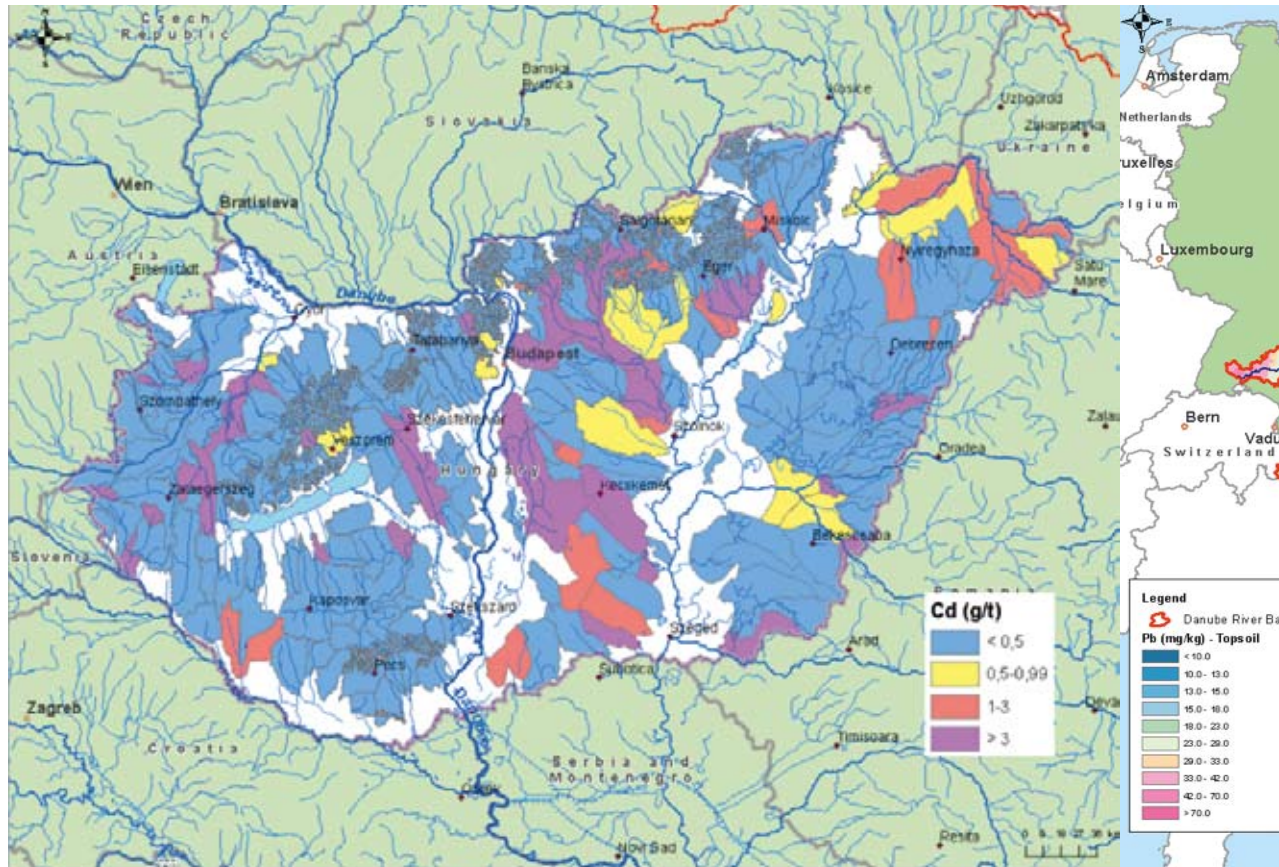
The year of the Ukrainian Presidency of the ICPDR was marked by these and other important events, all vividly testifying to the significant contributions made by Ukraine to protect the Danube and its tributaries, for future generations.

Kirstie Shepherd is a freelance journalist living in Vienna and has called the Danube River Basin home since 2000.

Contamination in the Danube Basin goes online

A novel web-based geochemical and contamination map series for the Danube Basin supports contamination risk assessment and helps spread environmental communication.

A screen shot from the ICPDR web page for cadmium (Cd) distribution in stream sediments in Hungary according to the Geochemical Atlas of Hungary, produced by the Geological Institute of Hungary (MAFI), based on a high-density 50x50km sampling grid. Coloured areas show catchments sampled for stream sediment at the outlet location.



Is the region in which I live contaminated? Is contamination higher where our children play and families live? To answer these questions you need a European-wide geochemical map showing the distribution of toxic elements such as arsenic, lead, zinc or cadmium. Such maps require advanced scientific knowledge and the broadest international cooperation. This is now available for the Danube Basin through the ICPDR from the Geochemical Expert Group (Association of European Geological Surveys; EuroGeoSurvey). With one click on the web page, you can wander around Danube landscapes and find pristine lands or areas of possible contamination!

The web application, developed by the Geochemistry Programme at the Geological Institute of Hungary (MAFI), shows the distribution of toxic elements in the Danube Basin at various scales along with topographic information such as country borders, roads, settlements, water courses and catchment boundaries. Users can

choose a toxic element to be displayed or can overlay contaminated areas in a GoogleEarth environment and fly over the terrain in 3D. Plenty of explanation, user guidance and links are provided for the interest of the public and for use by experts and decision makers.

The topographic maps are based on internationally recognised databases such as the EU Catchment Characterisation and Modelling drainage and catchment database. Geochemical maps in the web page feature the Water Framework Directive priority substances: cadmium, mercury, nickel and lead. In addition, geochemical maps are available for the other ICPDR Danube Basin List of Priority Substances arsenic, chromium, copper and zinc.

Using the European Atlas. Geochemical data for the website comes from the EuroGeoSurveys Geochemical Expert Group 'Geochemical Atlas of Europe', which is currently the largest and highest quality toxic element

multi-media and multi-element spatial database available in Europe. This database, a part of the International Union of Geological Sciences Global Geochemical Mapping Programme, is based on a low-density 160x160km global grid where stream water, stream sediment, topsoil, subsoil and floodplain sediment samples were collected and analysed for the whole periodic table, in addition to stream water nitrite, pH and other environmental parameters.

geological survey for the original maps and data (click on 'national contact' on the web page).

Looking ahead to further development. The next step for this project would be to create the uniform Geochemical Atlas of the Danube Basin. As the current website demonstrates, the harmonised European geochemical atlas available now only covers a part of the basin, and its sampling density is too low to

A new web-based map series shows the distribution of toxic elements in the Danube Basin at various scales along with topographic information such as country borders, roads, settlements, water courses and catchment boundaries.



support planning and management activities at the catchment scale. High resolution national geochemical maps cannot be compared because of the various methods used, which is particularly problematic when studying trans-boundary effects along the borders of the 11 Danube countries. It is therefore necessary to make a harmonised high-density, multi-media, multi-element geochemical atlas for the entire Danube Basin using the EuroGeoSurveys methods, experience and capacities.

An important future development would be to integrate all geochemical maps into GoogleEarth (currently available only for a few countries).

The advantage of using the publicly available European Atlas is that it is fully harmonised for sampling, laboratory analysis and quality control, and data processing methods are the same for all the participating Danube Basin countries. However, its low sampling density is a disadvantage (1 sample per 5000 square km) and a significant part of the Danube Basin is not covered.

In order to enable contamination risk assessment, it will be important to include other data layers in the database, such as contamination sources like mine sites or sensitive receptors such as protected ecosystems, agricultural areas on floodplains or urban areas.

National information. The other source for geochemical maps on the website is high-density, single-media, multi-element National Geochemical Maps. The National Maps have a higher sampling density (1 sample per 500 square km, on average, however these maps cannot be compared across country borders because of the differences of sampling media and various sampling and laboratory analysis methods used. Furthermore, not all Danube countries, have national geochemical maps. The National Geochemical Maps publication policy varies among the countries therefore the interested user should contact the relevant national

For more information about the geochemical and contamination maps for the Danube Basin, please visit: www.icpdr.org/geochemical_maps/

Authors: Gyozo Jordan¹, László Oroszl, Michalea Popovic², Zsuzsanna Kerekesné Steindl³, Éva Deseő³

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Commemorating the source of cooperation

Rivers cross political boundaries and bring diverse cultures together, providing an opportunity for cooperation and a shared commitment to protect natural resources. Countries in the Tisza River Basin are working to keep the symbol of that cooperation safe.



Credit: Olena Marushevska/Ukraine

A long climb high into the wild heart of the Carpathian Mountains brings visitors to the source of the Tisza River.

The Tisza River rises in the Carpathian Mountains in north-western Ukraine and crosses five countries: Ukraine, Romania, Hungary, Slovakia and Serbia. It links those countries in a shared responsibility to protect the Tisza Basin's unique natural resources.

The Tisza River Basin covers 157,186 km² – the largest sub-basin of the Danube – and is home to 14 million people. The Tisza Basin is roughly divided along the centreline by the Carpathian Mountains, east of which lays the 400–600m high plateau of the Transylvanian Basin, and the plains to the west.

The Tisza is formed from the confluence of the Bila and Chorna Tisza rivers, and the source of the Chorna Tisza is considered the source of the whole Tisza River. It is located on the south-western hill of Brat-

kivska Mountain in the Ukrainian Carpathians, Rakhiv district, Zakarpatska oblast. The source is located at an altitude of around 1240 metres above sea level. A memorial was constructed in 1889 to mark the starting point of the river's 900 km journey. Since then, the design of the source has changed several times, protected by the caring work of NGOs from Hungary and Ukraine.

Long-established ties. The Tisza countries have a long history of cooperation, including the agreement in 1986 to protect the Tisza and its tributaries and the establishment of the Tisza Forum in 2000 to address flood issues. The Tisza countries are all parties to the Danube River Protection Convention, the most comprehensive agreement in force for all Danube countries. In addition, all Tisza countries are parties to

the Carpathian Convention, which was signed in Kyiv, Ukraine, in 2003 and entered into force in 2006.

The first ministerial meeting of the ICPDR in 2004 established the Tisza Group as the platform to strengthen coordination and information exchange related to international, regional and national activities in the Tisza River Basin and to ensure harmonisation and effectiveness of related efforts. The states in the Tisza River agreed to close transboundary cooperation, aiming to achieve integrated management of the Tisza River Basin. The countries committed to the goal of achieving good water status of the rivers in the basin, through addressing water quality and quantity related problems (flood and excess water events, drought and water scarcity, climate change).

Rebuilding through cooperation. Since the establishment of the first memorial at the site in 1889, time and history had taken their toll on the source of the Tisza, and the wall of the source was endangered



during the last decade. Enthusiastic members of the Hungarian GEO-ENVIRON Environmental Protection Association (GEO-ENVIRON) from Szeged took steps to reconstruct the source of the Tisza River.

The main objective of GEO-ENVIRON is to search for natural sources, map them and create an inventory of natural sources. Members of GEO-ENVIRON visited the source of the Tisza River in 2006 to paint pathway markers leading to the source and place information signs in Ukrainian and Hungarian. Renovation

of the source was carried out in 2009, initiated by GEO-ENVIRON and supported by the Hungarian Ministry of Environment and other environmental organisations. Fieldwork took five days: the destroyed original wall was removed, a new edifice and stairs were built – all work that had to be carried out during challenging weather conditions.

Recognising shared commitment. Following the ceremonial approval of the Integrated Tisza River Basin Management Plan at the Ministerial Meeting in Uzhgorod on 11 April 2011, the Minister for Ecology and Natural Resources of Ukraine called for the establishment of memorial plates from each country to be placed at the source of the Tisza River, to recognise the significance of the transboundary cooperation between the countries sharing the basin.

The initiative was advocated by the ministers and high level representatives of all the countries sharing the Tisza River Basin, and included the support of several organisations from Ukraine: the Zakarpattia Oblast Branch of the All-Ukrainian Ecological League, Rakhiv Administration, Zakarpattia Water Management Board. More than 70 people from the countries of the Tisza River Basin participated in the ceremonial installation of the plates to celebrate Tisza cross-border cooperation.

Thanks to the enthusiasm and heartfelt motivation of the Hungarian

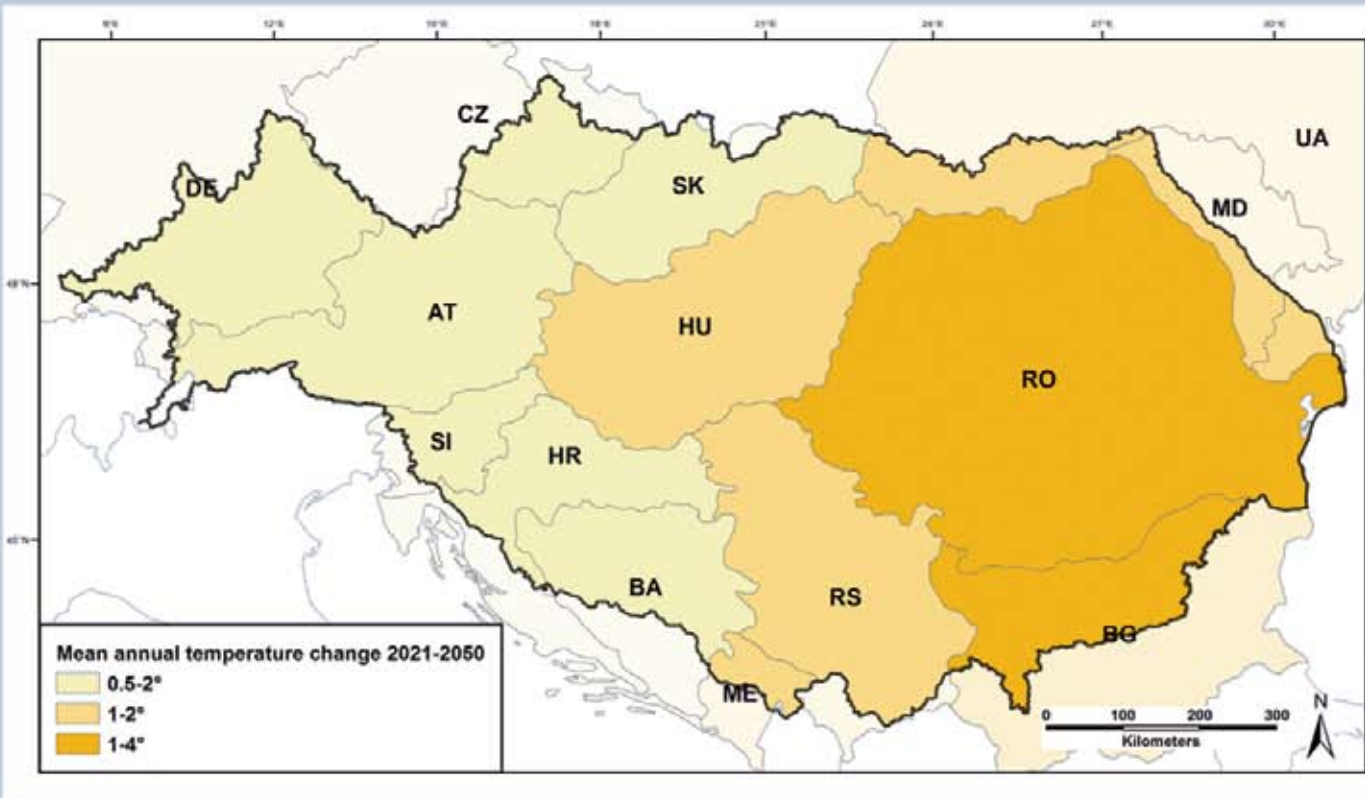
NGOs, the lively and soulful support of Ukrainian civil organisations, the initiative of the Ukrainian Minister for Ecology and Natural Resources and the commitment of all five Tisza countries, the source of the Tisza has become a symbol of cooperation for all Tisza River basin countries. Visitors from all over the world can pay their respects to this symbol and reinforce the need to maintain and protect their shared natural resources.

The memorial plates installed at the source of the river represent the Tisza countries' commitment to protecting the river basin, but it is the cooperation between the countries that serves as a source of inspiration for decision makers far and wide.

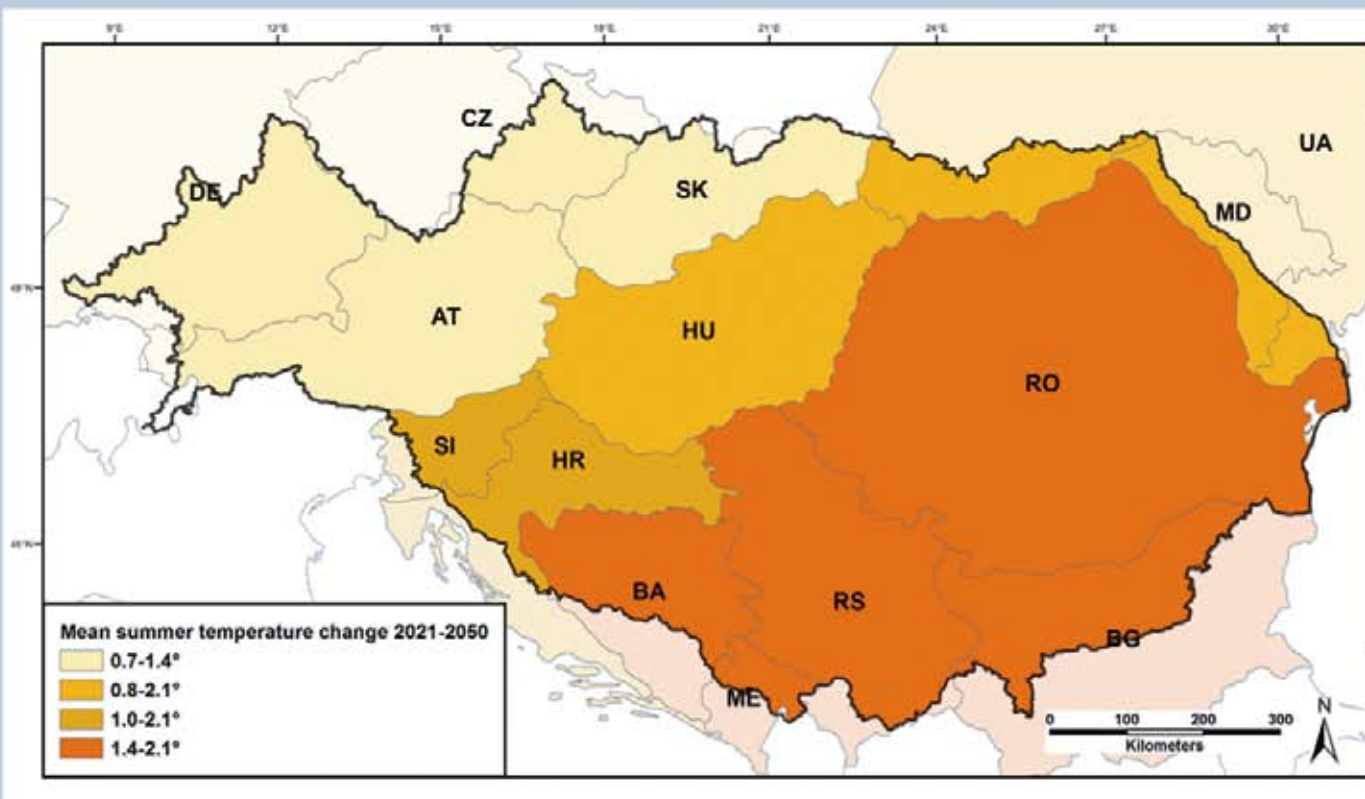
The adoption of the Integrated Tisza River Basin Management Plan in 2011 was a milestone for the Tisza countries, and includes an updated analysis detailing the pressures on the waters of the Tisza Basin, such as the impacts of floods/droughts on the region. Fold out to see an overview of possible future scenarios for Climate Change in the Danube River Basin.



Annual mean temperature changes 2021–2050

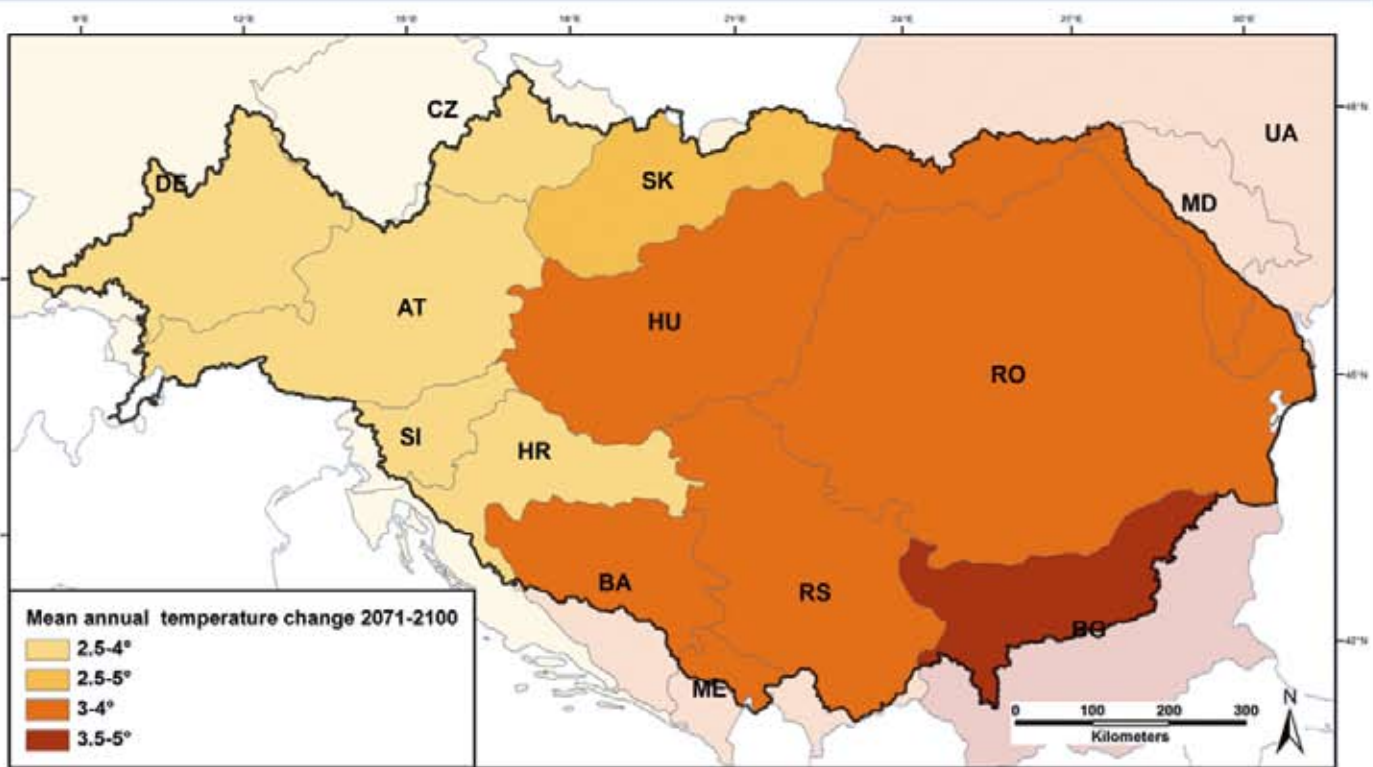


Summer mean temperature changes 2021–2050

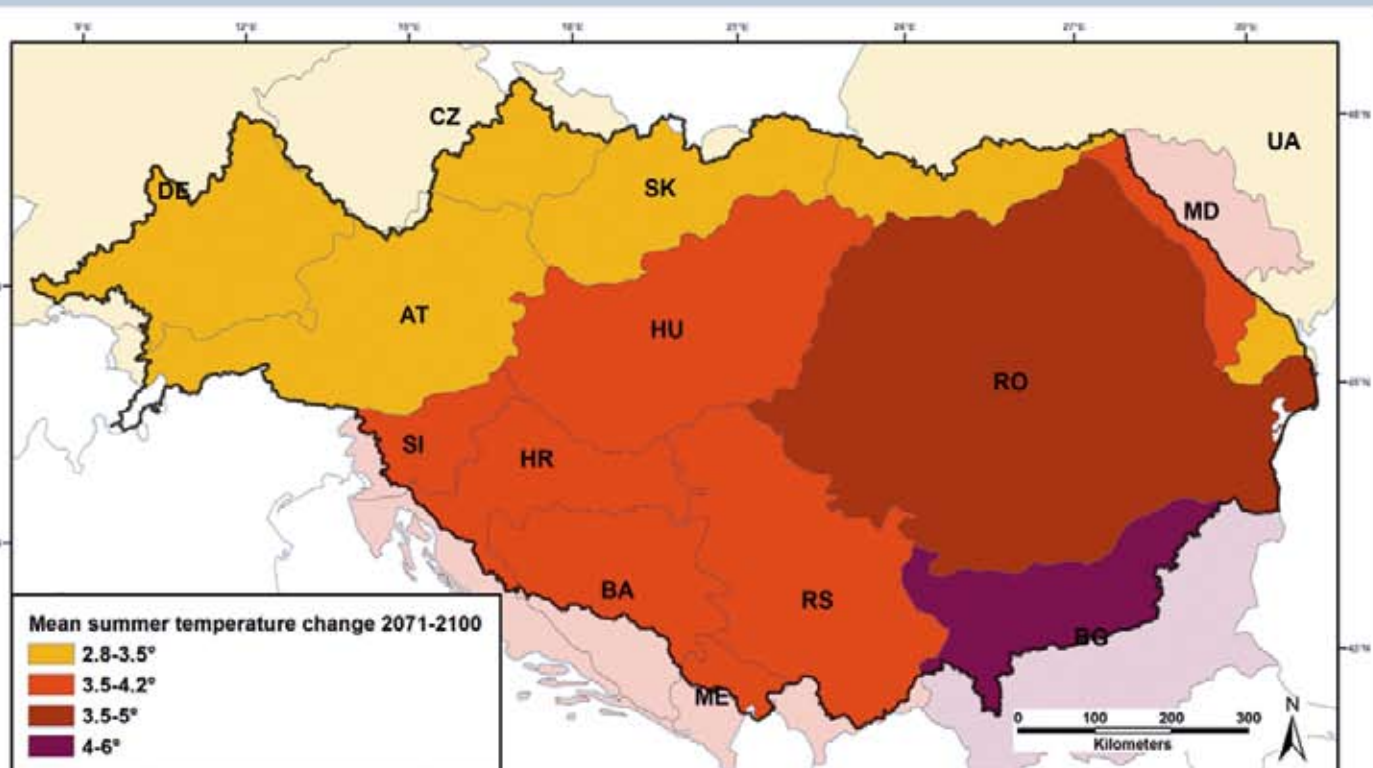


Increase of mean annual and summer temperature in the Danube River basin for 2021–2050 and 2071–2100 for a scenario from the Climate Adaptation Study according to different model results. Temperature changes are shown for countries; however, in reality changes are smooth without country borders.

2071–2100



2071–2100



ICPDR MEETINGS

For final dates, please consult the ICPDR calendar, available at www.icpdr.org.

17–19/4/2012	BUCHAREST, ROMANIA
	WORKSHOP ON STAKEHOLDER INVOLVEMENT IN FLOOD RISK MANAGEMENT
18–20/4/2012	SOFIA, BULGARIA
	ENVIROGRIDS GENERAL ASSEMBLY
19–20/4/2012	SALZBURG, AUSTRIA
	11TH PUBLIC PARTICIPATION EXPERT GROUP MEETING
24–25/4/2012	BRNO, CZECH REPUBLIC
	3RD APC EXPERT GROUP MEETING
26–27/4/2012	BIJELJINA, BOSNIA AND HERZEGOVINA
	14TH IMGIS EXPERT GROUP MEETING
10–11/5/2012	VIENNA, AUSTRIA
	35TH RIVER BASIN MANAGEMENT EXPERT GROUP MEETING
15–16/5/2012	LVIV, UKRAINE
	18TH TISZA GROUP MEETING
27–28/6/2012	INNSBRUCK, AUSTRIA
	10TH ICPDR STANDING WORKING GROUP MEETING
29/6/2012	THROUGHOUT THE DANUBE BASIN AND BEYOND!
	DANUBE DAY
6–13/7/2012	BUCHAREST, ROMANIA
	RAMSAR CONFERENCE OF CONTRACTING PARTIES – 11TH MEETING
9/7/2012	BUCHAREST, ROMANIA
	RAMSAR – WWF – ICPDR – SYMPOSIUM ON BUSINESS, WATER AND WETLANDS
DW 02/12	UPCOMING ISSUE
	CORPORATE RESPONSIBILITY
	BUSINESS FRIENDS OF THE DANUBE
	BUSINESS INVOLVEMENT IN WATER MANAGEMENT