

DANUBE WATCH

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

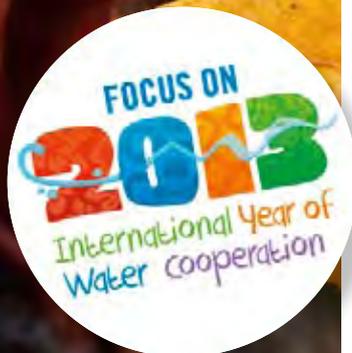
3 / 2013

17 **NEW ICPDR
EXECUTIVE
SECRETARY**

20 **THE THIRD JOINT
DANUBE SURVEY
SUCCESSFULLY
COMPLETED**

22 **A HYDROPOWER
BALANCING ACT**

New Guiding Principles on Hydropower offer a holistic approach to hydropower development plans, increasing energy production while allowing environmental conditions to improve.



- 3 Letter to readers
- 4 News & events
- 6 A sustainable world is a water secure world: the Budapest Water Summit
- 8 Danube Art Master at Budapest Water Summit
- 9 Working together for water: transboundary adaptation to climate change
- II First European Riverprize 2013: success on the Rhine
- 13 Global links for regional cooperation
- 15 Putting a value on ecosystems
- 17 Returning to the Danube waters
- 20 Credit to the crew: the third Joint Danube Survey successfully completed
- 22 A hydropower balancing act

17
Vienna, Austria
The ICPDR's new Executive Secretary brings a long association with the Danube countries and a strong background in environmental programmes to the work of the Danube region.

6
Budapest, Hungary
The Budapest Water Summit – held between 8 and 11 October 2013 – crowned this International Year of Water Cooperation and served a vital role in stocktaking, synthesis and further guidance.

20
Tulcea, Romania
The third Joint Danube Survey successfully completed its ambitious programme of analyses and observations to investigate water, sediments, suspended particulate matter, sediments and biota along the length of the Danube River.





Dear readers,

In this International Year on Water Cooperation, the joint efforts of the Danube countries to manage their water sustainably can be seen as part of a global endeavour. This great river connects past to present, country to country. It passes through or around ten countries. Sustainably managing such a vast and important resource presents many challenges, from local pollution to the growing impacts of climate change. By 2030 nearly half the global population could be facing water scarcity.

I would like to highlight cooperation in three areas critical to sustainable development: food security, climate change and sanitation. First, food security. Agriculture is by far the largest user of freshwater. My 'Zero Hunger Challenge' promotes sustainable agriculture by sharing best practices and harnessing the most appropriate technologies.

Second, climate change poses the risk of diminished supplies in much of the world. We must do everything we can to keep global temperature rise to below 2 degrees Celsius above pre-industrial levels. To do that, we need to finalize a robust legal agreement on climate change in 2015. To add momentum to this process, I will convene a Climate Summit in September 2014.

Third, sanitation. Water and sanitation feature largely in the Millennium Development Goals (MDGs). While the MDG target for providing access to improved water sources has been reached, 780 million people lack this basic necessity. Water and sanitation are obviously central to our efforts to achieve the MDGs and must figure prominently in the post-2015 development agenda.

Guided by this far-reaching vision, Member States can define a set of concise and inspiring sustainable development goals that will capture the imagination and mobilise the world, just as the Millennium Development Goals have done.

Ban Ki-moon
United Nations Secretary-General

This excerpt is based on UN Secretary-General Ban Ki-moon's opening remarks, as prepared for delivery, at the Budapest Water Summit on 8 October. It was kindly provided for Danube Watch by the Secretary-General.



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



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

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: studiod'luxe; **Cover photo:** Ostep Tsapulych/BlueRivers;
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.



DANUBIUS: NEW PHOTO BOOK ON THE DANUBE

In a new photography book, Italian Marco Bulgarelli explores the river as a way to trace European identity. A journey of 2778 kilometres created the basis for what may be the most poetic photo essay on the Danube since Inge Morath published her now iconic book "Donau". Bulgarelli's search for the river's essence is divided into four parts that correspond to the main linguistic groups present in the Danube area, symbolising the various cultures that it embodies. In a cyclical pattern, the differences and similarities that have emerged are the recurring themes of the various sections.

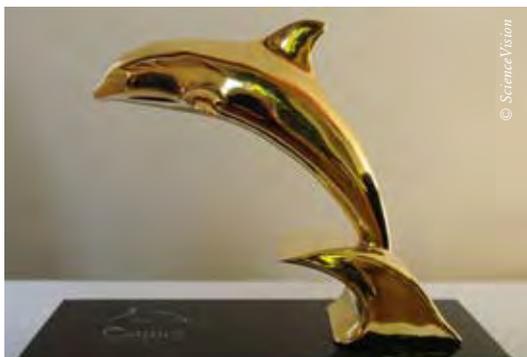
Learn more about the book or order a copy here:
www.postcart.com/danubius.php



STURGEON 2020: STRATEGY AND PROGRAMME TO SAVE THE STURGEONS

The Danube Sturgeon Task Force (DSTF) has developed a document on the Sturgeon 2020 strategy and program. The document, which is now available with a revised layout, combines environmental and socio-economic measures. The DSTF is a platform for scientists, international organisations, NGOs and other entities concerned with sturgeons in the Danube Basin and Black Sea. The ICPDR is one of the organisations supporting the DSTF, which is endorsed and supported by Priority Area 6 (Biodiversity and Landscape Diversity) of the EU Strategy for the Danube Region.

Download "Sturgeon 2020" here:
www.icpdr.org/main/sturgeon-2020-program



THE DANUBE: AWARD-WINNING DOCUMENTARY

The two-part natural history documentary *The Danube - Europe's Amazon*, keeps making headlines as it continues to win important international film awards. It won awards at the DocumentArt Festival in Romania, the Vendée Nature, le Festival de l'Insolite 2013 in France, the Eurofilm Festival in Slovakia, the 11th Matsalu Nature Film Festival in Estonia and - most recently - the "Golden Dolphin" at the French Cannes Corporate Media & TV Award (pictured). The documentary has become one of Austrian film production company ScienceVision's most successful project. As a co-producer, the ICPDR congratulates the responsible filmmakers Michael and Rita Schlamberger for the overwhelming international recognition.

Learn more about ScienceVision here: www.sciencevision.at



FILM CLIP ON DANUBE AND THE ICPDR

Using footage from *The Danube – Europe’s Amazon* (see above), including some never-before-seen segments, the ICPDR has produced a film clip that portrays the beauty and diversity of the Danube River and the efforts of the ICPDR countries to manage it sustainably. The video clip, which is less than six minutes long, will be disseminated via ICPDR and national channels, including YouTube. Use of it is encouraged.

See the new ICPDR video clip here: www.icpdr.org/main/film2013



GUIDING PRINCIPLES FOR SUSTAINABLE HYDROPOWER DEVELOPMENT

As an essential step in maintaining a dialogue with the hydropower sector, the ICPDR adopted the Guiding Principles on Sustainable Hydropower Development in the Danube Basin last June. These guiding principles are now available in print and can be downloaded from the ICPDR website or ordered in print. Developed through a dialogue between administration, hydropower companies, environmental NGOs and others, these guiding principles are supported by a broad range of stakeholders and should be applied to the development of new hydropower structures as well as the modernisation of existing facilities. You can learn more about sustainable hydropower in the article on page 20.

Download the Guiding Principles here:
www.icpdr.org/main/guiding-principles-hydropower

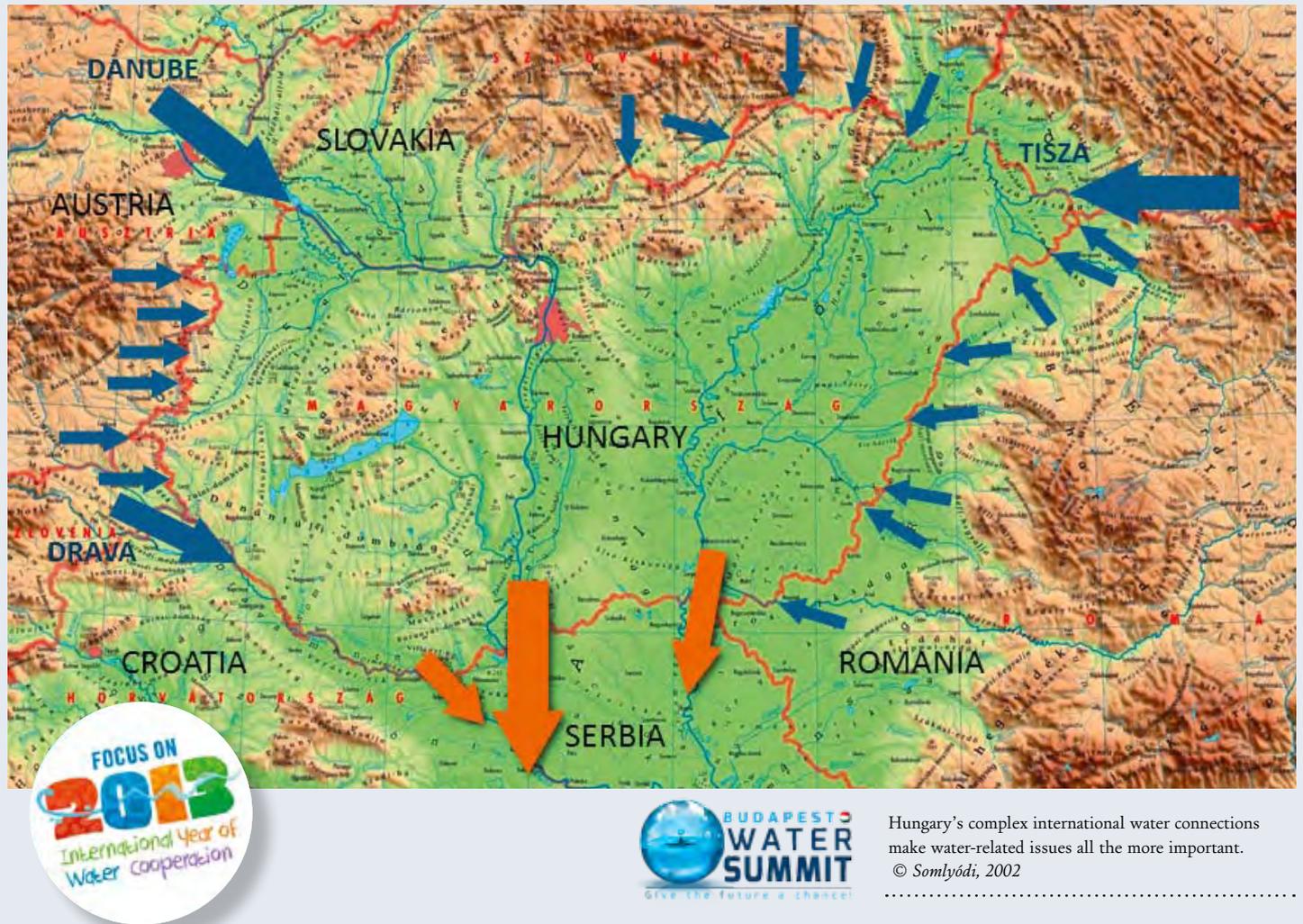
WELCOME TO NEW ICPDR HEADS OF DELEGATIONS

The ICPDR is pleased to welcome new Heads of Delegations: Nicola Notaro of the European Commission’s DG Environment and Karel Vlasak of the Ministry of the Environment of the Czech Republic. The ICPDR Secretariat and Danube Watch are looking forward to supporting the new Heads of Delegations in their endeavours for the Danube River Basin.

All ICPDR Heads of Delegations are listed here: www.icpdr.org/main/icpdr/hods

A sustainable world is a water-secure world: the Budapest Water Summit

While the current Millennium Development Goals address certain aspects of water – namely access to drinking water and basic sanitation – the acceleration of the global water crisis has called for a much broader approach and higher political profile.



In 2010 when the United Nations General Assembly declared 2013 to be the International Year of Water Cooperation it was hardly foreseeable how much importance water issues would gain within three short years.

However the UN system and Member States heeded the call to action in the field of water policy and through a series of international events from The Hague to Dushanbe, scientists, water professionals, policy-makers and businesses gathered to address the role of water in the development vision for the future. The Budapest

Water Summit – held between 8 and 11 October 2013 – crowned this International Year of Water Cooperation and served a vital role in stocktaking, synthesis and further guidance.

Setting the stage for water cooperation.

Hungary's special interest in international water policy is clear. Some 96% of the country's surface waters originate abroad, but water leaves only through three major rivers: the Danube River and two of its tributaries, the Tisza and Dráva Rivers. As a result, one quarter of the country, 700 settlements, 2.5 million people, 40% of

Hungary's complex international water connections make water-related issues all the more important.

© Somlyódi, 2002

the country's agricultural land and 2000 industrial plants are potentially affected by floods originating beyond the country's borders. Also, around of half of the country's groundwater bodies are shared by its neighbours. Thus, for a downstream country in a geographically complex international river basin, international cooperation is a crucial imperative for nature conservation, the economy and national security.

In recent decades Hungary has been an active promoter of such cooperation at the European as well as the international level. It spearheaded two protocols of the 1992

UNECE Transboundary Water Convention; it also selected water as its priority topic during its presidency of the EU in 2011. At the United Nations Conference on Sustainable Development in Rio de Janeiro in 2012 Hungary chose water as its flagship issue. The Government organised a series of events in New York in the framework of the Friends of Water Group (where it acts as a steering group member) tackling the most important water-related challenges.

The Budapest Water Summit developed from the need to overcome the structural difficulties that characterise the formal UN decision-making process. János Áder, President of the Republic of Hungary, offered Hungary's services exactly for that reason in Rio last year: to further the process of defining a stand-alone Sustainable Development Goal on water. Hence the Budapest Water Summit 2013.

A statement on water goals. The Budapest Water Summit welcomed over 1,400 participants from 104 countries, including the UN Secretary General Ban Ki-moon; Irina Bokova, Director General of UNESCO; Lamberto Zannier, Secretary General of the OSCE; José Graziano da Silva, Director General of the FAO; Margaret Chan, Director General of WHO; and

THE BUDAPEST STATEMENT

A The Budapest Water Summit discussions were summarised in the Budapest Statement under the title "A Sustainable World is a Water-Secure World". This statement offered a view of the main water-related issues as seen by the international community:

- water must feature as a priority in the new global development agenda through a dedicated Sustainable Development Goal;
- a dedicated Sustainable Development Goal should encompass all major water-related issues, ranging from access to drinking water, through wastewater treatment all the way to disaster management and international cooperation;
- a robust intergovernmental process to regularly monitor, review and assess progress of the implementation of a future water goal should be set up.

Michel Jarraud, Chair of UN-Water and Secretary General of WMO. The Summit was designed to bring a fresh multi-stakeholder input into the post-2015 global development discourse.

Transboundary cooperation. In his opening address UN Secretary General Ban Ki-moon stressed that by

2030 nearly half of the global population could be facing water scarcity and demand could outstrip supply by 40%, mainly in shared water basins. He thus called on every nation to ratify the UNECE Transboundary Water Convention, citing the Convention as the best available legal instrument to foster joint, peaceful management of shared water resources.



The Budapest Statement stresses that strong, long-term transboundary cooperation can only be ensured by joint governing institutions, work programmes, shared monitoring and broad international stakeholder participation based on sound legal and institutional principles.

UN Secretary General Ban Ki-moon opens the Budapest Water Summit. © Nagy

This is an issue that the Budapest Statement addresses extensively. Among its major political recommendations, it calls for integrated management of transboundary rivers and aquifers at the basin level. It concludes that strong, long-term transboundary cooperation can only be ensured by joint governing institutions, work programmes, shared monitoring and broad international stakeholder participation based on sound legal and institutional principles.

As the international community faces the new threat of water security, Europe and the Danube Basin have an historic role to play. If the example of the Danube countries and the ICPDR leads other regions to reap the unquestionable benefits of water cooperation, this would render the International Year an unmatched success in the history of international water policy.

Gábor Baranyai is the Deputy State Secretary, Ministry of Foreign Affairs of Hungary, and was Chair of the Organising Committee of the 2013 Budapest Water Summit.



Danube Art Master at Budapest Water Summit

Croatian students Lora Petak and Vinko Kovačić, of Primary School J. Kozarca in Semeljci, won the title 'International Danube Art Masters 2013' for their artwork, titled 'Danube People'. Their piece shows

rivers – and people – as they could look in 2021 if nothing is done to prevent their pollution.

The winners were announced at the Budapest Water Summit, and certificates were handed out by President János Áder of Hungary in the presence of ICPDR Executive Secretary Ivan Zavadsky. The Danube Art Master is organized through cooperation between the ICPDR and Global Water Partnership (GWP) with support from the Green Danube Partnership with the Coca-Cola system. After the ceremony, the winners attended a full-day environmental programme, organised by GWP Hungary, including trips to the surroundings of Budapest and the Danube bend, Szentendre and the Danube Museum.

Competition was strong: 237 schools attended, and 708 art works were submitted by 2021 children. Second place went to Austria for the artwork 'The Course of the Danube River' by Class 3b, NMS Marc Aurel in Tulln. 'Heart for Danube'



At the Budapest Water Summit, Hungarian President János Áder and ICPDR Executive Secretary Ivan Zavadsky awarded first prize certificates to Croatian teenagers from Semeljci for their winning entry for the 'International Danube Art Masters 2013' competition. © G2 Foto

by Lucka Pelantová, Lilian Teskal, Daniel Vadóczky, Katka Csicsaiová, Diana Manyuczová, Martina Takáčová and Adriana Čičaiová from Primary School Rozmarínová in Komárno, Slovakia, won third place.

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



Working together for water: trans-boundary adaptation to climate change

Danube countries are showing others how to develop strategies to address climate change at the transboundary basin level.

Climate change introduces additional challenges to water management, as impacts such as increased risks of floods and droughts will be widespread in the future. Transboundary cooperation helps to prevent negative effects of unilateral adaptation measures while maximising the effectiveness of adaptation strategies by sharing data, enlarging the planning space and locating measures where they can have the best effect. Therefore, stronger cooperation between riparian countries in developing and implementing adaptation strategies and measures is crucial.

The Climate Change Adaptation Strategy for the Danube was adopted in December 2012 – so far the only strategy developed for a transboundary basin. As a result, the experience of the ICPDR in developing such a strategy is highly valuable for other transboundary basins around the world. In June 2013, the ICPDR presented its lessons learnt at the

‘Fourth Workshop on Water and Adaptation to Climate Change in Transboundary Basins: Transboundary Climate Change Adaptation Serving Multiple Purposes’. Held in Geneva and organised by the United Nations Economic Commission for Europe (UNECE) Convention on the Protection and Use of Transboundary Watercourse and International Lakes (UNECE Water Convention) in cooperation with several partner organisations, the workshop included a discussion of the Danube during a special basin exercise.

Serving multiple purposes. Previous workshops – not to mention experience on the ground – have shown that climate change adaptation should serve a wide array of purposes in order to get sufficient support to implement measures. Getting a variety of sectors involved, therefore, is vital, requiring knowledge of the interests, concerns and motivations of stakeholders to be able to explain ‘what’s in it for them’.

Floods, droughts, or all the same? Climate adaptation strategies require complex planning and inter-sectoral approaches.
© Yaroslav Bulych

Previous workshops – not to mention experience on the ground – have shown that climate change adaptation should serve a wide array of purposes in order to get sufficient support to implement measures.

A GLOBAL NETWORK OF BASINS

The 'Fourth Workshop on Water and Adaptation to Climate Change in Transboundary Basins' was organized in Geneva on 25-26 June 2013 in the context of the global network of basins working on climate change adaptation in a transboundary context. Apart from the Danube, it currently includes the Amur/Argun/International Dauria Protected Area, Chu Talas, Congo, Dniester, Drin, Mekong, Meuse, Neman, Niger, Rhine, Sava and Senegal Basins, as well as the Northern Sahara aquifer system.

This network is based on the programme of pilot projects on climate change adaptation in transboundary basins, implemented by UNECE and partners since 2010. It aims to enable the comparison of methodologies and approaches, foster exchange of experience and promote a shared vision between the participating basins.

The creation of a global network of basins working on adaptation to climate change in transboundary basins was an outcome of the sixth World Water Forum and its results will be presented to the next World Water Forum in 2015 in South Korea. It is also part of the programme of work for 2013-2015 of the UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention).

The workshop was organised a few months after the Convention became global. The UNECE Water Convention is a unique framework for supporting transboundary cooperation in adaptation. Since 1992, the Convention has played a crucial role in the pan-European region in supporting the establishment and strengthening of cooperation. Building on the successes achieved, the Parties to the Convention amended it in 2003 to open it up to non-UNECE countries. Having received the necessary number of ratifications, the amendments to the UNECE Water Convention opening it for accession to all United Nations Member States entered into force on 6 February 2013. It is expected that non-UNECE countries will be able to accede to the Convention at the beginning of 2014.

As a result, the workshop brought together participants from the water sector as well as representatives of the agriculture, hydropower and industry sectors. A leading farmer from India, for instance, demonstrated that farmers are more willing to use water responsibly if they have a better understanding of water availability, water use and the effects of climate change by monitoring water resources themselves.

A leading farmer from India, for instance, demonstrated that farmers are more willing to use water responsibly if they have a better understanding of water availability, water use and the effects of climate change by monitoring water resources themselves.

The workshop also highlighted examples of successful cooperation between stakeholders and riparian countries in adapting to climate change. These successful endeavours included the Senegal, Rhône and Neman Basins, where stakeholders from different sectors jointly discussed vulnerability assessments and possible adaptation measures. In addition, El Salvador and Honduras showed how climate change impacts can be addressed by restoring ecosystems and helping communities improve their farming methods.

During the market place session in the workshop, participants could learn more about various modelling, communication and decision-making tools such as the tipping point approach, which forms the basis of the Dutch adaptive Delta management, and the Climate Vulnerability Index, which has been used to assess vulnerability to climate impacts and direct actions for adaptation in Mongolia.

Call for stronger cooperation. The basins represented at the workshop all confirmed the importance of transboundary cooperation in water management, particularly within a larger regional context. Although transboundary cooperation is often hindered by simple inconsistencies of data or by diplomatic challenges, examples such as the Dniester and Neman projects show that progress can be made and that climate change can even serve as a driver for better cooperation in general.

The UNECE Water Convention will continue to serve as a useful framework for climate change adaptation, and will do so on a global level. Through an institutional platform such as the UNECE Water Convention, countries can have access to a number of tools that allow them to build capacity to adapt to climate-associated challenges. The pilot projects that have been undertaken through the UNECE's programme of pilot projects on water and adaptation to climate change are starting to generate a number of valuable lessons, which will be gathered in a collection of lessons learnt and good practices, and presented to the next World Water Forum in 2015 in South Korea.

For more information or to see all the workshop presentations, please visit the UNECE website: http://www.unece.org/env/water/tranboundary_adaptation_workshop_2013.html

Els Otterman is the Consultant for the climate change activities of the UNECE Water Convention, and

Sonja Koepfel is the Coordinator of the climate change activities of the UNECE Water Convention.



First European Riverprize 2013: success on the Rhine

Once known as the dirtiest river in Europe, the Rhine has cleaned up its waters and its reputation to serve as a model for international cooperation in river basin management.



The Rhine received the European Riverprize 2013 for remarkable achievements in integrated river basin management following a 50 year legacy of river degradation. Pictured from left to right: Matt Reddy (IRF), Ulrike Sapiro (Coca-Cola Europe), André Weidenhaupt (ICPR), Ben van de Wetering (ICPR), Anne Schulte-Wülwer-Leidig (ICPR), Ermina Salkičević-Dizdarević (ICPDR), David Stuart (Australian Ambassador to Austria). © ICPDR

The Rhine is one of the most important rivers in Europe. For centuries, it has been not only a vital shipping lane, but also a source of food and water, a crystallisation point for human settlements. The banks of the river were the site of some of Europe's most important industrial development, with severe water pollution and river degradation the result. Once known as the sewer of Europe in the 1960s and 70s, it has become one of the cleanest international rivers.

Although water quality problems in the Rhine were recognised as early as the 15th century, the extent of the deterioration was not really apparent before the end of the 1960s. By that time, pollution from organic substances had led to acute oxygen problems and a disappearance of almost all aquatic life. Discharges of heavy metals, pesticides, hydrocarbons and organic chlorine

compounds caused further ecological problems. Efforts had to be continuously increased to produce good quality drinking water.

Working together for protection. The International Commission for the Protection of the Rhine (ICPR) was established in 1950 as the first intergovernmental body for protection against pollution in the Rhine with Switzerland, France, Germany, Luxembourg, the Netherlands and the European Union as Contracting Parties. Since the entry into force of the EU Water Framework Directive, the cooperation also includes Austria, Liechtenstein and Wallonia (Belgium).

What started with the development of a joint monitoring strategy in the 1950s and 60s has developed into a comprehensive integrated management strategy of the Rhine, comprising aspects of water quality, emission

THE EUROPEAN RIVERPRIZE 2013

Awarded by the International River Foundation, the IRF European Riverprize is one of the world's most respected environmental awards, giving recognition, reward and support to outstanding programmes in river management. Entries for the European Riverprize are judged by an all-European panel of experts, based on a documented river management framework, evidence of social and economic gains, an integrated approach to river management, a long-term vision and demonstrated, outstanding achievements in river ecology.

As the recipient of the European Riverprize, the Rhine will now automatically qualify as a finalist for the Thies International Riverprize in 2014.

reduction, ecological restoration and flood prevention. This development has been guided by a process of learning by doing which was triggered by a series of major disasters.

The comprehensive integrated management strategy of the Rhine has been guided by a process of learning by doing which was triggered by some major disasters.

Learning from disasters. In the 19th century, the course of the Rhine was drastically altered to improve conditions for navigation and to enable the use of alluvial riverside areas for agriculture and other purposes. Between Basel and Mainz the length of the river was reduced by more than 80 km and 85 % of the alluvial land was lost. Meanders were cut off, causing great changes in the river ecosystem. Flow velocity increased, the river bed eroded and groundwater levels dropped. Numerous dams and weirs serving hydropower production were constructed. Due to these physical barriers migratory species could no longer reach their spawning grounds and catches of Rhine salmon decreased dramatically from more than 280,000 tons of fish around 1870 to zero in 1950. These problems could only be solved effectively in a basin-wide approach, and obviously, for the Rhine, this meant international cooperation.

The first two decades of cooperation within the ICPR were dedicated to getting a common understanding of the Rhine problems and to creating a legal and institutional basis for cooperation. Joint monitoring programmes were developed, but the first joint measures to protect the river against the effects of organic pollution were only taken after 1970. Between 1970 and 1985, successful programmes were developed to reduce inputs of polluted municipal and industrial wastewater and oxygen levels steadily rose.

During this time, efforts focused on 'end-of-pipe' techniques such as wastewater treatment rather than on preventive measures – until 1986, when a serious

disaster forced further progress. At the Sandoz plant near Basel, 10–30 tons of toxic substances flowed into the river and caused the death of almost all aquatic life downstream as far as the Loreley rock near St Goarshausen. The development of the Rhine Action Programme of 1987 was the political answer to the disaster.

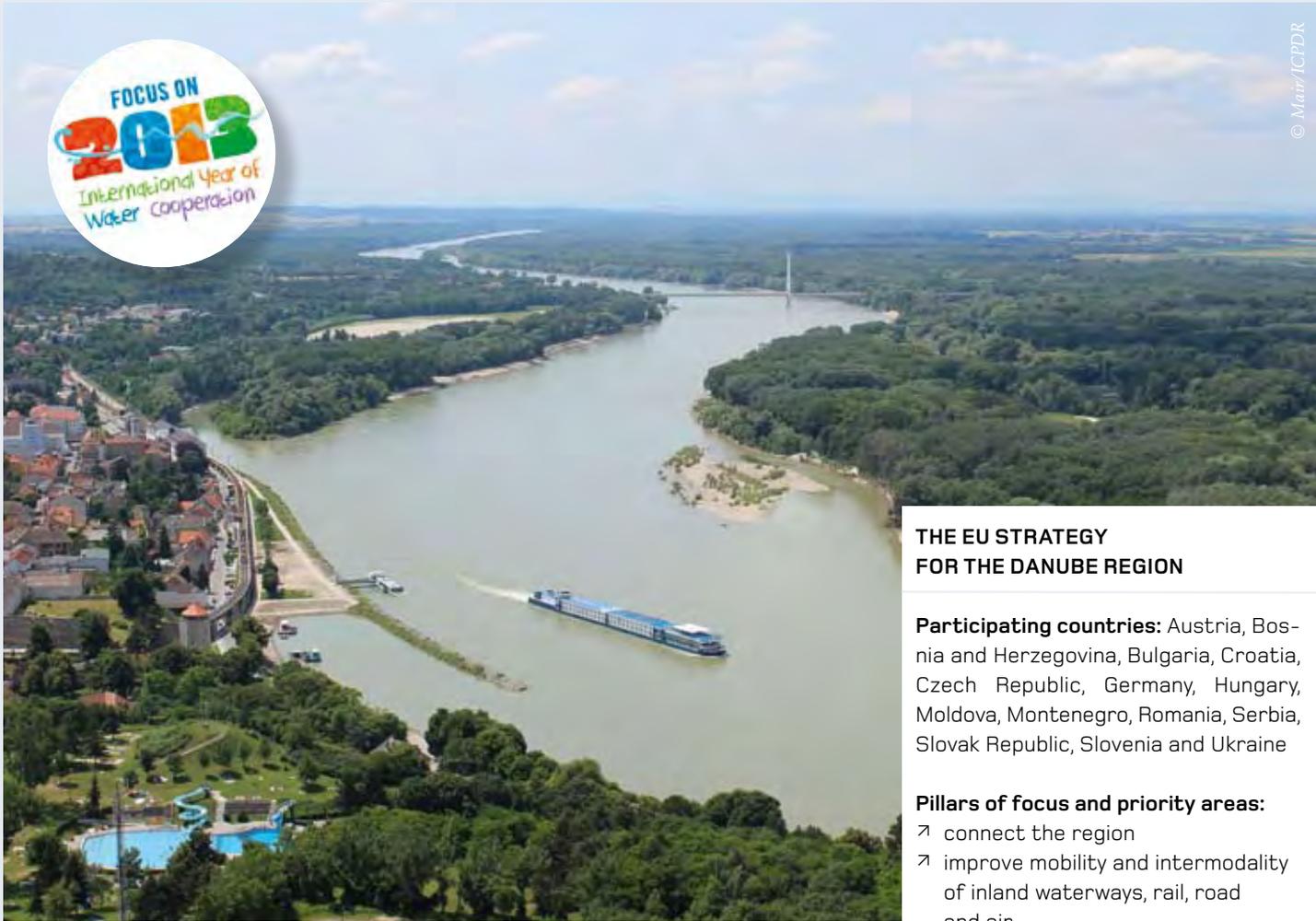
Measuring success. When adopting the Rhine Action Programme, ministers agreed to ambitious targets such as the return of salmon by the year 2000 and a 50–70% reduction of inputs of dangerous substances between 1985 and 1995. Measures were taken all along the river to prevent pollution, and since 1970, more than 80 billion Euros have been invested in constructing municipal and industrial wastewater treatment plants; about 96% of the population in the Rhine catchment is connected to municipal waste water treatment plants. Inputs of most priority substances were reduced by 70–100% or were no longer detectable, and by 2000 almost all reduction targets had been achieved.

In addition, the Salmon 2000/2020-Programme is responsible for seeing, by 2012, nearly 7000 adult salmon return to spawn. Further measures are required to achieve a self-sustaining salmon population in the Rhine catchment; however the ongoing reactivation of parts of the former flood-prone areas will lead to more room for the river, higher biodiversity and a more natural river system.

Extreme floods in 1993 and 1995 gave an extra impetus and resulted in a stronger political commitment for further integration of policies. As after the Sandoz disaster in 1987, these two floods convinced the Rhine states that floods measures had to be taken and the ICPR adopted an Action Plan on Floods. By 2010, measures costing over 10.3 billion Euros had been implemented, and since then retention areas for 229 million m³ of flood water along the main stream have been created.

The successful cooperation achieved by the ICPR has been an example for many other river basin organisations, and delegations from all over the world continue to visit the ICPR to share experiences and learn from the remarkable change brought about on the river.

Anne Schulte-Wülwer-Leidig is Deputy Head of the International Commission for the Protection of the Rhine.



© Mair/ICPDR

Global links for regional cooperation

European Union strategies for macro-regions like the Danube balance sustainable development with environmental protection by strengthening cohesion and reducing regional differences.

The Danube River and its abundant natural resources shape the lives of the 81 million people living in the basin. We rely on the Danube and its tributaries for energy, transport, agriculture, industry and, of course, drinking water. Such diverse uses of a river call for inter-sectoral approaches in managing it – and macro-regional strategies can help to facilitate this.

The EU Strategy for the Danube Region (EUSDR) acknowledges these shared challenges brought about by geographic circumstances. By using a macro-regional framework, the strategy produces more effective

cross-border coordination in building sustainable development and protecting the natural resources on which we all depend.

One strategy for all Danube countries. The EUSDR, approved by the European Council in 2011, links the efforts of 14 Danube countries under four main pillars – connecting the region, protecting the environment, building prosperity and strengthening the region – and further divided into eleven individual priority areas.

“For water issues, the macro-regional level makes the most sense to make changes and find real solutions,” says Florian Ballnus, Coordinator of Priority Area 6 (Preserve Biodiversity, Landscapes and the Quality of Air and Soils) for the Danube Strategy. “Water is a medium which obviously knows no borders, and whether it’s a

THE EU STRATEGY FOR THE DANUBE REGION

Participating countries: Austria, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Germany, Hungary, Moldova, Montenegro, Romania, Serbia, Slovak Republic, Slovenia and Ukraine

- Pillars of focus and priority areas:**
- ↗ connect the region
 - ↗ improve mobility and intermodality of inland waterways, rail, road and air
 - ↗ encourage more sustainable energy
 - ↗ promote culture and tourism, people-to-people contacts
 - ↗ protect the environment
 - ↗ restore and maintain water quality
 - ↗ manage environmental risks
 - ↗ preserve biodiversity, landscapes and air and soil quality
 - ↗ build prosperity
 - ↗ develop the knowledge society (research, education and ICT)
 - ↗ support business competitiveness
 - ↗ invest in people and their skills
 - ↗ strengthen the region
 - ↗ step up institutional capacity and cooperation
 - ↗ work together to tackle security and organised crime

For more information, please visit:
www.danube-region.eu

THE EU STRATEGY FOR THE BALTIC SEA REGION

Participating countries: Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland and Sweden

Pillars of focus and priority areas:

- save the sea
- ensure clear water in the sea
- have a rich and healthy wildlife
- achieve clean and safe shipping
- connect the Region
- improve the transport conditions
- have reliable energy markets
- connect people in the region
- fight cross-border crime and trafficking
- increase prosperity
- deepen and fulfil the single market
- contribute to implementing Europe 2020
- improve global competitiveness
- climate change adaptation

For more information, please visit:
www.balticsea-region-strategy.eu

sea, a lake or a river, water perfectly illustrates the need to cooperate transnationally and across borders,” says Ballnus.

Progress on the strategy. Two years into the strategy and progress can already be seen. The Danube Strategy Implementation Report published this spring highlighted some of the advancement made towards the various priority areas, for example the Danube Sturgeon Task Force, created to facilitate projects and measures to secure viable populations of this important fish.

Furthermore, success in the strategy depends on the involvement of a wide range of stakeholders to drive the implementation forward. The Second Annual Forum of the EUSDR was held in Bucharest in October 2013 with the focus ‘Danube region – stronger together, stronger in the world’. The forum encouraged debate on how the strategy is helping to tackle joint challenges.

For the Danube, this cooperation crosses issues as well as national borders. “The environmental Priority Areas [Priority

Areas 4, 5 and 6] have cooperated closely from the beginning on,” says Ballnus. “But there are so many cross-cutting issues, and now we see strong cooperation between other priority areas, which came about naturally from the Priority Area Coordinators themselves.”

The Baltic Sea as a role model. The macro-regional approach was pioneered by the Baltic Sea Region. Approved by the European Council in 2009, the EU Strategy for the Baltic Sea Region (EUSBSR) provides an integrated framework to improve the environmental condition of the sea, bottlenecks in transport and energy interconnections as well as to facilitate the development of competitive markets and common networks for research and innovation.

The Baltic Sea region has a long history of cooperation, from the Nordic Council founded in the 1950s, the Baltic Marine Environment Protection Commission founded in the 1970s and the Council of the Baltic Sea States founded 20 years ago. However, it’s the day-to-day cooperation that is making the most progress towards the EUSBSR’s goals.

“Environmental problems cannot be solved by one nation alone, and that is true for the Baltic Sea Region and is certainly true for the Danube Region as well,” says Erja Tikka, Finland’s Baltic Sea Ambassador, “so international cooperation is really needed.”

Inspiring other macro-regions. While coordinating actions across policy areas can produce better results than individual actions, macro-regional strategies have even larger benefits. Resolving issues in a relatively smaller region can clear the way for better cohesion at the level of the European Union. Therefore, based on the success of the Danube and Baltic Sea Strategies, the EU will develop strategies for other macro-regions – next for the Adriatic and Ionian Region.

The EU Strategy for the Adriatic and Ionian Region will promote sustainable economic and social prosperity through growth and job creation by approving its attractiveness, competitiveness and connectivity while at the same time preserving

the environment and ensuring healthy and balanced marine and coastal ecosystems. A public consultation period on the strategy is currently under way, and the final strategy is expected by the end of 2014.

“The Adriatic and the Ionian Seas are a major maritime and marine area in Europe, with precious ideas, experience and know-how,” said Maria Damanaki European Commissioner for Maritime Affairs and Fisheries in a speech delivered at the debate called ‘Adriatic-Ionian Macro-region: Transnational, Crossborder and Interregional actions paving the way ahead’ in Brussels in October 2012. “The true advantage of a regional strategy: it enables all levels and all countries to work together and on equal footing.”

THE EU STRATEGY FOR THE ADRIATIC AND THE IONIAN SEAS REGION

Participating countries: Albania, Bosnia and Herzegovina, Croatia, Greece, Italy, Montenegro, Serbia and Slovenia

Pillars of focus and priority areas:

- driving innovative maritime and marine growth
- connecting the region
- preserving, protecting, improving the quality of the environment
- increasing regional attractiveness

Future steps: The results of the public consultation on the future plan will be presented at a stakeholder conference to be held on 6 and 7 February 2014 in Athens, to be organised in the framework of the Greek Presidency of the European Council together with the European Commission.

For more information, please visit:
http://ec.europa.eu/regional_policy/cooperate/adriatic_ionian/index_en.cfm

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



Putting a value on ecosystems

Water managers from around the world are looking at tools like economic valuation to translate scientific findings into public policy development.

Faced with shrinking budgets and the growing needs for environmental action, water managers must make difficult decisions about how to allocate public investments to protect and restore the natural environment. Economic valuation can help resources managers measure the value of ecosystem services – such as trapping nutrients, regulating climate, purifying water or providing recreation – by estimating the costs to society for the loss of those services.

Economic valuation promises to help bridge the gap between science and policy making by communicating the importance of ecosystems in terms of their economic worth to a variety of sectors. “Economic valuation of science-based priority actions – including trying to put a dollar figure to the value that ecosystems provide – is not an easy task, but urgently needed as part of the solution toward long-term sustainability and on-the-ground results,” says Astrid Hillers, International Waters Cluster Coordinator of the Global Environment Facility (GEF).

The Seventh GEF Biennial International Waters Conference brought together over 200 participants from 85 countries to focus on economic valuation as a tool to protect and manage the world’s freshwater, groundwater and large marine ecosystems. © GWP IWC

Economic valuation is a useful tool that can support improved decision making and guide institutional framework development; influence allocation of financial resources and investments; raise awareness of various impacts in shared water systems; and ultimately lead to better governance of transboundary waters.

While economic valuation can be seen as a valuable mechanism tool for resource managers, there are several drawbacks: the potential to promote change where change is not needed; a seeming lack of trust in the practice; often insufficient availability of information and consistency among data sets; and a lack of understanding in the concept, which can lead to an inability to communicate results effectively, especially in a non-technical manner.

Proponents such as GEF recommend mainstreaming economic valuation with a clear understanding of need and scope; promoting acceptance of the practice through education and outreach; and translating results into an accessible form for policymakers and other stakeholders, such as the private sector. Communications need to be targeted to the needs of the audience and to the processes they are trying to influence. Stakeholders should be part of the economic valuation process from the early stages of the study, rather than simply presented with the results.

Bringing tools to the global community. While the Global Environment Facility's International Waters (GEF IW) portfolio historically has made use of economic valuation, the tool has not been used in a systematic or widespread manner. To address this, the Seventh GEF Biennial International Waters Conference (IWC7) focused on economic valuation as a tool to bridge the science policy gap.

GLOBAL ENVIRONMENT FACILITY

The Global Environment Facility (GEF) unites 183 member governments – in partnership with international institutions, NGOs and the private sector – to address global environmental issues. An independent financial organisation, the GEF provides grants to developing countries and countries with economies in transition for projects related to biodiversity, climate change, international waters, land degradation, the ozone layer and persistent organic pollutants. These projects benefit the global environment, linking local, national and global environmental challenges and promoting sustainable livelihoods.

The conference aimed to determine how best to incorporate economic valuation into future project implementation, such as how to include methodologies in the formulation of a transboundary diagnostic analysis and how to better translate scientific findings into policy development. Results from small table dialogues among participants indicate that economic valuation is a useful tool that can support improved decision making and guide institutional framework development; influence allocation of financial resources

and investments; raise awareness of various impacts in shared water systems; and ultimately lead to better governance of transboundary waters.

In addition to the central discussion on economic valuation, other conference sessions focused on a wide range of topics, from replicating good management practices from the wider Caribbean to catalysing finance for sustainable management of transboundary basins through partnerships. A highlight of the confer-

SEVENTH GEF BIENNIAL INTERNATIONAL WATERS CONFERENCE

Every two years, the Global Environment Facility's International Waters portfolio comes together to plan, share information and build capacity in key management and technical areas to protect and manage the world's freshwater, groundwater and large marine ecosystems. The seventh GEF IW signature learning event, held from 26 to 31 October 2013 in Barbados, brought together over 200 participants from 85 countries, including project managers, representatives of beneficiary countries, NGOs, transboundary management institutions, UN agencies and the private sector.

Barbados was selected to host IWC7 in part to highlight the threats posed to water security by rising sea levels and saline intrusion of coastal aquifers, rainfall variability and reduced catchment recharge, and increased frequency of natural disasters. Conference participants took part in technical site visits around the island that showcased the country's water management approaches to land-use planning, coastal risk reduction and groundwater protection.

ence was the Innovation Marketplace, where project exhibitors demonstrated innovations and results, including unique water management approaches and catalytic outcomes, with emphasis on how these might be replicated.

IWC7 culminated with a ceremonial transfer of the International Waters Conference Cup to Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), which will host the IWC8 in 2015.

For more information on the IWC7, please visit: www.iwlearn.net/iwc2013.

Taylor Henshaw works for GEF IW:LEARN. This GEF IW project has facilitated knowledge sharing and information management across the GEF IW portfolio since 2000 (iwlearn.net).



Ivan Zavadsky speaking at the public event for the Joint Danube Survey 3 on 5 September 2013 in Belgrade. © ICPDR/Liska

.....

Returning to the Danube waters

The ICPDR's new Executive Secretary brings a long association with the Danube countries and a strong background in environmental programmes to the work of the Danube region.

In August 2013, Ivan Zavadsky took over as Executive Secretary of the ICPDR. Already well known to many members of the ICPDR family, he has worked at the UN Global Environment Facility (GEF) in Washington and was responsible for the UNDP/GEF Danube/Black Sea Regional Programme and the UNDP/GEF Danube Regional Project, assisting in the implementation of the Danube River Protection Convention. He spoke to Danube Watch about the changes in the Danube region that have taken place over the last few years, and what the future holds for the ICPDR.

Danube Watch: What will be the focus on your work in the coming years?

Zavadsky: I was very pleased that the Danube countries have given me the opportunity to work for the protection and sustainable use of this river. The ICPDR is a mature institution, serving its contracting parties for almost two decades in the implementation of the Danube River Protection Convention and more recently in the implementation of the EU Water Framework Directive and the EU Flood Directive. Consequently, the emphasis of my work and the work of the Secretariat

should be on continuing the support for the implementation of the Convention and these directives in such a way that Danube countries see benefits in water management, nature conservation and flood protection. More specifically, we will assist countries to finalise the Second Danube Basin Analysis and then the Second Danube River Basin Management Plan, due in 2014 and 2015 respectively.

"It is necessary to clearly demonstrate to the countries at large the advantages of the joint work within the ICPDR on the economic growth and wellbeing of citizens. This would allow the ICPDR to further benefit from the high level of political commitment and support by the Danube ministers in charge of water management and environment."

The pioneering work of the ICPDR on cross-sectoral issues such as navigation, hydropower and adaptation to climate change underpinning the first management plan needs to be further expanded at both technical and political levels. The practical use of the joint statement on navigation and environment and the 'Guiding Principles on Sustainable Hydropower Development in the Danube Basin' will be important for this. We also need to focus on the fourth cross-sectoral issue impacting the Danube basin: agriculture. The threats of nutrient pollution from intense agriculture need to be aligned with the new Common Agriculture Policy (CAP). The CAP has perhaps not always been properly used by the water administrations and may be an area where some awareness raising would be helpful.

The EU Strategy for the Danube Region (EUSDR) is an important regional policy framework fostering an integrated approach to sustainable development through the strategy. The ICPDR should remain a key partner to the EUSDR, particularly within those priority areas where the ICPDR has the mandate, expertise and mechanisms to maximise the impact of the EUSDR. I would also like to strengthen the cooperation with the Black Sea Commission to provide Danube and Black Sea governments and citizens with reliable information and a scientifically sound assessment of the influence of the Danube River on the environment of the Black Sea. Although the ICPDR made progress regarding the pollution load, more work is still needed on the assessment from the Black Sea side.

Danube Watch: What has changed in the Danube Basin since you managed the UNDP/GEF Danube Regional Project?

Zavadsky: Since I left the Danube Basin, many things have changed – for the better, I'm glad to say. The EU enlargement means that 9 out of 14 ICPDR countries are now EU Member States. This has created not only great incentives for policy and legislative changes towards better water management, but also opened opportunities to put to use financing tools to reduce pollution and pursue measures for the protection of rivers, lakes and water-dependent ecosystems. What worries me now, however, is the increased frequency of heavy floods. Therefore flood protection measures,

**IVAN ZAVADSKY,
ICPDR EXECUTIVE SECRETARY**

Ivan Zavadsky joined the ICPDR Permanent Secretariat as the Executive Secretary in August 2013. Prior to this position, he worked as International Waters Focal Area Coordinator and Senior Water Resources Management Specialist at the Global Environment Facility Secretariat. Until 2007 he served as Regional Director for the UNDP/GEF Danube/Black Sea Regional Programme. In December 2001 he joined UNOPS as Project Manager of the UNDP/GEF Danube Regional Project assisting Danube countries in implementing the Danube River Protection Convention, with emphasis on inter-state cooperation and nutrient and toxic pollution reduction.

From 1992 he served as Director General at the Ministry of Environment of Slovakia responsible for policy and regulation of water, waste and air sectors. He has extensive experience in managing and coordinating environmental programmes and projects of large geographical and policy scope both within and outside the GEF International Waters area. During 1999-2001 he led the negotiations for the accession of Slovakia to the EU for the entire environment sector. Throughout his more than 15 years' of government service he has represented Czechoslovak and Slovak governments on a number of international bodies or organisations, including the ICPDR, but also the Environmental Policy Committee of the OECD, the UNECE Committee on Environmental Policy and others.

Mr Zavadsky holds degrees in water management (1981) and economics in water management (1986) from the Slovak Technical University in Bratislava.

flood risk management plans and the development of tools and policies to manage floods should be another priority for the ICPDR.

Danube Watch: What is the ICPDR's role in the international picture of transboundary water management?

Zavadsky: The Danube is in a unique position within the global environmental and development arena. The institutional and legal framework as represented by the ICPDR, the technical capacity of the protection efforts and the improved governance of the most international river basin in the world have made the Danube a flagship for the Global Environment Facility. What's more, the Danube is a model for many of the 276 transboundary river basins striving towards developing their own cooperative frameworks.

However, this comes with the obligation to return the support given to the Danube Basin. I think that our cooperation with the Orange-Senqu River Commission and future global partnerships should stay on the ICPDR agenda.



Ivan Zavadsky brings rich experience from the global water community and a long association with the Danube Basin to his new role as ICPDR Executive Secretary. © Liska/ICPDR

In addition, I am very pleased that this issue of Danube Watch is dedicated to the UN International Year of Water Cooperation. We all have to thank the Government of Hungary for hosting the Water Summit a few months ago where world water leaders made contributions to the Strategic Decision Group framing the world water, environment and development architecture for coming decades. In his opening remarks in Budapest, UN Secretary General Ban Ki-moon highlighted the Danube as an example of excellent transnational water management, and I am immensely grateful that he contributed the editorial to this issue of Danube Watch.

Danube Watch: How has the financial crisis affected the work of the ICPDR?

Zavadsky: The ICPDR constantly needs to prove its added value to the governments of contracting parties, which have to juggle funding for many international commitments in these times of austerity. It is necessary to clearly demonstrate to the countries at large the advantages of the joint work within the ICPDR on the economic growth and wellbeing of citizens. This would allow the ICPDR to further benefit from the high level of political commitment and support by the Danube ministers in charge of water management and environment.

Cooperation with the private sector is also crucial for ICPDR activities. The Business Friends of the Danube provide opportunities to develop stronger, more effective partnerships with industries operating in the Danube Basin. The experience and lessons learnt from the long, continuing cooperation with the Coca-Cola system should provide a model for others.

Danube Watch: What is your relationship to the Danube?

Zavadsky: Well, as a Danube Basin citizen, born and raised just a couple of hundred metres from the river, I have always been impressed by the power, beauty, economic importance, but also the threat of floods the river is famous for. Almost 30 years of direct involvement with river affairs, underlined by the understanding of the basic challenges that most similar rivers are facing worldwide, has made me proud to be a part of the Danube family.

"As a Danube Basin citizen, born and raised just a couple of hundred metres from the river, I have always been impressed by the power, beauty, economic importance, but also by the threat of floods the river is famous for."

The Danube truly connects the entire basin and provides a base for all types of cooperation, partnerships and business development. So for me, the Danube is a symbol of unity, cooperation and hope for good river basin management to secure all its intrinsic values, appreciate the people of the basin and sustain their work to protect this natural resource.

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

Credit to the crew: the third Joint Danube Survey successfully completed

A good team was the most important requirement to meet the goals of the ambitious Danube monitoring programme and bring the fleet of ships to a successful finish in Tulcea.



It was 12 August 2013. The tropical heat that Central Europe had been suffering from a week before had turned into a mild, pleasant summer. In Regensburg Harbour, however, for everyone involved in the Joint Danube Survey (JDS3) the heat was on.

The JDS3 monitoring cruise took place from 13 August to 26 September 2013 with the spirit of cooperation and support predetermining the whole survey. A good team was the most important prerequisite to fulfil the JDS3's ambitious programme of analyses and observations to investigate water, sediments, suspended particulate matter, sediments and biota. This required collecting diverse samples from each sampling site. To complete the entire sampling plan within the time given it was essential that the activities were well planned and orchestrated and then fine-tuned during the initial sampling performances.

Cruising the Danube waters. The JDS3 fleet was assembled thanks to Serbia (providing the laboratory vessel *Argus*), Romania (providing the supporting ship *Istros*) and Austria (financing the fish survey ship *Wien*). In addition, five small boats were deployed from the JDS3 ships at each sampling site to transfer the monitoring



Small boats were used to transfer experts to monitoring sites along the shore. © Liska/ICPDR

experts where needed. Macrophyte researcher Igor Stankovič was brought to shore to trawl three kilometres on left and right banks to assess plant occurrences and diversity. He was accompanied by Jarmila Makovinska sampling phytobenthos. The boat was also needed to bring Patrick Leitner, Thomas Huber and Claudia Nagy to the shore to perform the multihabitat sampling of benthic macroinvertebrates.

Another small boat was used for in-the-field physico-chemical analyses carried out by Florentina Dumitrache and also to collect water and sediment samples for chemical analysis, zooplankton sampling and bottom dredging for benthic macroinvertebrates on five cross-sectional profiles

carried out by Bela Csanyi, Jozsef Szekeres and Momir Paunovic. The third boat was operated by Peter Matok, Jan Busovsky and Radoslav Cuban to make a detailed hydromorphological characterisation of the sampling site and to collect river bed material and perform measurements of flow velocity, river discharge, suspended sediment and water level slope and fluctuation. Phytoplankton sampling was carried out by Martin Dokulil and Ulrich Donabaum directly from the *Argus*.

The fourth boat was used by the fish team (Vinzenc Bammer, Michael Schabuss, Horst Zornig and Lachezar Zlatev Pehlivanov) to catch fish species, by electrofishing, in a particular littoral habitat day and night.

The experts on board formed a very strong team, enthusiastically carrying out the necessary workload and coping with the problems that always emerge during field expeditions of this scale. The skilled professionals seasoned from previous surveys and the new, 'fresh blood' scientists formed an efficient squad providing the best guarantee for a successful monitoring expedition.

The river bottom was sampled for fish from the fifth boat by Agnes Irma Gyorgy, Zoltán Szaloky and Andras Weiperth, who used an electrified bottom trawler net. Most importantly, all of the fish sampled were returned alive back to the water after all necessary data had been collected.

Processing samples back on board. While those teams monitored from the smaller boats, a number of scientists accomplished their tasks from the ships. Mary Craciun operated the continuous flow centrifuge pumping several thousands of litres of river water at each Danube site to collect a few hundreds of grams of suspended solids, which were then distributed to laboratories for hazardous substances analysis. Together with Peter Tarabek, Mary also processed the collected sediments to obtain the fraction necessary for subsequent analysis. Peter's main activity was to operate the passive sampler and the mobile large-volume extraction unit containing a sequence of sorbents for the optimised extraction of a broad scale of contaminants so that their presence in the Danube water could be checked.

The samples prepared by Mary and Peter are now being analysed by leading laboratories in the Danube countries, from the NORMAN network of European reference laboratories for monitoring of emerging environmental pollutants as well as by the European Commission's Joint Reference Centre laboratories to obtain highly detailed information on the pollution of the Danube by chemical substances and to assess toxicity of individual samples. During the survey NORMAN experts Björn Deutschmann and Sandor Sipos prepared fish samples for follow up chemical analyses and bioassay investigations and Tobias Schulze assisted with large volume sampling.

The experts in microbiology Georg H. Reischer, Stefan Jakwerth and Stoimir Kolarevic also worked on board determining microbial water quality and securing samples for DNA based – large scale microbial faecal sourcetracking, which makes it possible to identify the sources of microbial faecal pollution in watersheds. In addition, Stoimir analysed fish blood samples with a rapid bioassay method in his night shifts.

Leadership and coordination. Well-orchestrated cooperation was vital throughout the entire survey. The detailed planning and management of daily activities was the responsibility of the Core Team Leader Bela Csanyi and his deputy Momir Paunovic. While both are leading experts in aquatic biology, it was their long-term experience with Danube monitoring and surveys – Bela was the Core Team Leader during JDS2 – that made them the best candidates to lead the third survey. Using an adaptive management approach to ensure harmony between the navigation requirements and the scientific goals, they successfully accomplished the survey's tasks and brought the fleet to its final destination in Tulcea.

The logistical and organisational back-up during the monitoring cruise was provided by the JDS3 Technical Coordinator Jaroslav Slobodnik, who had served the same role during both previous Joint Danube Surveys. Finalising the monitoring expedition has been a key step towards producing the JDS3 final report in autumn 2014. Until then, the samples collected during the survey are being analysed by the JDS3 laboratories, which will provide the results next spring.

To learn more about the JDS3 and read the updates made during the survey, please visit: www.danubesurvey.org

Igor Liska is the Technical Expert for Water Quality at the ICPDR Secretariat and JDS3 Project Manager.

.....
The monitoring programme for the JDS3 was an ambitious schedule of analyses and observations to investigate water, sediments, suspended particulate matter, sediments and biota all along the river. © *Liska/ICPDR*





Hydropower plant Arto-Blanca at the Sava River, Slovenia. Hydropower generates renewable energy but also has a negative impact on the environment – the challenge is to strike the right balance.
© Hidroelektrarne Na Spodnji Savi

A hydropower balancing act

The new Guiding Principles on Hydropower offer a holistic approach to hydropower development plans, increasing energy production while allowing environmental conditions to improve.

Transitioning energy systems towards renewables is one of today’s key challenges. Besides actions to increase the efficiency of energy use, societies need additional renewable energy sources to reduce greenhouse gas emissions in order to combat climate change. Next to wind, solar and biomass, hydropower has an important role in providing renewable energy and stabilising the electricity grid. However, as with other forms of renewable energy, hydropower cannot be considered as sustainable per se. Its negative impacts on, for example, fish populations, sediment transport and adjacent wetlands require a balanced approach for the preservation of healthy ecosystems.

Danube countries are getting closer to finding that balance. They have tasked the ICPDR to address the challenge of developing sustainable hydropower within the existing legal and policy framework. At the 2010 Danube Ministerial Meeting, ministers from all ICPDR countries asked the Commission to “organise in close cooperation with the hydropower sector and all relevant stakeholders 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”.

This activity was launched in 2011, building on the achievements of a similar process for inland navigation. The aim of the hydropower process is to find an agreement on how to address existing hydropower and to establish guidelines for how and where to develop hydropower in the future.

Led by experts. As lead countries, Austria, Romania and Slovenia committed to a stronger role within the ICPDR in order to steer the development of the Guiding Principles on Hydropower. This work was supported by a team of experts with representatives from energy and environmental administrations, the European Commission, energy community, sector representatives as well as environmental interest groups and the scientific community.

After a workshop and a number of meetings, the team developed an assessment report and a collection of case studies and good practice examples to accompany the Guiding Principles. The interim results of the work of the team of experts were presented and discussed at an international conference in March 2013 in Ljubljana, with the participation of more than 90 representatives from 13 countries.

Providing guidance. After the conference, the Guiding Principles were finalised and adopted by the Danube countries in June 2013 and are now also available in print. The Guiding Principles highlight the need for a sustainable approach to hydropower, taking into account social, economic and environmental issues. Furthermore, the Guiding Principles emphasise a holistic approach in energy policies, where hydropower development plans have to be linked with measures to increase energy efficiency along with an increase in other forms of renewable energy.

The Guiding Principles also suggest promoting technical upgrades for existing facilities and linking them with ecological restoration measures, such as fish migration aids or ensuring ecological flow. Practical case studies show that this combination can result in a win-win situation, allowing energy production to increase and environmental conditions to improve at the same time.

For new hydropower development, the Guiding Principles recommend a strategic planning approach based on two levels: a regional and a project-specific assessment. A regional assessment classifies river stretches by their suitability for hydropower development. In principle, protected areas, stretches of high ecological status or reference stretches are considered as suitable for exclusion from hydropower development, whereas remaining river stretches should be further classified according to energy management, environment and landscape criteria. The results of the regional assessment feed into the assessment of specific project applications, helping administrations take decisions which are transparent and reasonable.

Linking actions for success. The Guiding Principles are in need to be practically applied at the national level and should be linked to renewable energy action plans and river basin management plans to accelerate the increase in the share of renewable energy while meeting environmental protection goals.

The results of the hydropower guidance activities will have significant implications not just for the Danube region, but because they are also expected to provide an important contribution to worldwide discussions on how security of water, energy and food are inextricably linked and that actions in one area have impacts in

one or both of the others. A roundtable discussion on this topic took place in November 2013 in Sarajevo where the Guiding Principles were presented and follow-up actions discussed.

The hope is that this process will bring transparency and openness to decisions affecting water and energy made by ministries and hydropower companies in the years to come.

For more information or for a copy of the Guiding Principles, please contact the ICPDR Secretariat via www.icpdr.org.

Raimund Mair is the ICPDR Technical Expert for River Basin Management.

.....
A mitigation measure at a hydropower dam: vertical-slot fish pass enabling the migration of fish species. Practical advice for building fish migration aids can be obtained from a technical paper published in 2013 on the ICPDR website: www.icpdr.org. © *Mair/ICPDR*



Finding a balance for hydropower means getting all stakeholders together. The Danube Day celebrations spotlight the kind of cooperation necessary for positive change. Fold out to read more about Danube Day 2013.

The Guiding Principles highlight the need for a sustainable approach to hydropower, taking into account social, economic and environmental issues.

Danube Day 2013

The tenth Danube Day celebrated solidarity, diversity and positive change, providing a platform for action to revitalise rivers and communities. Tens of thousands of people took part and millions more followed along in the media in thirteen countries and seven capital cities. Overseen by the ICPDR, 914 government agencies, businesses and NGOs organised events in 2013, the UN International Year of Water Cooperation! The undisputed stars of the show were the Danube sturgeons, especially belugas – considered one of the most endangered species in the world. Spectacular, uplifting and poignant, events left an enduring message: working together we can achieve a sustainable future.

The ICPDR would like to thank all the organisations involved in Danube Day 2013. Visit www.danubeday.org to find out more about events and organisers.

GERMANY 1

Floods in the area in June did not prevent Danube Day from becoming a success in Germany: 2000 visitors enjoyed Baden-Württemberg's 'Danube Experience' in Sigmaringen; a weekend of eco activities and music celebrated Immendingen's new riverside park. In Bavaria, the Danube Art Master contest and Ingolstadt Swim brought cheer to the region. © 1: *Vinzenz Ratter, Wasserwirtschaftsamt Deggendorf*



1

AUSTRIA 2

Spectacle and laughter filled the air with a challenge to slack-line the width of the Vienna Danube, accompanied by flying fish, living sturgeon and a bubble show organised by the Environment Ministry and the city of Vienna. More than 1500 teens joined the 'Danube Challenge', digging mini-models of the Basin in the Donau-Auen National Park. © 2: *Danube Day Austria / Matthias Hombauer*



2

SLOVENIA 7

National contests encouraged 800 children to become Art Masters, Water Detectives and comic-book writers! In the Agriculture Ministry/Coca-Cola's 'My River.si', kids created river superheroes: 'Super Water Purifier' helped the Drava by building invisible flood walls, while hardworking 'Mimi the Octopus' had a filtering system that zaps rubbish! © 7: *ICPDR*



3

BOSNIA-HERZEGOVINA 13

At the Bosna source, ICPDR President, Deputy Minister Ermina Salkičević-Dizdarević, presided over a festival of arts and culture enjoyed by children, embassy and ministerial officials, Centre for Development and Support, Ekotim and water stakeholders. Applauding sustainable river management successes, the Minister's sentiment was echoed by EU Commissioner Hahn in a video message to the region. © 13: *Ekotim*

CROATIA 3, 4

Thousands enjoyed spectacular hi-tech celebrations at a joint EU accession-Danube Day party in Vukovar. While in Slavonski Brod, age-old sights, sounds and smells wafted over the Sava at the international 'Fišijada' fish stew festival, attended by Croatian Minister Tihomir Jakovina. © 3: *ICPDR*, 4: *Zeleni Osijek*



4



7



6

HUNGARY 6

Over 11,000 people took part in events throughout the summer: river and city festivals, sturgeon stroking, dragon boat races, a tango flash mob, the Danube Box contest, sturgeon focused Children Iceland and evening jazz concerts were just a few highlights led by the Rural Development Ministry, MindSpace, Coca-Cola, GWP, Danube Muzeum, Budapest Waterworks and others. © 6: *www.kormany.hu / Árvai Károly*

SERBIA 8

By the end of Serbia's summer-long event, 350 organisations had hosted 130 events in 28 towns! Festivities closed with celebrations at Zemun Quay and Ada Huja Natural Park. The Serbian EU Delegation hosted a Danube cruise, students attended the seventh 'Danube Eco Camp' and thousands enjoyed Srem Banoštor's festival of fishing and fish soup! © 8: *ICPDR*



8



MONTENEGRO

'Sunny Colours of Nature' won top prize in a contest run by Friends of Tara River Society. Part of the basin-wide 'Art Master' contest overseen by GWP, the artworks share common messages of environmental concern: basin-wide solidarity, anger at rubbish dumped and wonder at nature's beauty.



5



9

SLOVAKIA 9

Festivities organised by the Ministry of Environment and Vodohospodárska výstavba drew children from all along the Danube. Led by radio and TV's Roman Bomboš, highlights included dancing, river trips, kayaking, sterlet releases, interactive exhibition, environmental games and photo-shoots with a water-sprite! Komárno pupils were crowned BROZ's Art Masters for 'Heart for the Danube'. © 9: *Vodohospodárska výstavba*



10

ROMANIA 11

Some 128 organisations inspired Romanians to kayak, sing, run, create and collect rubbish! All 11 Danube regions went sturgeon crazy, but Galati was most affected with five days of ECCG-led fun. The Ministry hosted a high-level Danube Environmental Forum, where major NGOs petitioned officials over sustainability in the Delta. © 11: *ICPDR*



11



12

MOLDOVA 12

A thousand people took part in workshops and festivals: traditions were rekindled at Valeni's festival; journalists attended a climate change workshop; academics consulted over the Danube Strategy; and Criuleni students, winners of the Ecological Movement of Moldova's Danube Art Master contest, attended the international final in Budapest. © 12: *ICPDR*



13

BULGARIA 14

Danube Competence Centre's 'Blue Danube Week' saw an arts festival in Vidin and Serbian and Romanian cities. Regattas in Ruse and Silistra, festivals in Baykal and Nikopol, water sampling, Bulgarian-Romanian emergency planning, a design competition and funding workshop were among highlights across northern Bulgaria. © 14: *DRBD*



14

Suzie Holt lives in Devon, UK, and is a writer on environmental issues. She has been involved in Danube Day since its start in 2004 and prior to that worked for WWF on the Carpathian Ecoregion Initiative.

DANUBE DAY



ICPDR MEETINGS

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

29-29/1/2014

BUDAPEST/SZENTENDRE, HUNGARY

1ST REGIONAL WORKSHOP FOR THE DANUBE RIVER BASIN NETWORK

4-5/2/2014

ZAGREB, CROATIA

5TH MEETING ON THE FOLLOW-UP OF THE JOINT STATEMENT ON GUIDING PRINCIPLES FOR INLAND NAVIGATION AND ENVIRONMENTAL PROTECTION IN THE DANUBE BASIN

6-7/3/2014

VIENNA, AUSTRIA

12TH HYDROMORPHOLOGY TASK GROUP MEETING

11-12/3/2014

BELGRADE, SERBIA

18TH INFORMATION MANAGEMENT AND GEOGRAPHICAL INFORMATION SYSTEM EXPERT GROUP MEETING

20-21/3/2014

BUDAPEST, HUNGARY

18TH GROUNDWATER TASK GROUP MEETING

3-4/4/2014

KOBLENZ, GERMANY

19TH MONITORING AND ASSESSMENT EXPERT GROUP MEETING

9-11/4/2014

BRNO, CZECH REPUBLIC

25TH FLOOD PROTECTION EXPERT GROUP MEETING

10-11/4/2014

LJUBLJANA, SLOVENIA

6TH ACCIDENT PREVENTION AND CONTROL EXPERT GROUP MEETING

15-16/4/2014

BERLIN, GERMANY

16TH PUBLIC PARTICIPATION EXPERT GROUP MEETING

DATE AND LOCATION TO BE DETERMINED

9TH NAVIGATION TASK GROUP MEETING

DATE AND LOCATION TO BE DETERMINED

20TH PRESSURES AND MEASURES EXPERT GROUP MEETING

DW 01/14

UPCOMING ISSUE

Bulgaria's ICPDR presidency**Wasseraktiv: photo competition in Austria****Liberty Island: a revitalisation project in Hungary**