

DANUBE WATCH

THE MAGAZINE OF THE DANUBE RIVER / WWW.ICPDR.ORG 3-4 / 2010



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Credit: BMU

Dear readers,

20 years after the fall of the Iron Curtain, the Danube is a living thread binding together a united Europe. The Danube River Basin connects 14 countries which cooperate in the ICPDR. Twenty years ago only two of these countries were members of the European Union. Today, eight of them are members – and others will follow.

The European Council's request to the Commission to present an EU Strategy for the Danube Region before the end of 2010 is further proof of Europe opening up in the east. The first stakeholder conference on the EU Strategy for the Danube Region was held on 2 February 2010 in the German city of Ulm on the Danube. Beyond the historical and cultural significance of the Danube for Europe, the entire process of drawing up the EU Strategy highlighted that the Danube region can become a model region in Europe – not just economically, but ecologically as well.

The Danube region is shaped by the river and its basin. No other river on the planet links more countries in its river basin than the Danube. The ICPDR's many years of experience can be of exemplary significance for the EU Strategy's target of strengthening the Danube macro-region through improved coordination of the many activities and bodies. The ICPDR must therefore be the central contact for the environmental pillar of the EU Strategy regarding all questions of water management, flood protection and adaptation to climate change.

Over the years the ICPDR has been very successful in showing us how the use and conservation of our natural resources can be brought into harmony. The key factors of this successful work are simple yet fundamental: a joint vision, political will, information sharing and transparency. The Danube River Basin Management Plan, which we

adopted at the ICPDR Ministerial Meeting in 2010 in accordance with the EU Water Framework Directive (WFD), is an excellent example of what can be achieved on this basis. Although not all Danube states are legally obliged to implement the WFD, we now have a Management Plan and a Joint Programme of Measures that are coordinated between EU and non-EU states. We will not be able to reach our goal of a good status of the Danube and its tributaries throughout the entire river basin by 2015. But we will take the first, important steps on this path. We must remain committed to joint initiatives such as the introduction of phosphate-free detergents or the Joint Statement on Navigation drawn up together with the shipping sector. At the same time, we must not neglect implementation of our national programmes of measures.

In the future we will have to tackle new tasks. The meeting of the Conference of the Parties to the Convention on Biological Diversity from 18 to 29 October 2010 in Nagoya, Japan, highlighted the current challenges we are facing worldwide in the field of biological diversity. For the Danube there is a special responsibility as its delta is one of the most species-rich regions in Europe.

Adaptation to climate change represents a further challenge. At the ICPDR Ministerial Meeting in February 2010 we agreed to develop an ICPDR Adaptation Strategy by the end of 2012 and to fully integrate the impacts of climate change into the second Danube River Basin Management Plan in 2015. Germany is willing to take on responsibility in this area too and to strongly support the work of the ICPDR.

Norbert Röttgen, Federal Minister for the Environment, Nature Conservation and Nuclear Safety



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

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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.

News & events



Credit: pixelio/Falk



Credit: IKSE/MKOL



LITERATURE ON THE DANUBE

The 'Literature in Flux' project is providing a temporary space on the Danube for dialogue and exchange about similarities and differences in cultures and literatures. The historical ship *Radetzki* will serve as a temporary HALMA literature house and will stop in seven countries along the Danube bringing together writers, translators and journalists. HALMA is a network of European literary institutions helping to connect European culture and literature.

For more information, please visit: www.halma-network.eu

CONFERENCE ON BIODIVERSITY

World leaders and policy makers gathered at the 10th Conference of the Parties of the Convention on Biological Diversity in Japan to debate how to halt global biodiversity loss. Member States adopted a new protocol to the Convention, setting ground rules for improving access to, and the equitable sharing of, the world's genetic resources. The new treaty will provide an innovative approach to conserving and protecting the world's rapidly diminishing living resources.

For more information, please visit: www.cbd.int/

20TH ANNIVERSARY OF THE ELBE COMMISSION

The International Commission for the Protection of the Elbe River Agreement was founded in Magdeburg on 8 October 1990, and the protection of the Elbe River has become an outstanding example of international cooperation. One of the most polluted rivers in the late 1980s, water quality in the Elbe has drastically improved and the river has become a habitat for animals and plants again.

For more information, please visit: www.ikse-mkol.org/

A NEW MAGAZINE FOR THE DANUBE REGION

Danube Connects is a new international magazine for the Danube, designed to showcase development and cooperation in the Danube countries. Danube Connects provides reports, features and interviews on economics, culture, tourism, science and the environment. The magazine is produced by the European Danube Academy Ulm, which offers a framework for discourses in moral and social sciences and for historical-cultural studies on the Danube region.

For more information, please visit: <http://danube-connects.eu/>

INTERNATIONAL CONFERENCE ON THE STATUS AND FUTURE OF THE WORLD'S LARGE RIVERS

The human pressures and impacts on the World's Large Rivers have increased in recent years, and large rivers are particularly exposed to the problems of multiple uses – often with conflicting aims. The international conference aims to provide a global forum for a wide-ranging discussion of key issues related to research on large rivers and to their effective and sustainable management, involving scientists and decision makers.

For more information, please visit: <http://worldslargerivers.boku.ac.at/>



Credit: private

WELCOME BENEDIKT!

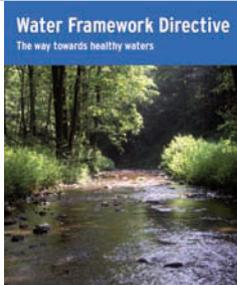
Benedikt Mandl has taken over the position of Technical Expert for Public Participation and Public Relation in the ICPDR Secretariat. Benedikt has an academic background in biology, but also brings a lot of experience in communication issues. Welcome to the ICPDR family Benedikt!



Credit: ICPDR/Stögmüller

THANK YOU, GYULA!

Gyula Hollo has been the Head of the Hungarian Delegation to the ICPDR for over a decade, but will retire from his post at the Hungarian Ministry by the end of the year. Gyula has been a strong pillar of the ICPDR and key to its developments. We would like to thank Gyula for his professional and personal dedication to the Danube Basin and wish him all the best for the years to come!

**THE WAY TOWARDS HEALTHY WATERS**

A new publication from Germany describes the objectives and visions of the Water Framework Directive and its role in the water management process. The pamphlet provides an overview of current water body status in Germany and current river basin management planning in Germany.

For more information, please visit: www.bmu.de/english/water_management/downloads/doc/46441.php



This break on 4 October caused the disaster (right). For some days it was even feared that the northern wall of the reservoir might collapse. Measures, such as building dykes, were taken to divert the flow of another possible sludge wave, providing 22,000 tons of gypsum and necessary acetic acid supply as well as pumping red sludge out of Reservoir 10 into Reservoir 11. This danger has so far been averted. *Credit: State Secretary for Government Communication*



The red sludge tragedy in the Danube Basin

The focus of the world has been on the Danube River Basin as pictures of injured people, damaged houses and dying wildlife around Kolontar, Hungary, were circulated two months ago. But the images also show the basin working together to clean up the area and to understand how to avoid such tragedies in the future.



Just after noon on 4 October, a dam broke at MAL Ltd., the Hungarian Aluminium production and trade company situated around 150 kilometres south-west of Budapest. As a consequence, about 700,000 m³ of red sludge spilled out of the facility's Number 10 Reservoir and entered the Torna Creek and Valley, thus reaching the Marcal River. Ten people died in the high-alkaline sludge and about 120 were injured. Five tons of rocks from the broken dam have been pushed by the flow more than one kilometre away from the reservoir. The red flood wave was up to 2.5 metres high and hit parts of the village of Kolontar one kilometre away (heavily damaging 35 houses), reached Devecsér seven kilometres away (damaging 207 houses), finally hitting 14 houses in Somlovasarhely. In total, an area of about 1100 hectares was affected: mainly crop land (600 hectares) and meadows (400 hectares), Natura 2000 sites or sites designed for nature protection (90 hectares) and forests (50 hectares).

Apart from the immediate effects of the wave of red sludge, there was also concern for a possible contamination of Hungary's waterways and air, and concern that the major environmental pollution might reach the Danube River. "The ICPDR was very much concerned about the possible pollution of the Danube River," explains Philip Weller, its Executive Secretary, "The Danube not only links several countries in Central and Eastern Europe, but is also the drinking water resource for millions of people."



The red sludge is collected in containers or plastic sheets and treated as hazardous waste. During this work goggles and a mask must be worn to prevent contact with the eyes or the airways. For most areas neutralisation, cleaning up the sludge and ploughing in the residue may be sufficient, according to Hungarian officials. *Credit: State Secretary for Government Communication*

Mitigation efforts. Immediate emergency response measures were undertaken for the protection of the population and the environment. By 4pm on 4 October, the highest alert level was ordered by the Environmental and Water Directorates and the Headquarters of HU Water-caused Damages seated in VKKI (Central Directorate for Water and Environment), Budapest. “The Hungarian Authorities have undertaken all measures to avoid further pollution of water, soil and air; we have tried to keep the pollution within the Marcal River catchment and to decontaminate this affected area as soon as possible to limit the harmful impacts on men and environment,” underlined Laszlo Perger, Central Directorate for Water and Environment (VKKI) Hungary, and Member of Hungarian Delegation to the ICPDR River Basin Management Expert Group.

A major problem was the sodium hydroxide content in the red sludge, which was the main danger for humans and the environment (see box: What is red sludge?). The content of sodium hydroxide in Reservoir 10 was – according to Hungarian officials – between 5% to 8%. One objective in the field of water protection was to keep the highly alkaline pollution as local as possible - hence to localise it in the Marcal River and to limit the metallic and organic contamination in the Rába, Mosoni-Duna and Danube rivers.

“An impressive sets of measures were undertaken to minimise the risk for the pollution of the waters of the Danube,” adds Weller. To that end several measures were undertaken: six underwater dykes were constructed in different sections of the Marcal River to slow down the water flow so that suspended solids could settle and to ease the neutralisation measures to improve water quality – to lower the pH level and to elutriate the pollution. The day following the accident, various neutralisation materials, such as gypsum and

bio-acetic acid, were discharged into the Marcal River.

The intensive neutralisation measures were successful and the pH value of the Marcal River decreased, so no major water quality problems in the water of the Danube River or harmful effects on the health of human beings are expected. Rainy weather washed further pollutants – alkali and heavy metals – into the Torna Creek from the surrounding areas; therefore additional gypsum was poured into the river.

WHAT IS RED SLUDGE?

Red-sludge is the by-product of the principal industrial means of refining bauxite in order to provide clean alumina as a raw material for the electrolysis of aluminium. In the so called Bayer process, bauxite is digested by washing with a hot solution of sodium hydroxide. This dissolves the present alumina into aluminium hydroxide, which dissolves in the hydroxide solution, while the other components of bauxite do not dissolve. The solution is clarified by filtering off the solid impurities. This mixture of solid impurities, including some of the hydroxide solution, is called red sludge. Next, the filtered hydroxide solution is cooled and the dissolved aluminium hydroxide precipitates as a white, fluffy solid; when heated again the aluminium hydroxide decomposes to alumina, which is then used for the production of aluminium. The red sludge is composed of a mixture of solid and metallic oxide-bearing impurities. Its distinctive red colour is caused by oxidised iron, which can make up 60% of the mass of the red sludge. Having been subjected to sodium hydroxide treatment, it is highly caustic, with pH values in excess of 13.2. A typical plant in Europe produces about 3 tonnes of red sludge waste per ton final aluminium.

Instant injuries are caused by direct contact with the red sludge: when alkali combines with water, such as the water in the skin, it produces heat, causing skin irritation, burn injuries and even damage to eyes on contact. The severity of the effect and the resulting injury depends on the length of the contact and the concentration of the lye. Sodium hydroxide dissolved from red sludge can destroy the flora and fauna of surface water and can even kill fish.

The alkali itself has no long-term effect on the environment, since water dilutes it and hence reduces the pH.

Spreading information to avoid the spread of pollutants. All these measures were accompanied by specific emergency water-quality monitoring undertaken by Hungary as well as in the downstream countries, to investigate the early direct impact to the Danube river (see box: The Accident Warning System of the ICPDR). “This accident has shown that the AEWs of the ICPDR works and can be used as a reliable source of information between all Danube countries,” explains Igor Liska, Technical Expert for Water Quality in the ICPDR Secretariat.

“We are relieved that major pollution beyond the local streams and rivers could be avoided,” says Maria Galambos, Member of the Hungarian Delegation to the ICPDR. “The intense monitoring of the Hungarian National Public Health Centre also revealed that the drinking water was safe at any stage of the accident.”



Decreasing risks from heavy metals. According to the Hungarian environmental agencies, the content of heavy metals in the red sludge posed a relatively low acute toxic risk as their concentrations were rather low. However, the release of heavy metals could have a long-term implication on the environment as they damage the nervous system in animals and humans and build up in the food chain. The radioactivity of the red sludge was insignificant, according to Hungarian authorities, and therefore not harmful to humans and the environment. The exact assessment of those possible impacts in the future must be preceded by a thorough monitoring of the heavy metal content in water, suspended particulates and bottom sediments in the Marcal, Rába, Mosoni-Danube and Danube rivers.

Monitoring results identified an increased concentrations of some heavy metals – mainly mercury and aluminium. In the Slovak reach of the Danube downstream the mouth of the Mosoni-Danube, the elevated concentrations of aluminium, vanadium and arsenic

were observed on 7 October with a sharply decreasing tendency. According to the monitoring results of the countries further downstream the Danube the threshold values for the measured substances, including several heavy metals, were not exceeded according to specific regulations of the European Union.

The dilution of heavy metals downstream resulted in a further decrease of their concentrations, so that the director of Croatian Waters Zoran Djurkovic said on 10 October that the quantity of metals measured in the Danube River “does not exceed the maximum limits allowed for even drinking water”. On the Romanian Danube section at Bazias (km 1071), the concentrations of mercury and aluminium have been reported below the limit values. However, in order to have a clear picture on the threat stemming from the heavy metals to the environment and human life, more detailed information is continuously assessed.

One problem that has still not been solved is that dried red sludge is a very fine powder, which irritates the respiratory passages when inhaled. Its alkalinity causes stronger irritation than normal dusts may cause.

International assistance. Disaster relief efforts on agricultural land are also ongoing. According to measurements by the Research Institute for Soil Science and Agricultural Chemistry of the Hungarian Academy of Sciences, the contamination did not permeate the soil at a depth in excess of 10 cm and the quantity of heavy metals in this layer also

did not exceed the contamination threshold.

Hungary asked for EU assistance in the frame of the EU European Civil Protection Mechanism. On 11 October, a team consisting of five experts with relevant international experience from Belgium, Germany, Sweden, France and Austria joined the Hungarian team to provide assistance in eliminating environmental damage.

Working together under the ICPDR. “There is no question that such accidents need to be avoided,” states Mihaela Popovici, Technical Expert for Pollution Control at the ICPDR Secretariat. “A special ICPDR Accident Prevention Task Group is working on how this can be best done.”

The most important activity has been maintenance of an inventory of potential accident risk spots. Countries are encouraged to monitor these spots continuously and to undertake preventive measures to avoid accidents on these installations. In addition, an inventory on

Currently the costs for cleaning, decontamination and compensation on a national level are estimated between 100 and 200 million US Dollars. International and national funds have been established to provide some compensation for private persons for their losses and damages. *Credit: State Secretary for Government Communication*

THE ACCIDENT EARLY WARNING SYSTEM OF THE ICPDR

The Danube Accident Emergency Warning System (AEWS) is an internet-based messaging tool for international coordination set up by the ICPDR in 1996. In the event of an accident on surface waters with a possible transboundary impact, the relevant information is shared between national alert centres: the respective national alert centre submits a message by filling in a form for the specific situation. All relevant national alert centres – primarily those located downstream of the accident site – are then instantly notified by SMS and e-mail and can view the full message on the web. The system can also be used for further communication on the accident.

The tragic case of the Ajka alumina plant accident has shown how important is the proper operation of the AEWS. After being informed by Hungary over the AEWS, on the morning of 5 October, most downstream countries (Slovakia, Croatia, Serbia, Romania and Bulgaria) started an extensive monitoring of the Danube River, especially at locations where the Danube entered the respective country. Over 60 messages about the status of the Danube have been shared through the AEWS.

This system was used not only for the warning of other countries, but also for daily updates of the monitoring results of the various water management authorities of the water along the entire stretch of the Danube.

The red flood wave was up to 2.5 meters high and hit parts of the village of Kolontar 1 kilometre away (heavily damaging 35 houses), reached Devceser 7 kilometres away (damaging 207 houses), finally hitting 14 houses in Somlovasarhely. *Credit: State Secretary for Government Communication*

contaminated sites in areas that are in danger of being flooded is regularly updated. For these sites a special catalogue of measures has been developed. “But this is not all,” continues Popovici, “Currently we are working on a proposal on mutual assistance in the event of such an accident as well as on a proposal for contingency planning.” As the main follow-up on the accident, the ICPDR plans to review all listed accident risk spots and to evaluate whether enough measures have been taken to prevent such accidents in future.

Costs and responsibilities. The MAL Ltd, which is owned 100% by the Hungarian Investors Zoltan and Arpad Bakonyi, claimed that a natural disaster led to the accident. But Hungarian Prime Minister Viktor Orban stated that the cause of the spill was presumably a human error. The Hungarian Government initiated a criminal procedure against persons unknown with “criminal negligence leading to a public catastrophe”. The Hungarian Government took control of MAL Ltd on 11 October, and the question of responsibility has not yet been solved.

As is the common practice after such accidents, questions arose of liability and who might finally pay for the damage. Currently the costs for cleaning, decontamination and compensation on a national level are estimated between 100 and 200 million US Dollars.

International and national funds have been established to provide some compensation for private persons for their losses and damages.

There are several legal instruments which could be of importance for questions of liability: the EU Environmental Liability Directive as well as the related EU Integrated Pollution Prevention and Control Directive, establishing a framework for environmental liability based on the ‘polluter pays’ principle, with a view to preventing and remedying environmental damage. Another international instrument which could be applicable – if a transboundary effect is proven – would be the Protocol on Civil Liability and Compensation for Damage Caused by the Transboundary Effects of Industrial Accidents on Transboundary Waters of the UNECE Convention on Transboundary Waters and the



UNECE Convention on Industrial Accidents. When in force - which is not yet the case - the Protocol will give individuals affected by the transboundary impact of industrial accidents on international watercourses (e.g. fishermen or operators of downstream waterworks) a legal claim for adequate and prompt compensation.

A tragedy such as happened in Hungary could also be seen as a wake-up call for even more caution with risk sites and being prepared for the unforeseeable. “We need to undertake all measures to avoid accidents with such tragic consequences for humans and nature,” concludes Weller, “but nevertheless, we all need to be prepared for them – on the local, national and international levels.”

For more information, please visit:
www.redsludge.bm.hu

This article was compiled by *Jasmine Bachmann*, Executive Editor of Danube Watch, with the support of the ICPDR Secretariat: Philip Weller, Executive Secretary; Mihaela Popovici, Technical Expert for Water Pollution; Igor Liska, Technical Expert for Water Quality; and Diana Heilmann, Project Staff.



Fighting a plastic menace

The accumulation of plastic is a growing threat throughout the region, choking floodplains and spoiling valuable grazing areas and recreation zones. With help from the Green Danube Partnership, one community is creating jobs and cleaning the river by tackling this plastic problem.



The first rounds of waste collection by village children were organised in August: 900 kilograms of plastic waste (or approximately 20,000 bottles) was harvested on just one 4-kilometre section of the Tisza floodplain 10 km upstream from the Hungarian border. *Credit: Iarochevitch, Rast (right)*



In recent years, a new problem has been growing in the Upper Tisza basin in Ukraine and Romania: the pollution of rivers and floodplains with plastic waste. Empty plastic bottles mixed with other waste are dumped in mountain brooks or on river banks and are flushed during high flows. Further downstream river banks act like a filter and look like a plastic curtain after floods. Whole river cross-sections have been blocked by such floating waste causing complaints by downstream countries.

A new project initiated by Mykhola Bohla of the Drotynsi community in Vinogradivski raion/Zakrapatska oblast in Ukraine is working to collect plastic waste from the floodplain – and at the source from villagers – and process it for recycling.

With funds provided by the Green Danube Partnership, cooperation between the ICPDR, The Coca-Cola Company and Coca-Cola Hellenic, the project began in April 2010. The project has allowed for the restoration of a communal building and the purchase of a pressing machine suitable for plastic bottles and other waste.

Harvesting a plastic crop. The first rounds of waste collection by village children were organised in August: 900 kilograms of plastic waste (or approximately 20,000 bottles) was harvested on just one 4-kilometre section

of the Tisza floodplain 10 km upstream the Hungarian border. After collection the plastic is pressed into 20-kilogram balls ready for transport to a recycling facility. Production of leaflets and an awareness-raising campaign began in the autumn.

The Drotynsi project has involved the creation of jobs, with financial support from the regional employment centre. However, a key challenge is to ensure the economic viability of the whole project. Income generated from selling pre-processed recyclable waste must cover the running costs of the processing facility and the transport vehicle, as well as amortisation costs of the machinery. Economically, it will be necessary to cooperate with other collection or pre-processing facilities, such as that in Velyky Bychkiv, to bring the highest possible recyclable volume to market in order to achieve better prices.

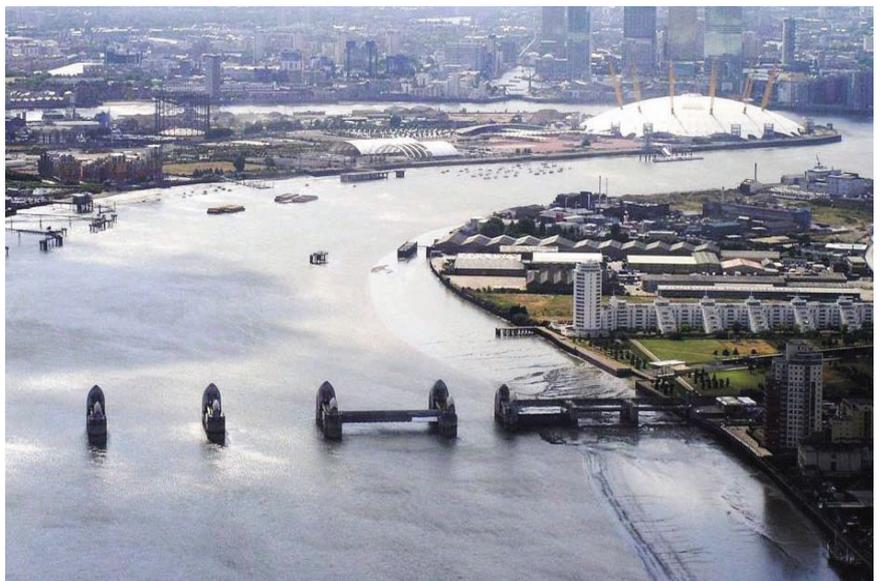
The project will run until June 2011, and the next steps will focus on consolidating the processing and storage unit, inquiry of plastic recycling market for best price of products, establishment of collection bins in the village and development of a more extensive waste recycling concept to avoid pollution right at the source.

Georg Rast, WWF Germany, is project manager for Upper Tisza river activities within the WWF Danube Carpathian Programme.

Facing unsafe potable water sources in rural areas and more easy access to transport means more and more bottled water (and other drinks like soft drinks and beer) is commonly used even in remote areas.



Rob Oates (Director, Thames River Restoration Trust) and Alastair Driver (National Conservation Manager, Environment Agency) with Tim Winton (Australian author) and Tikki Fullerton (Australian Broadcasting Corporation presenter). *Credit: International Riverfoundation.*



The River Thames in London looking up river to the city from the Thames Tidals Flood Barrier. *Credit: Environment Agency*

Thames wins 'World Cup' for rivers

Following in the footsteps of the 2007 winner, the Danube River, the UK's famous River Thames has won the International Riverprize for 2010.

The International Riverprize is the largest environmental award in the world and it celebrates outstanding achievements in river management and restoration. It is awarded each year at the International Riversymposium in Australia and is a partnership between the symposium and the International Riverfoundation.

The winning submission was made by the Thames Region of the Environment Agency for England and Wales and fronted by their National Conservation Manager, Alastair Driver, but it represented many decades of work by thousands of individuals from hundreds of organisations.

The River Thames is the UK's second longest river at 294 kms long and the catchment covers 16,000 km², with a dense population of 13 million people. The River Thames flows from the green rural upper reaches of the Cotswolds, through large urban centres of Oxford and Reading and the UK's capital's city, London, on through the industrial heartland of Essex and Kent, and thus to the North Sea. The river is non-tidal as far as Teddington Lock in West London, and is then tidal throughout London with a tidal range of seven metres.

The transformation of the Thames. Pollution of the tidal Thames left it biologically dead in the 1950s, but since then the river has been transformed into a thriving ecosystem teeming with fish, and with returning sea trout and otter populations. However, the Environment Agency acknowledged in its submission that there is still much work to be done to continue improving the quality of the river – especially the tidal Thames and its tributaries in London.

The Environment Agency's submission focused on five wide-ranging projects to demonstrate the innovative and challenging solutions now under way to achieve this further improvement:

Catchment Sensitive Farming: working with farmers to reduce rural diffuse pollution from nutrients and pesticides.

The Jubilee River flood alleviation scheme: creating a new 11 km stretch of naturalistic river and habitats, whilst delivering flood protection to 5,500 homes.

The London Rivers Action Plan: helping restore London's urban rivers, with 58 new river restoration projects in progress since its launch in 2009.

The London Tideway Improvements: three Thames Water schemes to tackle the 39 million tonnes on average of storm sewer overflows that enter the tidal Thames in an average year. These are the £675m Sewage Works Upgrades, the £635m Lee Tunnel, and the proposed Thames Tunnel (estimated cost £3.6bn).

Thames Estuary 2100: a 100-year adaptable plan directing the future sustainable management of tidal flood risk in the Thames estuary, and protecting over 1.25 million people and £200bn in property value.

“In the last 150 years, the Thames has been to hell and back, but now it really is back and it's time we shared our pride in this with the rest of the world,” said Alastair Driver, former Conservation Manager for the Thames for 18 years and now National Conservation Manager for the Environment Agency. “This recovery didn't just happen, it took thousands of people and billions of pounds over many decades to reach this point – and it's important that rivers around the world can hear about the highs and lows that we and our many partners have had along the way.”

Ensuring long-term sustainability. “This change was delivered through our stronger regulation, investment by water companies, environmentally sensitive river management and a decline in polluting industries,” said Howard Davidson, Thames Director for the Environment Agency Thames Region. “But the recovery is fragile and under pressure from a growing population, ageing infrastructure, climate change, diffuse pollution and fragmentation of habitat. Through the innovative projects that we have cited in our Riverprize application, we and our many partners can demonstrate to the world that we are tackling these challenges head-on, to ensure that the Thames remains an iconic river for many centuries to come.”

Feedback from the judging panel confirmed that the submission clearly demonstrated long-term sustained on-the-ground improvement of the Thames and its tributaries backed up with “excellent” data and evidence, as well as best practice in stakeholder engagement, and innovation in planning for the future uncertainties of climate change. The other finalists from over 20 entries were Hattah Lakes from Australia, Smirnykh River from Russia and the Yellow River from China.

The Riverprize trophy and cheque for AUS \$350,000 was presented on 12 Oct 2010 at the International Riversymposium in Perth, Western Australia. The Thames Regional Management team for the Environment Agency have agreed to use the prize money to establish a twinning project with a river in India that requires skills and resources to facilitate large scale ecological restoration.

Alastair Driver is the Principal Officer, External Relations, at the Environment Agency, covering the Thames Estuary.

“In the last 150 years, the Thames has been to hell and back, but now it really is back and it's time we shared our pride in this with the rest of the world,” said Alastair Driver, former Conservation Manager for the Thames for 18 years and now National Conservation Manager for the Environment Agency.

Biodiversity and water



Countries are working together to implement legislation that seeks to increase the resilience of biodiversity in aquatic ecosystems by balancing sustainable water use with the long-term protection of available resources.

2010 is the international year of biodiversity and also important for water. Although rivers and lakes make up only 1% of the globe's land area, freshwater ecosystems host a disproportionately rich diversity of species. Some 40% of Natura 2000 sites contain freshwater habitats, and many more terrestrial habitats are water-dependent. Likewise, 70% of protected habitats and species are aquatic or water-dependent.

But not all of them are in good condition. An EU-wide assessment has recently shown that for rivers and lakes, only 15% of the habitats are in favourable conservation status and 13% of their species. For wetlands these numbers are even lower with 8% of the habitats and 14% of the species in favourable condition. And for about one fifth of the assessments the status remains unknown.

"Improving the status of water bodies means better habitats for aquatic organisms and other water-dependent species," says Heide Jekel from the water department of Germany's Federal Environment Ministry.



Aquatic biodiversity is under increasing pressure: nutrients flowing off the land lead to the eutrophication of our rivers and streams. Poor land use and land management increases the degradation of habitats and loss of species. Rivers are straightened, natural floodplains detached and habitats fragmented through dams and weirs. In the Danube, for example, the sturgeon is particularly affected by existing dams and new infrastructure projects but also by poaching and hybridisation with exotic species. Invasive alien species are negatively impacting the natural fauna and flora in many rivers and lakes. While 90% of the 11,000 alien species in Europe are terrestrial, 28% of the most harmful species are found in freshwater.

Existing legislation. EU water policy seeks to increase the resilience of biodiversity and ecosystems by balancing sustainable water use with the long-term protection

of available resources. The Water Framework Directive (WFD) implementation is closely linked to nature protection and biodiversity aspects. “Improving the status of water bodies means better habitats for aquatic organisms and other water-dependent species,” says Heide Jekel from the water department of Germany’s Federal Environment Ministry.

The WFD establishes a framework for the protection of all surface waters and groundwater with the aim of reaching ‘good status’ in all waters by 2015. The Birds and the Habitats Directives together form the backbone of the EU’s biodiversity policy as they protect Europe’s most valuable species and habitats. Both the nature directives and the WFD aim to ensure healthy aquatic ecosystems while at the same time find a balance between water/nature protection and the sustainable use of nature’s natural resources. Indeed there are many



The Danube River Basin, including its tributaries, is home to around 2,000 plant and 5,000 animal species, including numerous endangered or nearly extinct species. *Credit: NP Danube Floodplains/Kern (above), and NP Danube Floodplains/GolebiowskiNavara (left)*

synergies as the implementation of measures under the WFD will generally benefit the objectives of the nature directives.

Integration of biodiversity in sector policies. A recent workshop called 'Biodiversity and Water – Links between the Water Framework Directive and EU Nature legislation' held in Brussels on 17-18 June 2010 has taken a closer look at possible synergies but also difficulties in combining necessary measures under the WFD and nature legislation. More than 120 participants from EU Member States, NGOs and stakeholders convened to discuss how to improve the implementation of these directives and how to develop integrated river basin management plans which cover both the protection of water resources, aquatic species and habitats as well as the sustainable use of water. There are many encoura-



The floodplains and wetlands of the Danube basin are uniquely valuable ecosystems in global terms, although few areas are still in their natural or near-natural state. Over the last two centuries in particular, most of the larger floodplain areas have disappeared.

Credit: NP Danube Floodplains/Popp

ging examples showing that it is possible to achieve win-win situations, where water uses such as navigation or flood protection measures can be successfully integrated with achieving good ecological status of waters and favourable conservation status of protected species and habitats.

For more information on the results of the workshop, including background information on best practice case studies, please visit: http://circa.europa.eu/Public/irc/env/wfd/library?l=/framework_directive/implementation_convention/biodiversity_legislation&vm=detailed&sb=Title

Ursula Schmedtje works on the implementation of the EU Water Framework Directive at the European Commission, DG Environment. *Joe Hennon* is the European Commission Spokesperson for Environment.

One step further for the EU Danube Strategy



Credit: Istock/Wackerbausen

After an intense consultation period involving all 14 Danube countries as well as stakeholder groups, the EU Strategy for the Danube Region is entering the final stages of completion and is expected to be adopted by the College of EU Commissioners on 14 December in the form of a Communication on the EU Strategy for the Danube Region.

The Danube Strategy itself will comprise two main documents: a Communication from the European Commission to the other institutions, which will set the scene and provide the overall framework for the future Strategy, and an Action Plan, which will be the main 'roadmap' for the years to come listing concrete actions to turn words into action. The Strategy is expected to be endorsed by Member States under the Hungarian EU Presidency in the first half of 2011.

"The ICPDR is clearly identified as an active partner and forum for issues and goals of the Danube Strategy related to water," explains Philip Weller, Executive Secretary of the ICPDR Secretariat. "Being the platform for implementation of the EU Water Framework Directive the ICPDR is ready to take on responsibilities for the water agenda of the Danube Strategy together with EU member states who will act as priority area coordinators for the two elements of the strategy dealing with water."

For more information, please visit: http://ec.europa.eu/regional_policy/cooperation/danube/index_en.htm

Jasmine Bachmann is the Editor of Danube Watch

Extreme floods in the Danube Basin

Floods are natural phenomena, which have helped to shape natural landscapes, habitats and ecosystems in floodplains, wetlands and other lowlands. Floods can, however, turn into disasters causing widespread damage, health problems and casualties.

According to climatic data, the 2009–2010 hydrological year (measured from November to November) produced the largest amount of precipitation ever observed in many parts of the Danube region. The layer of snow and rain along the central Danube exceeded the multiannual average by 1.5 to 2.0 times, a maximum never observed since systematic instrumental weather observations have been available. The 'wet spell' started in September 2009, and clouds carried more water than usual in most parts of the region (with the exception of the month March and over some catchments in April).

Corresponding to large amount of snowmelt and rain, excess water or water-table-related flooding occurred in spring months throughout the lowlands. The inundated area was measured in hundreds of thousands of hectares



and agricultural production of winter wheat and other crops suffered substantially leading to yields well below the average – if not completely devastating cultivated cultures. Saturated soil in hills and mountains created preconditions for riverine and flash floods.

Unrelenting rains. Intense rainfall and floods occurred in December 2009, and a 'Christmas flood' caused alerts on the Hron stream and endangered the city of Banská Bystrica in Central Slovakia. Extreme weather and flood events continued until late September/October 2010.

Dangerous hydrometeorological phenomena were most intense from May to July. Flash floods occurred from late April all through the summer months.

The influx of wet air masses on the Danube Basin was most intense during May. The monthly layer of precipitation exceeded seasonal values and moreover most of the rainfall arrived within a short period with atmospheric low pressure on 15-18 May. Storms and heavy rains led to flash floods and inundation, and record breaking strong winds removed or destroyed the roofs of hundreds of family homes in eastern Croatia and the Trans-Danubian part of Hungary. Heavy rainfall affected central and northern regions of the Carpathian Basin from the Drava lowland to the Beskied Mountains and catchments of Slovak tributaries entering the Danube and Tisza. Similar extreme events

followed within a surprisingly short period in late May and on the first days of June when the Bavarian Danube, Inn and catchments of Upper Austria also had torrential rain.

Unprecedented high waters.

In addition to wide spread flash floods from Salzburg in Austria to the Trans-Carpathian region of Ukraine, major floods propagated along larger streams and the upper and middle currents of the Danube. Hundreds of millimetres of rain at the headwaters of the Morava, Vistula and Oder rivers generated a high flood with a 50-year return period downstream of the

tributary Thaya/Dyje on the Morava/March, requiring intense flood defence activities along the Austrian-Slovak border.

Floods on the tributaries resulted in a significant Danube flood wave upstream of Budapest, equal to the third largest of the last century and causing serious transport problems within the city. The Vienna-Budapest railway line was also at risk while the motorway M1 was cut off by flash-flood-induced damage for a couple of days. The lower Hernád Valley was mostly saved by the

The cumulative impact of the floods arriving from the upper Danube together with the Tisza, Sava and Velika Morava tributaries was long standing peaks above the flood alert levels along river reaches downstream of the Iron Gate. Flood crests recorded on the lower Danube from Braila to the Delta brought about by tributaries from the eastern slopes of the Carpathians exceeded all major floods since 1970. Credit: EKOVIKIZIG/Csaba Csont

The most widespread damage was caused by flash floods; including infrastructure losses, the costs of the floods is more than 100 million Euros.
 Credit: EKOVIKIZIG/Csaba Csont

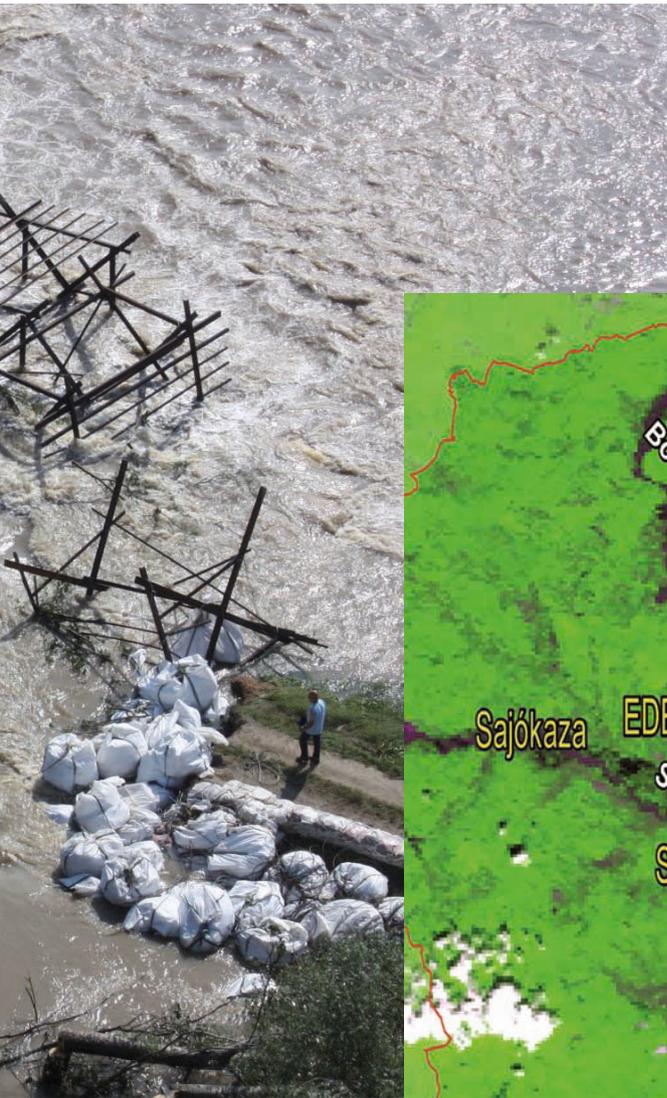


Credit: EKOVIKIZIG/
 Csaba Csont

construction of a temporary 40-km dike. Water levels reached the historical maximum on the Tisza River at Tiszapalkonya and the recently completed emergency reservoir of Tiszaroff was opened, reducing the flood peak by 15-20 cm and easing the flood protection load on the city of Szolnok.

Several large waves passed the left bank tributaries of the Tisza River and flood alerts were frequent on Transylvanian rivers, however no extreme floods occurred on medium and large streams. Heavy rains at the end of June and early July caused exceptional floods on the Siret, Prut and Jijia rivers. Discharges of the usually peaceful Prut exceeded 2300 m³/s or more than those of the Danube at Budapest under normal flow conditions.

Taking stock of the damage. Massive floods impacted houses and infrastructure, and tens of thousands of hectares of arable land have been affected. The damage to cereal crops has led to further economic losses. Some 198,000 hectares were affected in Hungary, while in Romania 110,000 hectares of agricultural land were inundated by water and an estimate for Romania indicates that overall losses by summer floods will be bigger than 0.6% of the gross domestic product. Around 1000 homes were destroyed or damaged by floods in Hungary. Including infrastructure losses, the costs of the floods is more than 100 million Euros.

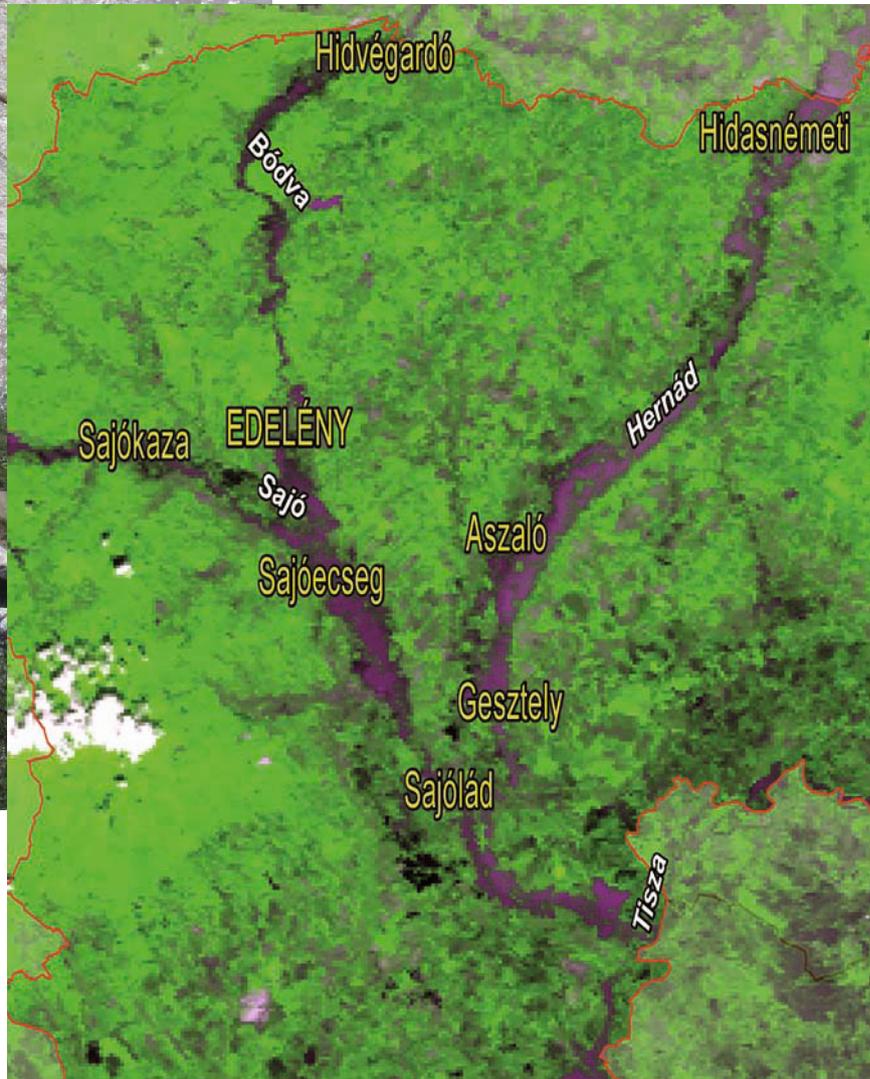


complicated, regular maintenance of river channels ensuring unhindered flow during extreme hydrological conditions can remarkably decrease the risk of flood damages.

Emergency services and agencies responsible for the management of water infrastructure were put on high alert during summer months. National efforts were

The extreme character of the events was manifested on streams of the Slana/Sajó River network together with the Hornád/Hernád and Bodva rivers where two or three subsequent flood peaks exceeded the historical maximum of 1974.

Credit: BME/Zsófia Kugler



The most widespread damage was caused by flash floods. Numerous cases were recorded in Slovenia and Croatia and in the upper part of the Velika Morava catchment in Serbia and large parts of Bosnia and Bulgaria. More than 900 localities in Slovakia and 510 in Hungary suffered. In Romania 3000 houses, 4130 km of national and regional roads as well as 700 bridges were damaged. Major floods on the Sava required extensive efforts to protect the region around Zagreb. Flash floods induced by torrential rain resulted in casualties on creeks entering the Mures and Târnava. Other Romanian counties east of the Carpathians suffered even more, leading to more than a dozen casualties in the region totalling 24 in the country. At least 50 flood victims were claimed within the entire Danube Basin.

Understanding flood risks. The lessons learnt showed that while reliable forecasting of flash floods is rather

sufficient to cope with rising emergencies; however, the economic losses were vast. Studies on the impact of climate change show it is very likely that there will be massive floods or flash floods in the future, so we must be prepared to cope with them. Therefore the preparation of flood risk maps by 2013 and flood risk management plans by 2015, in accordance with EU legislation, are important steps to living with the flood risks and addressing them with appropriately targeted measures.

Gábor Bálint is a Hydrologist and Research Associate at the VITUKI Environmental Protection and Water Management Research Institute, Budapest. *Igor Liska* is the Technical Expert for Water Quality at the ICPDR Permanent Secretariat.

Planning the first Joint Basin Survey for the Orange-Senqu River Basin

The ICPDR looks beyond the basin for inspiration and ideas, and working with other river basins provides an opportunity to share knowledge, and learn from similar challenges and experiences to see the Danube through other perspectives.

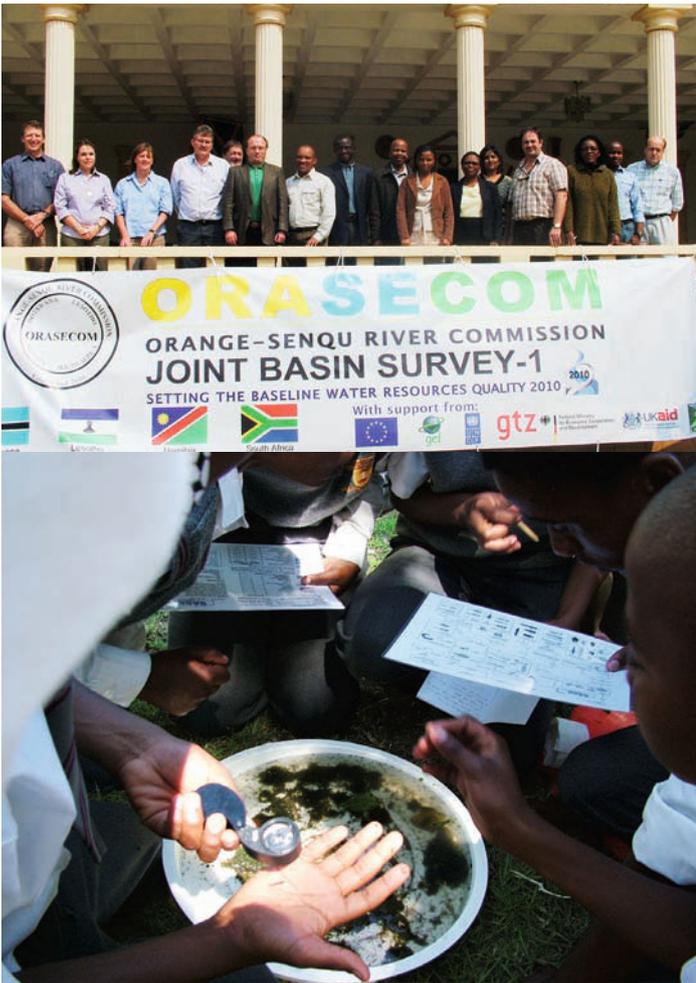
The ICPDR forges alliances around the world to share experiences on integrated river basin management and to develop innovative and collaborative solutions to water quality and quantity pressures with other international river basins.

The ICPDR has developed ties with the Orange-Senqu River Commission (ORASECOM) in southern Africa. Exchange visits between the two organisations have strengthened links between the two commissions and led to shared ideas on several issues – interactions that have already proven valuable to both organisations. One of the most notable of these exchanges has been the sharing of the ICPDR's experience with the two Joint Danube Surveys (JDSs).

Applying the Danube's experience. A team of water quality specialists from ORASECOM visited the ICPDR Secretariat in June 2009 for discussions on monitoring water quality in transboundary systems. Following this visit ORASECOM decided to initiate its own Joint Basin Survey, which took place in late October and November 2010. The ICPDR's Igor Liska has been involved with helping ORASECOM plan for their event, and has made two visits to South Africa to participate in planning workshops. These visits, funded



Local children will help test the water, gather samples and make a judgement on the health of the river. Their data will be valuable for the survey, but their participation is even more crucial to ensure action on water issues by future generations. *Credit: Lewis*



THE ORANGE-SENQU RIVER COMMISSION

The Orange-Senqu River Commission (ORASECOM) promotes the equitable and sustainable development of the resources of the Orange-Senqu River. ORASECOM provides a forum for consultation and coordination between the riparian states to promote integrated water resources management and development with the basin. The highest body of ORASECOM is the Council, which is supported by various Task Teams to manage projects, and a Secretariat, based in Pretoria, South Africa.

The Orange-Senqu River Basin extends over four countries: Botswana, Lesotho, Namibia and South Africa, covering an area of 985,000 km². Almost 59% of the basin falls within South Africa, 26% in Namibia, 12 % in Botswana and 3% in Lesotho. The two main tributaries are the Orange-Senqu and the Vaal rivers.

by European Union support to ORASECOM, have already proven mutually beneficial with ORASECOM gaining from lessons learnt in the two Joint Danube Surveys, and the ICPDR learning from approaches to surveying non-navigable rivers.

“Even though our planning for the Danube was largely tied to the requirements of the EU Water Framework Directive, it seems to be suitable also for different water

quality assessment approaches adopted by ORASECOM which only confirms the general benefits of the JDS concept developed by the ICPDR,” says Liska. “In the past, the ICPDR benefited from know-how and expertise from other river commissions and countries, and thus it is very natural to pay back by giving our know-how where it is helpful,” says Liska.

Providing a picture of the basin. The Orange-Senqu Joint Basin Survey will provide a snapshot of the quality of the water resources of the basin in 2010. This will serve as a baseline against which improvements in water resource quality can be measured. The survey will be the first joint monitoring of the Orange-Senqu Basin supported by all ORASECOM’s Member States, and will provide assessments for a wide range of water quality, aquatic ecosystem, health and hydromorphological parameters.

Lenka Thamae, Executive Secretary of ORASECOM, says while a lot of research has been done on the quantity of water available in Southern Africa, the new study would provide the first shared data on water quality in the Orange-Senqu Basin. “Water quality has always been lagging behind a bit, but it is a key element; important to all four states along the river system.”

Overall some 55 different variables or sampling protocols will be applied at some 60 sites throughout the Orange-Senqu Basin. ORASECOM’s survey – like the JDS – also includes public participation events in each Member State to help build awareness of the importance of maintaining river health.

Building public awareness. The public events will include working with school children to show them how to make their own simple determinations of aquatic ecosystem health. Schools will be using equipment donated through ORASECOM’s project partners, and it is hoped that they will continue to monitor and provide information to ORASECOM.

information to ORASECOM.

“There is already more trust amongst the four member states and I think the joint basin survey is an indication of this,” says Peter Pyke, of the Department of Water Affairs in South Africa.

Gavin Quibell is the Team Leader of the EU support to the ORASECOM Secretariat.

Bringing two basins together: lessons learnt in the two Joint Danube Surveys are helping form ORASECOM’s Joint Basin Survey, and the ICPDR has much to learn from ORASECOM’s approaches to surveying non-navigable rivers.
Credit: Quibell



Getting out of the box and reaching the people

One of the communication goals of the ICPDR is to ensure that information on the work being done in the basin is accessible and relevant, and that the message of sustainability goes right to the hearts of all stakeholders in the region.

Susanne Brandstetter,
Chairperson of the Public
Participation Expert
Group of the ICPDR
Credit: *Lebensministerium*
/Kern



In its continuing series, Danube Watch presents portraits of people whose passion and commitment actively steer ICPDR processes and help determine the future of the basin. Susanne Brandstetter, Chairperson of the Public Participation Expert Group of the ICPDR, explains why it's vital to reach out to the 81 million people living in the Danube River Basin.

Danube Watch: Why do you think it is important to invest time and money in communication?

Brandstetter: It is important that ICPDR has very good technical projects and is working hard on environmental water issues along the River Danube – but it is also important to have a strong focus on the public to communicate – via websites, press releases and interesting communication projects and other tools – what's done, what's on the way and what has to be done. It's vital to involve 'people from the street' and to reach their hearts – with information and emotion! It is important to have the people 'on the boat', to

have public support for investments and projects. People should also know what their role and their responsibilities are; awareness-raising is very important.

Danube Watch: Reaching 81 million people living in the Danube Basin – is this a realistic goal?

Brandstetter: There are a lot of good awareness raising projects going on along the Danube River. The ICPDR has the important role of raising enthusiasm in the countries and finding the right persons to 'make communication happen'. Danube Day – held each year on 29 June – is the most important and successful communication project along the Danube, perhaps it is the most important awareness project along any one river, connecting so many countries, nationalities, cultures, history and people in the world. I am very happy that we have Danube Day and that it continues to get bigger and bigger every year. There are also a lot of fruitful tools for special target groups such as teachers and pupils in the form of the Danube Box, which has already been translated into so many national languages, or the Danube Art Master, which is the most important art competition for young people in the Danube River Basin. In Austria we have had

win-win cooperation with Coca-Cola Austria – the Danube Challenge provided information, adventure, fun and action for more than 400 children on the Danube this year.

It is always important to involve the media for a broader public – as for the Joint Danube Surveys or the Minister Conferences and new target groups via new channels, such as Facebook. The ICPDR, together with the countries, should reach out as far as possible and get as many people as possible 'on the Danube Family Boat'. Reaching 81 million people is an ambitious and glorious goal – we should go step by step in this direction! Therefore you have to open all communication channels.

Danube Watch: From your personal experience from Austria, what else can be done?

Brandstetter: Austria is advanced in communications tasks – we have more than 10 years' experience with important and successful awareness-raising

projects and campaigns, such as the Year of Water 2003. Since 2004, Generation Blue – an internet platform for water – has targeted young people aged 13 to 19 years. It is important to have this umbrella and make ongoing projects visible and create new ideas with hip and funky communication tools like tattoos, stickers, games, trophies and so on. If we get the approval of the LIFE + for the Blue Danube Campaign, we could share our Generation Blue experience throughout the whole Danube River Basin. That would be great and would be also perfect for the ICPDR to communicate with young people. To reach young people, tools like Facebook are a ‘must have’. We have very good experience with modern communication tools in Austria – they allow you to reach completely new target groups and create interest for important topics quickly and easily, with pictures and links to websites, YouTube etc. You create a ‘fan network’.

Another important long-term awareness-raising project is the Neptune Water Prize awarded every two

years to good water projects in the region. Some 3000 water projects have already been submitted this year! The awards are presented with a big event with the Minister and all sponsor partners for the celebration of the winners. Projects are technical, include input from the broader public and from artists. From my point of view artists play an important role in communication, civil society and in getting in touch with people. They create interest in a completely different manner, such as paintings, videos, performances etc., and they can be our ambassadors for important ideas.

In my personal experience it is always necessary to raise awareness over a long term and have highlights in between, so you have to structure your communication and have your overall goal in mind. It is also important to focus outside – to identify the needs, find new partners on the way, work with them, find funds, create campaigns etc. I am going to do my best to share these experiences in the Public Participation Expert Group.



Credit: AQA/Bruck



The Public Participation Expert Group during its last meeting in Bonn, Germany in October. Credit: Knut Beyer

Danube Watch: What can we expect next from the ICPDR?

Brandstetter: The ICPDR already has a strong focus on communications and public participation tasks and in the coming years you can expect a well motivated and committed working group of public participation experts. From my point of view the people in the Danube countries, together with the ICPDR, should work together more deeply and should make all these positive things going on as visible for as many people as possible. This ICPDR will perform better, using all the necessary communication tools. It would be great to get the approval from the EU Commission to realise all the great ideas for the Blue Danube Campaign we developed this summer. This would be a perfect tool and communication plan for the next few years to ensure that more and more people can say “I ♥ Danube”, like I do.

“The ICPDR already has a strong focus on communications and public participation tasks and in the coming years you can expect a well motivated and committed working group of public participation experts”, says Brandstetter.

Danube Watch: Thank you, Ms. Brandstetter!

Jasmine Bachmann is the Editor of Danube Watch.



Steering to match compatible goals

The Sava Commission is balancing the individual needs of four countries under the framework of strong transboundary cooperation, ensuring that all Sava countries are sailing in the right direction.

The Sava has the largest discharge of water to the Danube of any tributary and is the second largest by catchment area. The joint management of the Sava River Basin by Slovenia, Croatia, Bosnia and Herzegovina and Serbia is an important model for the implementation of the EU Water Framework Directive for the Danube and Europe.

Results of the Project 'Detailed Design and Prototype Installation for the River Information Services (RIS) on the Sava River' have been officially presented to the wider public, along with the next steps in Sava RIS implementation. The application of RIS significantly contributes to navigation safety and increases the efficiency of inland transport.

By signing the Protocol on flood protection to the FASRB, representatives of the Parties to the FASRB committed themselves to regulate the issues of sustainable flood protection in the Sava River Basin with the aim of preventing or limiting flood hazards, reducing flood risk and reducing or mitigating the detrimental consequences of floods. *Credit: Sava Commission.*



The Sava Commission was established in 2005 to fulfil the Framework Agreement on the Sava River Basin (FASRB). Recent efforts, such as those regarding the continuation of activities on rehabilitation and development of the Sava River Waterway, development of nautical tourism in the Sava River Basin, engagement under the Danube Strategy process, among others, have proved that the Sava Commission is a model for progress in the region.

Milestones for navigation. The Sava Commission has recently taken several significant steps for inland navigation, including the rules for transport of dangerous goods in the Sava River Basin, rules for definition of winter ports and winter shelters in the Sava River Basin, and amendments of the navigation rules on the Sava River Basin.

In addition, the project 'Atlas of Nautical Tourism on the Sava River', launched recently, will promote nautical tourism on the Sava River, attract new investors and encourage tourism development in the Sava River Basin.

Improving cooperation. To further enhance cooperation in the field of water management, the Sava Commission organised the meeting 'Fostering the FASRB implementation in the fields of water management and environment'. The meeting was held in Belgrade in May and attended by high officials of the Parties to the FASRB responsible for water management and environmental issues. The attending representatives of the parties to the FASRB have committed to take over the liabilities of their countries to realise projects of common interest, especially with regard to development of the Sava River Basin Management Plan and implementation of

the project 'Technical assistance in the preparation and implementation of the Sava RBM Plan', establishment and implementation of the Sava GIS, development of the Hydrological Study for the Sava River Basin, etc.

The Sava Commission was especially honoured to grant the permanent observer status to the Republic of Macedonia, which is the first country to hold observer status in the Sava Commission.

Celebrating the Sava. Sava Day, held on 1 June, promotes the exceptional ecological values and socio-economic potentials of the Sava River for all riparian countries, and this year's celebration, held in Gradiška, Bosnia and Herzegovina, included the signing of the Protocol on flood protection to the FASRB, as well as an exhibition of student work developed under the

in a detailed, digital floodplain map of the Sava River Basin. The results of the workshop will have a positive impact on the international effort under the auspices of the Sava Commission to develop flood risk maps, flood forecasting, and flood warning systems. "The work and cooperation that has been manifested here serves as a reminder to all in the region of how much can be achieved through joint efforts and shared values," said US Ambassador to Croatia, James B. Foley.

Working toward the Danube Strategy. The Sava Commission has actively participated in the process of development of the EU Strategy for the Danube Region, focusing on raising awareness of the similarities of the main objectives of the EU Danube Strategy and the FASRB presenting the approach to sustainable development of the Sava Region and advocating in favour



US Ambassador to Croatia James Foley presented a plaque to the Sava Commission Chairman, Branko Bačić, to mark the successful cooperation of the two institutions. Centre: The photo exhibition, Sava River – Nature, People and Cultures' opened on Sava Day in Gradiška, Bosnia and Herzegovina. Credit: Sava Commission

creative educational workshops 'Sava River and its Friends' organised for pupils of elementary schools in Gradiška.

In addition, prizes were awarded to the top three photographers in the 'Sava River – Nature, People and Cultures' photo contest for the Sava River Basin countries. "I've been pleased to participate in such a contest, which yielded very vivid photos presenting the diversity of nature and cultures in the region," said First Prize Winner Danijel Kovačević, "and I am proud that few of my photos have been selected for this exhibition."

Mapping progress in flood risk management. The workshop Sava River Flood Mapping, co-organised by the Sava Commission and US Army Corps of Engineers, resulted

of potential effectiveness of the sub-regional level from the viewpoint of the Strategy implementation.

The Draft Action Plan of the EU Danube Strategy has recognised the Sava Commission as an important body in the Danube region, and several of its priority projects have been listed in the Draft Action Plan as 'examples of projects'. "The Sava Commission strongly believes that the implementation of the FASRB-related projects in the framework of the EU Danube Strategy can yield double benefits – it can contribute to an effective implementation, not only of the FASRB, but also of the EU Danube Strategy itself," says Mr Dejan Komatina, the Sava Commission Secretary.

Ljiljana Pandžić is an Expert Associate at the Secretariat of the Sava Commission.

Finding room for navigation and the environment

Inland waterway transport can be an environmentally friendly alternative to road or rail transport, and contributes to the decongestion of the overloaded road network in densely populated regions. Can sustainable waterway infrastructure projects create win-win solutions for the environmental needs of the river?

"I am convinced that all countries in the Danube region have the right to have access both to the Black Sea and to the Danube itself, whether through a port, canal or some other channel. On the other hand, there are rules governing the protection of the environment around the Danube, and those rules must be observed."

Inland navigation can contribute to making transport more environmentally sustainable, particularly where it substitutes for road transport. It can, however, also have significant influence on river ecosystems, jeopardising the goals of the EU Water Framework Directive, which aims for the 'good ecological status' of all waters by 2015.

Economic growth is linked to investments in infrastructure; to improve cross-country transportation, the European Commission (EC) has therefore developed the Trans-European Transport Network (TEN-T) with guidelines and financing for Pan-European road, rail, air and waterway transportation corridors. The Danube has been identified as Corridor VII.

Otto Schwetz, Chairman of the Pan-European Transport Corridor VII and President of the International Navigation Association Section Austria, speaks to journalist Natasha Christl about how to reconcile what might be conflicting interests.

Christl: Are the needs of navigation and the environment always at odds?

Schwetz: I am convinced that all countries in the Danube region have the right to have access both to the Black Sea and to the Danube itself, whether through a port, canal or some other channel. On the other hand, there are rules governing the protection of the environment around the Danube, and those rules must be observed. That is why we support inland navigation: because it is the cleanest mode of transport. But in order to use inland navigation, we need the means of doing so. This can be a problem.

Christl: Such as the controversial work on the deep-water navigation canal in the Bystroe Branch of the Danube Delta...

Schwetz: The Bystroe arm is a very short branch of the Danube, which is a good thing in that it provides a short route to the sea. But the delta is a very sensitive area in need of protection. It is one of the few remaining natural areas that we have. The wildlife in the area is terrific, as is the fauna.

Ukraine made a mistake in failing to consult the Romanian authorities and agree on the conditions for the construction of the canal, as required by international



norms. It should have invited the Romanian authorities and international experts to visit the site and see for themselves what was being done.

Christl: So it is important to consider all stakeholders and their needs in the planning stage?

Schwetz: We have to take into consideration that people need some way of making a living. A major problem is the difference in fees charged for passing through the navigation waterways in both parts of the Danube Delta, Romanian and Ukrainian. The Bystroe canal is much cheaper than Romania's waterways. There should have been a conference between the EU, Corridor VII,

Ukraine and Romania to consider how to handle that problem. The question as to how the system should be organised is crucial, and one that should be addressed by the port authorities. Who does what? Which vessels should use which waterway? Constanza is a main port and the main entrance to the Black Sea, but the other ports are also important. We must find a way to improve navigation together, to decide on the kind of vessels that use the existing canals and to use the Danube in the best possible way.

This is why the ICPDR and the Danube Navigation Commission and the International Sava Commission under participation of Corridor VII issued a 'Joint Statement on Inland Navigation and Environmental Sustainability in the Danube River Basin', setting out mechanisms for the development of the infrastructure for inland navigation and addressing ways in which to overcome such problems, especially the common way to start new projects. The statement was a response, among other things, to the Bystroe Canal. I think that both Ukraine and Romania must now hold direct

bilateral consultations on how to handle the problem; if they can't reach agreement, perhaps the EU should help. The ICPDR should adopt a tough stance in any such consultations. And I think that if both sides are willing to do what is best for the region, then that is the best way forward.

Christl: Should measures be proposed to compensate for damage caused by the construction and maintenance of the canal?

Schwetz: In Vienna we are very familiar with the idea of compensatory measures; for example, if trees over a certain size are cut down in a public park or a private area, there is a legal requirement that those trees must be replaced. I think that that is a good thing, provided that compensatory measures are reasonable.

While a navigable fairway is necessary as a transport 'artery' – not only for Ukraine but for the whole of the EU – the whole area must be protected. Something must be offered in compensation in order to provide that protection. It is also important to make Ukraine a greener country and promote its green image. Many parts of Ukraine are industrial and suffer from widespread land pollution and other problems. While some efforts are being made to address those problems, much more must be done. I should add that the

Before the Danube can handle more traffic, the EC argues that bottlenecks – barriers that prevent year-round passage – need to be eliminated. Not everyone agrees, however, mainly because of fears of environmental damage. WWF has been active for years campaigning against changing the river to accommodate shipping traffic, arguing instead that the interests of the river should come first. WWF found that most of the bottlenecks identified by the EC were in ecologically outstanding areas, some of the last remaining natural areas along the Danube and many with high levels of nature protection.

Credit: Zinke

THE BYSTROE CANAL

Much of the national and international controversy surrounding this project arises from its location. The Danube Delta, spanning the border between Romania and Ukraine, includes UNESCO Biosphere Reserves and a World Natural Heritage site. It is a wetland rich in plants (over 1,000 species), birds (300 species, including the largest pelican colony in Europe) and fish (including several endangered species of sturgeon).

Work is being undertaken to deepen and modernize a canal that was in use until the 1950s. The Bystroe Canal would aid navigation through the Danube Delta, and would increase inland shipping by more than 60%, according to a 2003 feasibility study.

However, the Inquiry Commission of the United Nations Economic Commission for Europe (UNECE) issued a report in 2006 concluding that the Bystroe Canal will have "significant adverse transboundary effects" on the environment and should be stopped until the ecological consequences could be properly evaluated.



MANUAL ON GOOD PRACTICES IN SUSTAINABLE WATERWAY PLANNING

In September, the PLATINA consortium launched an innovative manual presenting good practices in sustainable waterway planning. This document, produced by the ICPDR Secretariat, illustrates how waterway development projects can be made compatible with environmental protection requirements, such as stipulated by EU law.

The manual offers general advice for waterway infrastructure projects and addresses both technical planners and interested stakeholders who want to be involved in a planning process. The early integration of stakeholders (including those representing environmental interests) and environmental objectives, with decisions communicated as widely as possible, are essential for a successful planning process.

The Manual was prepared within the EU PLATINA project, involving 22 organisations in 9 countries to improve inland waterway transport. The ICPDR work is based on two years of intense expert reflections with the Austrian waterway company *via donau*, the BOKU University of Natural Resources and Life Sciences as well as Inland Navigation Europe.

Ukrainian authorities have taken certain measures, but they are not enough.

Christl: What should the compensatory measures include?

Schwetz: Discussions between the ICPDR, Ukraine and Corridor VII are needed on the kind of compensation that could be offered. It is important to handle the issue with a clear understanding of what is possible and what is not.

The restoration and rehabilitation of wetlands and abandoned agricultural polders and fish ponds could also be a very good idea; this should be carried out. The restoration of the Lower Danube lakes is also important, since the lakes are in a beautiful area that should be protected. The public should be able to use and enjoy the area, although there should of course be certain limitations as to the extent to which it is used. The area should not be exclusively

used by a small and privileged group, or by experts and scientists. The public should have an opportunity to get close to nature.

Christl: What would be needed to implement this idea?

Schwetz: I think we should hold a conference with representatives from the ICPDR, Ukraine, Romania, Corridor VII and the Directorate General for Environment of the EU, perhaps in Brussels, Odessa or Vienna, to discuss the next steps, because implementation will take time. Some research should be carried out beforehand. We should draw up a step-by-step programme in order to achieve the aims we discussed earlier.

This should be discussed by the international organisations concerned, the European Commission and the Ukrainian and Romanian authorities. This will also foster good neighbourliness. Ukraine and Romania are already implementing a joint project in Bukovina; the regions of Suchava and Chernivzi are working together across the border, provided that there is sufficient political will. However, I think that the two countries need international organisations as partners; they need support and funding.

We have had a good experience with the joint Austrian–Slovakian border commission, which focuses on water-related issues; I think Ukraine and Romania should



establish a similar body, but under the supervision of the EU and the ICPDR. While Ukraine is not an EU member, it borders the EU region and could benefit from many existing EU programmes.

Natasha Christl is a freelance journalist and a media expert.

Milestone near for laundry detergents – Washing without harming the water!

A month ago, the EU Commission published a proposal for the amendment of the Detergent Regulation with restrictions on use of phosphates in laundry detergents on an EU-wide level. The ICPDR played a vital role in winning support for this groundbreaking proposal.

Phosphates are used in detergents to combat water hardness in order to allow efficient cleaning. However, phosphates can contribute to adverse effects in the aquatic environment, such as an excess of nutrients, which causes eutrophication – an accelerated growth of algae and plants leading to a disturbance to the balance of organisms. Alternative water-softening ingredients are available, but with various performance limitations, particularly for demanding cleaning tasks.

The existing Detergent Regulation [(EC) No 648/2004] harmonises the process of placing detergents on the market, but only with respect to the labelling of detergents and the biodegradability of the surfactants they contain.



The proposal, which is now adopted and will become law in early 2011 unless amended by the Parliament or Council, aims to amend the Detergent Regulation by introducing a limitation on the content of phosphates and other phosphorous compounds in household laundry detergents. This approach by the EU Commission is welcomed by the International Association for Soaps, Detergents and Maintenance Products (AISE) “We are in favour of this approach across the EU as we consider this a major step in the development of a harmonised and consistent approach as well as a contribution to a better functioning of the internal market,” says Susanne Zänker, Director General of AISE.

Helping countries meet water standards. The amended Regulation would clearly help to decrease detergents’ contribution to the overall eutrophication of EU surface waters, as also requested by the EU Water Framework Directive, which requires Member States to achieve good ecological and chemical status of surface water

by 2015. To this end, Member States are required to prepare a programme of measures, which may include cost effective and proportionate, mandatory action or voluntary agreements to limit phosphates in detergents in order to tackle the eutrophication problem in their territories. Indeed efforts to combat eutrophication resulting from transboundary flows of phosphates into water bodies have progressed slowly until now.

“The ICPDR welcomes the proposal wholeheartedly, as it is a wonderful complementary measure for the success of the activities of international cooperation to combat the transboundary problem of eutrophication in rivers, such as the Danube,” says Philip Weller, Executive Secretary of the ICPDR Secretariat.

Jasmine Bachmann is the Executive Editor of Danube Watch.

Eliminating phosphates in household laundry detergents has been clearly demonstrated as one of the most effective short-term measures for reducing phosphorus pollution within the Danube River Basin; the ICPDR has played a vital role in winning support for this groundbreaking proposal. *Credit: Istock/Timur Arbaev*



At Persina Nature Park in Bulgaria, a Natura 2000 area and the biggest Ramsar site in the country, a model payment for economic services (PES) scheme will be set up based on the potential and economic efficiency of producing biomass from wetlands. *Credit: Ivanov*

Promoting Payments for Ecosystem Services in the Danube Basin

Arranging payments for the benefits provided by forests, fertile soils and other natural ecosystems is a way to recognise their value and ensure that these benefits continue well into the future.



The Iezer and Ciocanesti fish ponds are protected areas in Calaras county, Romania, and included in the Natura 2000 network. In this area much of the former mosaics of wetlands and natural channels, reed beds and patches of natural floodplain forest have been lost, but some remain, especially around the fish ponds. The fish ponds are among the most productive along the Lower Danube, but they are also valuable in biodiversity terms, for many of the birds and other species of fauna and flora are listed in the Bern Convention, and the EU Birds and Habitats Directives.

The WWF Danube-Carpathian Programme, as part of a major UNEP GEF-funded project focusing on ecosystem services in the Lower Danube, is developing a model scheme to encourage river basin administrators to maintain and eventually introduce water management practices, supporting biodiversity and preserving the natural landscape. The model scheme will ensure that land managers are paid as providers of these invaluable services.

Funding opportunities for this payment for ecosystem services (PES) scheme are seen in tourism activities, green labels for fish production, as well as in the Fisheries



Operational Programme of the EU, and in the cost recovery principle of the EU Water Framework Directive. If successful, local people and the local economy will benefit greatly from this scheme.

“The dependency of human society on ecosystem services makes the loss of these services a serious threat to the future well-being and development of the world. This project promotes and supports land managers who help us sustain the benefits that we all get from nature,” says Project Manager Maya Todorova.

ABOUT PAYMENTS FOR ECOSYSTEM SERVICES

Payments for Ecosystem Services (PES) is an innovative approach to nature conservation and includes a variety of arrangements through which the beneficiaries of environmental services – from watershed protection and forest conservation to carbon sequestration and landscape beauty – reward those whose lands provide these services with subsidies or market payments.

Arranging payments for the benefits provided by forests, fertile soils and other natural ecosystems is a way to recognise their value and ensure that these benefits continue well into the future.

Across the world, environmental conservation is critical to secure the flow of ecosystem services that are essential for people and nature. With funding for natural resource management dwindling, a variety of PES schemes have emerged as potential sources of sustainable financing for conservation.

PES encourage the maintenance of natural ecosystems through environmentally friendly practices that avoid damage for other users of the natural resources. In addition to preserving natural resources, this method improves rural areas and rural lifestyles.

Using nature’s own capabilities. Rusenski Lom, another model site for the Danube PES project, is a nature park and a Natura 2000 site situated along the lower stretch of the Danube in northern Bulgaria. What environmentalists would most like to see here is the improvement of the water retention capacities of the rich riverine habitats. The ecosystem service potential in this area relates to nature-friendly flood risk management and sustainable tourism. The model PES scheme will encourage riparian land owners and users to maintain and even restore the natural grass or wood cover along the river.

“Essentially, the goal of the project is to promote the concept and practice of Payments for Ecosystem Services

in Romania, Bulgaria, Serbia and Ukraine, and to serve as an example for other international river basins”, says Todorova.

Policies to support change. Most of the schemes that will be set up under the Danube PES project will require the institutional framework to be changed to launch them in practice. The state, businesses and the civil sector in participating countries will all need to be stirred to action to promote this novel approach to nature conservation. The project starts at a time of critical policy debate at European level.

“The replacement of the Lisbon Strategy – the so-called EU 2020 strategy – will place more emphasis on sustainability issues and will be reflected in the EU financial framework discussions already under way”, said Todorova. “Industrial policy, research policy, agricultural policy and so on are all affected by these moves towards an eco-efficient economy.”

The model scheme in Iezer and Ciocanesti fishponds, protected areas included in the Natura 2000 network in Calaras county, Romania, will be designed to accumulate funds to protect bird species. Funding opportunities for this payment for ecosystem services scheme are seen in tourism activities, green labels for fish production, as well as in the Fisheries Operational Programme of the EU. Credit: WWF DCPO/Lucius



The project also comes at a time of growing awareness of climate change, requiring the urgent and adequate reactions of all countries. For example, at Persina Nature Park in Bulgaria, a Natura 2000 area and the biggest Ramsar site in the country, a model PES scheme will be set up based on the potential and economic efficiency of producing biomass from wetlands.

“To me, it is also obvious that it is in the interest of businesses to maintain ecosystem services, because most businesses depend on the provision of natural resources to operate”, says Todorova. “It makes sense for businesses to support activities that help our ecosystems and, at the same time, to work towards minimising the negative impact on nature.”

For more information, please visit: <http://wwf.panda.org/dcpo>.

Olga Apostolova is the regional communications officer for the WWF Danube-Carpathian Programme.

ICPDR MEETINGS

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

9–10/12/2010	VIENNA, AUSTRIA
	ICPDR ORDINARY MEETING
14–18/3/2011	TO BE DETERMINED
	NUTRIENT TASK GROUP
16–17/3/2011	SOFIA, BULGARIA
	INFORMATION MANAGEMENT AND GIS EXPERT GROUP
17–18/3/2011	KIEV, UKRAINE
	GROUND WATER TASK GROUP
23–25/3/2011	LJUBLJANA, SLOVENIA
	FLOOD PROTECTION EXPERT GROUP
29–30/3/2011	BELGRADE, SERBIA
	MONITORING AND ASSESSMENT EXPERT GROUP
7–8/4/2011	ZAGREB, CROATIA
	PUBLIC PARTICIPATION EXPERT GROUP
11–15/4/2011	TO BE DETERMINED
	ACCIDENT PREVENTION TASK GROUP ECONOMIC TASK GROUP
12/4/2011	LJUBLJANA, SLOVENIA
	ACCIDENT EARLY WARNING SYSTEM TASK GROUP
18–20/4/2011	TO BE DETERMINED
	PROGRAMME AND MEASURES EXPERT GROUP
DW 01/11	UPCOMING ISSUE
	EU Danube Strategy
	Phosphate Ban