CONFERENCE REPORT

EUROPEAN RIVER SYMPOSIUM

EUROPEAN RIVERS AND WETLANDS 2021

The EU Biodiversity Strategy 2030 and the EU Green Deal shaping Europe's Water Management

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This publication has been made possible, by the partners, (programme) organisers, session leads, keynote speakers, speakers, facilitators, (session) reporters and participants of the European River Symposium 2021.

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2. Organisation and Programme

2.1. Organisatie

Organisation Committee.

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Bart Fokkens, Associate Expert ECRR

Programme Committee

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Conference Partners

European Centre for River Restoration, ECRR
International Association for Water services in the Danube Basin, IAWD
World Wildlife Fund Central and Eastern Europe, WWF CEE
International Network of Basin Organisations, INBO
Global Water Partnership Central and Eastern Europe, GWP CEE
International Commission fro the Protection of the Rhine, ICPR
International Commission for the Protection of the Danube River, ICPDR
Ramsar Convention, Ramsar Bureau
The Nature Conservancy, TNC
United Nations Economic Commission Europe, UNECE
Alliance for Water Stewardship, AWS

Other targeted organisation for contributions

IWA
UN Environment
World Bank
European Commission DG Environment, EEA
National Environmental Authorities
Water Utility Representatives
Corporate representatives:
Hydropower Association
Navigation
Tourism
Agriculture
Water Using Industries

2.2. Programme

PROGRAMME
Wednesday, 26th May 2021

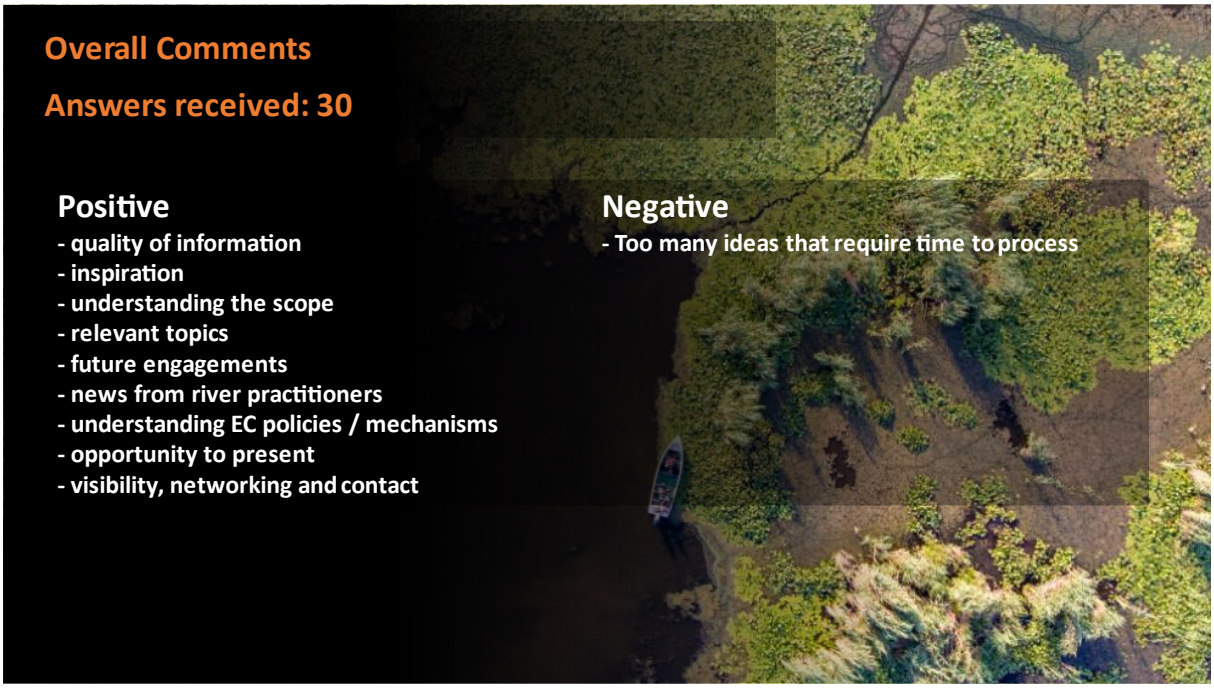
	ROOM A	ROOM B
09:00		Welcoming words from the organisers
09:15		Keynote from Virginijus Sinkevičius, European Commissioner for Environment, Oceans and Fisheries
09:25		Keynote from Veronica Manfredi, Director for Quality of Life in DG Environment, European Commission
09:45		Keynote from Steven Schonberger, Regional Director for the World Bank Group's Sustainable Development Department for the Europe and Central Asia region
10:00		Coffee Break
	PARALLEL SESSIONS	
10:30	**1 - HOW CAN THE EU BIODIVERSITY STRATEGY HELP ACHIEVE THE WATER FRAMEWORK DIRECTIVE OBJECTIVES, AND VICE-VERSA?** Organiser: *International Network of Basin Organizations (INBO)* This session will showcase exemplary case studies of river continuity & hydromorphology restoration (at all stages of planning, assessment and implementation) and call for their replication to achieve the objectives set in both the Water Framework Directive (WFD) and EU Biodiversity Strategy for 2030. Format: roundtable Keynote: François Omnès, French Biodiversity Agency Speaker 1: Fernando Magdaleno, Water Protection and Risk Management Subdirectorate, Ministry of Ecological Transition and Demographic Challenge, Spain Speaker 2: Turo Hjerppe, Senior Specialist, Department of the Natural Environment, Ministry of the Environment, Finland Speaker 3: Pao Fernández Garrido. Dam removal specialist, World Fish Migration Foundation (WFMF), Dam Removal Europe coalition	**5 - WHAT WILL IT TAKE TO RESTORE EUROPEAN FRESHWATER BODIES? PROMISING PATHWAYS FOR FINANCING** Organiser: *The Nature Conservancy (TNC)* The session will put the spotlight on the need for European actors to define transparent and coordinated funding mobilization strategies in order to meet the WFD and other related EU directives and policies, particularly the EU Biodiversity Strategy and the Climate Adaptation Strategy. Format: presentations followed by panel discussion Keynote: Hans Stielstra, Deputy Head Clean Water Unit, DG Environment, European Commission Speaker 1: Keiron Brand, Bankable Lead, WWF Speaker 2: Sophie Trémolet, Europe Freshwater Lead, TNC Speaker 3: Darko Manakovski, Global Water Partnership Speaker 4: Robin Price, Managing Director, Water Resources East Speaker 5: Stephen Hart, Senior Loan Officer, European Investment Bank Speaker 6: Simon Wightman, Esmée Fairbairn Foundation
12:00	Lunch Break	
12:30	**2 - ADAPTATION TO CLIMATE CHANGE: THE INTEREST OF BASIN MANAGEMENT PLANNING** Organiser: *International Network of Basin Organizations (INBO)* This session will present how cooperation and planning of water resources uses at basin level helps to improve adaptation (but also avoid maladaptation!) and achieve the objectives of the Water Framework Directive. Format: roundtable Keynote: Ivan Zavadsky, Executive Secretary, ICPDR Speaker 1: Nikola Schulte-Kellinghaus, International Commission for the Protection of the Rhine Speaker 2: Leon Dhaene, Secretary General, International Scheldt Commission Speaker 3: Françoise Goulard, Senior climate expert, Adour-Garonne Water Agency (France)	**6 - SUCCESSFUL RIVER MANAGEMENT: THE IMPORTANCE OF STAKEHOLDER INVOLVEMENT** Organiser: *Global Water Partnership (GWP)* Stakeholders play a vital role in river management by contributing ideas, collecting data, funding and delivering projects to improve our rivers. The focus of the session will be on discussing current approaches towards the engagement of the public and decision makers, main challenges and how we can improve engagement. Format: roundtable followed by breakout rooms Speaker 1: Hannah Joyce, Science and Technical Officer, the River Restoration Centre (RCC) Speaker 2: Helene Masliah Gilkarov, Technical Expert - Public Participation & Communication, International Commission for the Protection of the Danube River (ICPDR) Speaker 3: Colin Herron, Global Coordinator Water Solutions, GWP
14:00	Coffee Break	
14:15	**3 - SHARING BASINS, SHARING DESTINIES: INTERNATIONAL RIVER COMMISSIONS** Organiser: *International Commission for the Protection of the Danube River (ICPDR)* This session will highlight the role of River Commissions as key actors in the WFD implementation process and also examine their modes of interaction with the public. Both of these aspects have undergone exponential change in recent years. Format: panel discussion Speaker: Dr. Susanne Schmeier, Associate Professor of Water Law and Diplomacy at IHE Delft Speaker 1: Péter Kovacs, Hungarian Head of Delegation to the ICPDR, Chair of the Bureau of the Water Convention Speaker 2: Dragan Zeljko, Secretary, The International Sava River Basin Commission Speaker 3: Marc Daniel Heintz, Executive Secretary, International Commission for the Protection of the Rhine (ICPR) Speaker 4: Jean-Noël Pansera, Secretary General of the International Meuse Commission	**7 - HOW TO ENHANCE RIPARIAN AND FLOODPLAIN VEGETATION MANAGEMENT BY RESEARCH, PRACTICE AND POLICY?** Organiser: *COST Action CONVERGES, European Centre for River Restoration (ECRR)* This session will present evidence and reasons why and how riparian vegetation should be better integrated in water management frameworks to achieve ecological and socio-economic objectives. Format: panel discussion followed by open discussions Speaker 1: Dr Gorazd Urbanic Director, URBANZERO Institute for holistic environmental management (Slovenia) Speaker 2: Dr. Simon Dufour, COST Action Converges Lead, University of Rennes 2 (France) Speaker 3: Dr. Urška Vilhar, Slovenian Forestry Institute
15:45	Coffee Break	

16:00	**4 - THE FUTURE OF WATER: YOUNG WATER SPECIALISTS AND DECISION MAKING** Organiser: *Global Water Partnership* The session will take the form of a dialogue between high-level decision makers and representatives of young water professionals. The participants will be able to submit their questions to the speakers via Zoom chat function. The speakers will be answering these questions during the Q&A session. Format: structured dialogue Speaker 1: Péter Kovács, Head of River Basin Management and Water Protection Department, Ministry of Interior of Hungary Speaker 2: Tjasa Griessler Bulc, GWP CEE Regional Chair, Professor and Senior Researcher at the University of Ljubljana, Faculty of Health Sciences Speaker 3: Hasmik Barseghyan, President at the European Youth Parliament for Water, Future Energy Leader at World Energy Council Speaker 4: Zofia Pawlak, Ph.D. student at the Doctoral School of Warsaw University of Life Sciences Speaker 5: Judit Palatinus, International Relations Officer at TISZA OFFICE, Middle Tisza District Water Directorate	**8 - RESTORING WETLANDS TO IMPROVE RIVER STATUS** Organiser: *Warsaw University of Life Sciences-SGGW, Global Water Partnership, Secretariat of the Convention on Wetlands* The session addresses key elements of the EU Biodiversity Strategy 2030, notably the restoration of 25,000 km of EU rivers to a free-flowing state and the increase of biodiversity rich landscape features on agricultural land in river catchments and floodplains. The session will present the most up-to-date advances in integrated wetland and river management, which mirrors the requirements of the Green Deal. Format: roundtable Speaker 1: Dr. Michael Manton, Vytautas Magnus University, Lithuania Speaker 2: Dr Wendelin Wichtmann, Greifswald University, Germany Speaker 3: Prof. Wiktor Kotowski, University of Warsaw, Poland
16:45	Coffee Break	
17:00	**SIDE EVENT 1 - ECRR'S OVERALL STRATEGY DEVELOPMENT AND REVIVAL OF THE EUROPEAN RIVER RESTORATION COMMUNITY OF PRACTITIONERS** Organiser: *European Centre for River Restoration* The event will showcase and demonstrate the importance of sharing best practice and learning from each other enabling practitioners to constantly review how things can be done better and on a scale that can make a greater difference and motivate stakeholders to do more for both people and the environment. Format: demonstration Speaker 1: Martin Janes, The River Restoration Centre (UK) Speaker 2: Polona Pengal, Kamniška Bistrica Catchment restoration champion. REVIVO, Institute for ichthyological and ecological research (Slovenia)	**SIDE EVENT 2 - RESTORING RIVERS AND WETLANDS AT SCALE LESSONS FROM THE MULTI-SECTORAL LIVING DANUBE PARTNERSHIP** Organiser: *The World Wide Fund for Nature (WWF) Central and Eastern Europe* The event will reflect on the lessons learned from the multi-sectoral partnership between WWF Central & Eastern Europe, the International Commission for the Protection of the Danube River, and The Coca-Cola Company and Foundation, and how they can be applied to other areas, focusing as target audience on river and wetland practitioners, promoters, and decision-makers. Format: demonstration Keynote: Sofia Kilifi, Sustainability & Community Manager Europe at The Coca Cola Company
18:00	End of Day 1 Programme	

PROGRAMME
Thursday, 27th May 2021

	ROOM A	ROOM B
09:00	Welcoming words from the organisers	
09:10	Keynote from Dario Soto-Abril, Executive Secretary and CEO at Global Water Partnership	
09:25	Keynote from Loïc Obled, Deputy Director General at French Agency for Biodiversity	
09:40	Keynote from Sofia Kilifi, Sustainability & Community Manager Europe at The Coca Cola Company	
09:55	Keynote from Joakim Harlin, Chief, Freshwater Ecosystems Unit and Chief Manager, UNEP-DHI Centre on Water & Environment	
10:10	Coffee Break	
	PARALLEL SESSIONS	
10:30	**9 - CHALLENGES IN REACHING HEALTHY RIVERS AND SUSTAINABLE HYDROPOWER** Organiser: *Swedish Agency for Marine and Water Management (SwAM), European Centre for River Restoration* Hydropower exerts one of the most significant pressures on lake and river water bodies but, at the same time, it is an important part of many member states' electricity production and central to managing the transition to a climate friendly power production system. There is a great need for a transformation towards more sustainable hydropower and the challenges to deal with trade-offs, funding and policymaking is extensive. Format: roundtable followed by open discussions Speaker 1: Johan Kling, Head of Department, SwAM Speaker 2: Bernhard Zeiringer, Senior Scientist, University of Natural Resources and Life Sciences, Vienna Speaker 3: Jo Halvard Halleraker, Chief Engineer, Norwegian Environment Agency Speaker 4: Anders Skarstedt, Analyst, SwAM Speaker 5: Edith Hödl, Technical Expert, International Commission for the Protection of the Danube River	**12 - WATER USERS AND WATER QUALITY: COOPERATION TO ACHIEVE IMPROVEMENT** Organiser: *International Association of Water Service Companies in the Danube River Catchment Area (IAWD)* The session will explore the opportunities that exist for consolidating the interests of different users of water resources to achieve coordinated actions to improve water quality and restore and protect rivers. A case study will be presented on work that is undertaken to achieve cooperation in the context of International Commissions for river protection. Format: panel discussions Speaker 1: Sophie Trémolet, Europe Water Security Director, TNC Speaker 2: Philip Weller, Head of Technical Secretariat, IAWD Speaker 3: Wolfgang Deinlein, International Association of Waterworks in the Rhine Basin (IAWR) Speaker 4: Thomas Kullick, VCI Speaker 5: Dominique Gatel, Director for Water, Veolia Speaker 6: Eva Hernandez Herrero, Coordinator of Living European Rivers Initiative , WWF
12:00	Lunch Break	

12:30	**10 - DEVELOPING POLICY AND PLANNING OF RIVER CONTINUITY RESTORATION IN GREATER EUROPE** Organiser: *European Centre for River Restoration (ECRR)* European River Continuity Restoration Policy and Planning Survey: Funding, knowledge, guidance, collaboration and communication scaling up ecological river continuity restoration. Format: roundtable and presentation dam removal prioritization tool Speaker 1: Roman Havlíček, Director General of the Water Policy Division of the Ministry of Environment, Slovakia Speaker 2: Sharelle Verheij, ECRR Speaker 3: Joné Leščinskaitė, Chief Specialist Ministry of Environment, Lithuania Speaker 4: Joshua L. Royte, The Nature Conservancy Speaker 5: Martin Janes, The River Restoration Centre (UK)	**13 - SUSTAINABLE AGRICULTURE AND WATER MANAGEMENT: TOWARDS NEW SYNERGIES** Organiser: *International Network of Basin Organizations (INBO)* The session will present the current stakes of water management in agriculture, illustrated by some case studies from several stakeholders. A discussion time will also be the opportunity to address how the future CAP and Green Deal could help achieve these, for a sustainable agriculture that preserves water. Format: roundtable Keynote: Olli-Matti Verta, Director Water Resources Management, Finnish Ministry of Agriculture and Forestry Speaker 1: Leanne Roche, European Commission DG Environment Speaker 2: Ádám Kovács, ICPDR Speaker 3: Julienne Roux, Senior network specialist, GWP Speaker 4: Peter Newborne, Regional Coordinator for Europe, Alliance for Water Stewardship (AWS)
14:00	Coffee Break	
14:15	**11 - LIFELINES: A TWO DECADE JOURNEY OF THE INTERNATIONAL RIVER FOUNDATION AND THE INTERNATIONAL RIVER PRIZE** Organiser: *International River Foundation (IRF)* Follow the International River Foundation over two decades of journey: from its inception in 2003 to provide global recognition and support for best practice in river management to giving a voice to world's rivers to ensure rivers for future generations. The session will consist of a montage of powerpoint presentations, videos, animations and personal stories. Format: pre-recorded video presentations and open discussions Speaker 1: Dr Eva Abal, CEO, International River Foundation (IRF) Speaker 2: Prof Paul Greenfield, Chair of the IRF Speaker 3: Philip Weller, Head of Technical Secretariat, IAWD Speaker 4: Prof Bill Dennison, IRF Board member	**14 - PARTICIPATORY BASIN MANAGEMENT: HOW TO DO IT & WHY IT MATTERS!** Organiser: *International Network of Basin Organizations* This session will present how participatory management can be improved at each step of the WFD process for river basin management planning: how can water users and the public at large be better involved in monitoring, diagnosis, planning and implementation? Format: roundtable Keynote: Alexander Zinke, Senior Project Coordinator Water and Environment, Environment Agency, Austria Speaker 1: Helene Masliah Gilkarov, Technical Expert - Public Participation & Communication, ICPDR Speaker 2: Anna Ek, Senior analyst, SwAM Speaker 3: Michele Ferri, Director, Eastern Alps River Basin District Authority, Italy
15:45	Coffee Break	
16.00	**CLOSING SESSION** (30 min)	



3. New initiatives and support for strengthening the protection and restoration of European rivers and wetlands.

Introduction

The European River Symposium, held virtually on May 26 and 27, successfully concluded with many insightful presentations and discussions on actions to improve the quality of European Rivers and Wetlands. Involving over 250 participants, 70 panelists and presenters, including 6 Keynote Presentations, the Symposium also identified new tools and resources in the European Green Deal and Biodiversity Strategy to further expand the actions undertaken in the interest of rivers and wetlands.

The Symposium is the 4th in a series of events that have been held within Europe to strengthen the commitment and level of action to protect and restore the continents damaged river systems. The intent of the Symposium was to help participants get acquainted with the new initiatives to support rivers and wetlands in the Biodiversity Strategy and the Green Deal and to stimulate the use of these opportunities.

Actions by important economic actors such as agriculture, hydropower, and urban municipal waste water services, and various industrial production sectors were all identified as key to improvements made and in future needed. The Symposium concluded that innovative financing instruments to support protection and restoration of rivers offer new hope that these mechanisms along with the right use of European legal and legislative tools (Water Framework Directive) and dialogue and cooperation between sectors using and affecting rivers and wetlands that their condition and health can be improved.

The symposium strengthened ddialogue and cooperation between sectors using and affecting rivers and supported initiatives that the condition and health of rivers can be improved. This challenge is to be addressed at the local, regional, and national levels. Promotion of healthy ecosystems, green infrastructure and nature-based solutions should therefore be systematically integrated in policies and planning.

The conference was organized by a wide range of Partner organizations and brought together people from Government, NGOs, River Commissions, Business and Scientists to share experience and celebrate positive efforts that have been taken to restore rivers and wetlands. In this report you can read more on key themes and lessons from the Symposium.

This report can contribute to the work in the coming years on the collective efforts to strengthen and improve the protection and restoration of rivers and their associated landscapes. Hopefully you find the report useful in your own work and that it stimulates and creates opportunities for dialogue and cooperation in those efforts.

4. Keynote presentations and conference themes

4.1. Presentations

The keynote speeches were stage setting for the 16 sessions jointly organised by the 12 conference partner organisations. *Veronica Manfredi*, the Director for Quality of Life in DG Environment presented the EU Water Policy under the European Green Deal with the state of play and the key challenges ahead facing four ecological crises on climate, biodiversity, resources, and pollution and with the EU responding through interrelated solutions. *Steven Schonberger*, Regional Director for the World Bank Group's Sustainable Development Department of Europe presented a world water sector in transition and the World Bank increasing its commitment to support green development and climate action, consistent with the European Green Deal.

Sofia Kilifi, Sustainability and Community Manager Coca Cola European Partners described the relevance of rivers and wetlands to Coca Cola and other business and the company's new freshwater strategy. *Joakim Harlin* heading up both the Freshwater Unit of UN Environment and the UNEP-DHI Centre on Water and Environment presented UNEP's Freshwater Strategy and the urgent need to revive damaged ecosystems now with the world picking up the pace and put greater efforts in finding better solutions to pollution, climate change and biodiversity loss. The initiative of the UN decade on Ecosystem Restoration aiming to prevent, halt and reverse the degradation of ecosystems.

Dario Soto-Abril, Executive Secretary and CEO of the Global Water Partnership and *Loic Obled*, chief operating officer of the French Office for Biodiversity emphasized the importance of knowledge, resource and capacity development on sustainable integrated water (resource) management and the involvement and engagement of stakeholders and public, in particular the citizens when implementing the EU Biodiversity Strategy 2030 and the EU Green Deal.

All stressed the importance of integrating policies and that actions by important economic actors such as agriculture, hydropower, and urban municipal (waste) water services, and various industrial production sectors are all key improvements made in future needed and that these improvements should offer new hope that with the right use of legal and legislative tools, together with dialogue and cooperation between sectors using and affecting rivers that their condition and health can be improved.

The symposium discussed, explored, and proposed new institutional cooperation, integrative approaches, and various innovations, guidance, education, training financing, and funding mechanisms needed. Moreover, the symposium addressed how to include, by developing nature-based solutions in combination with suitable financing and funding mechanisms, climate actions into the integrated River Basin Management Plans and the Programme of Measures implementation.

4.2. Themes

The conference findings are reported in a manner reflecting the new European policies, as presented by Veronica Manfredi, the European Green Deal and the related European Biodiversity Strategy 2030. And the reflections are presented along the lines of the overarching main themes of the conference, which are:

- Legal and financial frameworks

- Perspectives of integrating sectoral policies
- Stakeholder involvement, public and youth engagement
- Implementation of longitudinal and lateral connectivity
- Basin level cooperation and management

4.3 European Green Deal

Introduction
As mentioned by *Veronika Manfredi* of the EC the EU is responding to the four ecological crises, climate, biodiversity, resources, and pollution through interrelated solutions.

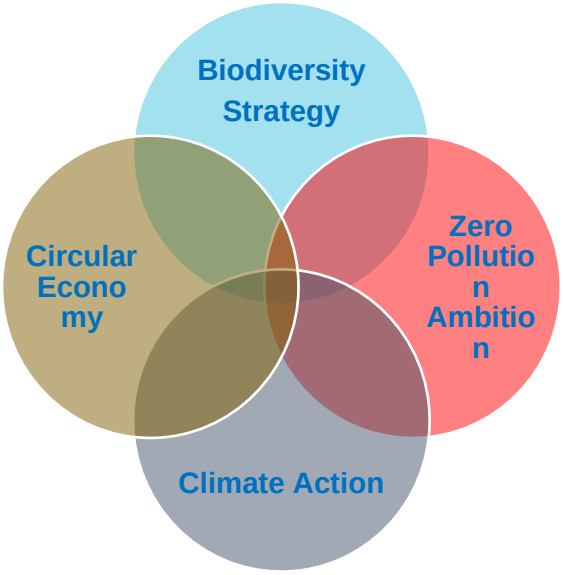


Figure 1. Interrelated actions responding to the ecological crises

Climate change and environmental degradation are an existential threat to Europe and the world. To overcome these challenges, the European Green deal will transform the EU into a modern, resource efficient and competitive economy, ensuring:

- Not net emissions of greenhouse gases by 2050
- Economic growth decoupled from resource use
- No person and no place left behind

One third of the 1.8 trillion-euro investments from the NextGeneration EU Recovery Plan, and the EU seven-year budget will finance the European Green Deal, what will improve the well-being of citizens and future generations.

Actions
The following figure presents an overview of the Green Deal Actions making the EU as a global leader implementing the European Climate Pact.

Figure 2. European Green Deal Actions

Circular Economy Action Plan

Key targets related to water

- ***Food, water & nutrients*** *– one of the key product value chains addressed*
- ***Water reuse*** *and* ***water efficiency***
  - *Facilitate* ***water reuse*** *and* ***water efficiency,*** *including in industrial processes*
  - *Application of the new* ***Water Reuse*** *Regulation (2020/741/EU)*
- ***Sustainable product policy framework*** *– aim to set principles for product policy and requirements on products placed on the EU market*
- ***Review of the Insustrial Emissions Directive,*** *and integration of circular economy practices in upcoming Best Available Techniques (BAT) reference documents*
- ***Address and prevent microplastics ->*** *Environment, drinking water and food*
- *Key sectors****: building*** *and* ***textile***

4.4 EU Biodiversity Strategy 2030

Introduction

The EU Biodiversity Strategy 2030 states that greater efforts are needed to restore freshwater ecosystems and the natural functioning of rivers. To make help this reality, at least 25,000 km of rivers should be restored into free-flowing rivers by 2030. Technical guidance and support to the Member States will be provided by the Commission in 2021, in consultation with all relevant authorities, taking a wide range of issues into account, including hydropower generation, flood management, water supply, agriculture and navigability.

Overall, large scale river and floodplain restoration investments should provide a major economic boost to the restoration sector and for local socioeconomic activities such as tourism and recreation.

At the same time, these investments can improve water regulation, flood protection, nursery habitats for fish, and the removal of nutrient pollution. The promotion of healthy ecosystems, green infrastructure and nature-based solutions should be systematically integrated in policies and planning, specifically in urban areas. The symposium discussed, explored, and proposed new institutional cooperation, integrative approaches, various innovations, guidance, education, training, financing, and funding mechanisms therefore needed.

Key targets related to water

- 30% of EU land and sea protected, 1/3 of which under 'strict protection'
  - **Freshwater ecosystems** are included
- Restoration of freshwater ecosystems:
  - Increased efforts to **restore freshwater ecosystems and the natural functions of rivers** – WFD objectives to be met by 2027
  - **Restore at least 25,000km free flowing rivers**
    - Removal of primarily obsolete barriers
    - Restoration of floodplains and wetlands
  - **Restore and preserve ecological flows ->** Member States review water abstraction and impoundment permits – WFD objectives to be met by 2027
- Focus -> To implement and enforce EU environmental legislation

4.5 EU Strategy on Adaptation to Climate Change

Introduction

Adapting to climate change means taking action to prepare for and adjust to both the current effects of climate change and the predicted impacts in the future. Global emissions of greenhouse gases are still on the rise. Even with our commitment to cut net global emissions to zero by 2050, the concentration of greenhouse gases in the atmosphere will continue to increase for the coming decades, and average global temperatures will climb. As the climate heats up, it will bring with it all kinds of risks. From more frequent extreme weather events like heatwaves, droughts or floods, to coastal erosion from rising sea levels, the impacts will affect everyone.

Towards a climate resilient water management

- Improve coordination of **thematic plans and other mechanisms** (incl. water resource allocation and water-permits) across sectors and borders
- Reduce **water use**, encouraging **water efficiency and savings**
- Stable and secure **supply of drinking water** -> climate change-risks in risk analyses of water management
- Sustainable **soil management and land-use**
- Nature-based solutions to achieve the goals of the Water Framework Directive and the Floods Directive

4.6 Towards an EU Zero Pollution Plan for Air Water and Soil

Introduction

The EU 2050 vision is that air, water and soil pollution is reduced to levels no longer considered harmful to health and natural ecosystems and that respects the boundaries our planet can cope with, thus creating a toxic-free environment.

Integrated approach

- reduce pollution at source
- strengthen the EU green, digital and economic leadership, and create a healthier, socially fairer world
- mainstream pollution-prevention across policies, step up implementation and modernize EU law
- 33 actions, 9 cross-sectorial flagships, 6 key targets to be achieved by 2030 (with a 2025 review clause)

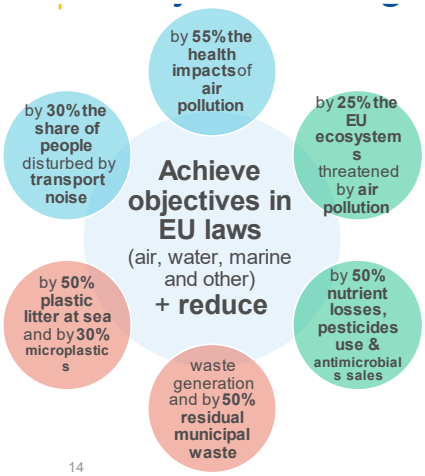


Figure 3. 6 key targets 2030

4.7 General Union Environment Programme to 2030

Key enablers

- Better **implementing** EU law & **better mainstreaming** environmental concerns across policies
- Harnessing the potential of **digital and data** technologies
- Making full use of **nature based solutions** and social innovation
- First EU-wide **overarching monitoring framework** to track and measure progress
- Better information of **policy makers, stakeholders and citizens** – through key indicators informing about the state of the environment, the main pressures and the effectiveness of the actions taken – higher standards for transparency, public participation and access to justice
- Key support from the **European Environment Agency** and the **European Chemicals Agency**

4.8 Citizens' and stakeholders' engagement

Introduction

The European Green Deal is clearly an important instrument to create a shift to a more sustainable Europe, but it needs the support and engagement of all: policy, makers, citizens, and stakeholders. ,

Common objectives

- mainstreaming environmental, sustainability, health concerns into all layers of policy making
- creating co-ownership, promote collaboration and foster integrated solutions
- sharing good practices on cross-cutting topics such as financing for green innovation and jobs, boosting sustainable production and consumption

Opportunities to bring together stakeholders and experts from different policy areas

- Circular Economy Stakeholder Platform
- Business@Biodiversity Platform
- Zero Pollution Stakeholder Platform & Chemicals Roundtable
- Green City Accord & Covenant of Mayors
- European Climate Pact

5. Conference reporting

5.1 Introduction

The symposium has set the stage by guiding the leap from the EU Policy level to local realities through presentation of high level briefs and dialogue in panels with direct implementors and practitioners. The Symposium involved a mix of presentations for understanding rivers and the current political and legal climate in managing them (especially from the EU) followed by dialogue between actors interested in and affecting rivers. Special focus was on the alignment and exploration of interests between water users (water supply, navigation, agriculture, and hydropower) and conservation, restoration, planning and management authorities. Case studies and examples were explored in more detail in these groups. The event highlighted the work of Past and Future Winners of the European River Prize and International River Prize.

The reporting on all these aspects is done through the overall threads of the overarching main themes of the conference, which are:

- Legal and financial frameworks
- Perspectives of integrating sectoral policies
- Stakeholder involvement and public and use engagement
- Implementation of longitudinal and lateral connectivity
- Basin level cooperation and management

5.2 Legal and financial frameworks

Promising pathways for financing

"Promising pathways for financing" put the spotlight on the need for European actors to define transparent and coordinated funding mobilization strategies to meet the WFD and other related EU directives and policies, particularly the EU Biodiversity Strategy and the Climate Adaptation Strategy. The financial needs associated with the EU Biodiversity and EU Climate Adaptation strategies are not yet fully identified. However, based on global assessments, such as those highlighted by the recent report (2020) published by The Nature Conservancy, the Paulson Institute and the Cornell Atkinson Centre for Sustainability, these figures are likely to be high. The report shows that to reverse the decline in biodiversity by 2030, we need to be spending US$ 722-967 billion per year globally.

Funding in Europe must come from all sources: at the European level from the EU MFF and EU recovery plan, but also from the member states national budgets, philanthropy and private sector. While funding needs are important, there also are many financing solutions for river restoration that can be pursued. The session identified current barriers that cause lack of investment in this area in Europe, including:

- Lack of information on climate risks, and impact on and opportunities for business and supply chain, at landscape level.
- Lack of good corporate stewardship and regulation.
- Lack of capacity and initiative to translate climate risks into business risks and response options.
- Lack of legal technical and financial expertise to produce high/quality climate and development relevant investment propositions.
- Perceived risk-reward imbalance of investing in climate and development projects and limited access to capital.

Investing in nature can deliver several benefits for water quality, improving river flow, aquifer recharge and reducing the impact of flooding. Nature-based solutions generate multiple co-benefits (for climate change adaptation and mitigation, biodiversity conservation, human health and well-being and jobs and social cohesion). They are attractive from an investment point of view but also present multiple challenges, as this means that there are multiple revenues that can be generated for multiple beneficiaries.

There are many EU funding sources for biodiversity available – lack of money won´t be the big challenge in this area. The hard work will consist of operationalizing this target under EU funds and programmes, and to make sure that, across this landscape of EU instruments, good entry points are found (agricultural funds, regional funds, etc.) and practical and credible programmes are built.

Tracking of spending will also be important – and should be improved with respect to how it´s been done in the past. An ongoing study by the Environment Biodiversity Unit aims at updating the methodology to track biodiversity in the MFF and Next Generation EU, as well as assessing funding needs to implement the BDS, assess current funding levels (including from MS and private sector) and identify the financing gap.

While European funding is one important source of funding for river restoration, Members States national budgets continue to be the biggest sources of funding in this area and there is a high need for MSs investments. One of the main challenges is also to attract more private sector funding for these projects.

NGO Approaches
WWF presented bankable approaches and how these ties into Landscape Activities, Project Activities and Blended Finance. The Dutch Fund for Climate and Development (DFCD) was used as an example of this approach along with three high level case studies. Bankable Nature Solutions are solutions for environmental challenges that at the same time generate an acceptable (risk-adjusted) return on the money invested. Bankable Nature Solutions differ from regular conservation projects because of their source of funding and because they are managed by the private sector. Their design is centered around revenue generating activities that help recover project costs and generate a return on investment.

The Dutch Fund for Climate and Development (DFCD) enables private sector investment in projects aimed at climate adaptation and mitigation in developing countries. The Dutch Ministry of Foreign Affairs has made available €160 million to increase the resilience of communities and ecosystems most vulnerable to climate change. The DFCD is managed by a consortium of Climate Fund Managers (CFM), World Wide Fund for Nature Netherlands (WWF-NL) and SNV Netherlands Development Organisation, led by the Dutch Entrepreneurial Development Bank, FMO.

The fund will be structured with three separate, but operationally linked facilities, each with a specific sub-sector focus and role across the project lifecycle. Furthermore, the consortium adopts a 'landscape' strategy for deal origination and execution. This strategy allows consortium parties to actively source and develop private sector investment opportunities for other consortium parties in-and-around, in the vicinity of, as well as downstream from, their own investment activities.

Nature based solutions for Water Security

These solutions have a long history in Europe and are being implemented by a broad range of stakeholders: regulatory agencies, utilities and cities or bottled water companies. These actors are engaging with upstream users to protect their water sources, by buying and protecting land, working with farmers and forest managers to support change in agricultural practices or building artificial wetlands to reduce the costs of wastewater treatment. These examples have usually emerged thanks to a supportive policy and regulatory environment at EU level and in the country. Despite a conducive policy framework in Europe, we still need to find ways to scale-up these investments. There are several solutions that can be put forward – one is to set up collective action platforms and blended-finance approaches.

TNC has helped implement such collective action platforms, referred to as "Water Funds", in many locations around the world. Water Funds are organizations that design and enhance financial and governance mechanisms which unite public, private, and civil society stakeholders around a common goal to contribute to water security through nature-based solutions and sustainable watershed management.

Financing NBS for water security: squaring the circle

Multiple challenges / benefits	Multiple beneficiaries	Multiple revenue streams
• Water quality • River flows • Flood reduction • Aquifer recharge • Carbon sequestration • Reduce GHG • Reduce soil erosion • Soil quality improvement • Reduce frequency of forest fires, floods and droughts • Improve human health • Protect and expand natural habitats • Create green jobs • Amenity value	Utility service providers (water, energy) Large water users: industry, farmers Local governments General public Workers The environment, both locally and globally	• Tariffs associated with services (for water, wastewater, drainage) • Payments for ecosystem services • **Public subsidies (e.g. farming subsidies)** • Credits: carbon, biodiversity, water replenishment • Visitor fees and tourism revenues

In Europe TNC has set up collaborative action mechanisms in the UK and Spain. In the UK, TNC is working in partnership with Water Resources East and water company Anglian Water and the Norfolk County Council, to prepare a Norfolk Water Sustainable Management Plan that incorporates

NBS at scale to address intra-year water variability (summer droughts, winter floods). This will include the establishment of a Water Fund, a collective action platform for implementing the Plan.

Panel discussion
The panel discussion brought together a project developer, a representative from a foundation and one from a development bank, each with a different angle on the funding /financing debate. The discussion highlighted the need for networks of organizations to work together, for joined up thinking and action by the different categories of actors involved. We need to bring together actors from different part of the equation to understand each point of view.

This network organization supporting the preparation of initiatives in the water sector calls for integrated whole system transformation at scale through integrated water resource management. This approach is applied in the UK thanks to a change in policy that led to regional water sources planning in the country.

The discussion highlighted the need for very transparent and inclusive governance models and for a clear definition of landscape when speaking of landscape intervention. From the point of view of the Esmée Fairbairn Foundation - one of the largest independent foundations in the UK - foundations tend to operate in a broad and thus relatively superficial way. For this reason, one of their main roles should be to find the right/more efficient specialized organizations and provide them with as much unrestricted support to implement their projects.

Another important element that emerged is the need for dialogue – often politicians and regulators underestimate the willingness and ability of customers and owners to pay for environmental services.

Time and money are also needed for the soft processes of connecting actors and moving towards systemic change – politicians should focus on this beyond focusing only on regulations.

Enabling conditions

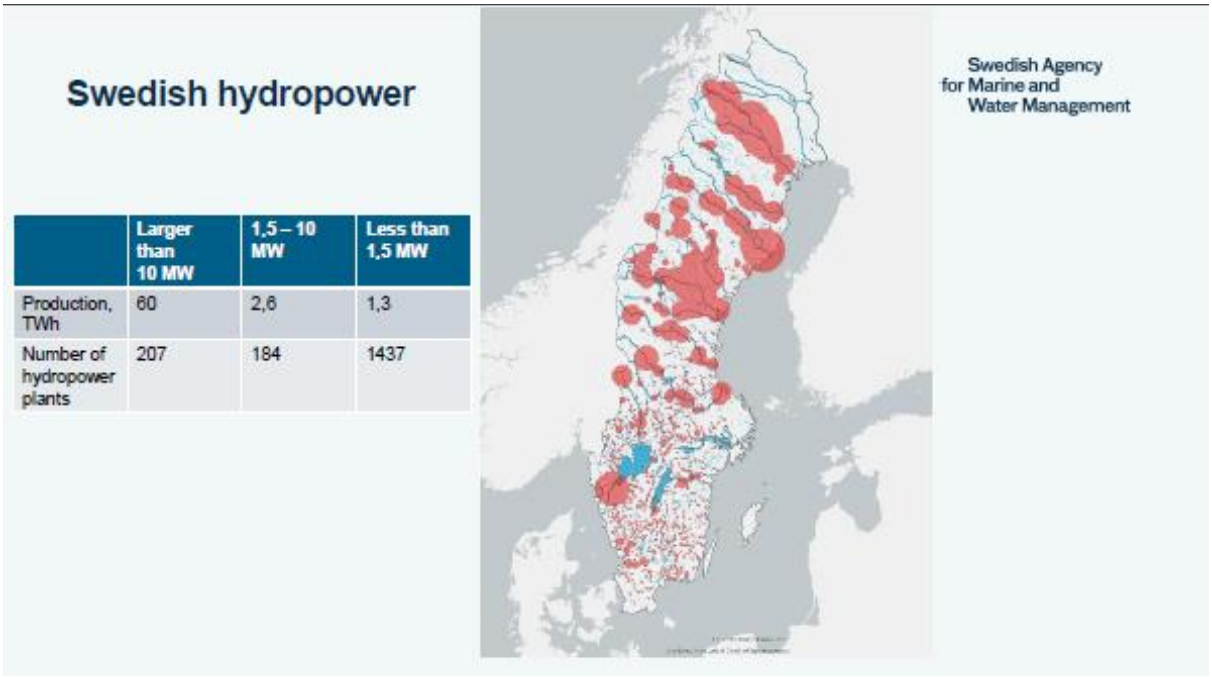
It was proposed that to create systematic change there is a need to move towards integrated whole system transformation at scale through integrated water resource management across Europe. The example of the UK, with its conductive policy that supports regional water resources planning is considered appropriate. We need to create communities of donors and investors, to provide increase access to public spending and private finance. The question remain how private sector, industries and polluters will be engaged in funding large scale river restorations. The hydropower sector, for example, makes great profits on river's exploitation and they do next to nothing (or little) to restore rivers they have degraded by their operations? And multi-layer platforms and integrated landscape approaches are often long-term (sometimes 5+ years) processes. These need to begin before starting implementation and run parallel to project level actions that can be deliver direct benefits. How to balance these two approaches, remains a critical question.

5.3 Perspectives of integrating sectoral policies

Sustainable hydropower

As part of the European Green Deal, the Commission proposed in September 2020 to raise the 2030 greenhouse gas emission reduction target, including emissions and removals, to at least 55% compared to 1990. This goal puts even greater emphasis on increasing the use of predictable climate-friendly electricity production technologies. At the same time, in the EU Biodiversity Strategy to 2030, the European Commission is proposing targets for ensuring more free-flowing rivers within the Union.

Hydropower excerpts one of the most significant pressures on lake and river water bodies. At the same time, it is an important mechanism to manage the transition to a climate friendly power production system. Therefore, there is a great need for a transformation towards more sustainable hydropower and the challenge to deal with tradeoffs, funding and policymaking is significant. A summary conclusion is that a balance between environment and hydropower pre-supposes good methods for assessing both the environmental benefit and the effect of hydropower production



	Larger than 10 MW	1,5 – 10 MW	Less than 1,5 MW
Production, TWh	60	2,6	1,3
Number of hydropower plants	207	184	1437

A major concern is how to organize and plan a reassessment of the large number of hydropower plants where both the environmental values and the facilities' function and impact are all linked into the catchment areas. Some countries, including Sweden and Norway have set a cap on how much the overall impact of hydropower may be. The calculations done for this were on a national scale and consisted of many assessment actions carried out for a long time. Now a long-term plan is required to manage a goal that limits the overall effect on hydropower production in relation to the environmental benefits. A catchment area approach is a good way to deal with the issue. Guidance documents, at the National international level are important to support these assessments. After decisions have been made, an ongoing collaboration is needed to facilitate the implementation. Furthermore, a broad collaboration between energy and environment administrations, hydropower sector and businesses, NGOs, scientists and the stakeholders is needed as well as a good understanding at the political level is a prerequisite for the success of the implementation of the transition plans.

Most of the hydropower plants are small and account for only a small contribution to overall hydropower production. The cost of measures per MW produced will therefore be exceptionally large for smaller hydropower plants and facilities with limited incomes cannot fully cover their own costs of complying with modern environmental conditions. When a political will exists, and it is assessed that the value of these facilities is not reflected in the payment for produced electricity, the burden needs to be distributed within the collective? In Sweden, a national fund has been created by the larger electric power producers to allocate the costs according to the carrying capacity.

In 2014, the Swedish Agency for Marine and Water Management and National Energy Agency suggested a national strategy to balance the need for improved ecological status and the need of hydropower. Based on the results of the developed national strategy, high-level discussion in 2015 among the power sector, the NGOs and the authorities took place. A proposal was submitted to the

government suggesting changes in legislation and the environmental fund, provided by the main hydropower companies in Sweden.

ICPDR's balancing hydropower Act

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

Sustainable agriculture

Pressures from agriculture are currently amongst the most significant pressures identified by Member States in many river basin districts, posing potential risk of non-achievement of the environmental objectives under the WFD. In recent years, climate change has arisen as a new pressure for both agriculture and water, water being a central element of adaptation to climate change in agriculture. According to the Common Agricultural Policy (CAP), aiming to increase the level of environmental ambition with two important environmental directives entering the scope of conditionality: namely the Water Framework Directive and the Directive on sustainable use of Pesticides, Member states will have to define their intervention strategy in their CAP strategic plan, which shall consider the needs identified in the RBMPs and contribute to the achievement of WFD objectives.

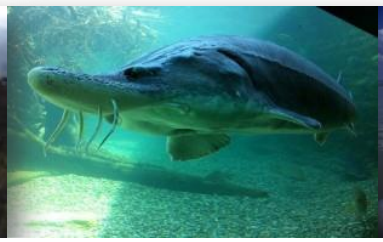
The CAP reform is in line with the European Green Deal (EGD), since the CAP proposal includes tools to further promote sustainable farming practices across EU, crucial to achieve the Green Deal's ambitions. This will happen by turning climate and environmental challenges into opportunities across all policy areas and making the transition fair and inclusive for all. This European Green Deal brings a new impetus to transform the EU's agricultural economy for a more sustainable future, including a 'fair, healthy and environmentally friendly food system' across the agricultural supply chain from 'Farm to Fork'. Under the Farm to Fork strategy, a key water target is for a 50% reduction in nutrient losses (nitrogen and phosphorous), part of that being a reduction in fertilizer use by 20%. Member States are to adopt and apply Integrated Nutrient Management Action Plan to improve soil quality and reduce pollution to rivers and other water bodies. The CAP Strategic plans should lead to sustainable practices such as precision agriculture, organic farming, agro-ecology, more efficient irrigation, low-intensive permanent grassland, stricter animal welfare standards.

Thank you for your attention!

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


For more information please visit the **ICPDR website**:

http://www.icpdr.org


These strategies promote green solutions. The Commission proposes that 10% of agricultural land should consist of 'high-diversity landscape features'. Further a quarter of agricultural land should be under organic farming management by 2030, and the use and risk from pesticides should be reduced by 50%, as well as the use of the more hazardous/dangerous pesticides. Nature-based solutions are central to achieving the objectives of the Biodiversity Strategy. Of the 25% of the EU budget dedicated to climate action, a significant proportion will be invested in biodiversity and nature-based solutions



like Natural Water Retention Measures (NWRM). The need to support this type of measure via policy instruments was raised. It was suggested that provisions should be embedded in the EU strategies and policies to ensure that Member States action is sufficiently ambitious.

A strong collaboration between stakeholders of water and agriculture sectors was seen to be important to reach a sustainable water management in agriculture. Issues linking water and agriculture are complex. Drivers are generally outside the direct control of water managers, and situations often face systemic lock-ins. A whole of society approach is therefore needed, relying on the involvement and collaboration of all actors: political leadership, farmers, agri-food chain actors, researchers and scientists, cross-sectoral collaboration, consumers, civil society, etc. A poll asked participants what the biggest obstacle is preventing the proper implementation of the WFD in Europe in relation to agriculture. The majority answer was “insufficient implementation of the WFD in the Member States, including processes in river basin which promote multi-stakeholder collaboration between water users”.

River basin organization have an important role to play in facilitating dialogue and cooperation, and ICDPR presented during the session its approach to sustainable agriculture in the Danube River basin. Agriculture is an important sector in the basin and has major impacts on water resources, nutrient, and pesticides pollution. Water scarcity is also an emerging issue. When ICDPR started working on the topic of agriculture and water, it realized that the approach was too often a confrontation between the sectors; whereas it was determined that a key to success is to establish trust and shared ambition. This entails considering farm economics, looking for win-win approaches, ensuring appropriate consultation with farmers and good policy coordination. Taking such an approach, ICDPR has been working on a guidance document to decision makers, recommending policy instruments and measures, and supporting the definition and implementation of agro-environmental policies under CAP and river basin management plans.

As for private sector involvement, the session panelists as well as the representative for the European Commission, agreed that water stewardship can provide an important complement (a synergistic element) to the European Green Deal and the Biodiversity Strategy. Water stewardship is mobilizing businesses/private companies in stakeholder collaboration. What could be done, at different scales, to reach a sustainable water management in agriculture? A whole of society approach is needed and there is not one single solution, but multiple pathways, including the following in particular which were highlighted: knowledge, capacity building, nature-based solutions, policy instruments and farm economic insights, payment for ecosystem services and mobilization of agri-food sector, while the climate change is seen as an important driver.

Multi-sector cooperation
Different sectors with different attitudes and points of views collaborating in the projects bringing in various valuable expertise, experiences, relationships/networks and routines are needed. One of the key lessons is the power of partnership – that by working together we can achieve more than working alone. Experiences underlines the importance of building good relationships and a common understanding with all partners. Clearly stated shared goals, restoration vision and project outcomes are important to put cooperation on a firm footing and avoid later misunderstandings. Personal

meetings with partners are important for getting to know each other and building close and trustful relations.

Where there are significant differences in perspective among partners, neutral experts that are respected by both sides can help mediate relations and facilitate.

Enabling conditions
The hydropower sector feels the need for, and is open, for a broad collaboration in reconsidering hydropower strategies. Moreover, they recognize the importance of sharing knowledge and research between countries. Water users are stressing more frequently the importance to hear about various perspectives across various sectors – it is good to have dialogue addressing the hot buttons/challenges. Continued dialogue inside the forum created by the River Commissions is needed to help create a basis for long term solutions. Recognition of the importance of focusing on the uniting principle of a quantitatively and qualitatively secure water supply for everyone. As the view on security is challenged, many unknowns (chemicals, effect on human and biodiversity health). Barriers between stakeholders need to be broken down (chemical industry highlight demand for chemicals and wrong application). Mitigation action is good, but prevention is better → there is currently discrepancies between actors/interest groups and therefore political structures. And one of the remaining questions is how to increase participation of farmers. The importance of AKIS (agricultural knowledge and innovation systems) was highlighted for their effectiveness.

Where should the dialogue take place. River basin commissions can be a key forum/player here. Dialogue forums between sectors already exist or can be created to further drive and deepen engagement across sectors. Often interest groups are very focused on their topic and the neutrality of competent authorities that have the task to compare options is an ideal place for engagement. There is a need to break down communication barriers. Linking farming and urban communities (upstream and downstream benefits) and develop new funding models that involve a variety of

stakeholders. The Water Fund developed by TNC, for example, highlighted, Blended finance opportunities with subsidies and grants and schemes such as payment for ecosystem services. Not only water companies can benefit from such initiatives.

In Norway, there is a political view that small hydropower plants are beautiful. This means, for example, that the protection against the expansion of hydropower only applies to large facilities and not small ones. The impact from large power plants, however, is clear but the scattered impact from many small ones can also be significant. Would it be possible to choose which rivers are: A. free flowing without barriers, B. Rivers for hydropower? It makes sense to clearly make choices 1) which rivers flow freely, 2) which rivers are allowed barriers with the best available environmental mitigation, and 3) which rivers do not need mitigation.

There are complex interactions between issues and systems that we just start to understand. There needs to broader and continuous engagement across sectors and involving all actors (including those often reluctant i.e agriculture).

5.4 Stakeholder involvement, public and youth engagement

Introduction

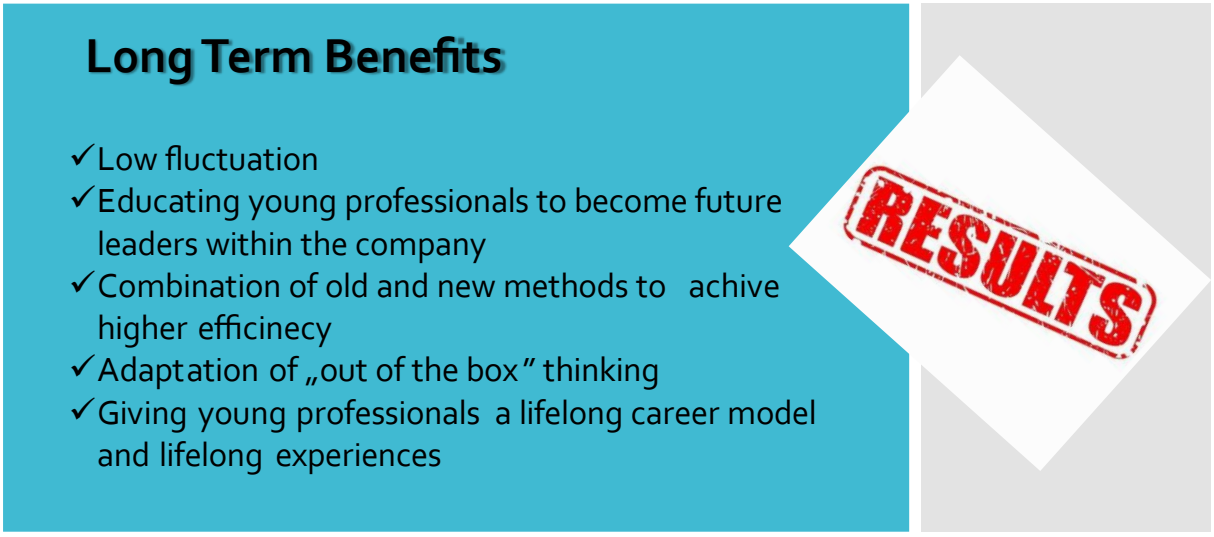
There are certain intensities of participation (information > consultation > co-decision making and decision making). European water resources directives (WFD + FD) require a consultation. Thus, states (and international secretariats) are obliged to give interested parties the opportunity to have their say on the draft document. Afterwards they can decide on their own which modification proposal they consider and which not.

Many current projects neglect the importance of marketing and communication of their findings and efforts to various stakeholder groups. This leads to stakeholders being confused and generally uninterested in research evaluating projects.

Citizen science can however contribute to understanding. It has multiple short- and long-term impacts on society, environment, government, as well as scientific and economical spheres. 80% of surveyed participants believe that citizen science is important. CS further splits into three levels: Contributory, collaborative, and co-created/designed.

Mechanisms for decision making should include youth. Combination of old and new methods are needed, as well as adaptation to out-of-the-box thinking. Young professionals should be educated to become the future leaders of organizations, combining old and new methods to achieve higher efficiency.

Participatory basin management
Catchment officers, as they exist in Sweden, function as catalysts and can help landowners that are willing to make their contribution to protect water to overcome obstacles such as lack of knowledge and time and costs. These officers engage in dialogue with individual farmers – and their children – and take efforts to understand their needs and help them by securing funding for planning and implementing measures. They can close the feedback loop and lead to a process of continuously improving measures, from the national to the local scale. However, state funding is running out, so the issue long-term sustainability still needs to be sorted out.



The decisive factor in use of Citizen Science and Citizen Observatories is trust. Trust and transparency, and listening to the needs of the people, are the important factors that have an impact on policy and decision-making. The legal requirements for participation are not enough. Tools and experiences that incentivize citizens to engage in water management and incentivize authorities to invest in citizen involvement are important. However, tools for achieving this are constantly evolving, so it is a constant learning and adaption process, and it is important to particularly address youth and secure funding for participation, e. g. through the EU Recovery Funds.

There are legal requirements for public consultation within the Danube River Basin, as per the European Union's WFD & FD. A shared understanding of these requirements is necessary for better transparency. Participatory basin management creates shared understanding, ownership and support and improves measures implementation. It helps to sort out conflicts early so the implementation can happen smoothly

Stakeholder involvement in multiple sector restoration projects
Experience and expertise in stakeholder involvement can be invaluable for ensuring smooth stakeholder engagement and project implementation. Ensure that one of the project partners has this experience and expertise; alternatively, this can be secured from a third-party, e.g. working on a consultancy contract. Time and resources spent on effective stakeholder engagement is usually well worth the investment.

Most if not all river and wetland restoration projects emphasize the importance of stakeholders and their careful consultation and involvement in project development. Stakeholders who are initially skeptical and hostile can be won over through careful consultation and involvement, building their trust, awareness and understanding. An example from the Living Danube Partnership is the local hunters and water managers whose opposition had frustrated earlier attempts to restore soda lakes in the Seewinkel area of Austria. They were won over through their involvement and opportunity to review results – and have now gone on to become active proponents for further restoration.

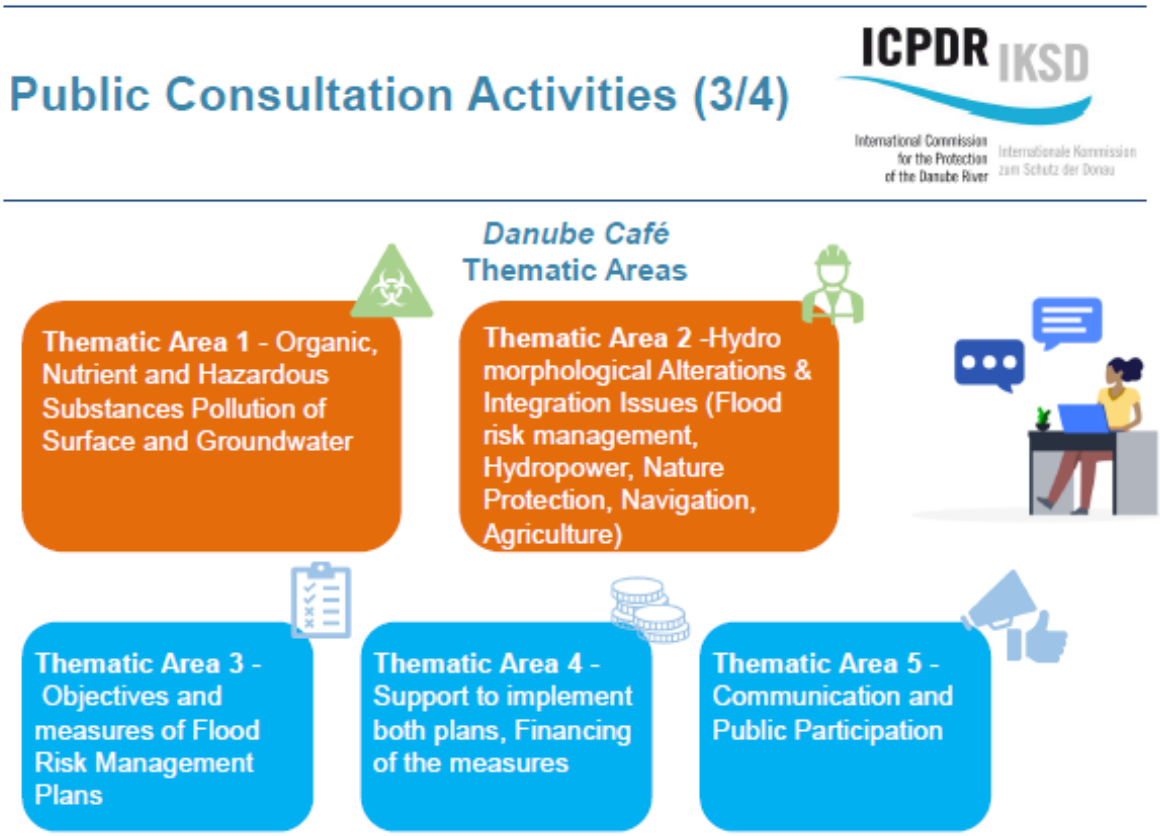
For efficient cooperation with stakeholders, it was suggested to start their involvement and maintain regular contact. Joint discussions about the project idea, the design of the technical solutions and asking for their acceptance avoid misunderstandings and conflicts. Simple and illustrative model projects can build awareness, trust and support among stakeholders and the public, and thus help overcome resistance to large-scale restoration of natural habitats. Scientists from universities and institutes can make a valuable contribution especially in project preparation, monitoring and evaluation.

The joint work builds up trust, and in addition to achieving the restoration targets of the projects, also inspired the partners and other stakeholders to initiate new restoration projects in the future. Experience from all projects underlines the importance of building good relationships and a common understanding with all partners. Clearly stated shared goals, restoration vision and project outcomes are important to put cooperation on a firm footing and avoid misunderstandings.

Building and and maintaining the motivation and ownership of the project by all partners is considered important. Adhering to deadlines and maintaining a smooth flow of information among project partners are essential. Good cooperation and positive feedback from partners and stakeholders is the best way to ensure good advocacy and promotion for river and wetland restoration. A successfully implemented restoration pilot can motivate project partners to initiate and implement further initiatives.

In cross-border cooperation, potential language barriers can lead to complications and delays. In some cases, a third language may have to be used to facilitate communication with and between partners and stakeholders. This can significantly slow interaction and require further resources as well as patience. This needs to be taken into account in planning, e.g. by including capacity and resources for translation and longer meetings and interaction.

Enabling conditions
International Commissions can address adaptation challenges by relying on observers and stakeholders. dedicated NGOs could help encourage local politicians to focus on environmental objectives.

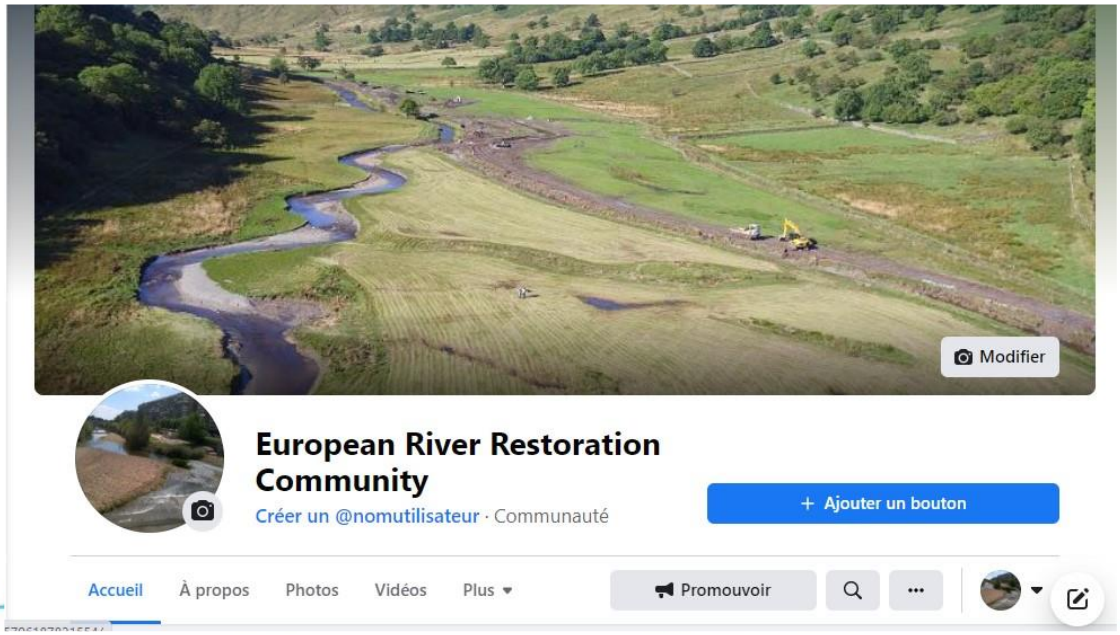


It was suggested to organize a visual conference for a few hours where people can share good practices. It is not about solving all the problems at once, but sometimes you just need to focus on one at a time. Provide the community with one problem and they can provide solutions. People tend to talk about the good stuff that is happening, what has gone well. The point of the Community of Practice, however, is to talk about things that have not gone so well, where things have been difficult.

The broad introduction of the ECRR Community of Practice ensured a greater awareness of its existence and drove the audience to think about joining the CoP as a representative of their organisation or share the possibility with network members.
Gradual involvement of youth and the introduction of new approaches leading to the recognition of the importance of youth voices in decision-making processes were promoted. Youth can act as a bridge between the society and the decision makers and influence social innovation. They provide new and creative ideas to problem solving. It was noted that decision-making bodies are not always treating young specialists as equals.

Example of communication tool

- A Facebook page where case studies are continuously shared



An improved understanding / trust can both reduce the transboundary costs and increase the transboundary benefits of public participation. Catchment officers are a catalyst on a basin to the local scale and for the individual farmer, creating incentives for implementing measures and increasing participation.

An assessment of which public participation tools are available, can help close gaps when it comes to public participation in river basins. Continued improvement of the process of planning local measurers is needed, from the transboundary to the national to the local scale.

Citizens, in a process piloted in Italy, are involved in water and flood management through monitoring water levels and providing other relevant information (e. g. the presence of flooded areas including the water height) through mobile apps, linking citizen observatories with hydrological modelling to raise awareness of flood hazards.

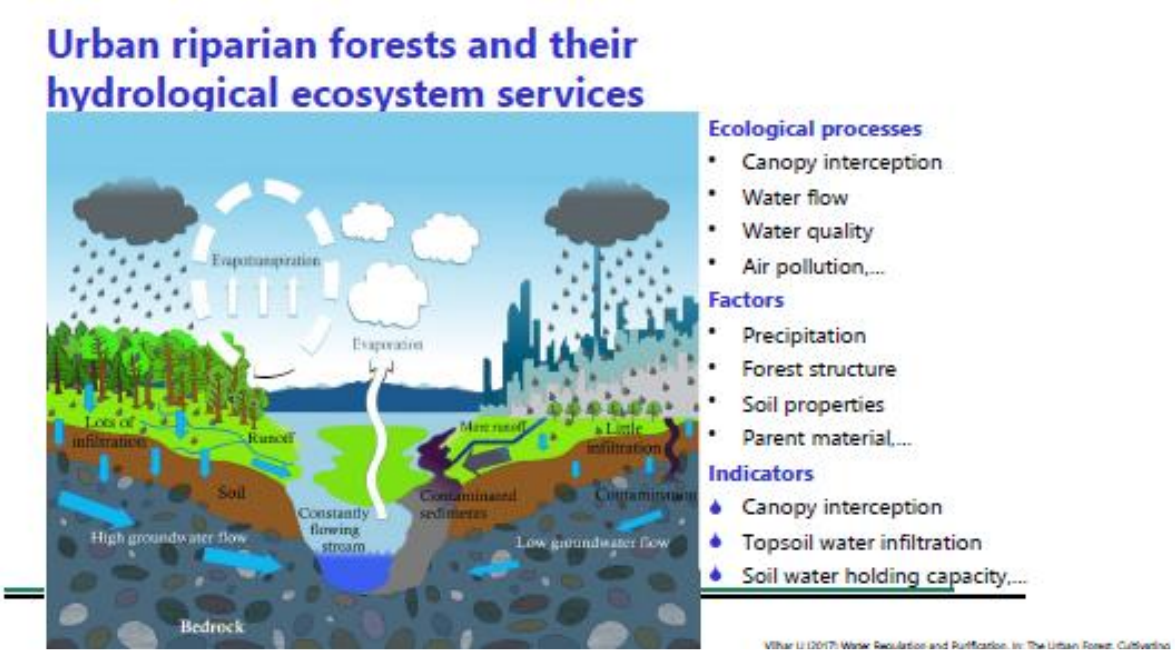
The Citizens Observatories can promote a win-win situation. They can achieve a real two-way communication between Citizens and local authorities, which is an essential component for effective participation: a continuous exchange of knowledge and experience among experts, the general public and decision-makers is necessary, to facilitate taking decisions, especially during emergency situations.

Stakeholder involvement is complex -- starting with the range of "stakeholders" that can be potentially defined and involved (from NGOs to communities to private sector) and their quite different needs and interests -- including their different levels of awareness and understanding of the importance of basin management for their own interests. This involvement though is essential.

5.5 Implementation of longitudinal and lateral connectivity

WFD implementation

There are strong linkages between actions to achieve river restoration and the reality of implementing the WFD and Biodiversity Strategy, which has the ambition to put biodiversity on a path to recovery by 2030. For Freshwater ecosystems there is the iconic target of restoring 25,000 km of free- flowing rivers by removing obsolete barriers. The goal, however, is about creating river continuity. WFD defines Good Ecological Status, looking at water bodies and everything that contributes to that, but we look less at what is adjacent, wetlands and floodplains. This linkage to these broader freshwater ecosystems is the linkage to the Biodiversity Strategy.



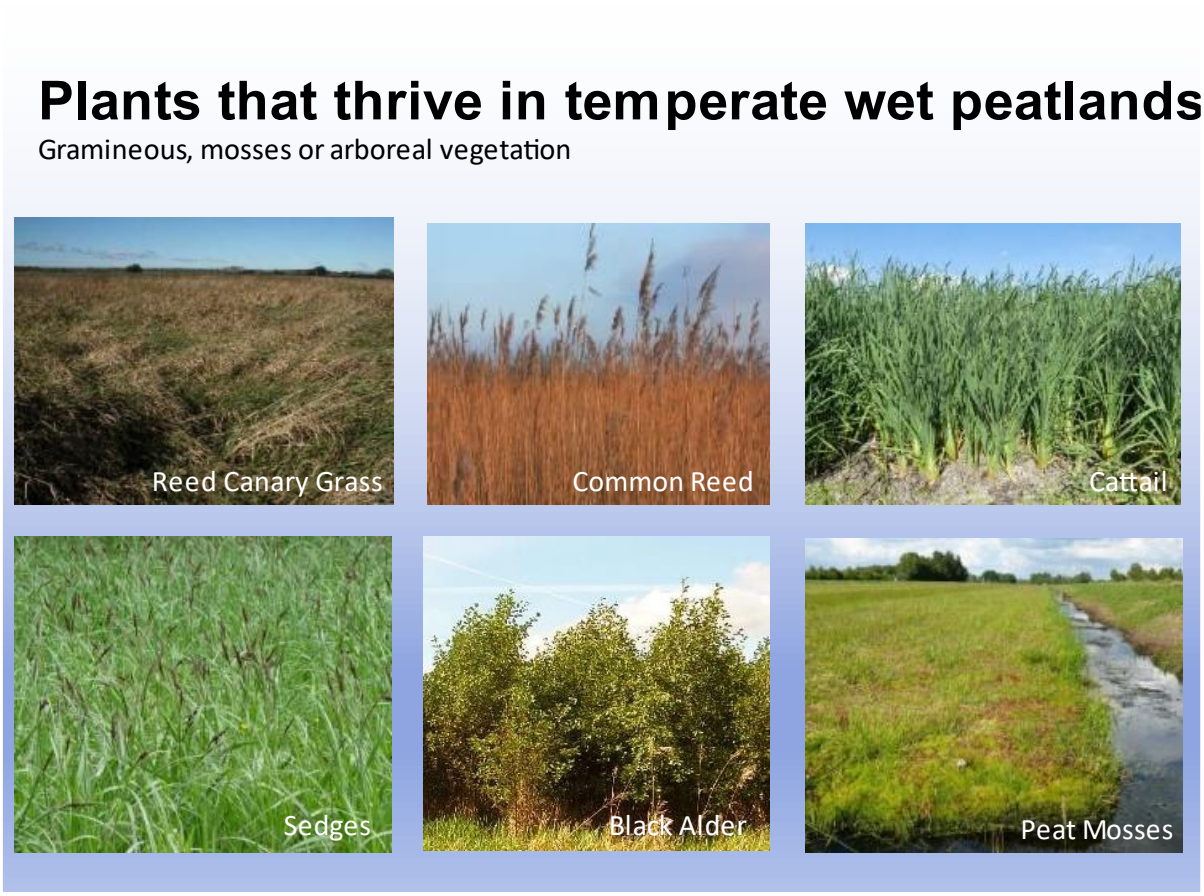
Riparian vegetation is currently marginally addressed in the EU Water Framework Directive (WFD) - within the hydro-morphological characterization. It is addressed there as playing a key role in major freshwater biophysical processes that are crucial for river status (water quality, river habitats, etc.). Riparian vegetation should be better integrated in water management frameworks to achieve WFD goals. The Green Deal encourages to develop systemic solutions to maximize synergies among EU priorities.

Member States have limited ability to successfully design and implement river continuity restoration. The problem is not a matter of techniques, it is an issue of political will and the need for cooperation between sectors. The funding is also clearly a limiting factor Lack of support at the national level for restoration means that there are often no legally binding targets being set.

Slovenia was cited by the audience as an example of a country where national level officials do not recognize river fragmentation as an important impact, preventing rivers reaching good ecological status in accordance with the WFD. Dams that are not intended for hydropower have a designated functionality: maintaining water level

The sentiment was expressed that the European Commission could be helpful in supporting integrating strategic objectives in sectoral policies, providing funding and set concrete and legally binding targets for MS. It was noted the position of the EC has not been very clear on this.

Floodplains and wetlands
The restoration of floodplains and wetlands could be better facilitated using riparian socio-ecosystems restoration and conservation because their restoration and conservation represent an effective way, in both monetary and spatial terms, of addressing several Green Deal issues in a synergetic fashion. The session provided solid evidence and motivation to do so. Mobilizing riparian vegetation as tools for better river management needs to mobilize the different actors, to determine which strategies and tools may be most effective, and how best legislation or policy might be utilized to improve European riparian systems. This should foster exchanges to enhance the creation of links between all the stakeholders concerned by riparian zones and discuss innovative solutions for the identified needs on management of riparian systems.



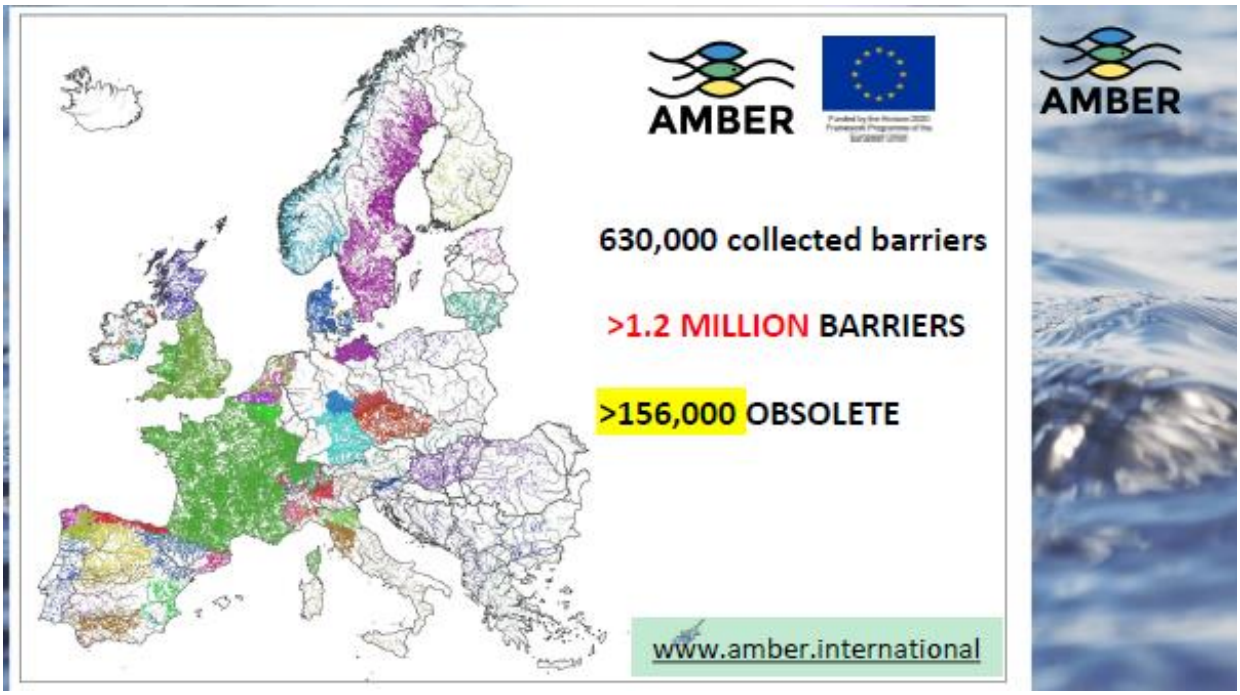
Ecologically functioning wetlands are important arteries in the hydrological cycle and therefore crucial infrastructure enabling us to fully profit from nature-based solutions for ecosystem-based restoration plans. Hydrological functions of healthy river ecosystems provide several services, such as water purification and retention, flood mitigation and water provision during drought periods that support sustainable land-use forms as a basis for circular economies, GHG emission reductions and long-term carbon storage.

Wise management of rivers and wetlands will contribute to reduction of our Carbon Footprint, bringing EU towards a net non-emission status. Restoration of floodplain wetlands will allow to improve the ecological status of rivers that will help to prevent river degradation and preserve species and ecosystems. The most up-to-date advances in integrated wetland and river management mirrors the requirements of the Green Deal. Integrated river basin management should therefore more focus on the need to obtain an overview of the wetland ecosystems in the river catchment, by assessing their degradation, prioritize those areas to be restored and estimating the restoration costs and the economic benefits thus created.

There is a strong need for a circular approach when restoring vegetated wetland buffer zones along river stretches with re-naturalized shores. Such restoration efforts should take wetland type into account and focus on the most effective areas rather than trying to establish buffer zones along all river stretches. This will substantially reduce restoration costs. This restoration concept could be developed one step further by promoting paludi-cultural activities to be undertaken to produce sustainable crops on rewetted soils.

River continuity restoration
To come to improved river continuity restoration a new and/or better institutional cooperation between the water sector and the hydropower sector on both public and private level is needed. Such a cooperation should focus on the development of a policy framework including financing, funding, guidance, education, training etc. In Slovakia a broad and intensive stakeholder participation and ownership started with a new government declaration.

In North America the benefits of hydropower generation and the costs of ecosystem degeneration are weighted against each other. The strategic prioritisation to leverage more restoration includes policies and tools that help others to quantify, justify, embrace, and expand on positive work. This includes demonstrations through which communities connected with rivers can have a better sense of human well-being; promotion of public amenities (parks, water access, historic recognition); ensuring learning of safe and efficient restoration methods; success bringing success (public & private funders); focusing where fish, birds and other nature rebound quickly; revitalized rivers attracting people and business.



Nature based solutions

To use, improve, expand and verify the currently available information new projects should be started to improve, expand and verify and further develop innovative nature based solutions for river continuity restoration by different categories.

Policymakers and planners should improve or develop the present strategies, policies and planning of river continuity restoration for each country. Consultation with other countries should also take place.

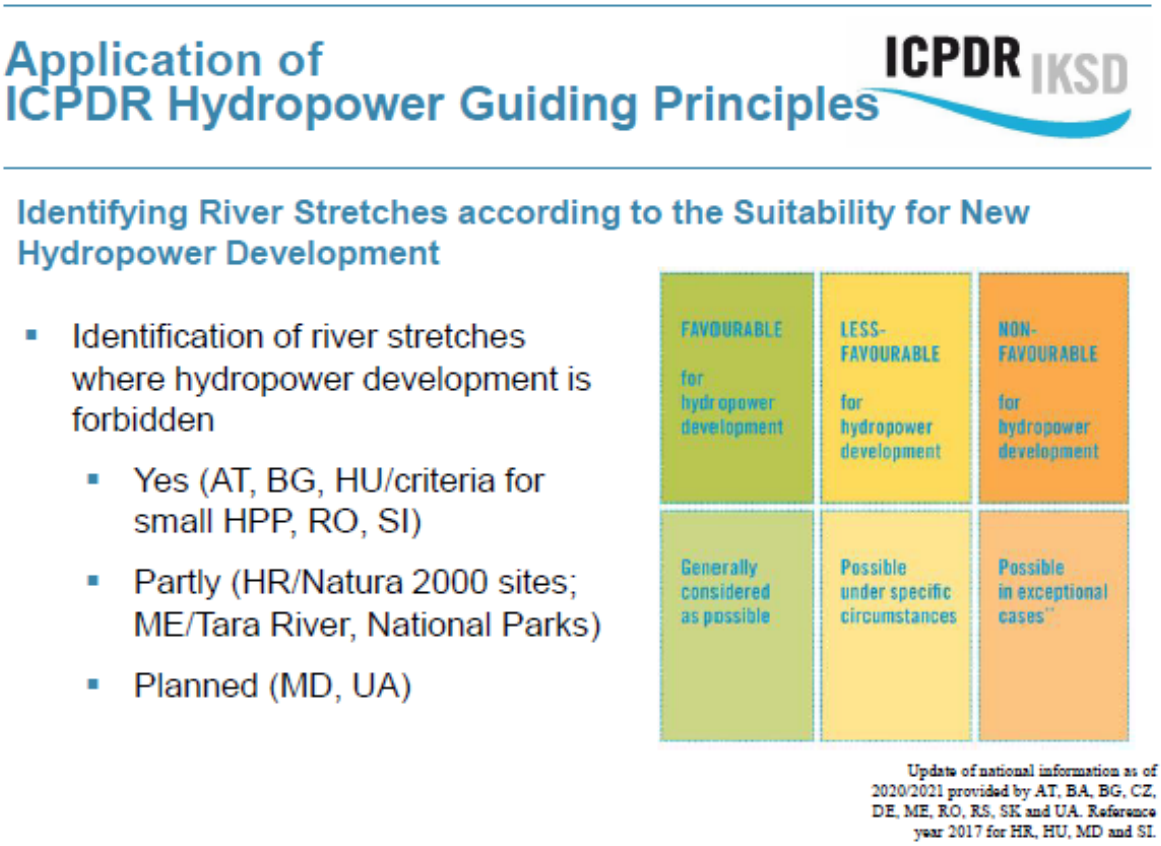
Implementers of projects should use the drivers and strategies as starting points These should therefore be clear before developing and implementing restoration programmes and projects. The effort in awareness raising should be increased locally among the general public. Stakeholders should be involved from the start and best practices should be showcased.

Researchers can contribute to improve, expand, and verify the knowledge, methodologies and techniques that are currently available and that could be developed. They can jointly investigate the scope of policies and the ability of countries to implement them. This can be done by testing and verifying the long-term outcomes of the work, better integrating existing and new science into application on the ground, monitoring the baseline and changes along the way, learning from implementation, and providing the evidence on which to help change and improve policy and decision making.

Overall, countries should have a national policy on river continuity restoration. They should have a prioritization strategy for barrier removals, and they should explore measure prioritization approaches. Countries should have a national database of their artificial barriers, but the necessity of the completeness of such a database should not be overestimated. And lastly, there are clearly significant opportunities in river continuity restoration, so national governments should have or make implementation programmes in place.

The use of all these elements will help to scale up and carry out river continuity restoration to its full potential.

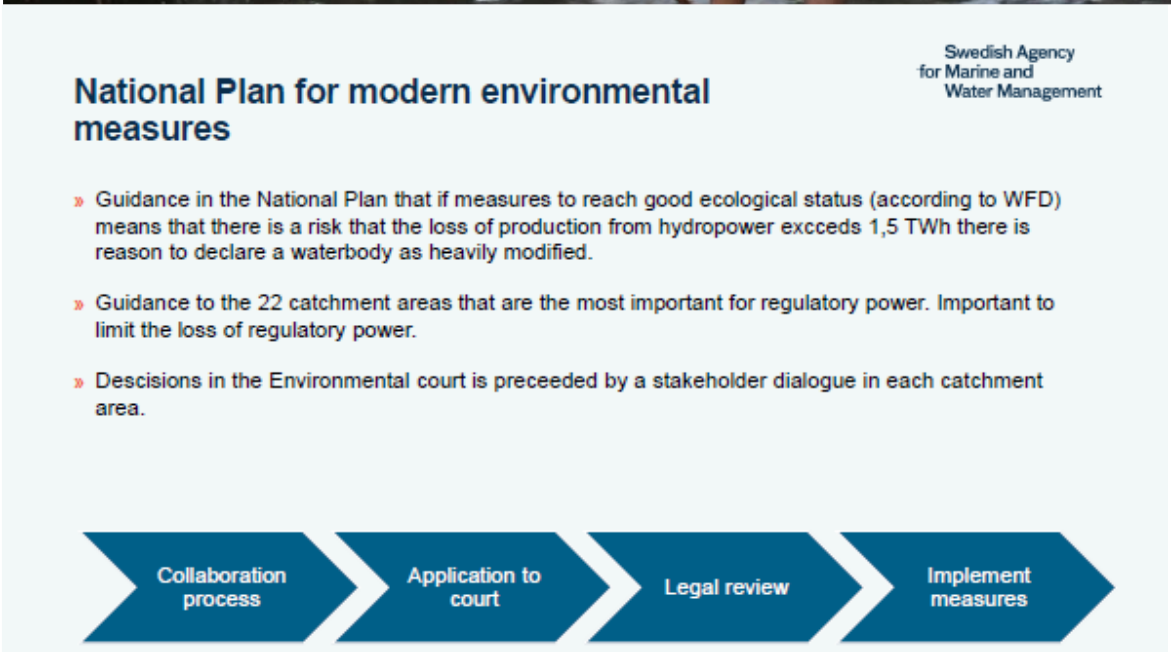
Ecological prioritization



Though the prioritization of applied measures to river barriers for river continuity restoration is not wellknown, it has been determined that three types of measures are most often applied in practice. These measures are adding fish passes, constructing barrier bypass channels and complete removal of a barrier. It is very country-dependent which measures are investigated and applied.

Various stakeholder groups can exchange with persons in other countries and in this way contribute to the decision-making process on which barrier measures to prioritize. Policymakers and planners can investigate the existing strategies and their objectives and ambitions around measures prioritization, implementers should use the drivers and strategies as starting points for the development and implementation of measure prioritization programmes and projects, and researchers can improve, expand, and verify the knowledge, methodologies, and techniques around measure prioritization. Every country should (together with the other countries) explore these measure prioritization approaches.

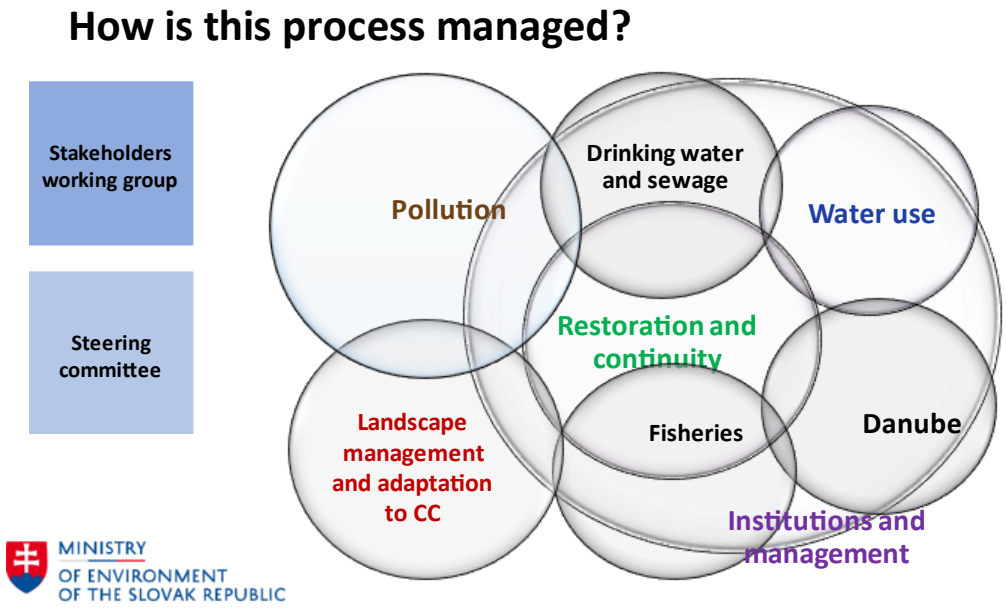
At present the idea prevails that complete removal of barriers to create the greatest amount of river kilometers to be free-flowing is the measure that should have the highest priority, after which removal of ready-to-go barriers follows. The removal of obsolete barriers and the restoration of selected river barriers such as those in protected areas are the third option. Installing by-passes, or fish passes, to the barriers with the highest ecological impact does not seem to have large support.



Enabling conditions

Partnerships

The EU Biodiversity Strategy's objective of river continuity restoration needs partnerships between different water users. Projects carried out have demonstrated that such actions can benefit many diverse users. Moreover, it is very important that the implementation of this type of river restoration measures are in accordance with the water framework directive and national legislation. Therefore, the EC should devise strategies in a coherent manner, pulling the sectors in the same direction, for example energy, and mobility of navigation. It is, however, needed that we explain better why to restore river continuity and what are possible technical solutions and with many stakeholders to restore functionality.

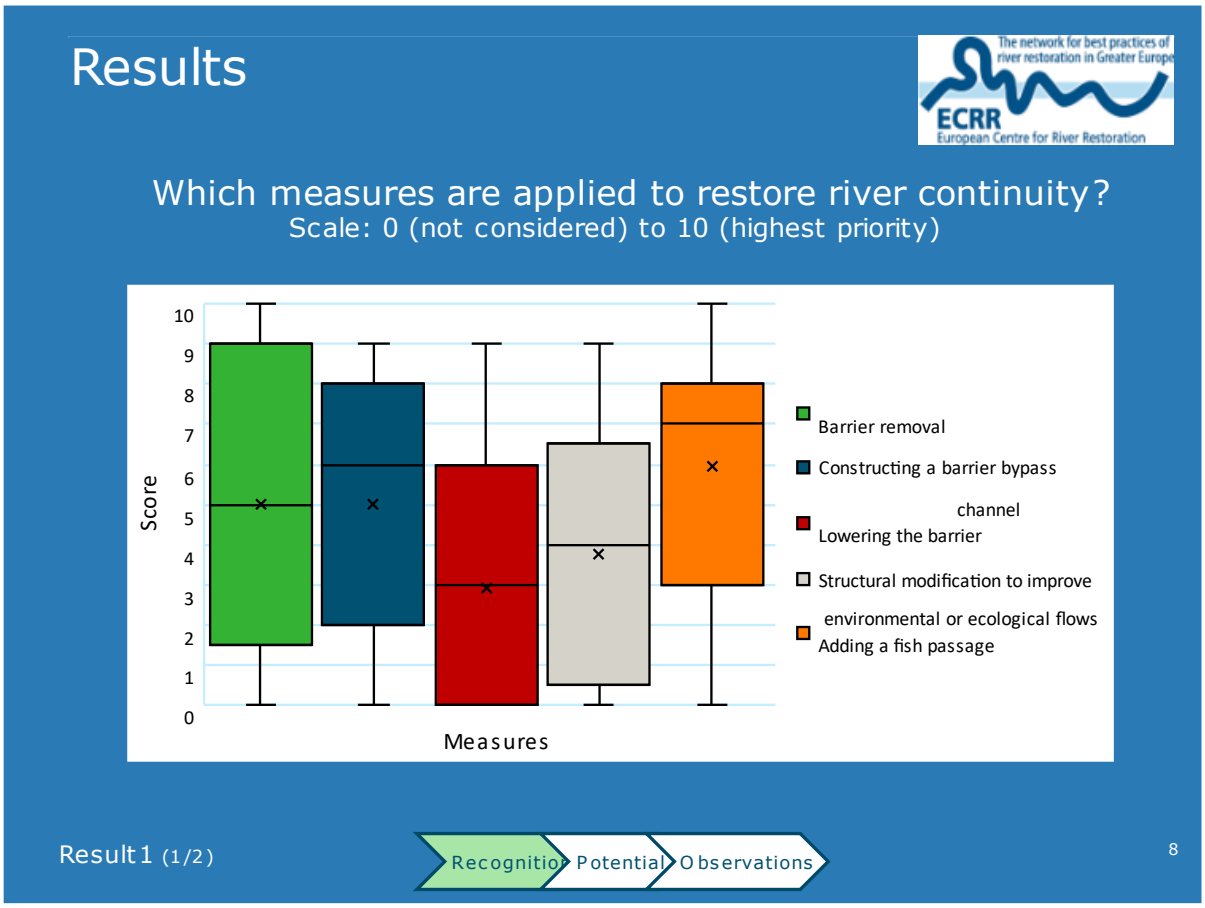


Scientists and river managers have a different view of the riparian areas such as floodplains and wetlands. The latter are more concerned with practical issues, while the former dedicate their attention to the functioning and the relationship among processes and entities. Even more different is the view of policy and law makers whose view of riparian systems needs to accommodate societal needs such as public safety and economic development. The three views are not necessarily in contrast, they are simply different because there are different objectives of the three groups. However, the lack of alignment between views negatively affects the communication and the potential support these groups provide to each other. The challenges to overcome the miss alignment is to create concrete solutions that are based on new partnerships and by more and improved communications between the different interest groups.

Moreover, for improving the lateral connectivity there is the need for increased cooperation between professionals of different sectors, disciplines and faculties, i.e. scientific studies need to

analyse agricultural practices and their effects on local economies and the environment. Ultimately, such inter-sectoral cooperation will lead to sustainable development that provides benefits for specific floodplain and river biodiversity, allows nutrient and pollutant removal from groundwater and river surface waters, improves water retention capacities in floodplain wetlands which are relevant for the entire water catchment basin, an allows different stakeholders to develop a true ownership of common sustainability projects.

For improving the longitudinal connectivity, the communication between the three target audiences (policymakers & planners, implementers, and researchers), should keep improving. Direct collaboration and involvement are necessary to further progress the river restoration. Knowledge organizations and the civil society can combine forces to mobilize people to use their influence.



It was encouraged that NGOs, Academics and local enthusiasts ensure that river continuity restoration is high on the political agenda. all the tools available should be used. Exchange of information across national borders was seen as a potential way to find solutions. Building bridges between policy makers and academics was also encouraged.

Resources

Development and implementation of an EC strategy based on the new paradigm and principles of river restoration requires cooperation and funding across public and private actors and with the involvement of the academia and NGOs. Moreover, institutional solutions are needed for dam

removal, and that data management and data gaps are also important. Practitioners need tools, knowledge, and policies to make a change. Often a main problem cited is that local politics redirects funding to other sectors rather than river restoration and there is not a good collaboration between different actors toward river restoration targets.

Estimating the financial needs for a particular wetland restoration programme and assessing alternative methods that could substantially reduce costs, notably when providing nature-based solutions, is becoming a priority need. This is needed to convince investors, that wetland-based solutions are better in the long term. The acknowledgment of the need to restore wetlands to improve the quality of river water and floodplains is just at its beginning and needs to be brought to other audiences beyond the usual dedicated environmental specialists. This requires increased communication and outreach that creates more political support.

In North America, connectivity projects start with collecting data to assess barriers, after which tools for barrier prioritization are developed to use the data effectively. Policies that require permitting and require dam liability exist. Finance mechanisms include public and private funds to support dam removal.

Experience to date has shown that official processes like securing relevant environmental and water permits for removal can take a long time. Involving relevant authorities, planning offices and ministries in project development can help avoid later delays and complications.

In cross-border cooperation, potential language barriers can lead to complications and delays. In some cases, a third language may have to be used to facilitate communication with and between partners and stakeholders. This can significantly slow interaction and require further resources as well as patience. This needs to be taken into account in planning, e.g., by including capacity and resources for translation and longer meetings and interaction.

Legal and administrative procedures, including environmental and water permits, can vary significantly between countries and may be difficult to harmonize, potentially leading to significant delays. Anticipate such cases by including significant buffers of time into the implementation plan.

Capacity development
The EC will submit guidance on how to realize continuity and restoration and will take into consideration input from stakeholders and sectors. Financing is also important and there are many opportunities to restore river continuity, such as the fisheries funds. A guidance doc will provide EU level financing options. The Nature Restoration Law to be proposed this year, will set out how continuity targets can be achieved by legal means – beyond obligations under WFD, removing lateral and longitudinal barriers.

The network: Dam Removal Europe – set up by the World Fish Migration Foundation was presented and participants encouraged to join. This network is promoting dam removals all over Europe to increase the fish migration possibilities.

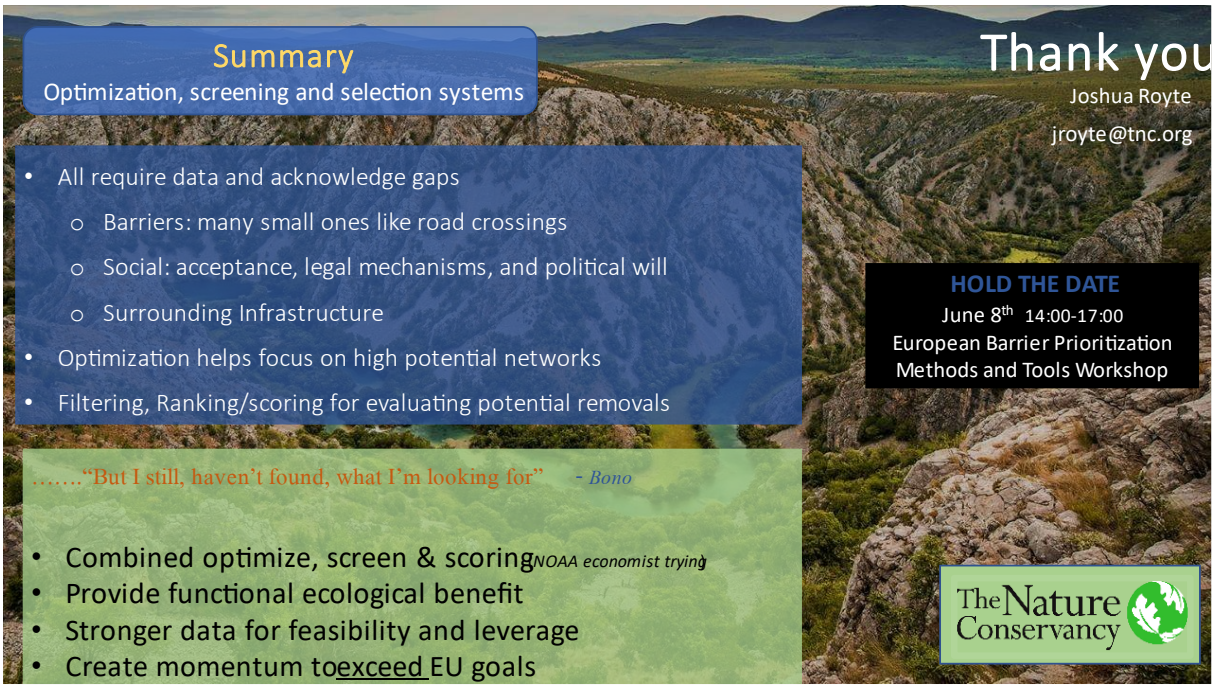
A live interview at the site of a weir in the UK was held as part of the session. It was explained that communication and engagement with the local communities is fundamental to be able to achieve the objectives of gaining approval to take the weir down. In the early days a local community engagement plan was formed and adopted, which has been successful but difficult in 2020 due to Covid restrictions. Objections are confined to a small number of people who actually live along the riverbanks who do not want to see change from the weir removal.

A prioritization (GIS) tool that is currently in development in Slovenia by The Nature Conservancy includes an interactive platform for diverse user groups and covers the number of barriers up- and downstream, the number of dams to the ocean, the number of kilometers to connect upstream, the overall number of kilometers (basin potential), the habitat for key species, and the proximity to protected areas.

Knowledge
The economic aspects of dam removal should be documented, and the results of these studies should be further disseminated.

Despite the efforts by OFB, Water agencies, migratory fish trusts, conflicts are still existing with water mill owners and hydropower industries. To avoid these it was suggested to improve reconciliation of economic, renewable energy targets and ecological interests.

European-wide there is a lack of allocation of finances to support these efforts and other challenges that are inhibiting efforts. ,



The session identified a number of key issues:

- In North America there is cultural attachment to dams and impoundments. This makes it harder to remove a barrier, due to the lack of local or national will power, and the growing need to avoid and protect against:
- Need for guiding policy
- Lack of technical expertise
- Misunderstanding of risks and true costs
- Lack of predictable funding mechanisms
- Pressure for new hydropower
- Bias/hidden costs in hydropower economics
- Potential impact of invasive species spreading
- Excessive sediment and potential contaminants
- Prioritization starts with a broad set of potential projects, 1 out of 10 or 20 may be implemented and can take up to 5-10 years..

The audience also identified other factors and questions:

- The need to prevent new dams.
- Measures to ensure that "restored" rivers will remain restored, and no further fragmentation will happen?
- In Europe there are plans for at least 9,000 new dams. These should be stopped as a threat to European biodiversity.
- How is it possible to stop river exploitation from small hydropower plants construction in rivers which are Natura 2000 sites?

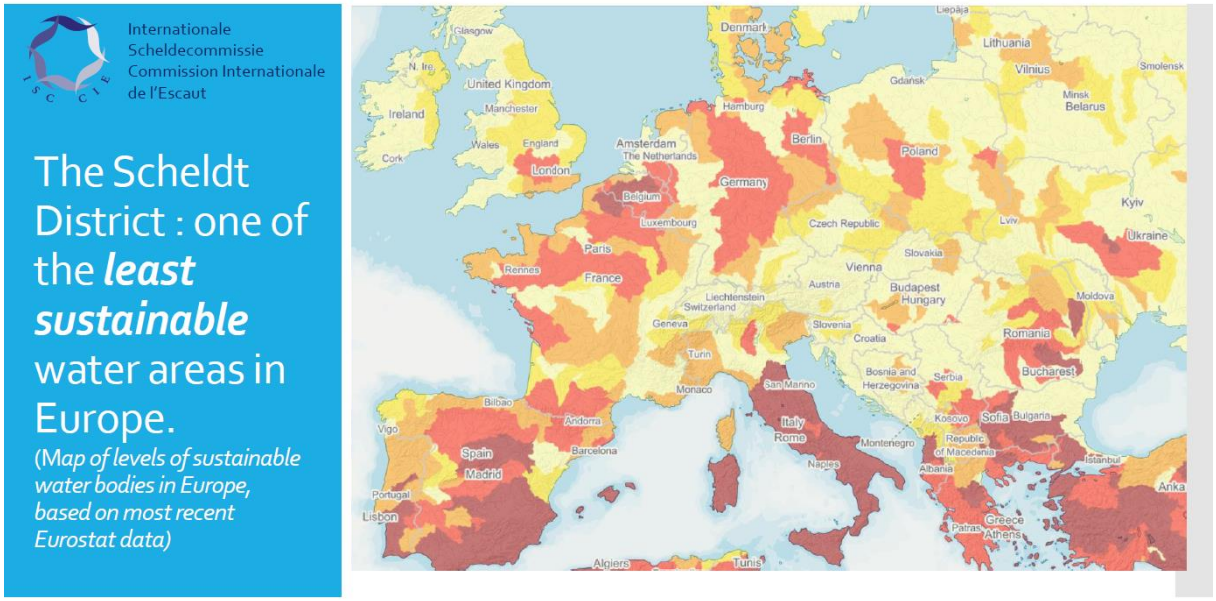
- The large rivers are the backbones of biodiversity corridors and cannot be achieved only by the restoration of small obsolete barriers.
- Reconnecting rivers to flood plains is a further priority and more difficult to implement than removing obsolete barriers.

5.6 Basin level cooperation and management

International River Basin Commissions

Role

Basin organizations play a key role in institutionalizing cooperation and therewith ensuring that benefits of cooperation are generated and shared across riparian areas. To fulfil this important role in ensuring sustainable and cooperative management of shared basins, basin organizations need to be designed appropriately, enabling them to become key custodians of the basin, and to bring together necessary stakeholders and sectors.



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Institutionalized cooperation provides benefits beyond simple commitment to cooperation and ensures agreement on water resources management principles, joint vision, RBMPs, etc. It serves to regularly exchange on (possibly contested) issues, exchange of data and information and provides availability of governance mechanisms.

The potentially prominent role of International River Basin Commissions communicating and coordinating on the EU 2030 Biodiversity Strategy would most certainly be of interest and importance, i.e., helping Member States plan/deliver coherently on this awfully specific target across borders – especially when talking about prioritization of restoration action, for example, for cumulative river continuity.

Assisting countries and stakeholders

In basins with functioning international river commissions, countries and stakeholders can conduct a sound estimation of where to target measures most effectively at the basin-wide scale, e.g., by an ecological prioritisation of measures to restore river and habitat continuity in the basin. The ecological prioritisation approach provides indications on a stepwise scale and guarantees efficient implementation of restoration measures at the basin-wide scale. The ecological prioritisation approach represents an important component for River Basin Management Planning and constitutes an important basis for discussions on measures addressing river and habitat continuity interruptions within the Joint Programmes of Measures (JPM) in the periodical RBM plan updates developed under the EU WFD. Such an approach provides useful information on the estimated effects of the national measures in relation to their ecological effectiveness and could serve as a supportive tool for future measure implementation.

Science, stakeholders and observers, key ingredients for successful river restoration?
A combination of sound, coordinated scientific programs or campaigns, underpinned with full engagement from active stakeholders, are key prerequisites for the sound development of highly demanding but realistic RBM plans, which in addition to bringing the countries towards the EUWFD goal of reaching good ecological status, support broader environmental objectives on river restoration and/or conservation.

Making use of parallel application of traditional biological assessment techniques and modern molecular methods has demonstrated the large potential of DNA and environmental DNA-based approaches for biodiversity and WFD ecological status class assessments. Such programs/campaigns provide an opportunity for harmonization and training in WFD-related monitoring and cover information gaps for the RBM planning and parallel application & comparison of classical and new monitoring techniques for WFD assessment.

Adaptation to climate change
Adaptation plans and key measures

In a survey of the participants 70 % have basin adaptation plans in their basin. 57 % of all participants use green adaptation measures including e. g. natural water retention measure and nature-based solutions like wetlands preservation. Soft adaptation measures are applied by 27 % covering governance, knowledge, and the coordination of policies. The final 16 % utilises grey adaptation measures comprising e. g. infrastructures such as flood retention basins to mitigate flood events.

Cooperation and planning
Cooperation and solidarity within a river basin are essential for achieving the WFD objectives, because downstream riparians depend on upstream riparians and vice versa. E. g. salmon/pass ability and water pollution and floods. In addition, the water availability must be coordinated. Priority schemes are needed in times of scarcity (e. g. drinking water first, irrigation water lower priority).

The public must stand behind the intentions of policies. There must be cooperation with the local level. It is not possible to work without the local people. The actual decision for a river basin must happen across borders, as funding is needed from the states together i.e., flood warning and monitoring systems need to be transboundary, too (e. g. low water monitoring of the Rhine).

Aligning policies is difficult, especially because the four-year term of most governments inhibits long term thinking. The needed support/acceptance of the public and the duration of realisation related to climate change adaptation need to last for 10-20 years. We must start now with integrated

projects/policies and make the public understand and trust/accept what we/river basin organisations do.

Resilience

River ‘personality’.

Rivers have different ‘personalities’, reflecting their unique geology and landscape topography, geography, culture, political governance structures (transboundary, different environmental laws) and economics that shape each river and associated human communities. By defining different river personalities, various strengths and weaknesses can be identified which can lead to tailored recommendations for different rivers. Resilience has traditionally been the ability of a system to resist change and then recover from disturbances. The pace of change has been accelerating and the almost constant disturbance regimes that rivers are facing has created a need for a new type of resilience.

A new way of thinking

Resilience is considered as the capacity of a river system and its associated communities to quickly recover from disturbances, adapt to changes without collapsing, and to transform through innovation and implementation of resilience strategies. The key to the Resilient Rivers Blueprint is to map out a path toward river resilience, regardless of where you are on the resilient rivers journey. There are various strategies and actions that can be employed to build river resilience. The resilience attributes that have been identified as being essential for building river resilience include:
Geography, history, culture and economics, all of which serve to shape each river basin and community into their distinct entities. But there are some universal relationships that exist between people and rivers which are based on the uses that people derive from rivers and the river aspects that people desire. People use rivers for conveyance, water sources, sewage disposal, and drainage. People also desire rivers to be healthy, to support lifestyles and ultimately to be resilient.

Water users and water quality
Water quality improving progress.
Data from WFD River Basin Management Plans and the River Commissions show that in the last decade good progress has been made, but there is still a lot to do. Even though there is quite some progress the status of the water bodies does not always change to the better when control of pollution is in place – this often because a particular parameter remains problematic. It was highlighted with the analogy of going to the doctor and finding that one ailment was addressed and got better, but other issues persist, - in total you are still not in a good shape.

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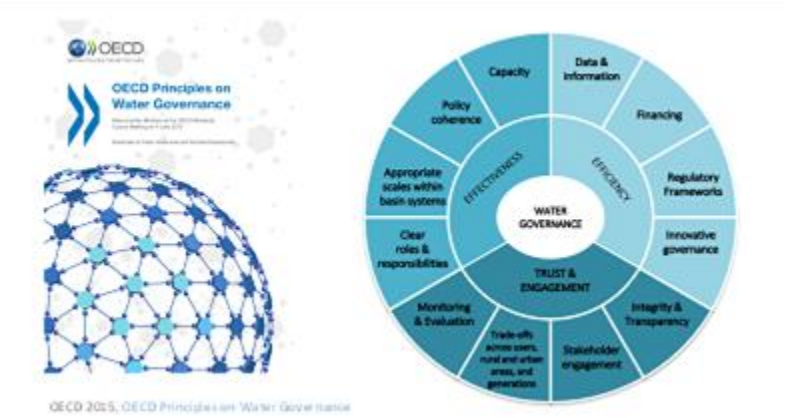
OECD Principles on Water Governance



It was noted that there are also different perspectives and challenges with contaminants. Some chemicals are not yet identified or cannot be accurately measured and their consequences accounted for. Many effects are therefore not yet understood due to unavailable data or because they are not necessarily in the scope of the WFD yet. Many water quality concerns are also linked to the problems of hydro-morphology in addition to direct pollution.

Cooperation models
Positive examples of NBS (Nature Based Solutions) have been realized with multiple partners. These examples have demonstrated multiple benefits and proven economical in protecting or improving water quality. These models can serve as inspiration and models for other actors working together – i.e. upstream farms and cities. Partnership like the European River Memorandum were also identified as useful. The Memorandum involves the Waterworks organizations of various European rivers, representing 180 million Europeans.

Partnership between water interests and organic farming and the food retail industry were suggested as potentially beneficial. Cooperation can achieve highlighting cost reduction and pollution reduction, improvement of quality of soil. River managers and industry must come together for landscape compatible farming: flood compatible, nutrient recycling. Improvements in water quality

and economic improvement for farmers have been shown in several cases (less use of expensive pesticides and nutrients).

All actors, need to come together - private and public sectors and civil society to achieve progress. . There is a need for places to talk openly as all perspectives must be considered. An important forum for this dialogue is provided by the River Commissions.

There are many perspectives and ideas out there on how to mitigate water quality issues (NBS), but also dissemination of information and raising issues (water works, civil society organizations) are helpful. Industry representatives pointed out that everyone wants and needs chemicals (cleaning agents, food additives, hygiene and disinfectants, pharmaceuticals, plant protection, electromobility) including chemicals for plant protection. It was noted, however, that they are often applied incorrectly and therefore dangerous substances and their metabolites end up in the system.

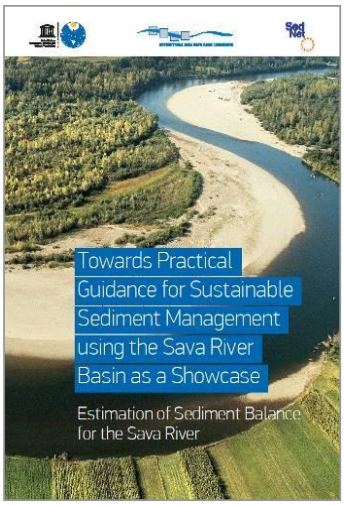
Already the conference showed though that silos between operators and environmentalists etc. can be merged. Exchange between actors can only be beneficial and conflicts need to be addressed and discussed and should not happen within silos as this does not lead to a solution.

The need for collaboration should always highlighted – all stakeholders need to be involved. .

Enabling conditions
Partnerships
For better success programs or projects that are initiated need not only to take water resources into account but also associated resources such as land, energy, biodiversity etc. This also needs to happen on a transboundary basin level. It is important to build on existing approaches of river restoration and flood management in the countries where they are already being funded. However, the challenge remains to integrate other policy sectors apart from the environmental sector: this includes agriculture, transportation, homeland security, economy, education, public health into RBM planning. Will other Ministers apart from the Ministers for the Environment care about the decisions of the River Commission? This question remained unanswered, and an issue of longer-term concern.

It was deemed to facilitate exchange regarding approaches as NBS, Biodiversity, Chemicals, Agriculture and actively addressing burning issues with constructive dialogue. Showcasing case studies from farm scale to landscape scale and involving all relevant actors – can help show the economic benefit of needed measures (less cost for fertilizers, increase product acceptance)

INTERNATIONAL SAVA RIVER BASIN COMMISSION



Towards Practical Guidance for Sustainable Sediment Management using the Sava River Basin as a Showcase

- **Objective:** To develop and validate practical guidance to achieve SSM plan on the river basin scale
- **Partners**: UNESCO Venice Office, UNESCO ISI, SedNet and ISRBC
- **Outcomes:**
  - ✓ Practical SSM course;
  - ✓ Practical guidance (document) on how to achieve SSM plan;
  - ✓ Draft implementing program for development of Sava SSM plan;
  - ✓ Draft project fiches for different modules of Sava SSM plan ;
  - ✓ Overview of monitoring and sampling gaps and data uncertainties;
  - ✓ Estimation of a sediment balance for the S ava RB;
  - ✓ Proposal for the establishment of an effective sediment monitoring system.

Recognition should exist of unifying principle of a secure water supply for everyone. As the view on security is challenged, many unknowns (chemicals, effect on human and biodiversity health) are identified. Barriers between stakeholders need to be broken down. Mitigation action is good, but prevention is better.

Resources
Political support is strong for climate change adaptation, but it often overlooks adaptation in the water sector - even though water is where the most impacts of climate change are felt by society (droughts, floods, heavy rain).

Despite the limited mandate and resources of an international commission, the commission is able to address adaptation challenges by relying on observers and stakeholders.

Interactive tools to assist in generating support and interest were presented (i.e. River Resilience Tool, River personalities). These are tools that aim to engage stakeholders and stimulate their interest. These tools provide opportunities to leap-frog progress and tick-up stakeholders from where there stand.

Two instruments

Programme "Rhine 2040"

https://www.iksr.org/en/icpr/rhine2040

Masterplan Migratory Fish

https://www.iksr.org/de/themen/oekologie/pflanzen-und-tiere/fische/wanderfische

Objective: ecological continuity for migratory fish upstream & downstream
(Rhine + water bodies defined by masterplan)

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There is a dire need of a significant increase in the need for protection of drinking water resources particularly from pollution from agriculture, industry and households. This is needed to be able to guarantee a supply of clean and safe drinking water in the future. Predictions show a twofold shortage of clean drinking water due to climate change. We therefore expect EU Member States, the European Parliament, and the Commission as well as polluters to support the European Green Deal particularly the Zero-Pollution Action Plan and its Chemicals Strategy for Sustainability jointly fully as well as a redirection of EU's agricultural policy (CAP) in the upcoming period 2021-2027 to secure clean and safe drinking water supply.

Public authorities often lack the staff they need to achieve the goals set by politicians. Political will alone is not enough, the financial and human resources must also be made available. River basin organisations need sustainable funding from the member states. Constant engagement from national experts in working groups/expert groups of river basin organisations is crucial.

Capacity development.

Recognition is required of the ultimate goal - even though the situation gets better the status may not be “good”. Communities and engaged stakeholders need to find pathways to keep the motivation up and counter fatigue behaviors.

It was suggested that the chemical industry needs to provide stronger guidance on the use of their products (e.g., agriculture chemicals), and ensure efficient and effective knowledge transfer/communication for audiences who often are under a lot of socio-economic pressure. Similarly, water works should support initiatives like the European River Memorandum to highlight issues across basins and built awareness and capacity to manage and finance actions.

Maintaining strong monitoring networks is essential. There are and will always be uncertainties, and effective monitoring can provide a robust basis to act. Better communication and broader synergies between adaptation and restoration policies can also be relevant assets to achieve the objectives of the WFD and the good ecological status of our rivers. The urgency of taking political decisions and taking measures (action – timing – budget).

Ensuring that the next generation has the tools and platforms to engage and taken on board to tackle accelerating issues. There are no one-size-fits-all solutions. There are opportunities to build up IRF efforts with regional events such as the ERS and a tailored European prize with specific consideration of European context, i.e., WFD.

Knowledge
Chemical Pollution Iceberg: 1 single substance can be enough to make drinking water unsafe for human consumption. There is a multitude of emerging substances, many identified and many unknowns including persistent substances that keep accumulating.
Pesticide and their metabolites present a particular challenge. It is not feasible to trace thousands of substances so targeted testing is often impossible.
Gap of interaction based on knowledge often occurs because of siloed perspectives and approaches. It needs all stakeholders on the table with a willingness to listen to and hear about other perspectives. Only then can we start a dialogue.

From the audience
It was agreed that there are legal frameworks for flood management (EU Flood Directive), but not for drought/low water management. Examples, exist, however, where local water utilities have been helpful, leading or supporting to river basin efforts to create climate resilience measures.

Young qualified and passionate people with different backgrounds and interdisciplinary teams are a recipe for success. The contribution of youth, however, are often not taken as serious as they should.

In any dialogue or event like this it is essential that a special session involving and getting the perspective of youth/young professionals takes place because new windows on the issues can be opened.

In Europe, 'Resilience' is not yet commonly used as an expression. The concept works and is compatible with the new European Green deal. Europe should provide content and submit cases to support the development of the IRF Resilient River tools.

Group picture of the online European River Symposium 2021.

6. Deliverables

Session	Deliverables
1: How can the EU Biodiversity Strategy help achieve the Water Framework Directive objectives, and vice-versa?	Presentations of the case studies made available in PDF format to the registered participants (through an email thanking them for their participation), and online for further dissemination. Policy recommendations drawn from the speakers' presentations & exchanges with the audience, and synthesized in this Reporting sheet, once completed. Dissemination of key background documentations addressing the issue of the session: ● The Handbook of INBO / GWP / OiEau / ONEMA (former name of the French Biodiversity Office) "Management and restoration of aquatic ecosystems in river and lake basins" (March 2015) ● The Nature Conservancy report "Resilient European Cities: nature-based solutions for clean water" (December 2020) ● The Wetlands International European Association report "Time for a new recipe for flood risk management in Europe" (December 2020) ● The report of Wetlands International–European Association and Italian Centre for River Restoration on "Successes of EU Water Framework Directive implementation: Evidence of river restoration measures improving ecological conditions" (March 2019) ● Beyond river continuity restoration, river continuity conservation is equally important! On this topic, there is also the report of The Nature Conservancy and Living Rivers Foundation: "Legal Protection Schemes for Free-Flowing Rivers in Europe" (December 2019)
2: Adaptation to climate change: the interest of basin management planning	Presentations of the case studies made available in PDF format to the registered participants (through an email thanking them for their participation), and online for further dissemination. Policy recommendations drawn from the speakers' presentations & exchanges with the audience, and synthesized in this Reporting sheet, once completed. Dissemination of key background documentations addressing the issue of the session: ● The Handbook of UNECE and INBO on "Water and Climate Change Adaptation in Transboundary Basins: Lessons Learned and Good Practices (March 2015) ● The Handbook of the World Bank, African Development Bank, UNECE and INBO on "Financing Climate Change Adaptation in Transboundary Basins: Preparing Bankable Projects" (January 2019) ● The UNECE Guidance on Water and Adaptation to Climate Change (October 2019) ● The Implementation Guide of UNDRR and UNECE "Words into Action Guidelines Implementation Guide for Addressing Water-Related Disasters and Transboundary Cooperation" (October 2018) ● The ICPR "Strategy for the IRBD Rhine for adapting to climate change"

	● The ICPR presentation "Transboundary cooperation in the Rhine river basin" ● The ICPR "Rhine 2040" programme (February 2020) ● The ICPR assessment of "Rhine 2020" (February 2020) ● The ICPDR Danube Climate Change Adaptation Study (2018) ● The ICPDR Update of the ICPDR Strategy on Adaptation to Climate Change (December 2018)
3: Sharing basins, sharing destinies: international river commissions	Narrative conference report Conference statements Conference report
4: The future of water: young water specialists and decision making	Narrative conference report Conference statements Conference conclusions and recommendations
5: What will it take to restore European freshwater bodies? Promising pathways for financing	Demonstrative case studies: we brought examples of landscape scale/ blended finance approaches – across the spectrum of the different interventions on rivers (i.e. river restoration, river protection, catchment-level interventions). During the session, we highlighted relevant examples from Europe and its neighbors, where innovative approaches to pool funding streams together and develop investable (or bankable) projects have been developed and could provide inspiration for others. Conference conclusions and recommendations: the session content adds to the conference report by stating and focusing on the need to call for European actors to define transparent and coordinated funding mobilization strategies in order to meet the WFD and other related EU directives and policies, particularly the EU Biodiversity Strategy and the Climate Adaptation Strategy.
6: Successful river management: the importance of stakeholder involvement	Narrative conference report Conference statements Conference conclusions and recommendations
7: How to enhance riparian and floodplain vegetation management by research, practice, and policy?	Narrative conference report Conference statement Conference report
8: Restoring wetlands to improve river status	*Assessment and spatial planning for peatland conservation and restoration in the Neman River basin (Michael Manton, Lithuania):* The catchment basin of this lowland river is shared between Lithuania and Belarus, with small additional parts in Poland and Russia (Kaliningrad). It is one of the few basins with an exhaustive wetland inventory and a recent analysis available. Most of the wetlands form peat soils, mainly fens, with some additional transition mires and raised bogs. As in many catchments, individual wetlands are often disintegrated and patchily distributed. Land-use patterns differ between the catchment countries: They left larger wetland sites in Belarus, but only small patches in Lithuania. All Lithuanian wetlands are impacted by drainage. In Belarus, only the wetlands along the Berezina River are not impacted. The remaining wetlands in Poland are all protected (including by EU Directives) and

	cover areas in their respective catchment basins, that are much larger than the 17% Aichi target for Protected Areas established by the Biodiversity Convention, or the more ambitious 30% goal of the recent EU Green Deal. Gap analyses of the wetland inventories in the four countries allow to identify the restoration priorities for specific wetland ecosystems (overall 35,000 ha). They are completed by an economic analysis showing the costs of the restoration measures (overall 70 million EUR) and the benefits that will likely be created for water purification, nitrogen and phosphorus removal and long-term carbon storage (20 million EUR/year). Even without accounting for additional biodiversity benefits, the estimations show, that the costs of restoration would be entirely covered by their benefits already after 3.5 years. *Circular economy approach to river pollution from agricultural nutrients using carbon-storing ecosystems (Wiktor Kotowski, Poland):* The main source of lowland river water pollution are agricultural runoffs. To prevent polluted water to enter the river, restoring vegetated wetland buffer zones along re-established natural riverbanks in the floodplain is a cost-effective means to reduce non-point nutrient loads in river water. The upper Narew River catchment in Poland (covering 5% of the country's surface) was used to calculate the costs of upscaling local wetland restoration efforts to the entire river catchment. Creating wetland buffer zones along the upper Narew and along all its tributaries would significantly reduce nitrogen and phosphorus loads in the river water and cost about 170 million EUR. However, this programme could be improved by targeting the restoration efforts to the most relevant floodplain wetlands on mineral soils and oxbows only, and by rewetting specifically selected riverine fens (covering together about 90,000 ha). Such a targeted programme would reduce N and P about half as much as the larger programme covering all river stretches but would cost only 5% (9 million EUR) of the comprehensive programme. Public authorities and private investors are much more likely to support such targeted restoration programmes with limited costs and assured benefits. *Palu-diculture and rivers (Wendelin Wichtmann, Germany):* In lowland river floodplains, peat accumulating fens do not only remove nutrients and pollutants from the river water but produce also significant amounts of biomass. Such fens can be protected and left to evolve according to natural patterns, providing habitat for biodiversity. However, in many areas formerly used for agriculture or forestry, rewetting drained fens can create new ecosystem services and assures renewed accumulation of dead plant material as peat, i.e. providing a long-term carbon sink. Agriculture on drained floodplain peatlands requires a paradigm shift from drained to managed wetlands. Different commercially exploitable plants grow well in rewetted floodplains. Reed, cattail, canary grass, sedges, alder trees and peat mosses can be cultivated in formerly degraded peatlands. Such paludi-culture plots on peatlands in northern Germany showed nitrogen emission reduced ba a factor of 12 compared to drained, intensively used grasslands. Nowadays the technical machineries exist to harvest paludi-cultural crops from rewetted plots for roofing, constructions, mats, information material, fodder, biogas production, food, medicinal use.
9: Challenges in reaching healthy rivers and sustainable hydropower	Narrative conference report which briefly describes the situation in Norway, Sweden, Austria and the Danube and describes similarities and differences in the re-examination of hydropower.

	Norway and Sweden are planning a joint conference on measures and reconsideration of hydropower in June 2022. There will be a continuation of the cooperation during the symposium. *Guidance documents:* Sweden is planning a translation into English of our plan for reconsideration of hydropower. This is to better disseminate information within Europe.
10: Developing policy and planning of river continuity restoration in greater Europe	*ECRR Special newsletter:* A report of the session as an article in an issue of the ECRR Technical Newsletter: elaboration on the project and its results, to be distributed over ECRR's network *Contribution to the overall conference report:* Summary of the session with the feedback, questions, and discussions from the session as guiding theme. *Extended partnership between the ECRR, SYKE, OFB, Slovak Ministry of Environment, TNC, WFMF (and all participating organizations who filled out the river continuity survey for their country):* During the fulfilment of the project, many organizations have contributed to the answers of the survey. Afterwards, the ECRR and the co-organizing organizations can fall back on these participating organizations for any follow-up activities and required information and actions.
11: Lifelines: A two decade journey of the International River Foundation and the International River Prize	To expose the ERS audience to IRF and our associated programs. To engage the ERS audience with the 1000+ Resilient Rivers initiative and the International River Symposium. To engage the ERS audience in interacting with the Resilient Rivers self-assessment tools and the Resilient Rivers Hub.
12: Water users and water quality: cooperation to achieve improvement	Clear Statement of the Status of Water Quality in Europe. The WFD provides a clear basis for interpreting the status of water quality and this shows that the goals established will not be met by 2027. Documentation of good examples of cooperation in improving water quality and in particular the use of NBS. Suggestions for building relations and strengthening the cooperation to achieve water quality improvement.
13: Sustainable agriculture and water management: towards new synergies	Session's main outcomes (from the presentations, the poll, the recommendations, and the exchanges): 2-3 pages, on the basis of the INBO outcomes examples. Case studies: a focus on some CS to illustrate our session (including use of NBS, stakeholders' cooperation): <u>Upscaling natural small water retention measures (NSWRM)</u> In the mid-2010s, GWP started advancing NSWRM through demonstration projects, knowledge products and building partnerships. Framwat project (2017 – 2020), developed and implemented with partners under the leadership of Warsaw University of Life Sciences, has been an important milestone in this work. Framwat aimed to strengthen the regional common framework for floods, droughts and pollution mitigation by increasing the buffer capacity of the landscape through NSWRM. Supported by INTERREG's Central Europe Programme, the project developed new tools (GIS based tool for assessment of needs and possibilities, Excel based tool for comparison of different variants of catchment development and Decision Support System),

	methodologies and guidelines, supported preparation of Concept Plans in pilot basins, engaged stakeholders and decision makers. The synthesis guidelines, developed by GWP, bring together the learnings for the project and aim to address knowledge gaps and issues relating to the integration of water retention measures into river basin management plans. Learnings from this work show that the development of green solutions requires leadership, supportive policies, knowledge and capacity development, and appropriate measures to manage the potential footprint on agricultural land – hence the particular importance of embedding such measures in the CAP. Water stewardship implementation: Iberesparragal (Spain) Iberesparragal is a citrus farm of close to 200 hectares located about 20 kms north-west of Sevilla, in the Guadalquivir River basin, in south-west Spain. The farm is owned by the Spanish company, *Iberhanse-NaturGreen*, which promotes environmentally friendly agricultural practices. The farm supplies oranges and mandarins to the German retailer, EDEKA, which has, in collaboration with WWF, showed its leadership in water stewardship. The farm chose to implement the AWS Standard and was certified 'Gold' in June 2018. The farm is in a nitrate vulnerable zone. As part of its water stewardship plan, the farm has reduced its use of nitrate fertilisers in 2019 and 2020 by 23.3% to 3.26kg of nitrates per hectare and tonne of produce. Pesticide use by the farm was reduced from 2019 to 2020 by 11.85%. The water consumption at Iberesparragal farm was reduced by 52.96% in 2019, including control of the following parameters: pressure, flow. The farm has turned 30 hectares of citrus into a biological reserve to encourage biodiversity, while at the same time focusing water use on the citrus production in other areas of the farm. The AWS Standard has provided a framework to identify and engage key stakeholders in the catchment - other farmers, the catchment authority, public agencies. Miguel Hidalgo, Operations Manager at the farm, said "*We had little idea about the catchment we are in, its water balance, quality, stakeholders and the impact to and from our activity in the farm. The Zitrus Project and AWS implementation provided us a valuable knowledge and understanding on the catchment context we didn't have before."* The benefits of water stewardship have included: increased capacity (on water use, biological pest control, biodiversity management); dialogue and collaboration with other farmers; a more resilient farm; and strengthened commercial links with EDEKA: a sustained series of supply contracts ensuring these oranges and mandarins are brought to customers. Main messages from the session, including 1 or 2 quotes: - New European strategies (European Green Deal, new CAP) offer opportunities towards more environmental ambition. *"There is an opportunity that these CAP plans have been more ambitious than previous".* "*We have a huge opportunity, and it is down to the Member States to actually use it".* (Leanne Roche, DG ENV) - One of the main important elements to reach a sustainable agriculture preserving water is the cooperation between stakeholders of water and agriculture sectors. "*Key issue is to establish a proper cooperation and partnership with agriculture, so that the water management and agriculture policies can be better aligned*" (Adam Kovacs, ICPDR).

	"*The business side that Peter has brought in with this water stewardship is also very important and another avenue that we can really explore*" (Leanne Roche, DG ENV). - NWRM are a great way to address multiple challenges. "*There is a strong potential to upscale the NWRM [...], in Europe these are totally aligned with many different European objectives and instruments including the WFD, the Green Deal, the Biodiversity strategy, the environmental objectives of the CAP and the Farm to Fork strategy*" (Julienne Roux, GWP).
14: Participatory basin management: how to do it & why it matters!	Presentations of the case studies made available in PDF format to the registered participants (through an email thanking them for their participation), and online for further dissemination. Policy recommendations drawn from the speakers' presentations & exchanges with the audience, and synthesized in this Reporting sheet, once completed. Dissemination of key background documentations addressing the issue of the session: ● The Handbook of INBO, AFB (former name of the OFB), OiEau and the Brazilian Network of Basin Organizations on "Participation of Stakeholders and the Civil Society in the Basins of Rivers, Lakes and Aquifers" (March 2018) ● The ICPDR "WFD & FD Public Participation Plan" (December 2018) ● The Handbook of the FP7 Bewater project "Developing participatory adaptation plans for river basins" (2016) ● The report of the French Ministry of Environment and French Basin councils presenting "French river basin committees: governance and participatory implementation of water policy" (2015) ● The ICPDR has a questionnaire for public participation (WFD + FD) on their website. This is also a good example of a deliverable.
Side Event 1: ECRR's overall strategy development and revival of the European river restoration Community of Practitioners	ECRR discussion note on the ECRR Association Strategy ECRR discussion note on the CoP development in relation to its focus Contribution to the Newsletter Conference (narrative) report.
Side Event 2: Restoring rivers and wetlands at scale. Lessons from the multi-sectoral Living Danube Partnership	Expert publication about the key lessons learnt of the 9 restoration projects running under the Living Danube Partnership. Short summary video about the Living Danube Programme. Brief presentation of the 9 restoration projects through a Google Earth Application.