The importance of River Basin Management Plans in Europe - Cooperation in the Danube River Basin

LIFE Platform Meeting

LIFE SIPs Implementing RBM Plan Practices

Focus on the Water Resilience Strategy

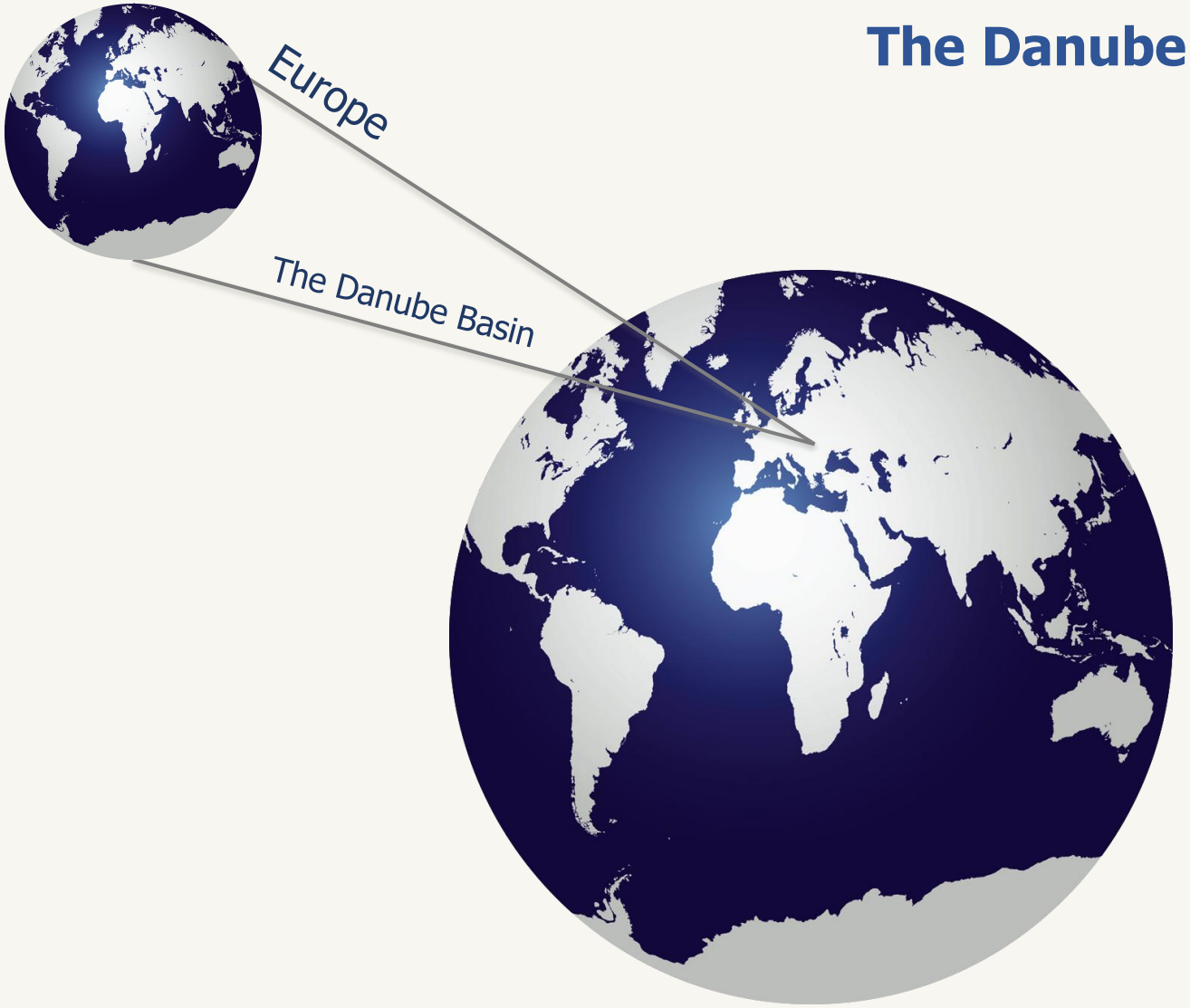
14 - 15 October 2025

Brussles / Belgium

Birgit VOGEL

ICPDR Executive Secretary

This meeting is organised by



The Danube is one of Europe's most important river

Lifeline for people and countries

Ecological richness & biodiversity

Danube has always been a connector between countries and with the Black Sea – S2S

International cooperation plays a key role in the DRB

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Danube River Basin

- 800.000 km²
- 10% of surface Continental Europe
- 19 countries
- 79 million people
- Variation of different needs of countries across the DRB
- Heterogeneity between
  - countries and on level of (cross-border) micro-regions
  - economic powerhouses of capital cities versus remote, rural areas

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Danube River Protection Convention

1991 - Environmental Programme for the Danube River

Danube River Protection Convention

- signed 29 June 1994, Sofia (Bulgaria)
- enforced in October 1998

30 YEARS OF ACTION FOR A CLEANER, HEALTHIER, AND SAFER DANUBE
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1998/99 ICPDR established - Secretariat in place

- Based on UNECE Water Convention
- DRPC = overall legal instrument for co-operation on transboundary water management in the DRB
- Applies to countries with territories of more than 2000 km² within the Danube Basin

Protection of water & ecological resources

Sustainable & equitable use of water

Reduce nutrients & hazardous substances

Manage floods & ice hazards

Challenges and Basin-Wide Activities

Transnational Monitoring

Climate Change Strategy

Greener Navigation

Tailings Management

Stakeholder Involvement/
Public Participation

Joint Danube Survey

Accident Warning System

Sustainable Hydropower

Sustainable Agriculture

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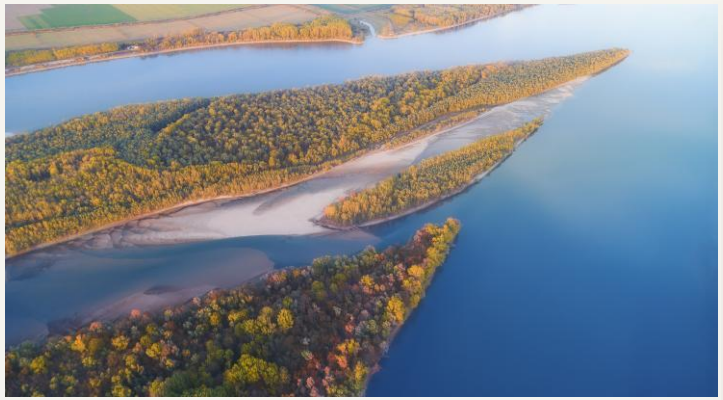
Basin-Wide RBM Management Approaches and Tools



2021 / 3rd Edition

4th DRBM Plan 2027 underway

2021 / 2nd Edition

4th DRMP Plan 2027 underway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Danube Declaration 2022

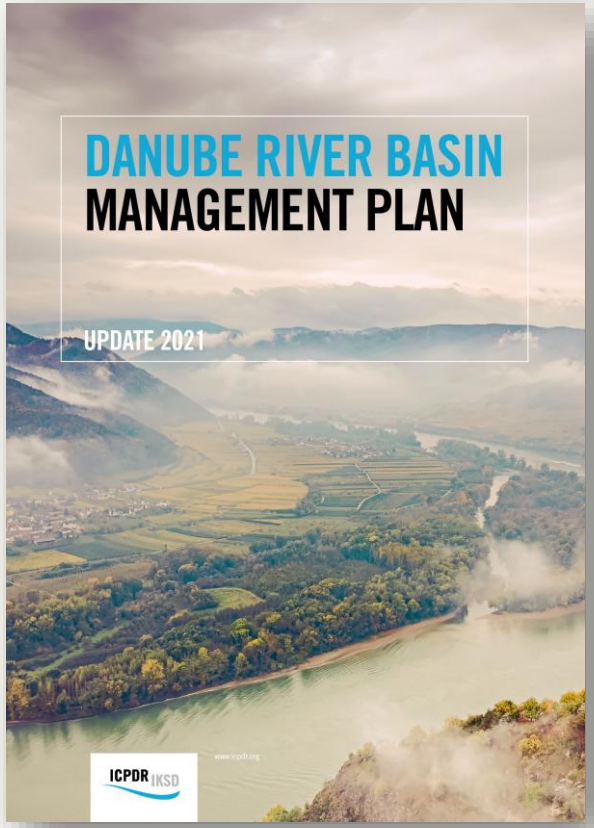
On 8 February 2022, in Vienna, the ICPDR convened its 4th Ministerial Meeting of Ministers and high-level representatives responsible for water management from the 14 Danube River Basin countries (Austria, Bosnia and Herzegovina, Bulgaria, Croatia, the Czech Republic, Germany, Hungary, Montenegro, the Republic of Moldova, Romania, Serbia, Slovakia, Slovenia, Ukraine) as well as the European Commission.

This Ministerial Meeting endorsed two essential plans for the Danube: the updated Danube River Basin Management and Danube Flood Risk Management Plans. The meeting also adopted the 2022 Danube Declaration, which shows the highest level of commitment for the ICPDR concerning its future work to address the Danube basin's shared challenges.

Danube Declaration – Let us explain!

Every six years, a new and updated 'Danube Declaration' is signed and adopted by the ICPDR countries, updating, and extending the objectives and direction of travel for the Danube River Basin (DRB). It's a vital part of strengthening the ICPDR's goals for improving and maintaining the DRB.

5 Significant Water Management Issues



Organic Pollution

Nutrient Pollution

Hazardous Subst Pollution

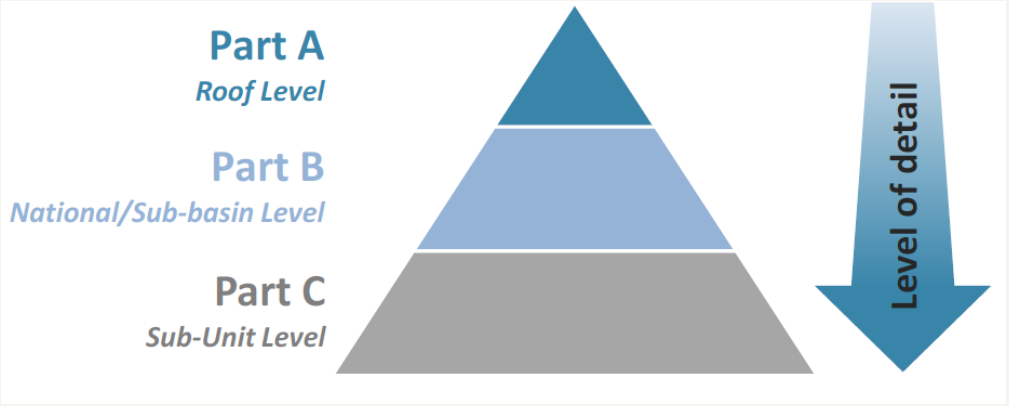
Hydromorphological Alterations

Effects of Climate Change (drought, water scarcity, extreme hydrological phenomena and other impacts)

Effects of Climate Change as Significant Water Management Issue

- Relates significantly to water resilience
- Understand pressures/impacts on water resources
- Consider affected water uses in the DRB / understand possible competition over water

Coordination Mechanism for Cooperation



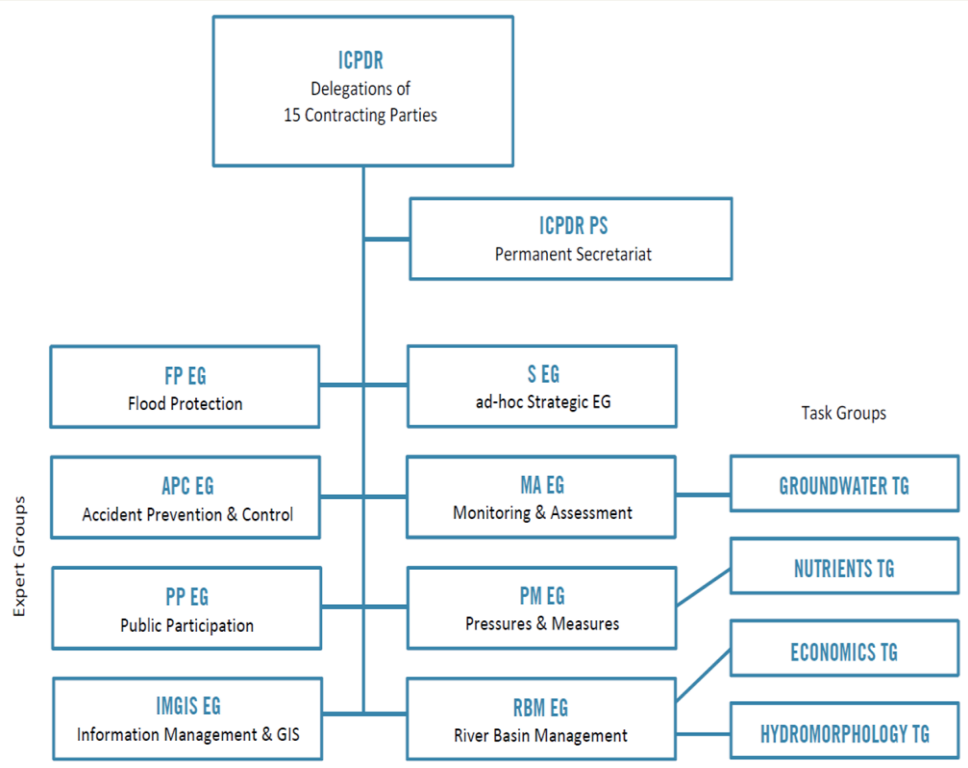
Three coordination levels for WFD RBM

Part A International, **basin-wide level** - the roof level (**ICPDR**)

Part B **National level** and/or the internationally coordinated sub-basin level

Part C **Sub-unit level**, defined as management units within the national territory

Coordination of work via Expert & Taks Groups



Transforming Alterations into Good Status through Monitoring

Monitoring, sharing information and warning system were first joint actions in the DRB <u>also protecting Black Sea</u>

- This is unusual and not the same in most river basins

- **1993:** Design of Transnational Monitoring Network
- **1996:** Transnational Monitoring Network is in operation
- **2001:** First Joint Danube Survey (2007, 2013, 2019, **2025**)

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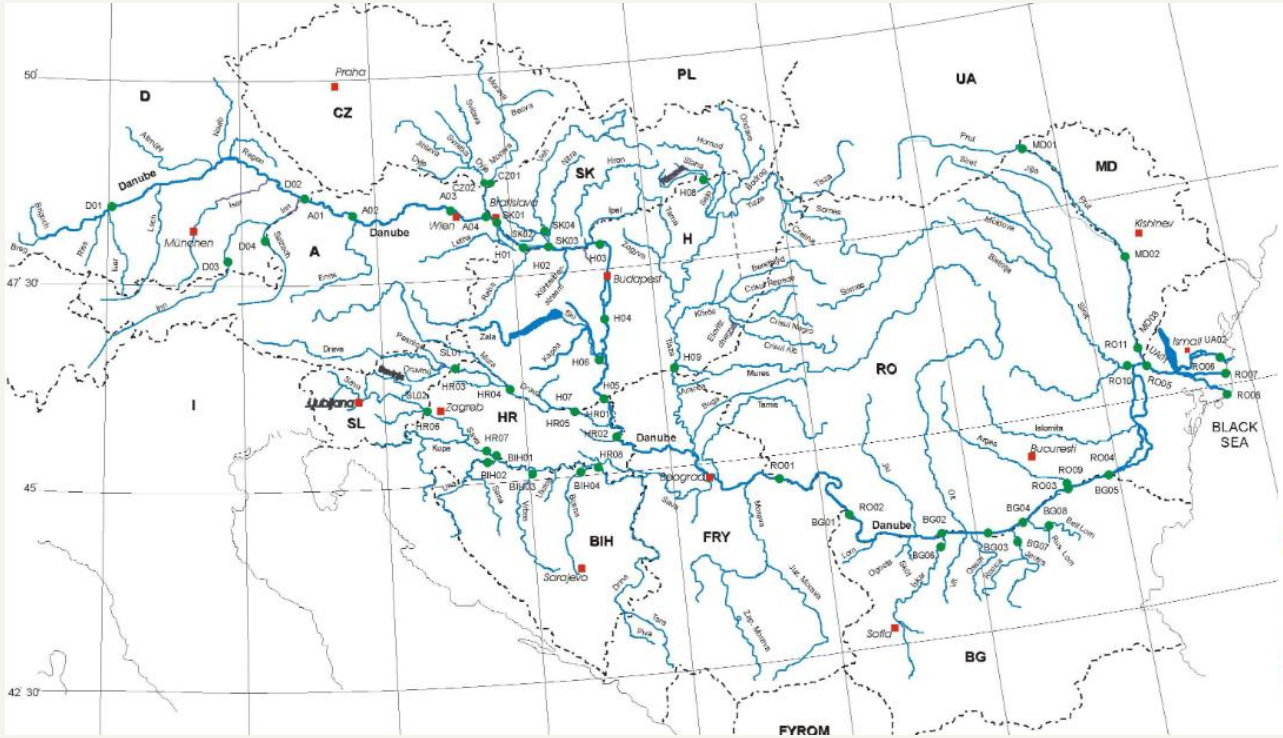
Transnational Monitoring Network

1996: Initial Transnational Monitoring Network

- 61 sampling sites

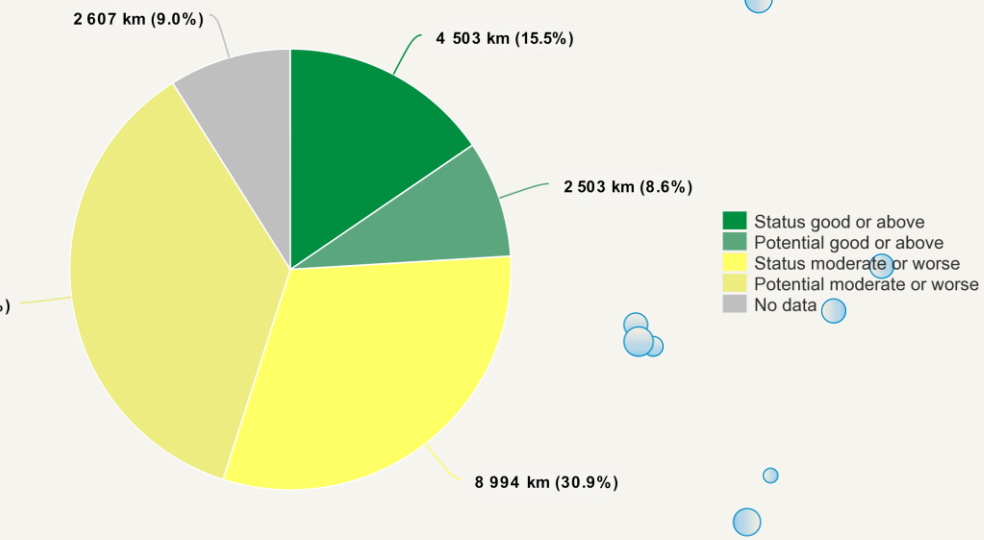


2007: EU WFD Transnational Monitoring Network

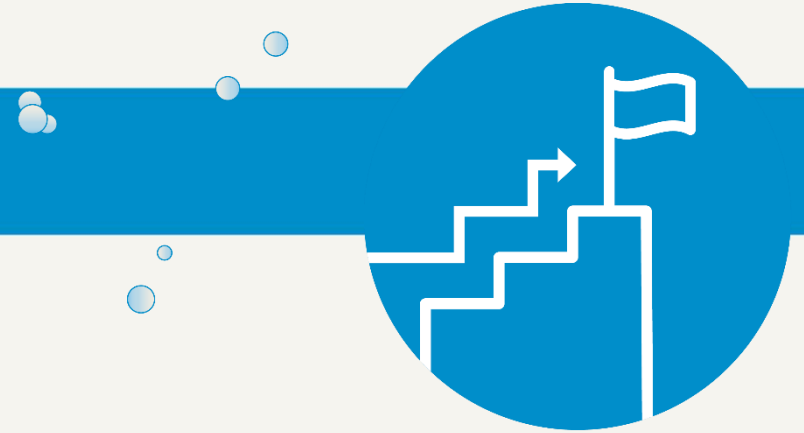
- 101 sampling sites

Assessing Good Water Status based on Monitoring

Ecological status & potential: 2021



Source to Sea Approach in the Danube River Basin



Memorandum of Understanding on cooperation with the Black Sea Commission

2015 Slovenian Presidency's priority

- Enhancing cooperation »From source to Sea«: DRB/Black Sea/Mediterranean to reduce pressure on large marine ecosystem

Slovenian and ICPDR presence at the UN Ocean Conference (Nice, June 2025)

- Ministerial Declaration: "Ministers welcome progress towards a Source-to-Sea approach in the Danube River Basin, the Black Sea and the Mediterranean supporting the implementation of SDG 6 and SDG 14."
- Joint activities are planned including climate change adaptation towards resilience

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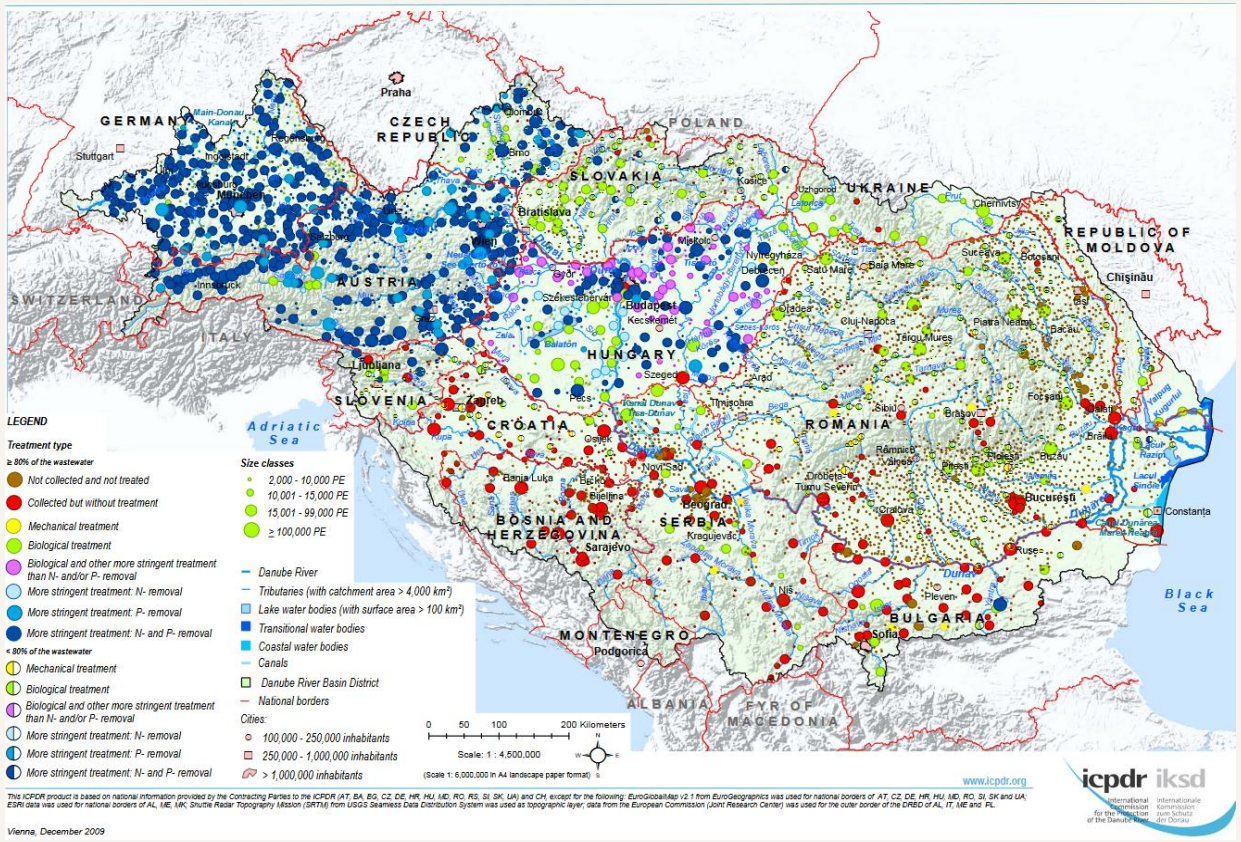
Improving Basin-Wide Wastewater Treatment & Water Status

- 60% organic emission
28 € billion investment

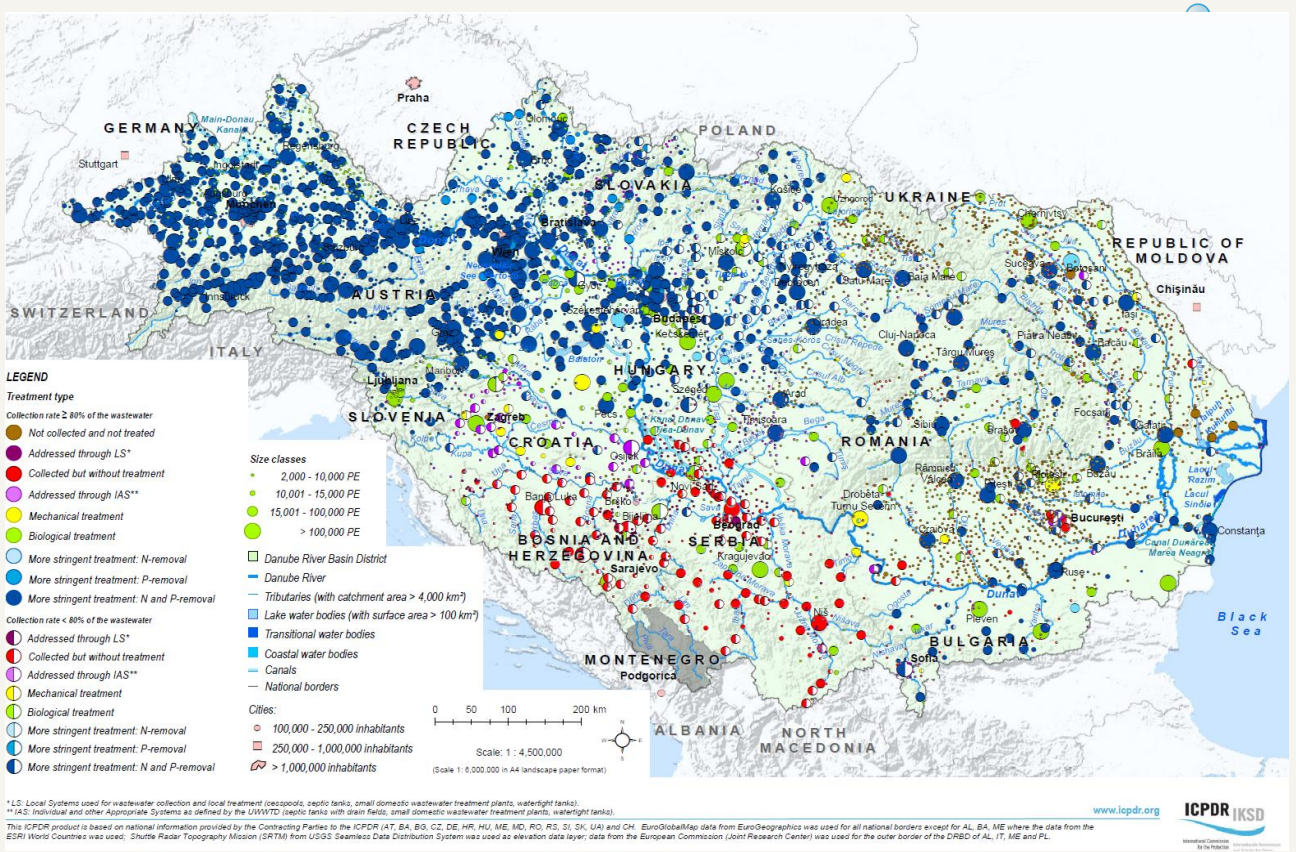
- 30% nitrogen emissions

- 50% phosphorous emissions

Urban Wastewater Treatment: 2009



Urban Wastewater Treatment: 2021



Linking DRB Cooperation Action to the Water Resilience Strategy

Ensure a secure water supply despite climate change and other pressures by improving water management, restoring the water cycle, and ensuring access to clean water

- Restore the water cycle: Focus on protecting and restoring the natural water cycle, which is the foundation for a sustainable water supply.
- Ensure clean and affordable water: Guarantee access to clean and affordable water and sanitation for all, and empower citizens to be more water-resilient.
- Build a "water-smart" economy: Foster a competitive water industry by improving water management, which can drive innovation and support business.

How can international River Commissions and their cooperation actions contribute?

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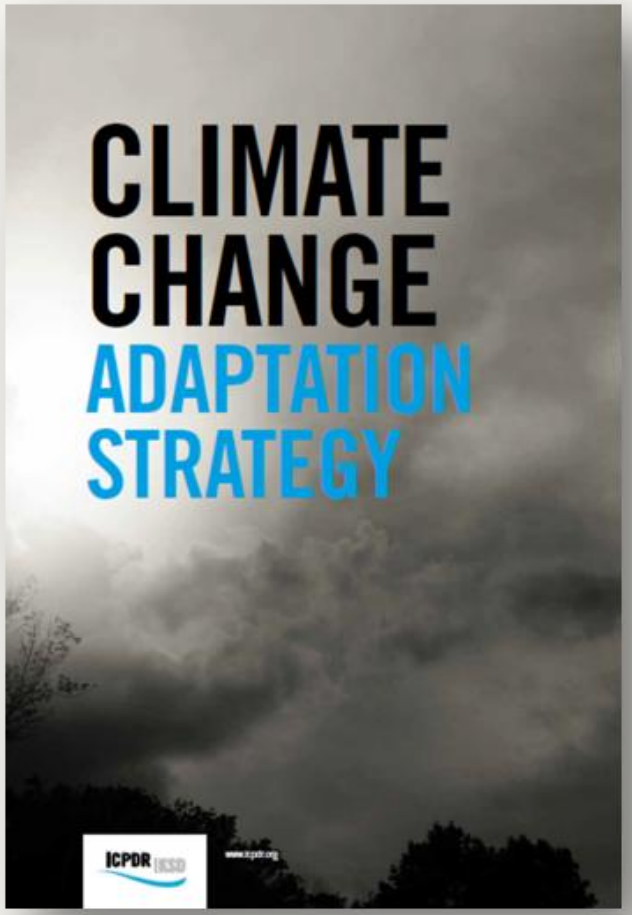
Example: Climate Change Adaptation Towards Resilience



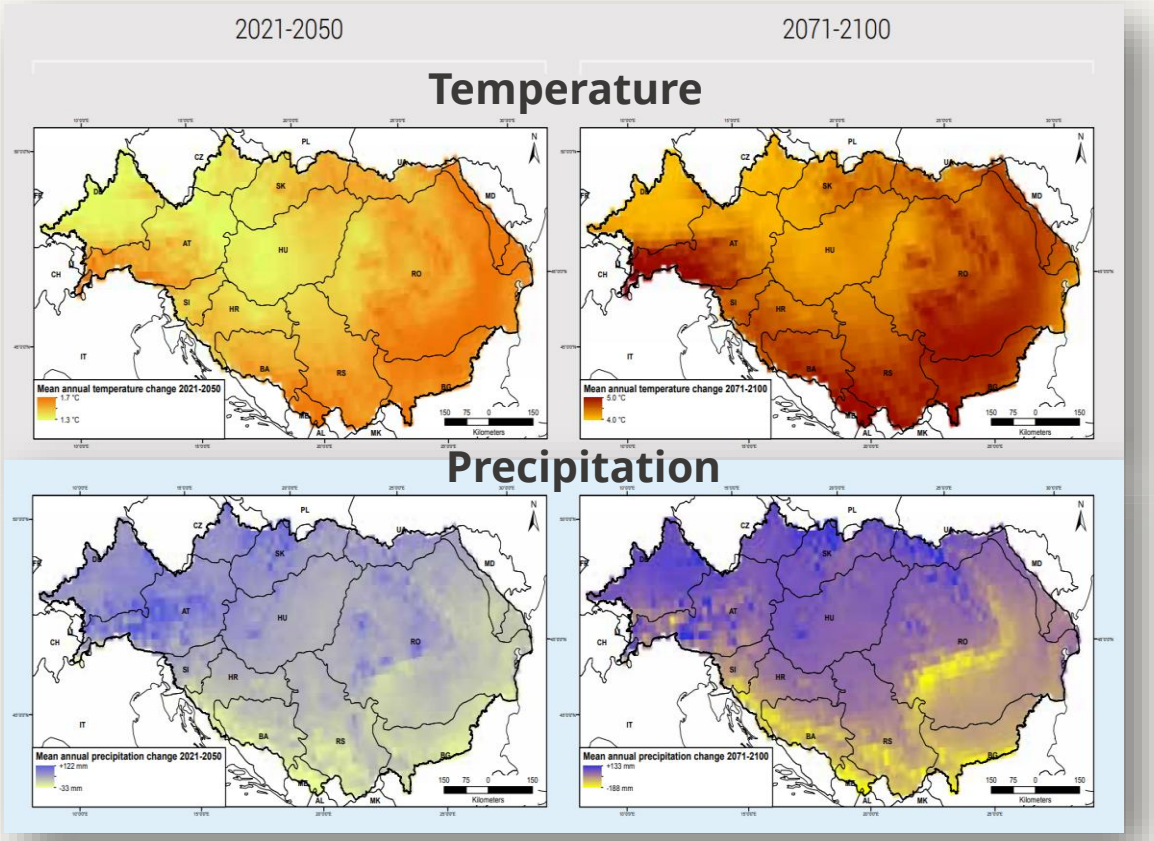
Basin-wide adaptation strategy towards resilience

- Integrate adaptation into overall ICPDR planning
- Relevant actions incorporated in the DRBMP and DFRMP
- Support transboundary actions and feeding into national strategies
- Toolbox of potential adaptation measures

Flood and drought events became more extreme

The events alternate faster and more frequently in the DRB

Climate Change Scenarios for the Danube River Basin



RCP 8.5 of EURO-CORDEX (as of 2018)

Unfavorable future climate patterns

- Dramatic **temperature increase**
- Strong **precipitation gradient** from NW/SE
- **Increased intensity/alteration** of extremes
- **Increased peak river flows** by 10-30% for the upper and middle Danube
- **Increased drought duration, frequency & magnitude** during summer months

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ICPDR Response to Floods

Implementation of the EU Flood Directive

- Preliminary flood risk assessment (2011 / 2018 / 2024)
- Flood risk and flood hazard maps (2013 / 2019/ 2025)
- Flood risk management plans (2015 / 2021 / 2027)

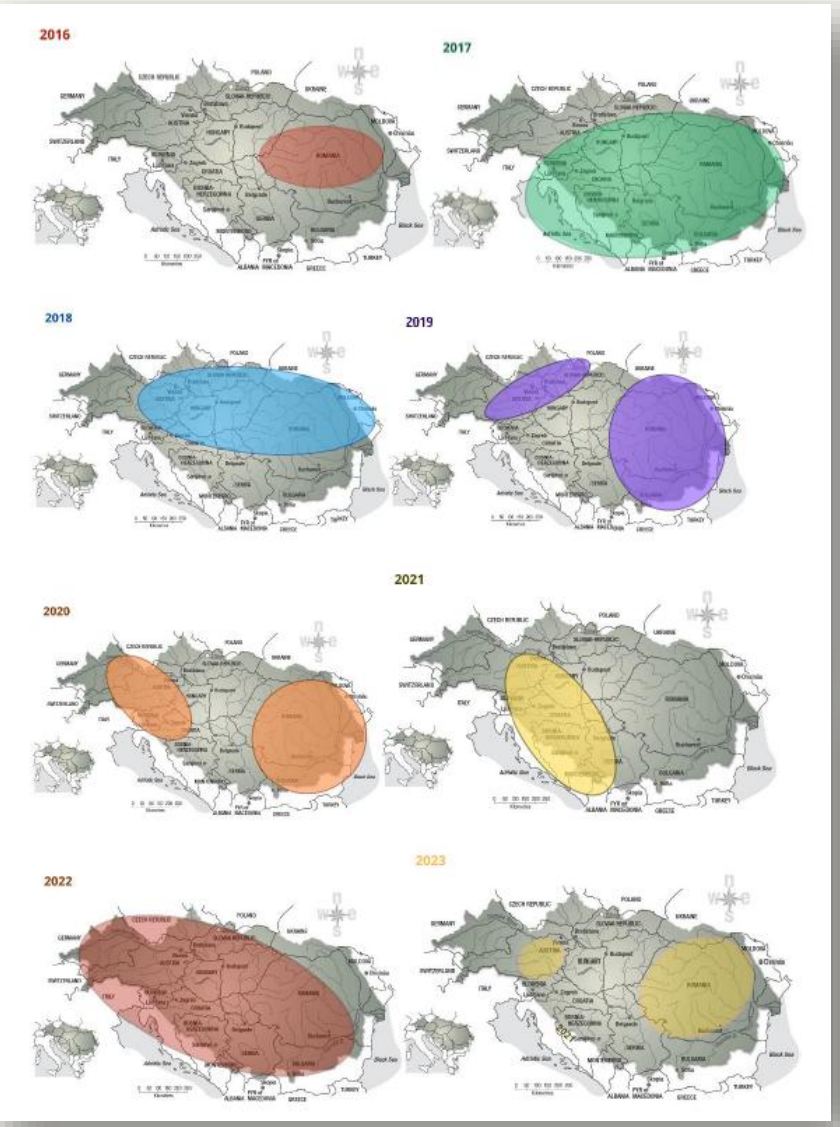
Basin-wide objectives of DFRMP linked to measures

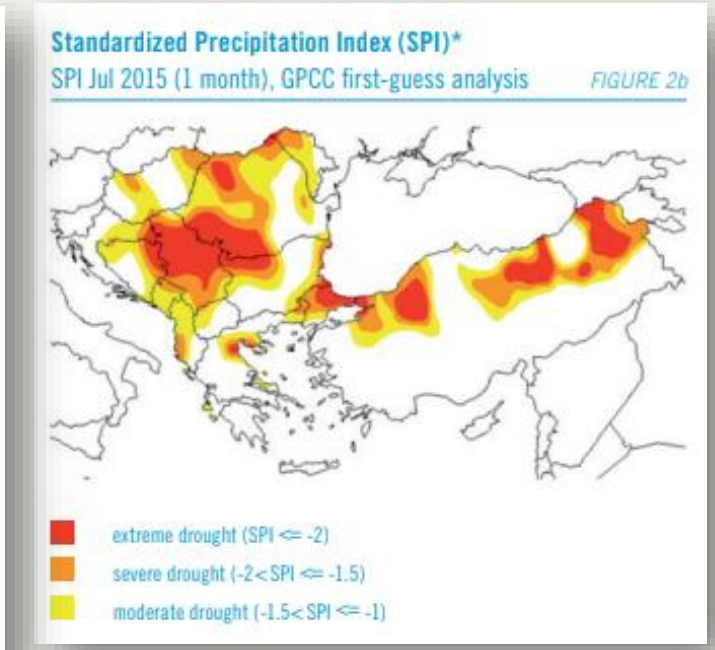
- Solidarity principle & Avoidance of new risks
- Reduction of existing risks
- Strengthening resilience
- Raising awareness

Economic Impact Examples

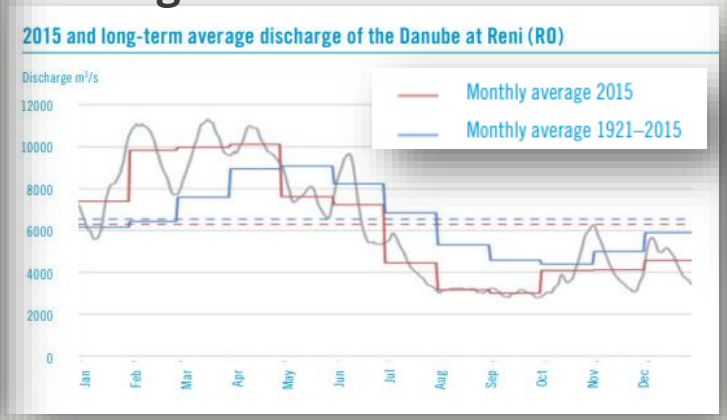
- 2006 (DRB): € 0.6 billion
- 2010 (DRB): € 2 billion
- 2013 (DRB): € 2.4 billion
- 2014 (Sava): € 3.8 billion
- 2023 (SI): € 10 billion

Drought events in the Danube River Basin

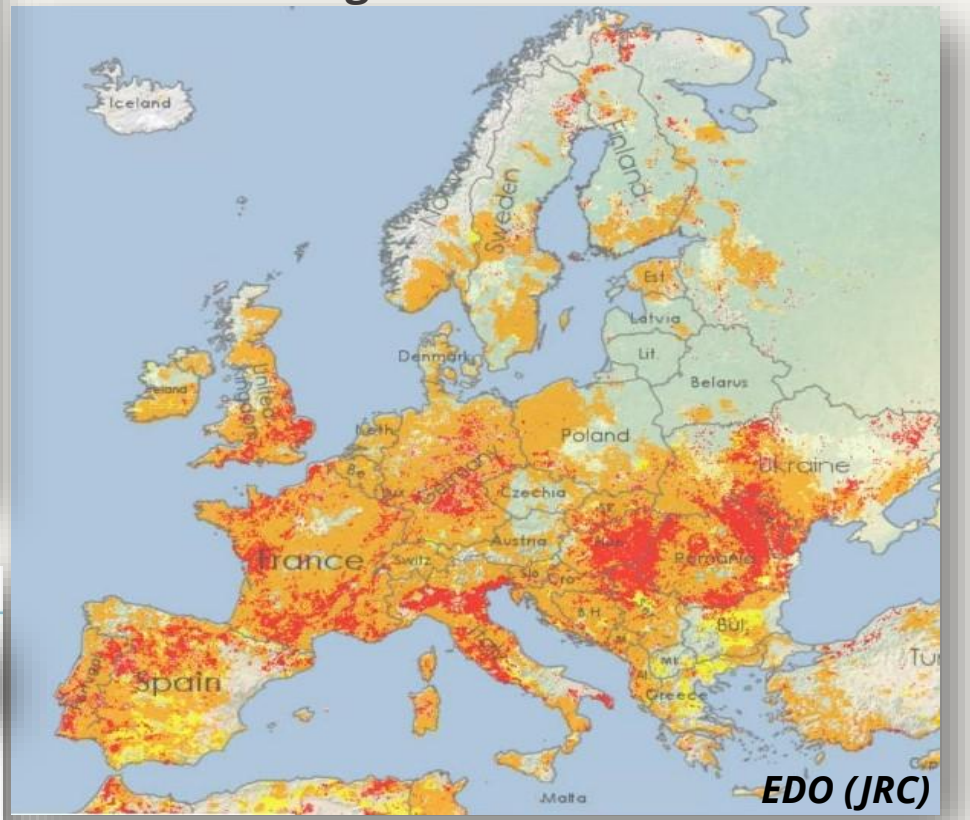




Drought in 2015



Combined Drought Indicator for August 2022



Watch	Warning	Alert	Full recovery	Temporary soil moisture recovery	Temporary vegetation recovery	No data

Drought Impacts in the Danube River Basin

Drought consequences

- Impacts on aquatic and terrestrial **ecosystems**
- Impacts on **water uses**, e.g.
  - Lack of precipitation - reduced summer crop yield
  - Low water levels - impacts on navigation
  - Reduced stored water volume - impacts on hydropower
- Potential **water scarcity** - resource overexploitation / possible competition over water
- Economic losses

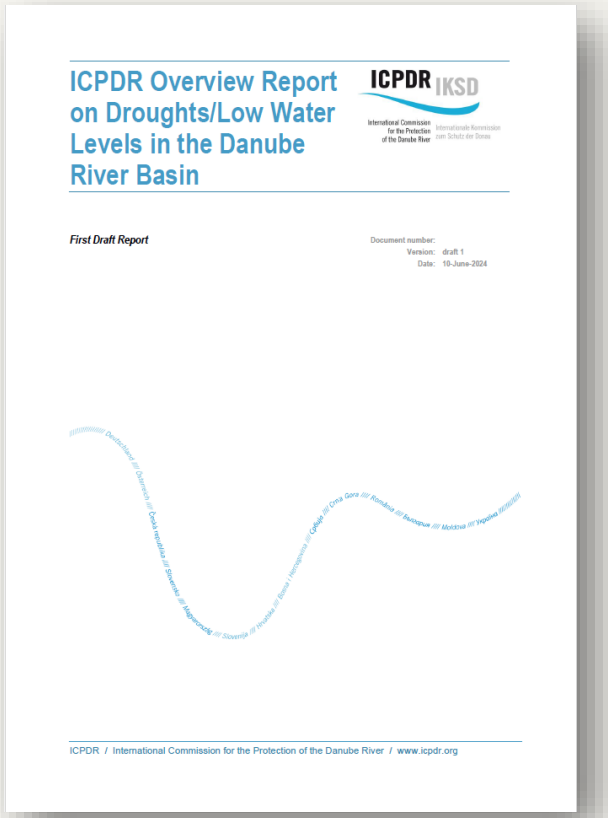
Annual losses in the DRB

- **Wheat yield:** up to 10%
- **Hydropower:** up to 15%
- **Water supply:** up to 5%

Damage and losses caused by drought 2017	
Austria	140 mio EUR/crop failure and fish mortality.
Bosnia and Herzegovina	126 mio/agriculture, 40 % losses in energy production (Bileća).
Croatia	125 mio EUR/agriculture, >4000 fires over 86 500 ha of the Adriatic coast; islands water supply shortages.
Czech Republic	120 mio EUR/agriculture.
Hungary	51 000 ha of agricultural land damaged.
Montenegro	50 % lower yield in viticulture, 42-50 % losses in energy production (Perućica, Piva), fish mortality.
Romania	reduction of Danube flow for 60 %, higher electricity prices, crop transportation problems.
Serbia	Substantial losses in agriculture, water shortage, dried-up lakes, disturbed energy production. >1 bn EUR/all sectors.
Slovakia	20-40 % lower crop yields, dried-up rivers, hydrological drought.
Slovenia	65 mio EUR/agriculture

DriDanube

Basin-Wide Response and ICPDR Actions on Droughts


ICPDR Overview Report on Droughts/Low Water Levels in the Danube River Basin

ICPDR IKSD

First Draft Report

Document number:
Version: draft 1
Date: 10-June-2024

ICPDR / International Commission for the Protection of the Danube River / www.icpdr.org

ICPDR Drought Overview Report for the Danube Basin

- Policies, management plans, technical tools, databases and measures

Agreed Top-3 Priorities for implementation

- Define common drought indicators (including low water level and potentially e-flow), building on existing national approaches
- Develop harmonized basin-wide drought monitoring systems building on existing national systems
- Foster capacity building as a continuous effort to share good practices and experience, involving relevant stakeholders (not only water sector but also others such as agriculture, navigation and nature protection)

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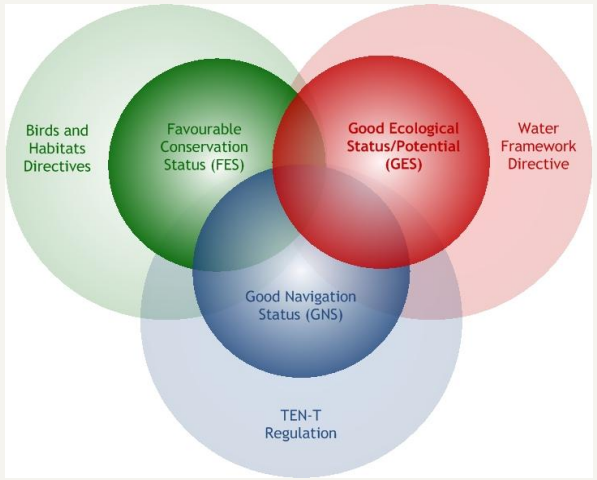
Good Practice: Climate, Inland Navigation and Environment

What is the challenge?

Inland navigation:

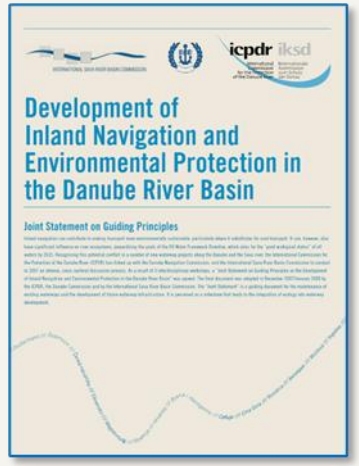
- Unreliable fairway conditions at critical bottlenecks during low waters
- Partly insufficient maintenance/rehabilitation activities
- Delays of projects for various reasons
- Inland navigation basically requires stable waterway conditions

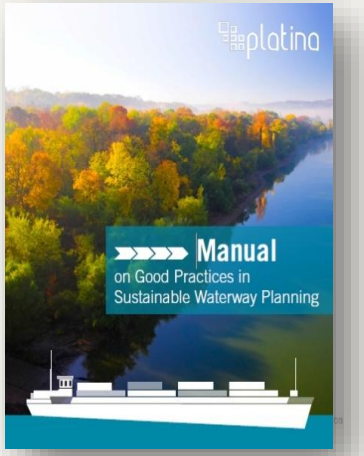


Conflicting conflicting objectives & legal requirements

Good Water Status, nature conservation and protection

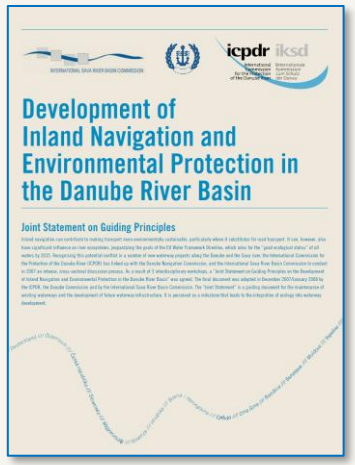
- Degradation/fragmentation of habitats
- Hydromorphological alterations
- Loss of biomass/biodiversity
- Insufficient ecological status of surface waters
- Riverine habitats require basic conditions/dynamics





+ Climate Change: Increased drought events and low water levels

Good Practice: Climate, Inland Navigation and Environment



ICPDR, Danube Commission and Sava Commission jointly coordinated the revision of the Joint Statement

- Involvement of all Danube countries, stakeholders, NGOs and EUSDR PA 1a
- Addressing **climate change, droughts low water levelsx**

Objectives - Joint Statement 2.0

- **Equally** secure **Good Navigation Status** and **Good Ecological Status** in the Danube and Sava River Basin
- Enable creation of a **resilient Danube and Sava River Basin**
- Define, establish and implement **dynamic and integrative management** approach as a new standard
- Address river **dynamics in the Danube Basin** with technical actions and solutions that are innovative/integrative with the potential to **adapt flexibly to quickly changing climate conditions**
- **Address the implementation of innovative and flexible measures** instead of large project

Joint Statement 2.0 has been adopted by all three Commissions

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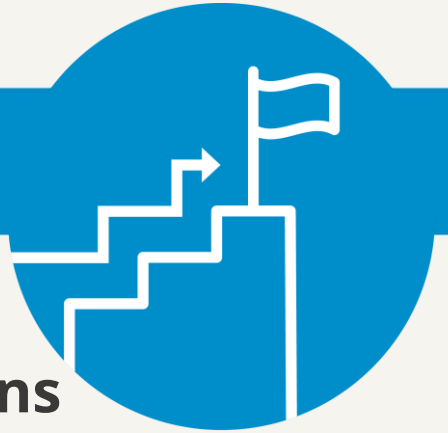
Danube River Basin - Way into the Future



River Basin Management Plans are key tools to plan and set actions

- Significant Water Management Issues
- Understand pressures and impacts across river basins
- Improve situation through targeted measures

Contribution to Water Resilience Strategy

- Integrate policies, topics and management tools into RBM Plans
- Address climate change and integrate related topics into RBM Plans
- Cooperate stronger across sectors
  - Adress both impacts on water and water uses – integration into RBM Plans

Projects including LIFE SIPs contribute significantly in applied implementation

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Thank you very much for your attention!

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