River Basin Management and Flood Risk Management Planning in the Danube River Basin

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The ICPDR …

- 19 countries covering the DRB
- More than 79 million people in a catchment of 800.000 km²
- **Contracting parties to the ICPDR**
  - Nine EU-MS: DE, AT, CZ, SK, HU, SI, HR, RO and BG; and European Union
  - Five non-EU Member States: BA, RS, ME, MD, UA

Danube River Protection Convention (DRPC)

signed 29 June 1994, Sofia (Bulgaria)

Protection of water & ecological resources

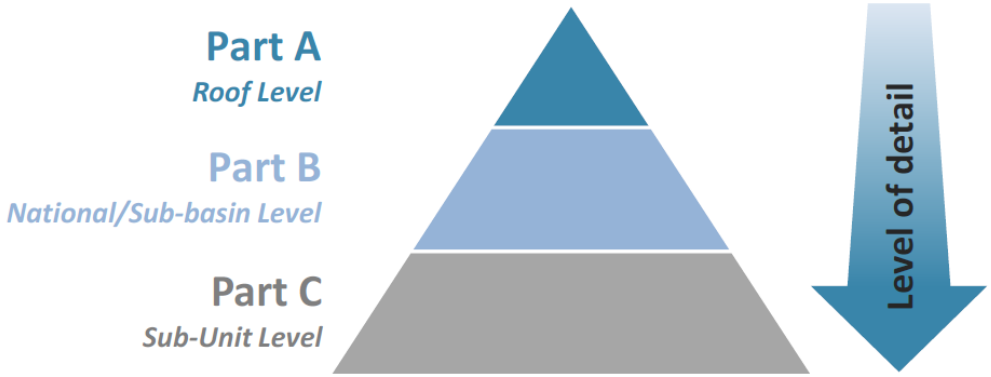
Sustainable use of water

Reduce nutrients & hazardous substances

Manage floods & ice hazards

- Forms the overall **legal instrument** for co-operation on **transboundary water management** in the Danube River Basin
- Applies to countries with **territories of more than 2000 km²** within the Danube Basin
- Foresees establishment of the **International Commission for the Protection of the Danube River**

Water Framework Directive Coordination mechanisms



River Basin Management is based on three levels of coordination

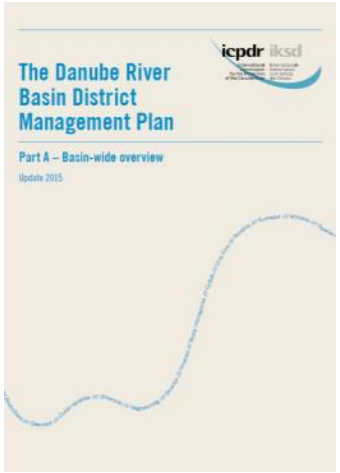
Part A	International, **basin-wide level** - the roof level (**ICPDR**)
Part B	**National level** and/or the internationally coordinated sub-basin level for selected sub-basins (e.g. Sava and Tisza)
Part C	**Sub-unit level**, defined as management units within the national territory

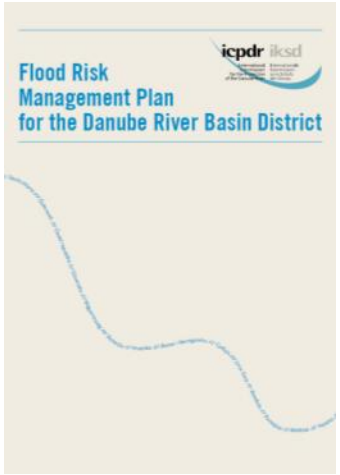
The information increases in detail from **Part A** to **Parts B** and **C, Part A covers**

- rivers with catchment areas > 4,000 km^2;
- lakes > 100 km^2;
- transitional and coastal waters;
- transboundary groundwater bodies of basin-wide importance.

Two Management Plans for the Danube River Basin

Danube River Basin Management Plan
(Update 2021 in progress)





Danube Flood Risk Management Plan
(Update 2021 in progress)

Significant Water Management Issues
Main pressures on basin-wide level

ICPDR IKSD

Organic Pollution

Nutrient Pollution

Hazardous Substances Pollution

Hydromorphological Alterations

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

- **Priority pressures for actions** requiring **joint actions** by Danube countries
- Addressed in **Danube River Basin Management Plan**, updates every six years

Organic Pollution: Progress 2009-2021

Organic Pollution

- Significant **progress** even in a short period (2005-2018), shift to more **enhanced** technologies
- Improvement of wastewater infrastructure for ca **40 million PE**, on-going or planned projects for 25 million PE
- **Country investments** in wastewater sector: ca. 22 billion EUR (2005-2016, DRB parts), in total more than 40 billion EUR (without DE**)**

Hydromorphological Alterations: Progress 2009-2021

Hydromorphological Alterations

- Numerous hydromorphological measures have been implemented addressing mitigation of
  - **hydrological alterations** like impoundments, water abstractions and hydropeaking,
  - **improvement of river continuity** (building of fish passes),
  - reconnection of **wetlands/floodplains** and
  - improvement of **morphological conditions** (river restoration projects).

- More than **60 implemented measures related to the improvement of hydrological alterations**, mainly to impoundments and water abstractions
- More than **120 fish migration aids** were completed; as for 8 fish migration aids the construction is on-going
- More than than **60,000 ha of wetlands/floodplains** partly or totally reconnected; for additional 4,500 ha the construction of reconnection is still ongoing

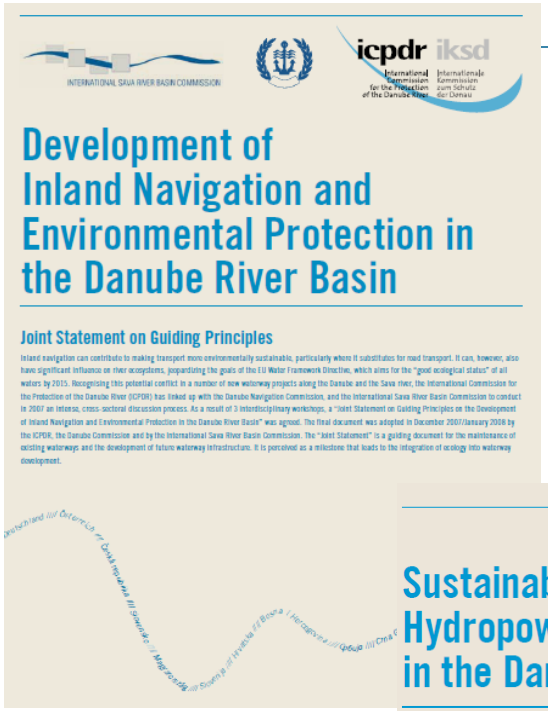
Additional activities: Adaptation Climate Change

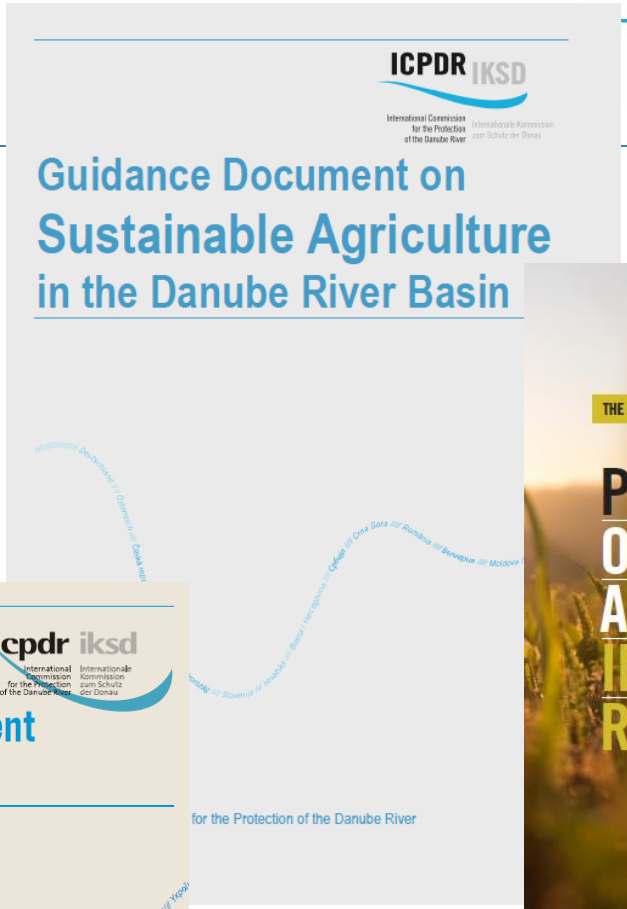
ICPDR IKSD

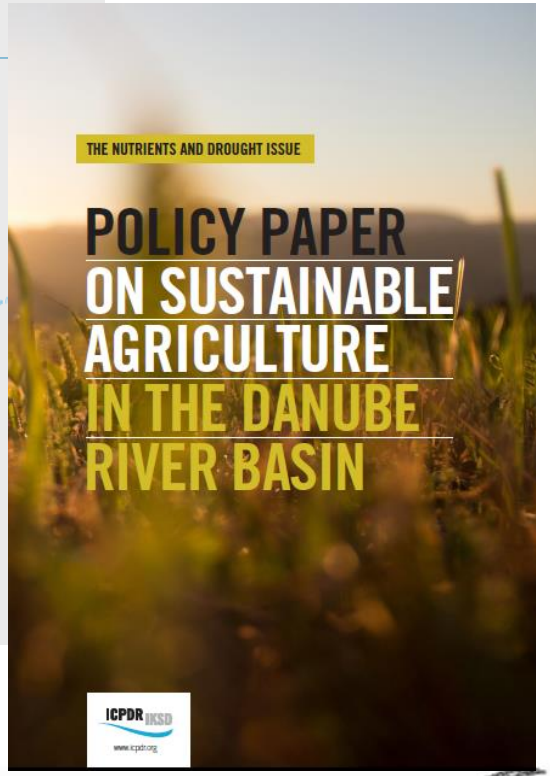
- As a **leader and pioneer among transboundary river basin commissions** in responding to climate change, the ICPDR adopted the first ICPDR Strategy on Adaptation to Climate Change in 2012, which was updated in 2018
- New **significant management issue "Effects of Climate Change (Drought, Water Scarcity, Extreme Hydrological Phenomena and other Impacts)**" has a prominent role in DRBMP Update 2021
- Planned **Danube Hydrological Information System (HIS)** will provide basic hydrological and meteorological near real time data in a standard format and, if possible, validated long-term data series, for flood risk management
- Developing an improved **Water Balance for the Danube River Basin** as an element for facing the expected upcoming water quantity challenge

Additional activities: Integration Issues

ICPDR IKSD







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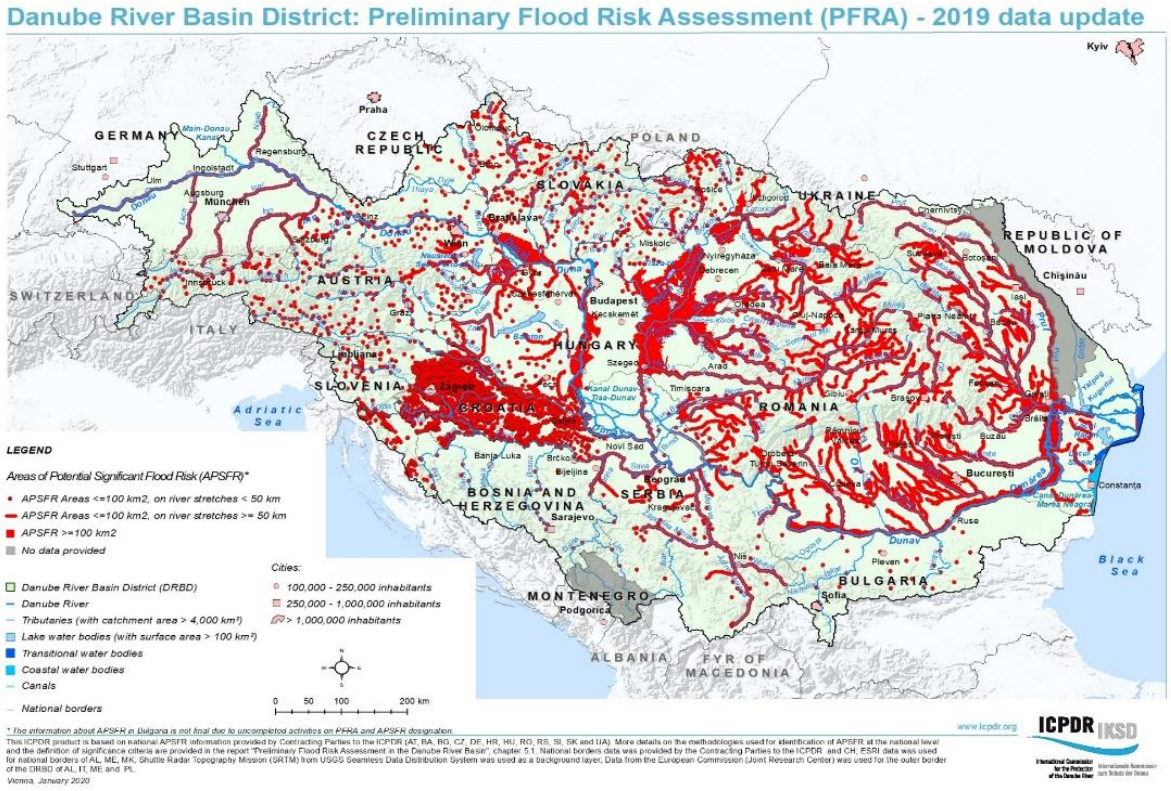
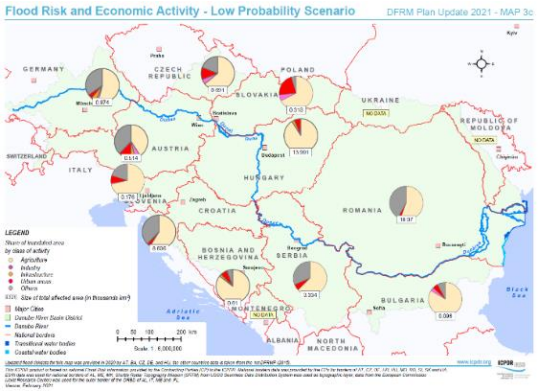
Flood Risk Assessment



Flood Hazard and Risk Maps



Danube Flood Risk Management Plan – Update 2021

1. Introduction
2. Conclusions of the preliminary flood risk assessment
3. Conclusions on flood hazard maps and flood risk maps
4. Objectives
5. Measures and their prioritisation
6. Water retention
7. Coordination with WFD
8. Cost-benefit analysis
9. Impacts of climate change
10. International coordination
11. Promoting the solidarity principle
12. Public information and consultation
13. Conclusions and next steps.

Appropriate objectives

Basin-wide objectives of DFRMP - they are linked to the respective measures and reconfirmed for 2021:

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

Annex 2: Measures & projects supporting DFRMP 2021

Strategic level measures: Measures with downstream effect and measures applicable in more countries of the basin

- natural water retention,
- warning systems,
- awareness rising,
- reduction of risk from contaminated sites in floodplain areas.

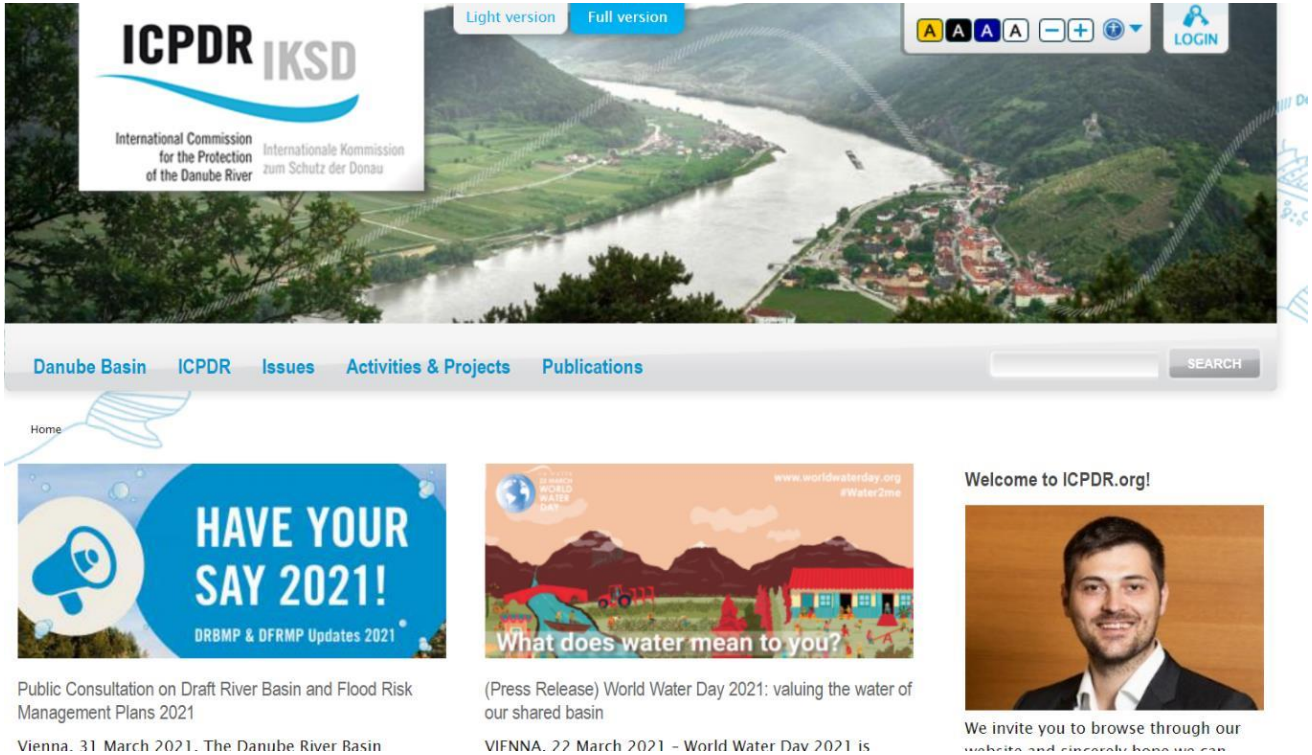
Projects & project ideas identified by FP EG:

- Reflect the objectives and priorities set in DFRMP
- Basin-wide / transboundary character

Implementation progress

- Progress in achieving objectives is addressed primarily through the implementation of the best practices projects;
- Progress in implementing measures demonstrated through achievements of international projects;
- Giving priority to measures with positive up/downstream effects such as natural water retention, warning systems, reduction of risk from contaminated sites in floodplain areas or exchange of information;

Further information



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