Stakeholder Conference

Transboundary water issues in a macro-regional context: the Danube basin

11-12 September 2013, Budapest, Hungary

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Compatibility of environmental requirements and sectoral water needs

Raimund MAIR, ICPDR
Technical Expert on River Basin Management
Raimund.MAIR@unvienna.org

Danube River Protection Convention

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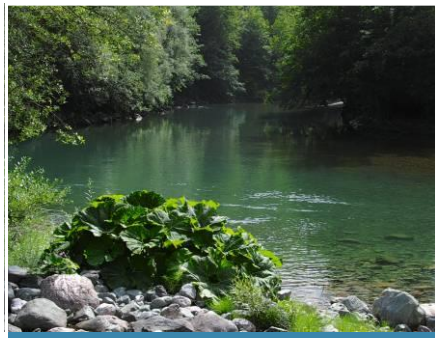
signed 29 June 1994, Sofia (Bulgaria)



Protection of water & ecological resources

Sustainable use of water

Reduce nutrients & hazardous substances

Manage floods & ice hazards

ICPDR coordinates implementation of EU Water Framework Directive & EU Floods Directive on basin-wide level

EU Water Framework Directive (WFD)
Environmental objectives

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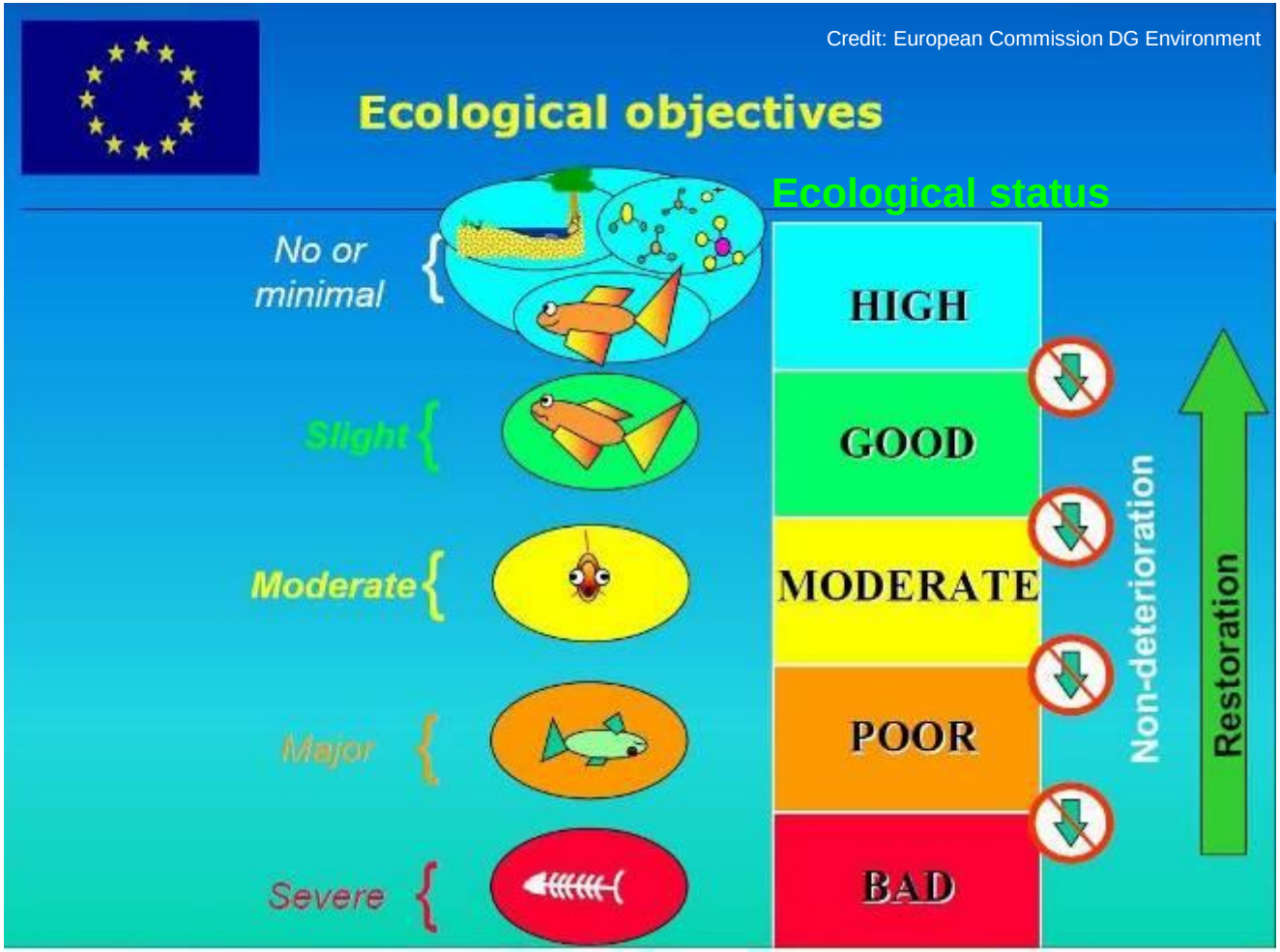

EU Water Framework Directive (WFD)

Diversity of uses, aspirations and impacts

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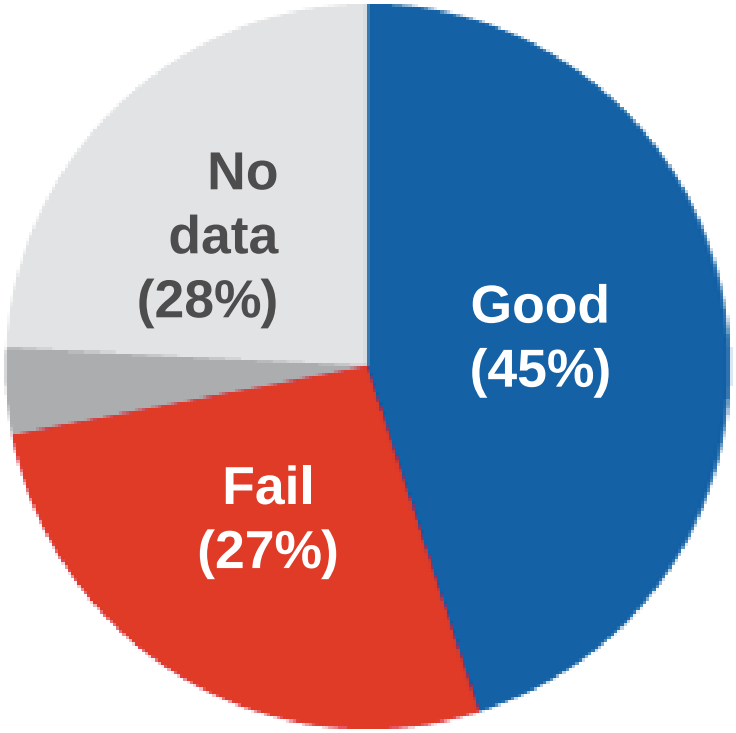
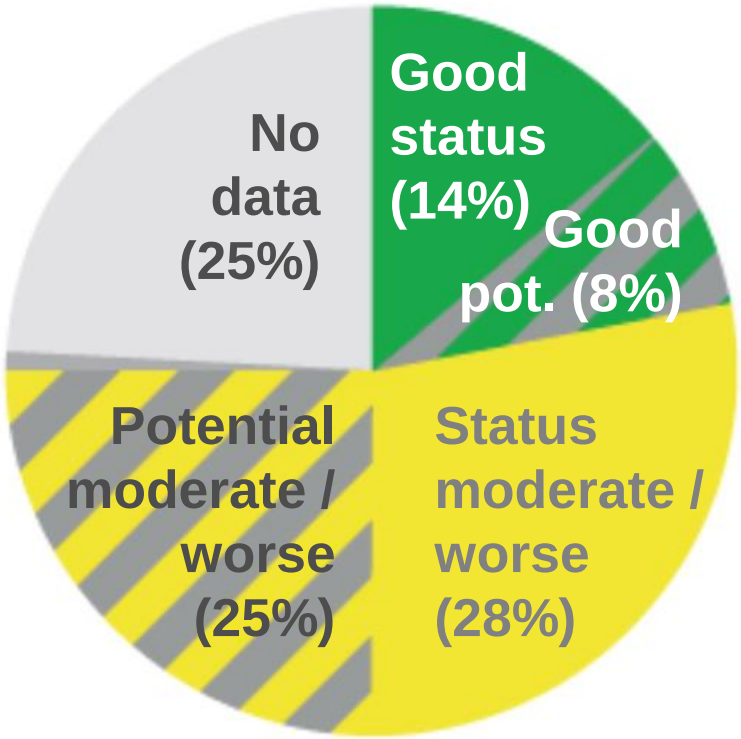
Surface waters - Status of the Danube and its tributaries

(Rivers with catchment areas larger 4.000 km^2 – DRBM Plan 2009)



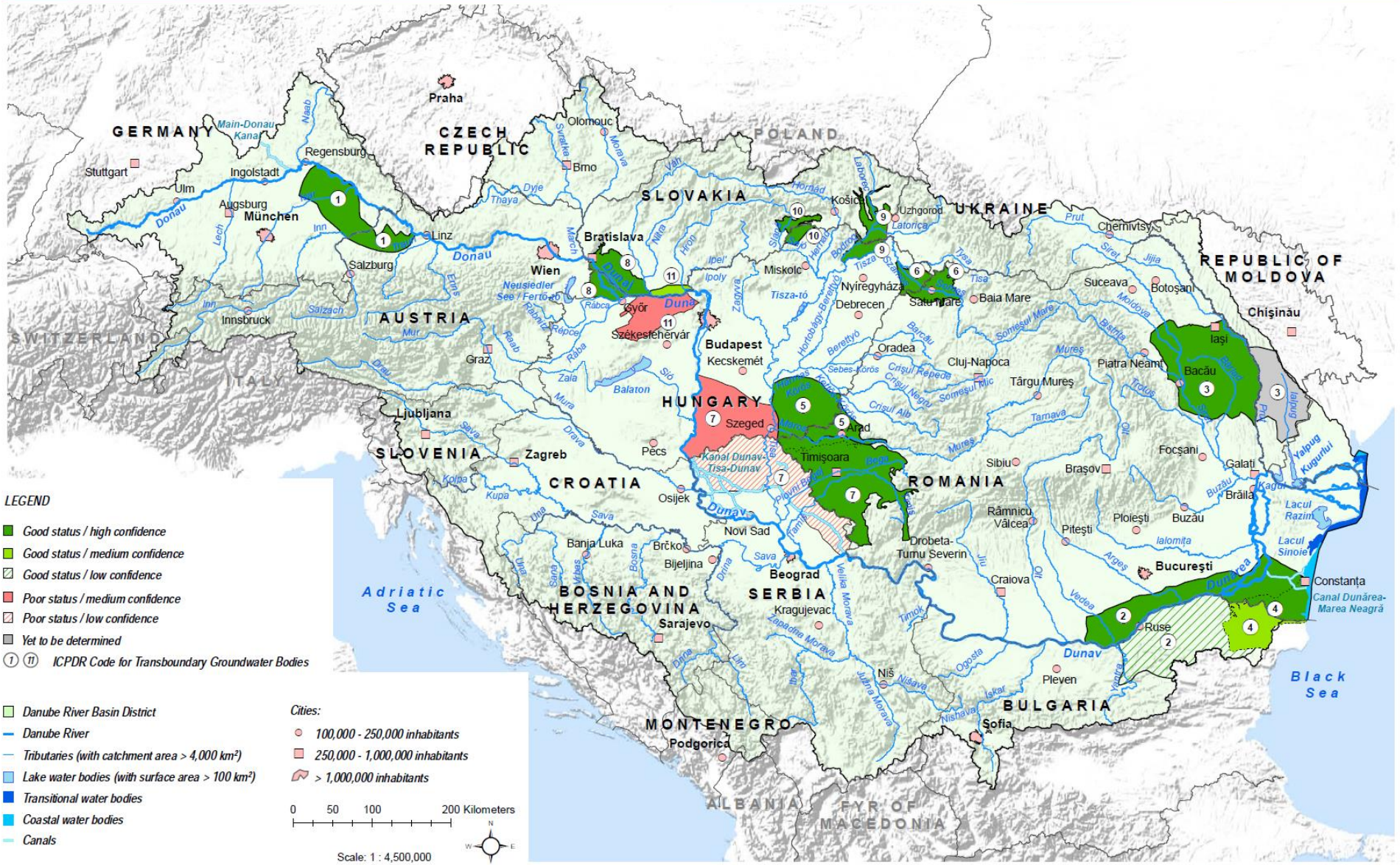
Chemical Status



Ecological Status

Danube River Basin District:
Quantitative Status - Groundwater

MAP 15



LEGEND

- *Good status / high confidence*
- *Good status / medium confidence*
- *Good status / low confidence*
- *Poor status / medium confidence*
- *Poor status / low confidence*
- *Yet to be determined*
- ① ⓝ *ICPDR Code for Transboundary Groundwater Bodies*

- *Danube River Basin District*
- *Danube River*
- *Tributaries (with catchment area > 4,000 km²)*
- *Lake water bodies (with surface area > 100 km²)*
- *Transitional water bodies*
- *Coastal water bodies*
- *Canals*
- *National borders*

Cities:

- *100,000 - 250,000 inhabitants*
- *250,000 - 1,000,000 inhabitants*
- *> 1,000,000 inhabitants*

0 50 100 200 Kilometers

Scale: 1 : 4,500,000

(Scale 1: 6,000,000 in A4 landscape paper format)

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Significant Water Management Issues for the DRB

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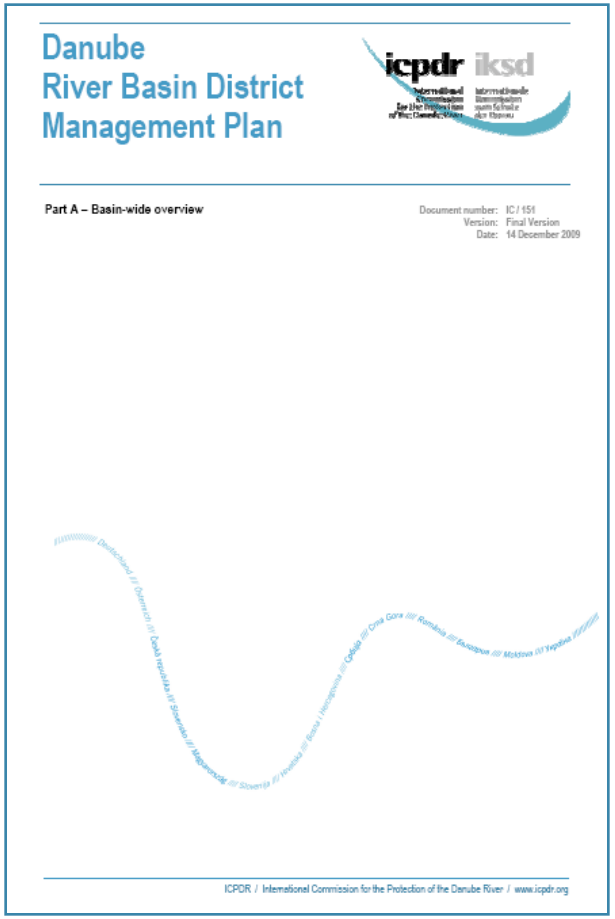
Organic Pollution

Nutrient Pollution

Hazardous Substances Pollution

Hydromorphological Alterations

Danube River Basin Management Plan (adopted 2009)



Reflects

- Water status in the basin
- Significant Water Management Issues

Includes

- **Joint Programme of Measures (JPM)**

Enables

- Conclusions on investment & funding
- Evaluation on measures implementation

Examples for measures

Organic pollution

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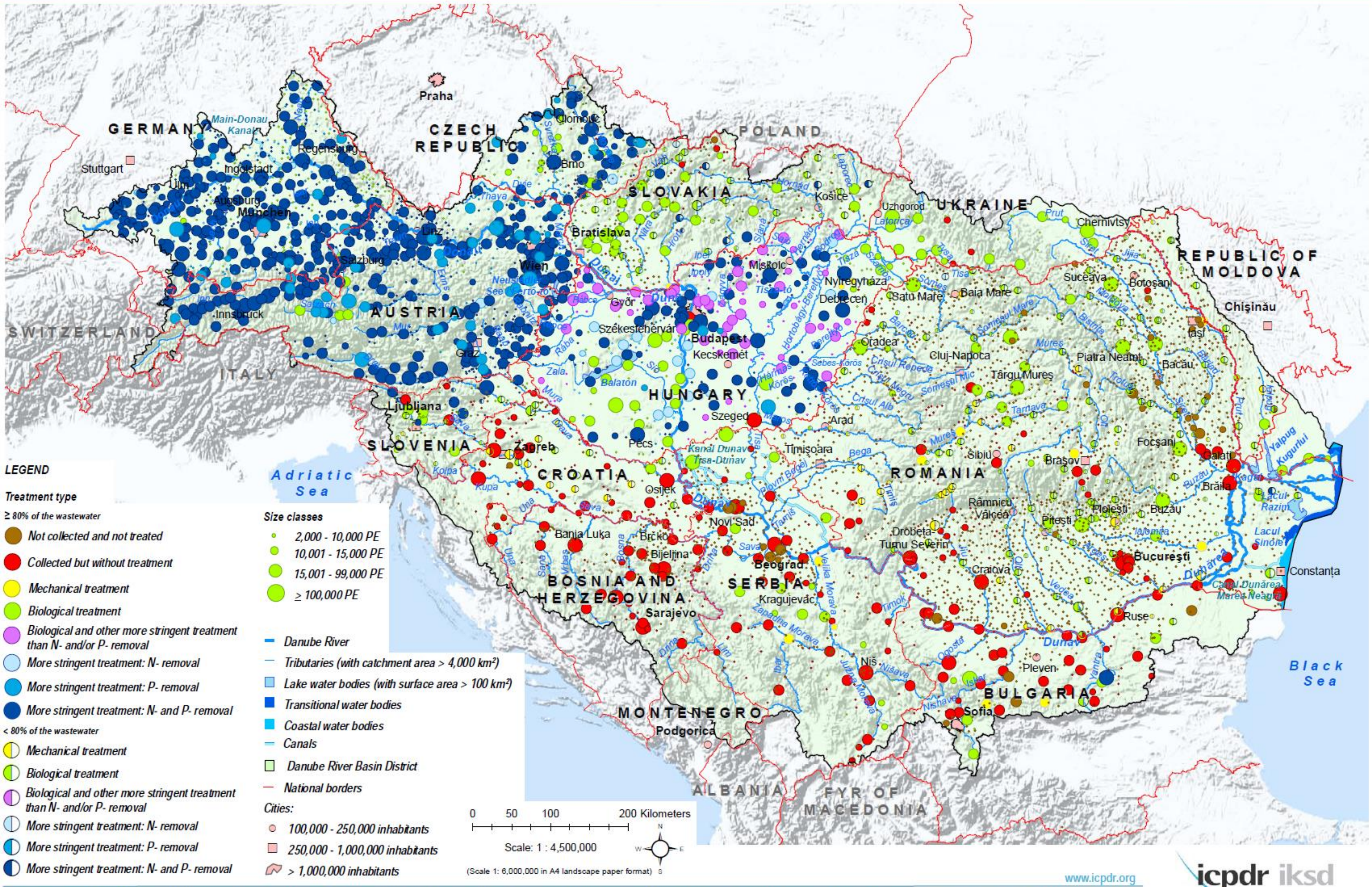
- Implementation of the **Integrated Pollution Prevention Control** (IPPC) Directive
  - Addressing pollution from **industrial facilities**
  - EU Member States: Implementation of IPPC Directive by 2007
  - RO & BG: Gradual transition periods up to 2015; HR: Transition period until 2017
- Implementation of the **Sewage Sludge** Directive
- ICPDR **BAT industrial sector recommendations**
  - Implementation of BAT in the chemical, food, chemical pulping and papermaking industries
  - Further efforts taken to continuously implement and update BAT
- Investment in **Urban Wastewater Treatment** – **key measure** for reduction of organic and nutrient pollution

Danube River Basin District:
Urban Wastewater Discharges – Reference Situation - UWWT 2005/2006



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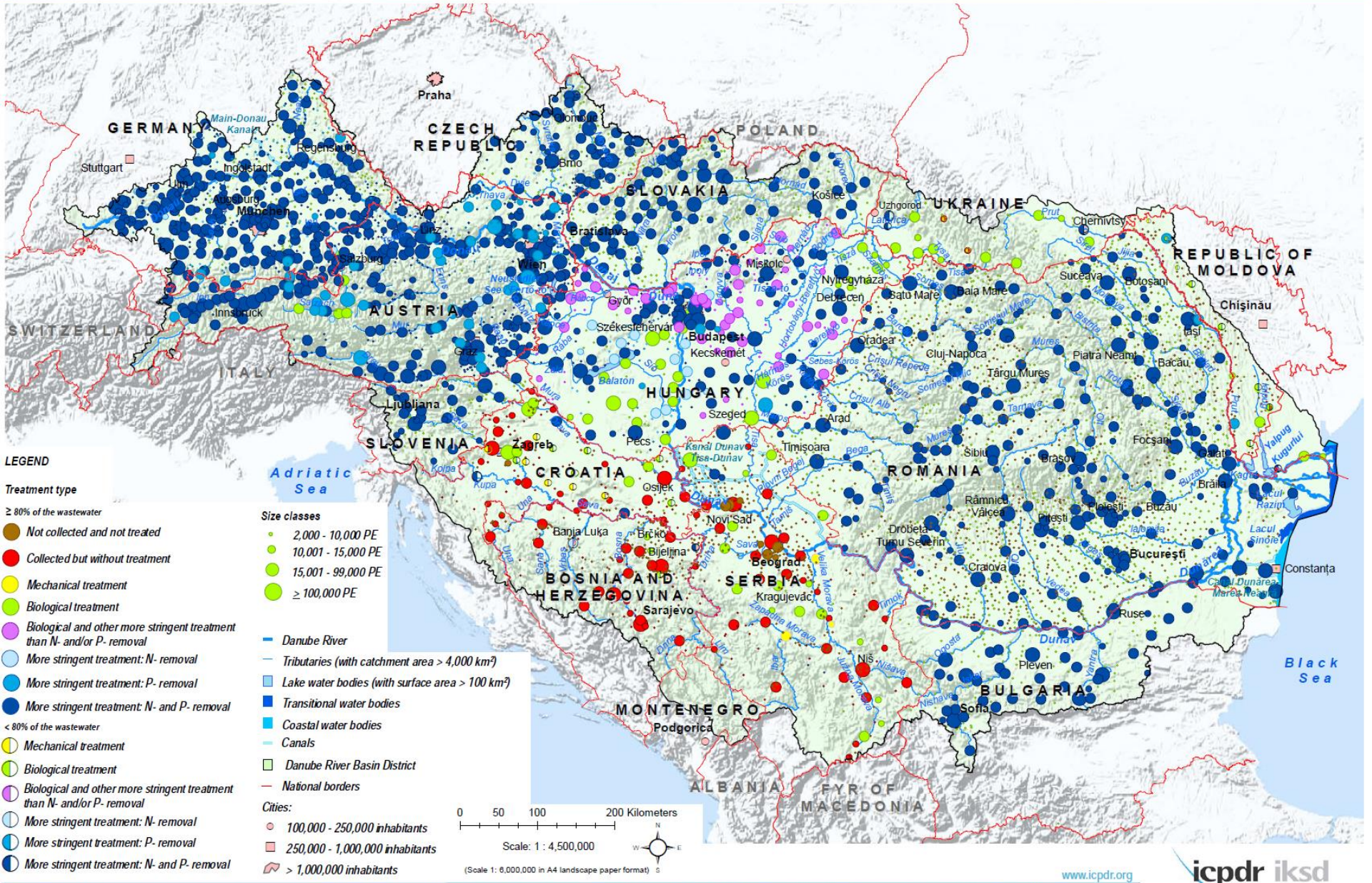
Danube River Basin District:
Urban Wastewater Discharges – Baseline Scenario - UWWT 2015

MAP 19



LEGEND

Treatment type

≥ 80% of the wastewater

- Not collected and not treated
- Collected but without treatment
- Mechanical treatment
- Biological treatment
- Biological and other more stringent treatment than N- and/or P- removal
- More stringent treatment: N- removal
- More stringent treatment: P- removal
- More stringent treatment: N- and P- removal

< 80% of the wastewater

- Mechanical treatment
- Biological treatment
- Biological and other more stringent treatment than N- and/or P- removal
- More stringent treatment: N- removal
- More stringent treatment: P- removal
- More stringent treatment: N- and P- removal

Size classes

- 2,000 - 10,000 PE
- 10,001 - 15,000 PE
- 15,001 - 99,000 PE
- ≥ 100,000 PE

- Danube River
- Tributaries (with catchment area > 4,000 km²)
- Lake water bodies (with surface area > 100 km²)
- Transitional water bodies
- Coastal water bodies
- Canals
- Danube River Basin District
- National borders

Cities:

- 100,000 - 250,000 inhabitants
- 250,000 - 1,000,000 inhabitants
- > 1,000,000 inhabitants

0 50 100 200 Kilometers

Scale: 1 : 4,500,000

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Progress in implementation
Organic pollution

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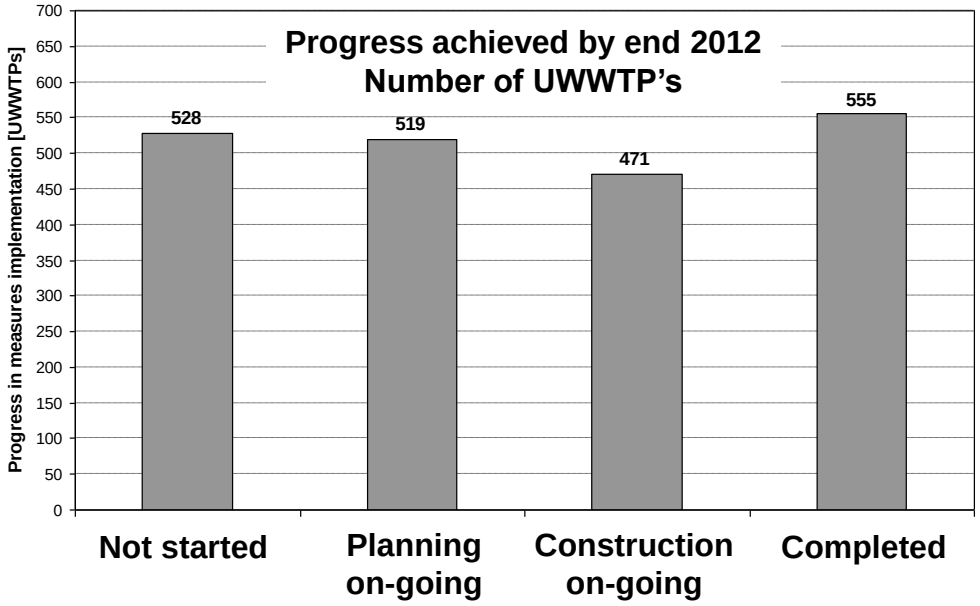
- Implementation of **UWWT Directive** and investment in **wastewater infrastructure - key measure** to reduce organic pollution
- **~ 32 Mio. PE planned** to be reduced by 2015
- **~ 7 Mio. PE reduced** by 2012 (approx. 22%)



Outlook
Organic pollution

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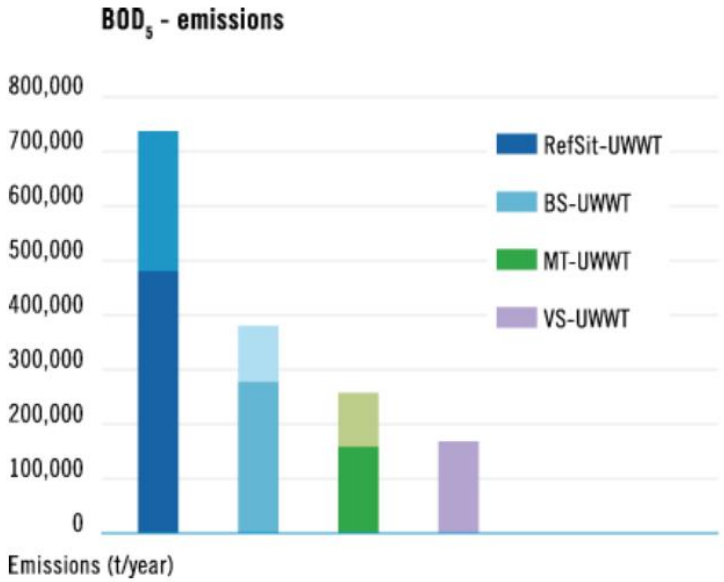
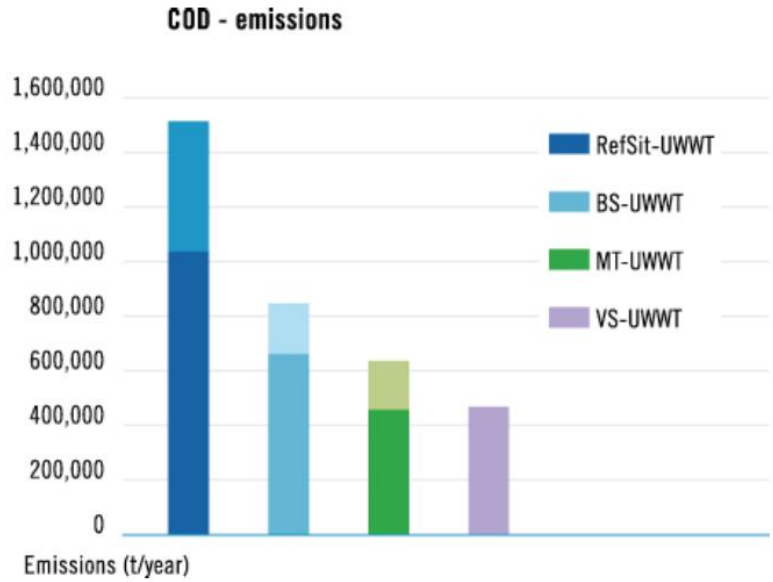
- Measures currently under implementation → **considerable reduction** of organic pollution
- Further post-2015 efforts needed, however, in the **long-run**, implementation of UWWT and IPPC Directives for EU MS and equal level of measures for Non EU MS **expected to solve problem**





Examples for measures

Nutrient pollution

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- Strong **inter-linkages between sources of nutrient and organic emissions** (i.e. urban and industrial); in addition:
- Implementation of the **EU Nitrates Directive** addressing **agriculture**
  - Establishment of **Nitrates Action Programmes** - wide range of measures in **agriculture** (limits for fertiliser application, prohibition periods, etc.)
  - Different approaches in place: Designation of **Nitrates Vulnerable Zones** (CZ, HU, RO, SK, BG) or application of **Whole Territory Approach** (AT, DE, SI)
  - Similar efforts taken by non EU Member States
- Introduction of **phosphate-free detergents**

Assessment
Nutrient pollution

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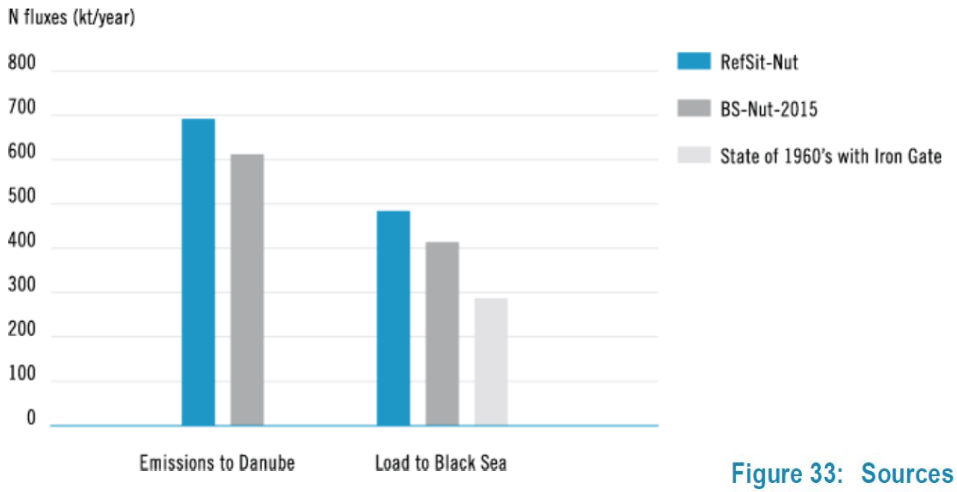
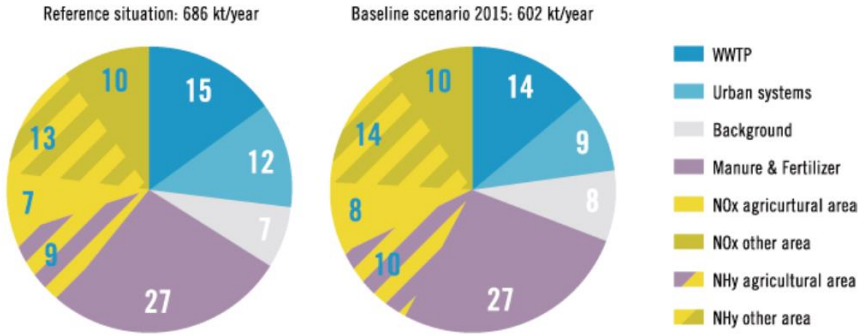
Figure 32: Nitrogen emissions for the Reference Situation-Nutrients (RefSit-Nut), Baseline Scenario-Nutrients 2015 (BS-Nut 2015) and the situation in the 1960s[78].



- Expected **reduction** of **nutrient emissions by 2015**: 12% for N and 21% for P compared to 2000-2005

- Approx. **50%** of emissions from **agriculture**
- Approx. **40%** in form of **atmospheric deposition** (NOx and NHy)

Figure 33: Sources of nitrogen emissions in the DRB for the Reference Situation-Nutrients and Baseline Scenario-Nutrients 2015 (BS-2015).



Outlook

Nutrient pollution

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- Reduction of **nutrient pollution** is **significant challenge**, also in the long-run
- **Improvements** made, i.e. due to **investments in wastewater treatment infrastructure** for urban and industrial pollution
- However, by 2015 **loads to Black Sea still significant** and far above that of 1960‘s (40% for N and 15% for P)
- Question of future **agricultural development** and impact on water – measures on agriculture are **major issue** for handling nutrient pollution in the future

Hazardous substances pollution

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- **Partly insufficient information** available
- Efforts taken to **improve knowledge base**:
  - Contribution for the development of the “Technical guidance on the preparation of an inventory of emissions, discharges and losses of priority and priority hazardous substances” (EU Drafting Group on Priority Substances)
  - **Danube case study** under development
- **Inter-linkages** with relevant EU Directives (i.e. UWWTD and the IPPC Directive)
- Measures to prevent and control **accidental pollution**

Hydromorphological alterations

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Hydromorphological Alterations

River and Habitat Continuity Interruptions

Disconnection of Adjacent Wetlands/Floodplains

Hydrological Alterations

Future Infrastructure Projects

- **Main drivers:** Flood protection, navigation, hydropower
- **<u>Two-fold challenge:</u>**
  1) Mitigation measures for already **existing pressures**
  2) Ensuring sustainability of possible **future infrastructure**

Hydromorphological Alterations

Addressing existing pressures

Example: Wetlands and Floodplains

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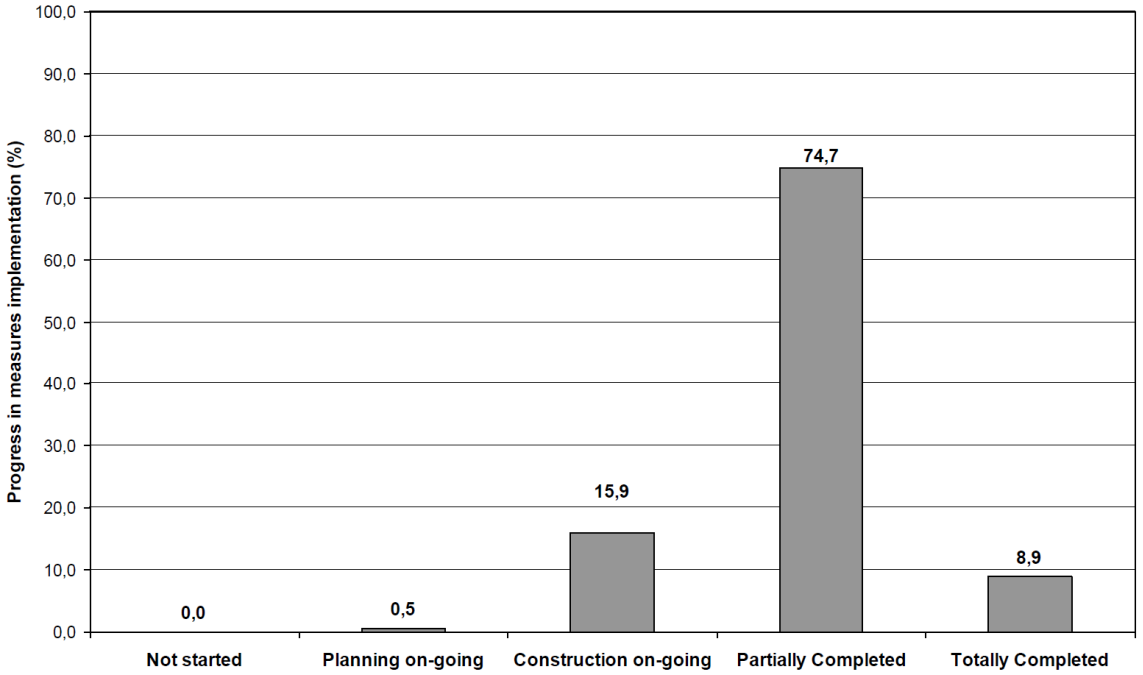
Re-connection of wetlands/floodplains

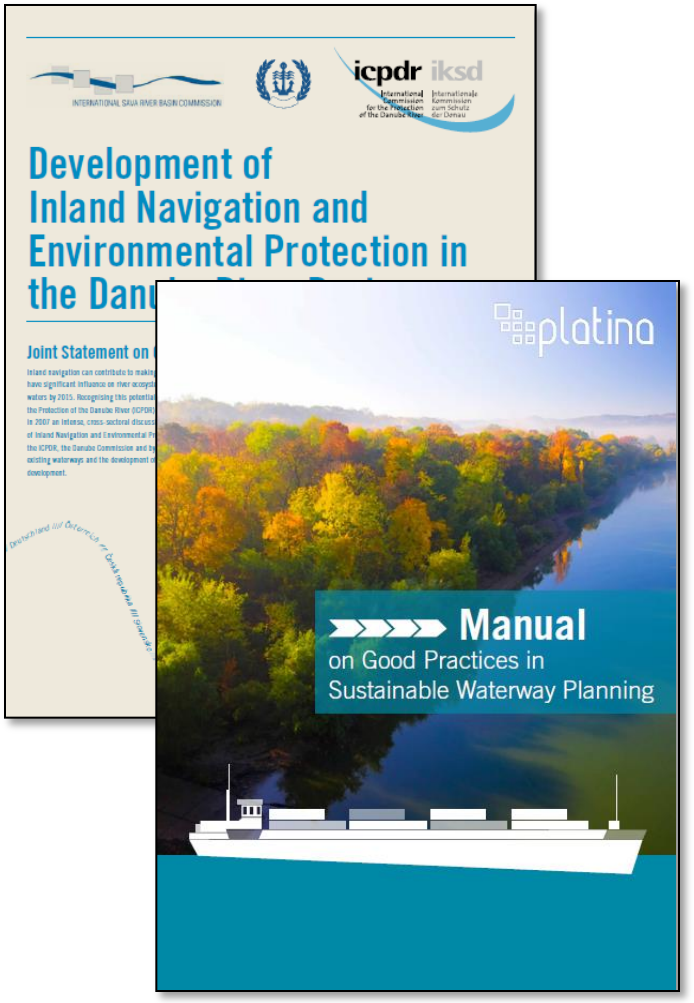
62,300 ha of wetlands/floodplains to be reconnected by 2015



Sustainable infrastructure

Joint Statement on Navigation and Ecology

- **Integrated planning** process from the beginning to **minimize impacts** of engineering interventions on ecology – use of **best practice**
- **Apply EIAs** with public input and respect **WFD**'s River Basin Management Plans
- **Define goals** for Inland Navigation and the river/floodplain ecological integrity



Challenge: HYDROPOWER

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RES-e
European Renewable Energy Directive 2009/28/EC

Objectives:
to **increase share of energy from renewable sources** with target figures for 2020 for each MS

MS set national targets + decide on strategy; e.g. by targets for HP

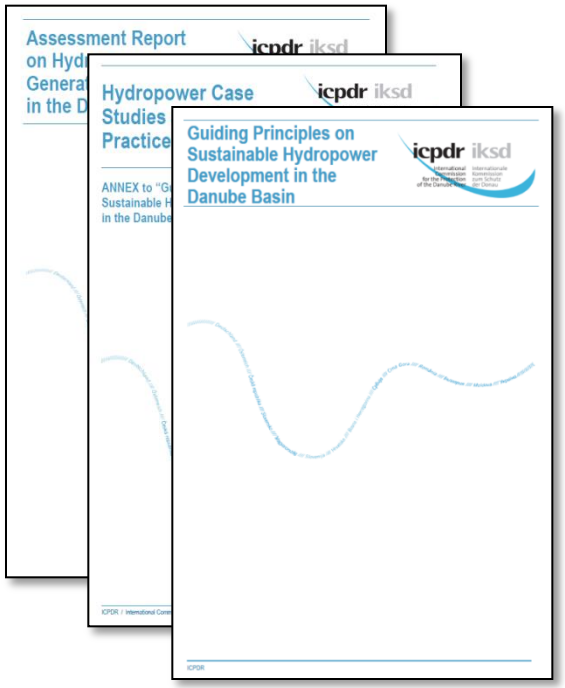
EU-WFD
European Water Framework Directive 2000/60/EC

Objectives:
good ecological status of water bodies

No deterioration of status

How to **increase renewable energy** (also from hydropower) while at the same time not jeopardising the achievement of **environmental objectives**?

Guiding Principles on Sustainable Hydropower in the Danube Basin



- Developed from 2011 to 2013 with major **stakeholder involvement**
- **Adopted** in June 2013
- Addressing already existing and future facilities
- Core element: **Strategic planning approach** for new developments
  - **Favourable** / **less-favourable** / **non-favourable** **sites**
  - **Exclusion zones** for hydropower
- Follow-up activities planned

Flood Risk Management

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Sector-dialogue and coordination

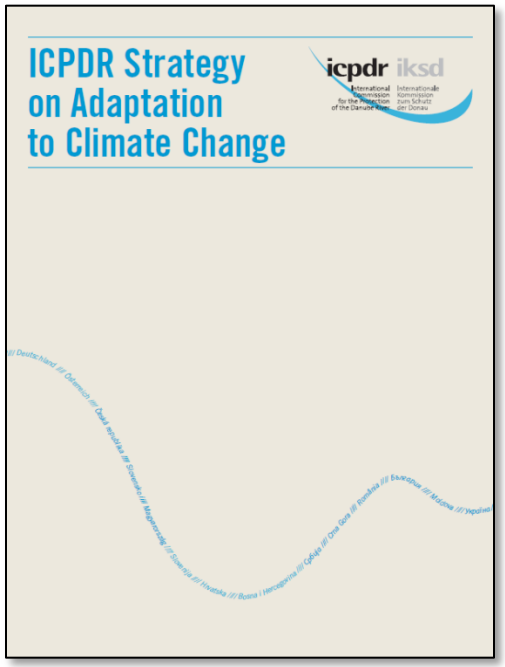
EU Flood Risk Management Directive

EU Water Framework Directive

- **Aligned deadlines** for implementation of both Directives
- Making best use of **synergies**
- Awareness for **coordination requirements**

Climate Change / Water Scarcity and Drought

Using the tools



ICPDR Strategy on Adaptation to Climate Change

- Adopted in December 2012
- Making best use of existing water management instruments and coordination mechanisms
- Upcoming **2015 Management Plans** (WFD and EFD) for implementation of **adaptation measures**

Water Scarcity and Drought

EUSDR PA5 Target: "To address the challenges of water scarcity and droughts based on the 2013 update of the Danube Basin Analysis and the ongoing work in the field of climate adaptation, in the Danube River Basin Management Plan to be adopted by 2015."

EUSDR Actions and ICPDR Activities – PA4 & PA5

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EUSDR Priority Area	Example for relevant EUSDR Action	ICPDR involvement
PA4 „Water Quality“	“To implement fully the Danube River Basin Management Plan”	ICPDR acts as observer in PA4 and PA5 Major involvement and/or implementation of Actions under PA4 and PA5
	“To continue to invest in and support the information collection systems already developed by ICPDR”	
	“To continue boosting major investments in building and upgrading urban wastewater treatment facilities…”	
	“To reduce existing water continuity interruption for fish migration in the Danube river basin”	
	(...)	
PA5 „Environmental Risk“	“To develop and adopt one single overarching floods management plan at basin level…”	
	“To continuously update the existing database of accident risk spots…”	
	(...)	

EUSDR Actions and ICPDR Activities – PA6

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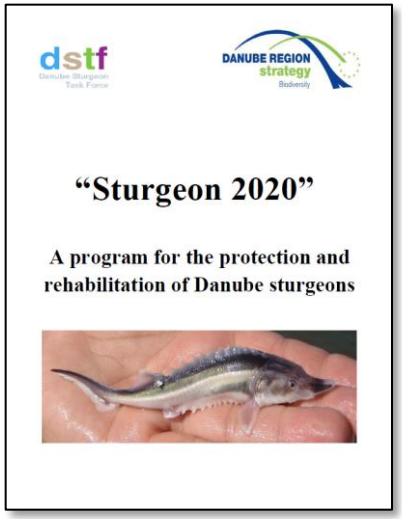
EUSDR Priority Area	Example for relevant EUSDR Action	ICPDR involvement
PA6 „Biodiversity“	“To protect and restore most valuable ecosystems and endangered animal species”	ICPDR is observer General relevance of ICPDR activities for biodiversity issues (and vice versa) Direct targeted cooperation with PA6 on **Sturgeons**



dstf Danube Sturgeon Task Force

Danube Day 2013
„Get active for the sturgeons“

EUSDR Actions and ICPDR Activities – PA1a and PA2

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EUSDR Priority Area	Example for relevant EUSDR Action	ICPDR involvement
PA1a „Inland Waterways“	“To invest in waterway infrastructure of Danube and its tributaries and develop the interconnections”	ICPDR participates as observer - cooperation based on „Joint Statement“ process
PA2 „Sustainable Energy“	“To develop and set up pre planning mechanism for the allocation of suitable areas for new hydro power projects”	ICPDR „Guiding Principles on Sustainable Hydropower Development in the Danube Basin“
	“To develop a comprehensive action plan for the sustainable development of the hydropower generation potential of the Danube River and its tributaries”	

Summary and Conclusions

- „*Compatibility of environmental requirements and sectoral water needs*“ requires **integrated management** and **coordination** between different water-relevant **sectors**
- **Management plans** according to **EU Water Framework Directive** and **EU Floods Directive**, updated every 6 years, are the **key tools** for management and integration
- Some of the **challenges**:
  - Secure required **funding for investments** and furhter development of **wastewater treatment** infrastructure
  - Future development of **agricultural sector** and related measures
  - Measures on **hydromorphology** / **sustainable infrastructure** (i.e. inland navigation, hydropower, flood protection)
  - **Climate change** adaptation

Summary and Conclusions

- **EU Danube Strategy** provides **opportunity** to further strengthen cooperation in the Danube basin
- Significant overlap of ICPDR activities and spcific EUSDR actions requires **sound coordination** between ICPDR and PACs
  - Avoiding duplication of work
  - Making best use of synergies
- Example: **Danube Sturgeon Task Force** (PA6) enables „extension“ of capacities
- Need to ensure exchange and **integration between different PAs**
- EUSDR can help to secure long term **matching of funds with required measures**, i.e. for **2015-2021 Management Plans** according to EU Water Framework Directive and EU Floods Directive

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Thank you for your kind attention!

For more information please consult the ICPDR website

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ICPDR Secretariat / Vienna International Centre, D0412 / P.O. Box 500 / 1400 Vienna / Austria
Phone +43 1 26060-5738 / Fax +43 1 26060-5895 / icpdr@unvienna.org / www.icpdr.org