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# Water Management and Agriculture Workshop

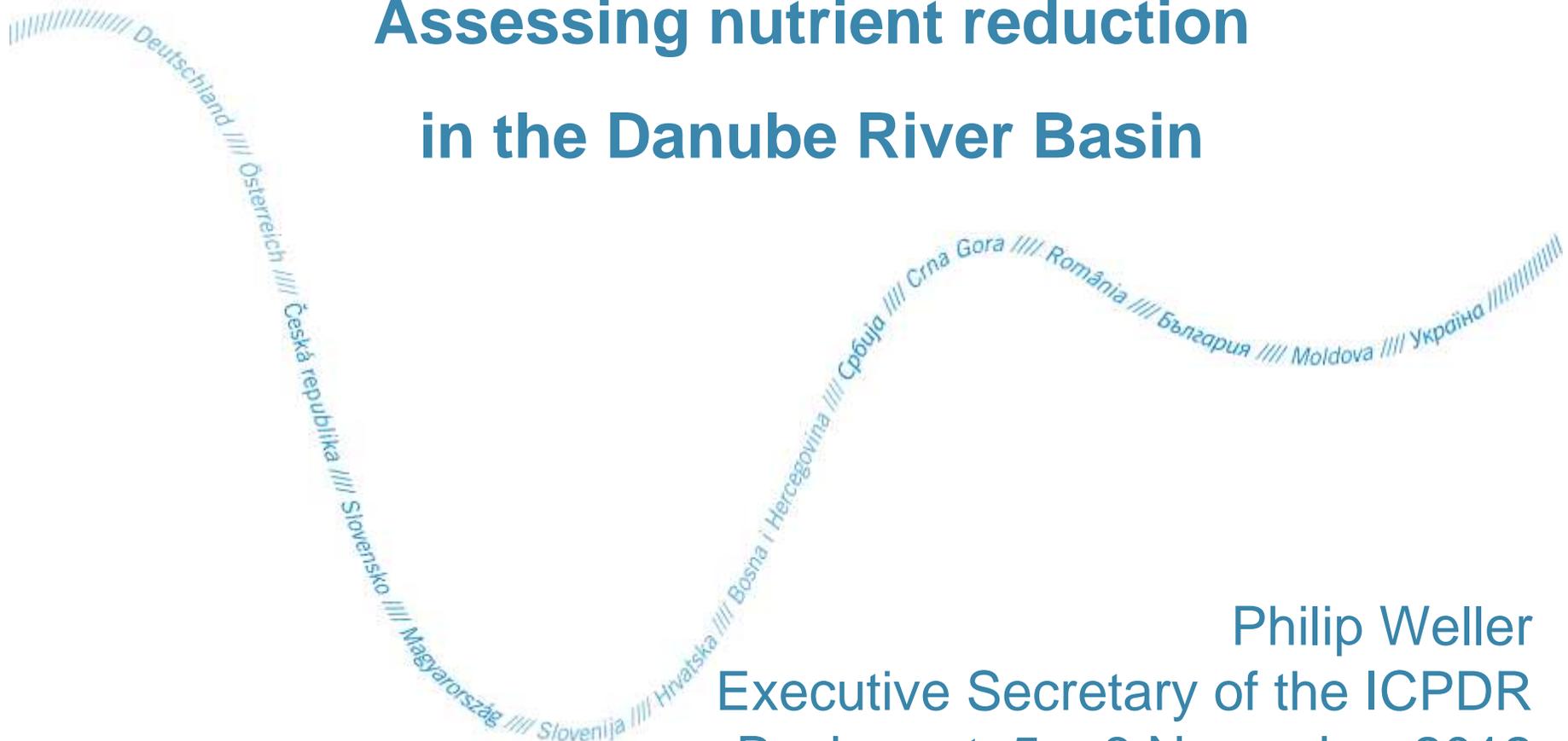
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Kommission  
zum Schutz  
der Donau

## Assessing nutrient reduction in the Danube River Basin



Philip Weller  
Executive Secretary of the ICPDR  
Bucharest, 5 – 6 November 2012

# From Black Forest to Black Sea

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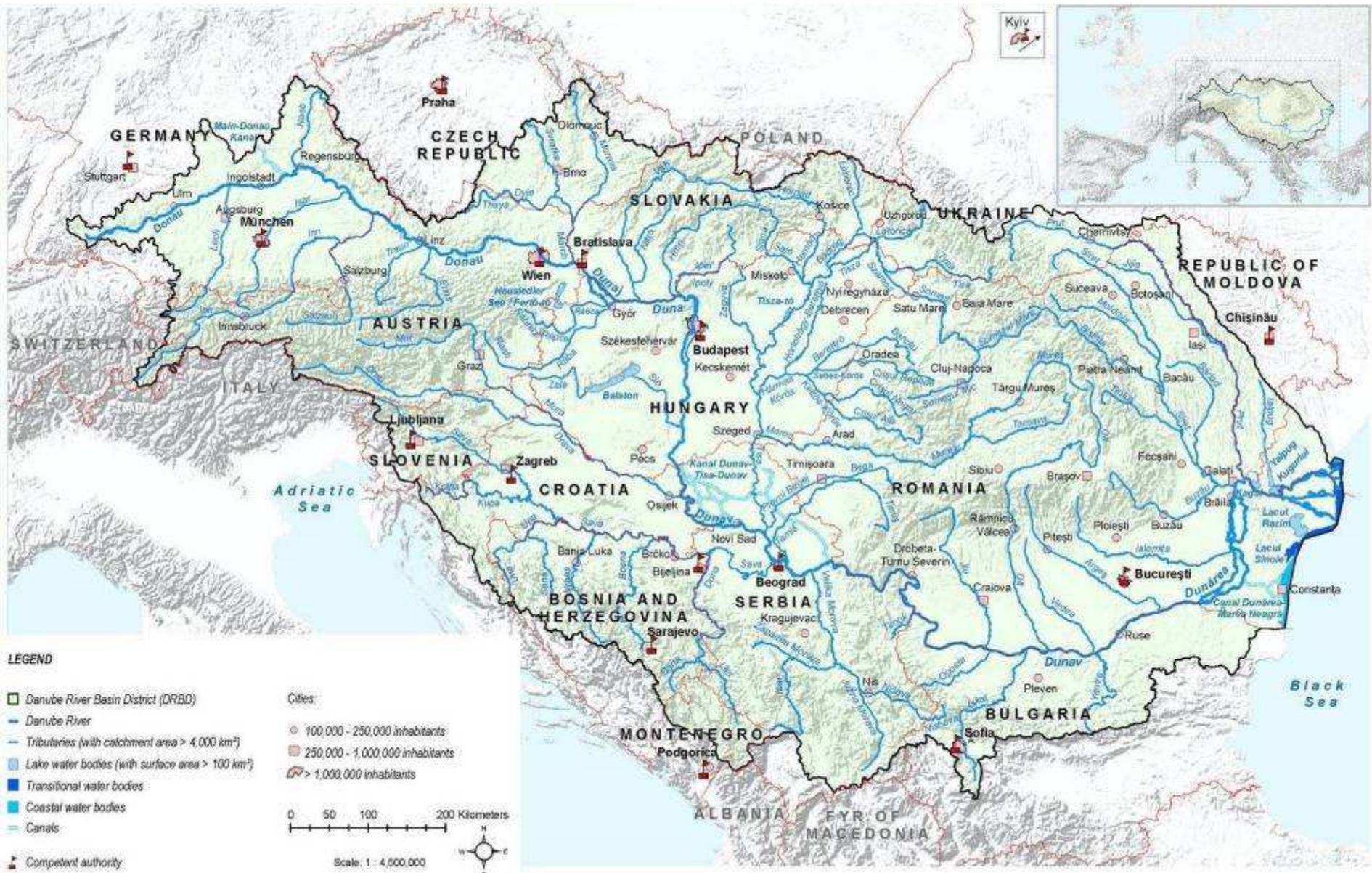
# Danube River Basin & the Black Sea Basin

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The World's most international River Basin

# Human activities damaged the Danube

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# Danube River Protection Convention

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**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 Flood Directive**

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# Contracting Parties

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Germany



Austria



Czech Republic



Slovakia



Hungary



Slovenia



Croatia



Bosnia & Herzegovina



Serbia



Montenegro



Romania



Bulgaria



Rep. of Moldova



Ukraine



European Union

# Stakeholder Involvement: 22 Observers

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viadonau



European Barge Union ebu



VGB



DANUBE PARKS  
network of protected areas



Danube Tourist  
Commission



dcc

danube  
competence  
center



ICPDR Delegations of Contracting Parties

ICPDR Secretariat

IMGIS EG

Information Management & Geographical Information System

PP EG

Public Participation

Flood EG

Flood Protection

MA EG

Monitoring & Assessment

APC EG

Accident Prevention/Control

PM EG

Pressures & Measures

RBM EG

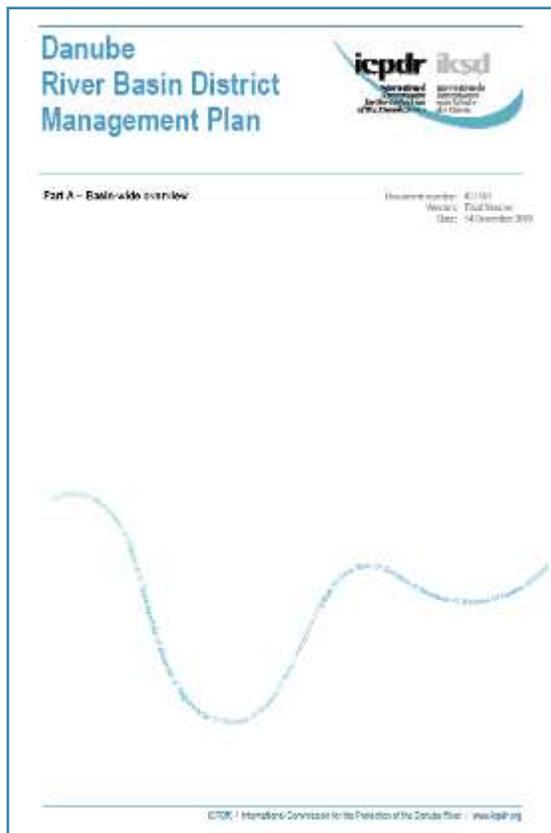
River Basin Management

ad hoc S EG

ad hoc Strategic

Task Groups

# Danube River Basin Management Plan



## Reflects/Includes

- Water status of the DRB waters
- Joint Programme of Measures

## Enables

- Conclusions on funding
- Evaluation of measure implementation

# Significant Water Management Issues

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Organic  
Pollution



Nutrient  
Pollution



Hazardous  
Substances Pollution



Hydromorphological  
Alterations

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# Visions & Management Objectives for the SWMIs

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# Visions & Objectives

## Organic Pollution

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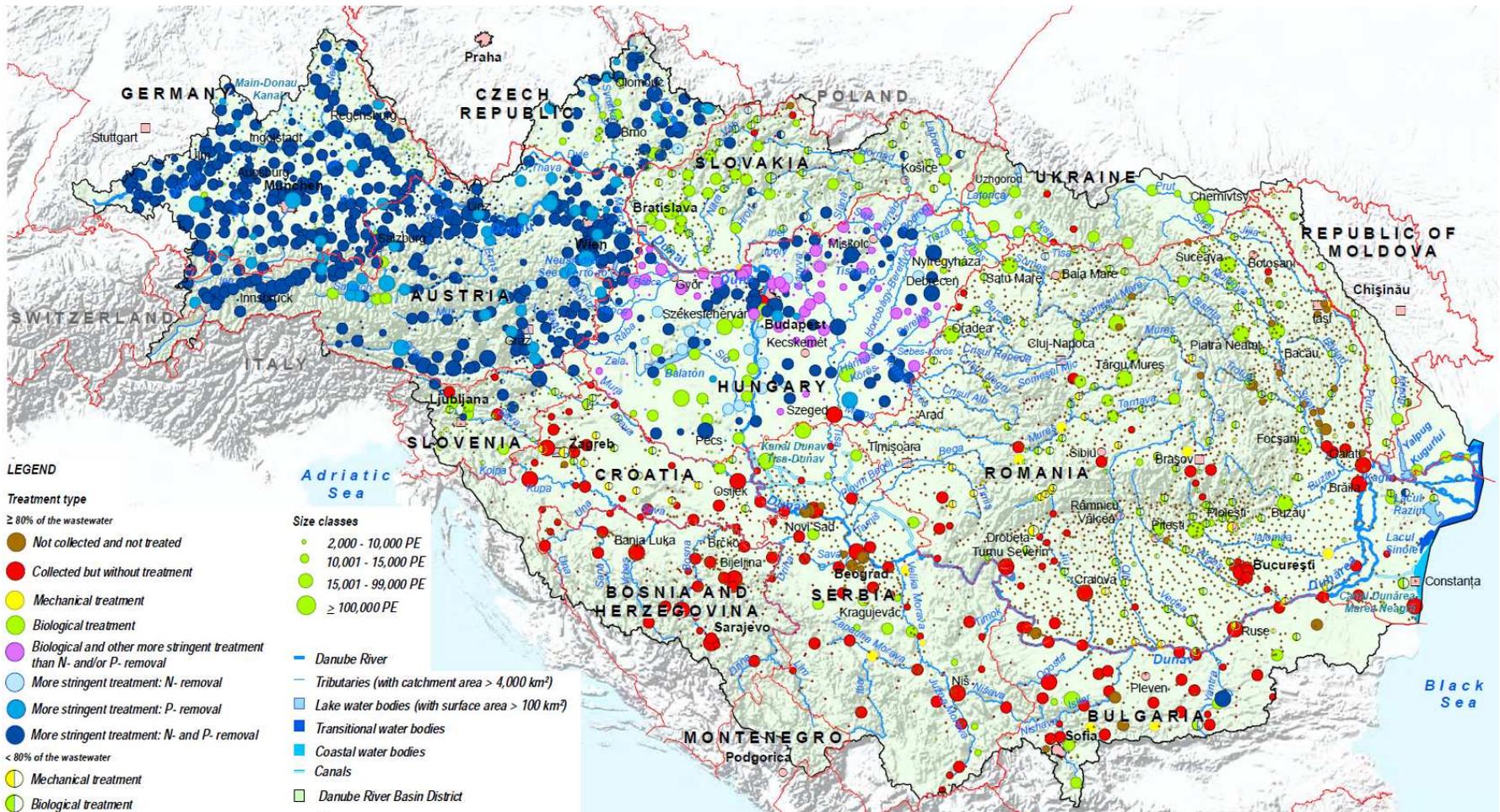


No untreated municipal and industrial wastewaters are discharged into the waters of the Danube River.

# Urban Wastewater Treatment Plants – 2005/6

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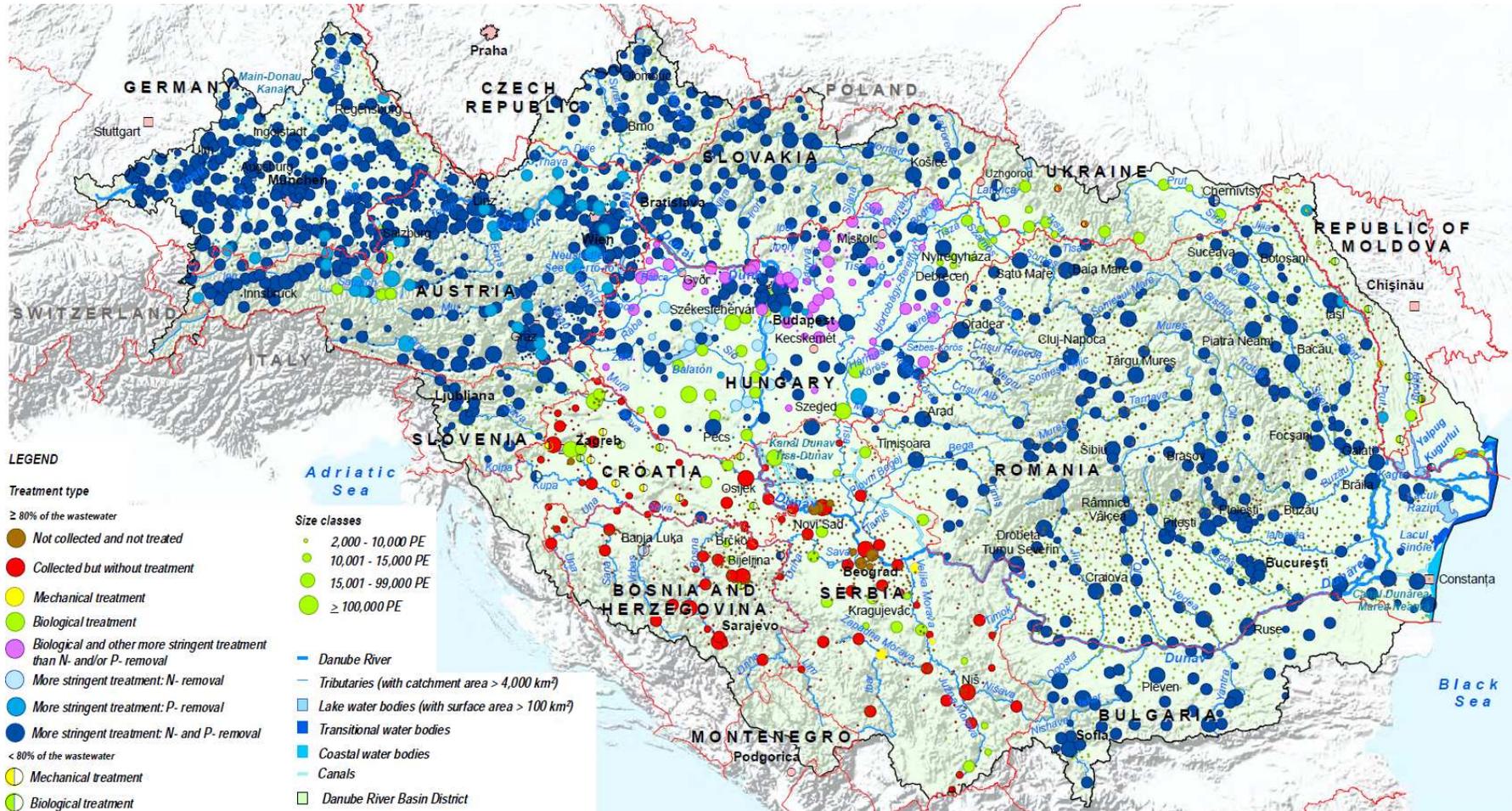
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# Urban Wastewater Treatment Plants - 2015

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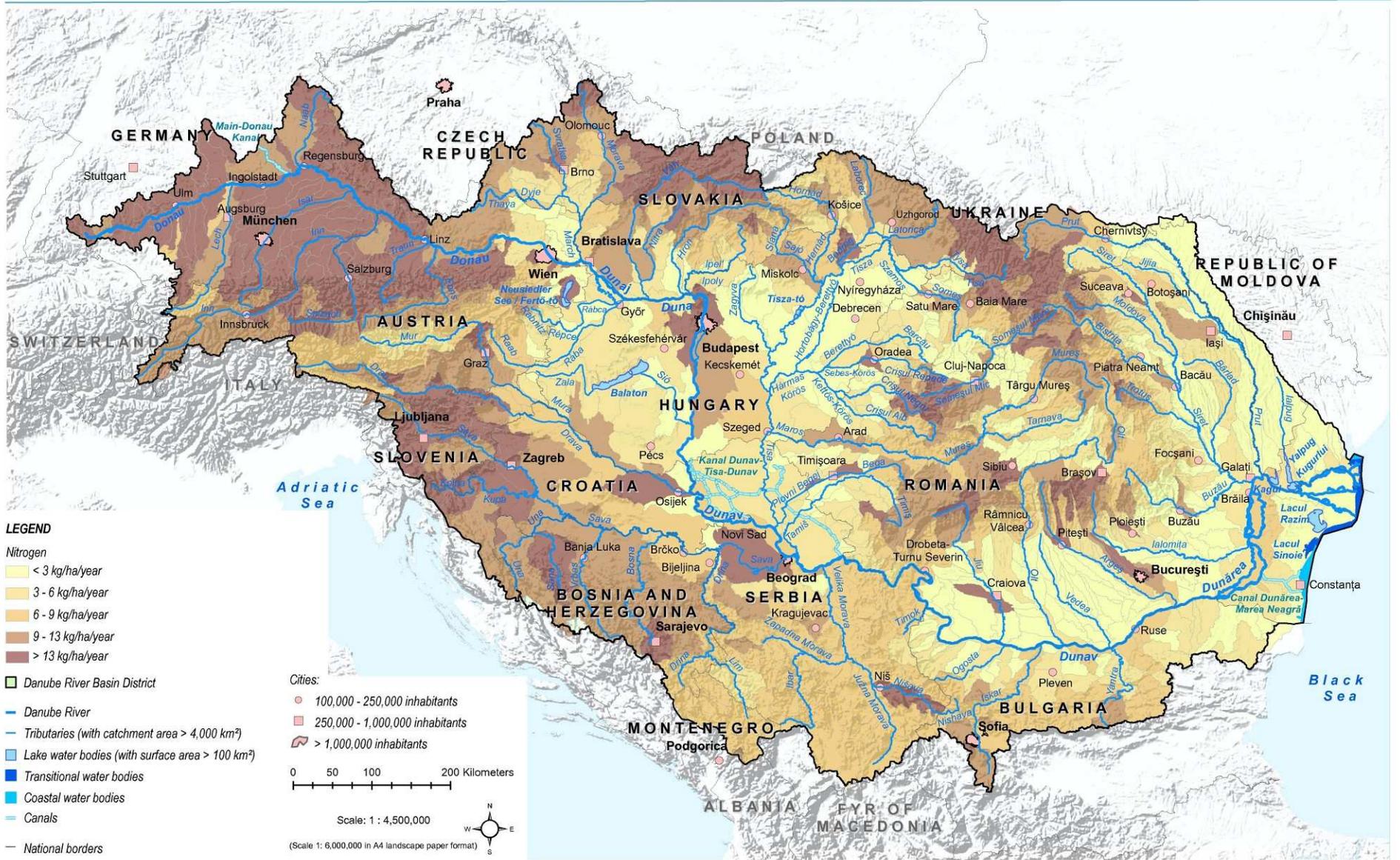
# Visions & Objectives: Nutrient Pollution

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The nutrient balance in the DRB is environmentally sustainable. The emissions of nutrients via point and diffuse sources are managed in a balanced way for the entire DRB, that neither the waters of the DRB nor the Black Sea are threatened or impacted by eutrophication.

# Danube River Basin District: Nutrient Pollution from Point and Diffuse Sources - Reference Situation for Nitrogen



**LEGEND**

**Nitrogen**

- < 3 kg/ha/year
- 3 - 6 kg/ha/year
- 6 - 9 kg/ha/year
- 9 - 13 kg/ha/year
- > 13 kg/ha/year

- Danube River Basin District
- Danube River
- Tributaries (with catchment area > 4,000 km<sup>2</sup>)
- Lake water bodies (with surface area > 100 km<sup>2</sup>)
- 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)

Significant efforts have been undertaken so far in the DRBD regarding diffuse source pollution and its illustration using the MONERIS Model System (Behrendt et al., 2007). However, further research and monitoring is needed, as well as a continuous improvement and calibration of the MONERIS scenarios.

The MONERIS Model integrates the findings of point source analysis with those related to diffuse sources and reflects the overall nutrient input in the DRB in total and per Danube country. SI is using a method based on the OECD method: Environmental indicators for agriculture. Methods and Results (2006).

This ICPDR product is based on national information provided by the Contracting Parties to the ICPDR (AT, BA, BG, CZ, DE, HR, HU, MD, RO, RS, SI, SK, UA) and CH, except for the following: EuroGlobalMap v2.1 from EuroGeographics was used for national borders of AT, CZ, DE, HR, HU, MD, RO, SI, SK and UA; ESRI data was used for national borders of AL, ME, MK; Shuttle Radar Topography Mission (SRTM) from USGS Seamless Data Distribution System was used as topographic layer; data from the European Commission (Joint Research Center) was used for the outer border of the DRBD of AL, IT, ME and PL.

Vienna, December 2009

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# Danube River Basin District: Nutrient Pollution from Point and Diffuse Sources - Reference Situation for Phosphorous

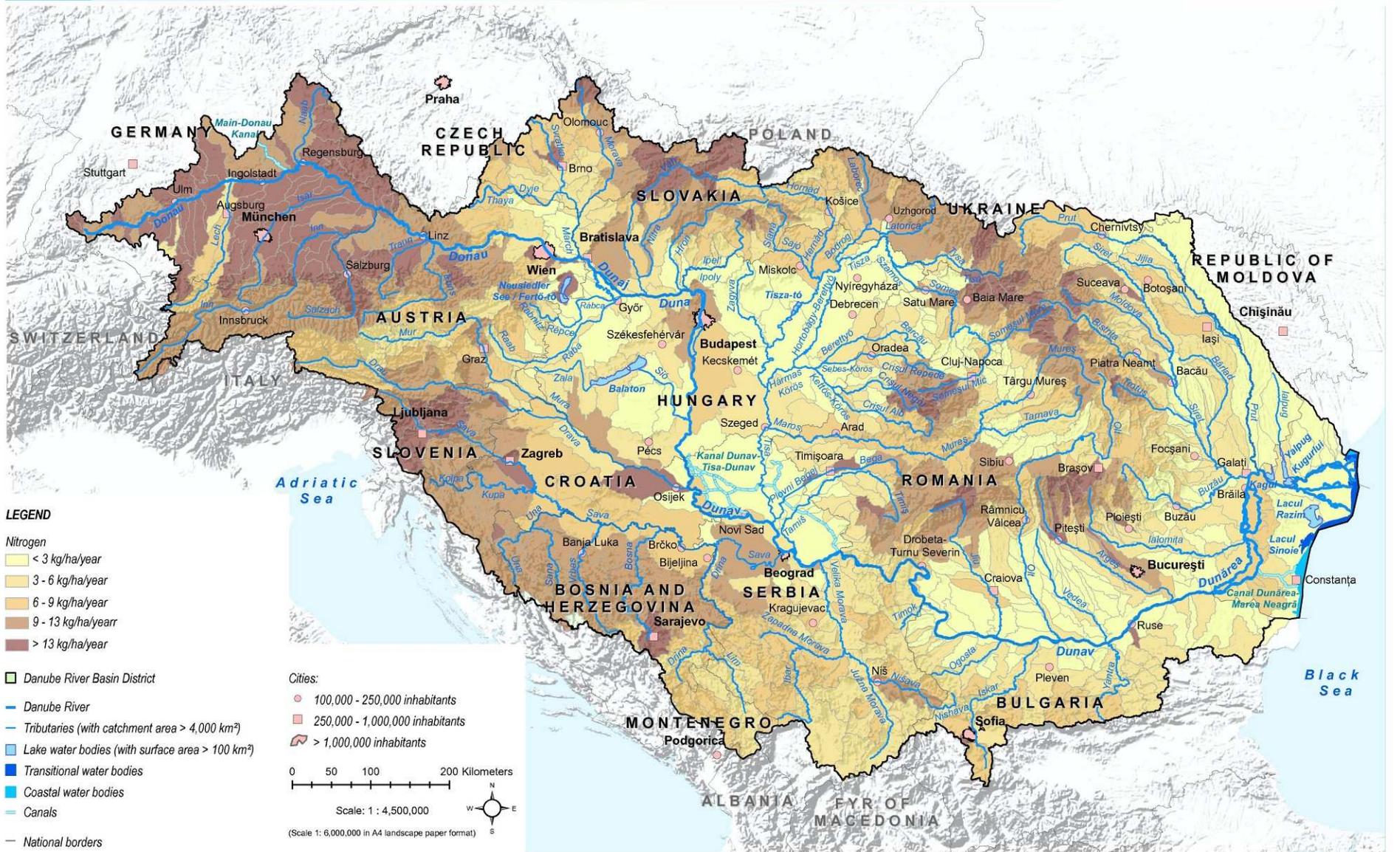


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# Danube River Basin District: Nutrient Pollution from Point and Diffuse Sources - Baseline Scenario 2015 for Nitrogen



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Vienna, December 2009

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# Danube River Basin District: Nutrient Pollution from Point and Diffuse Sources - Baseline Scenario 2015 for Phosphorus



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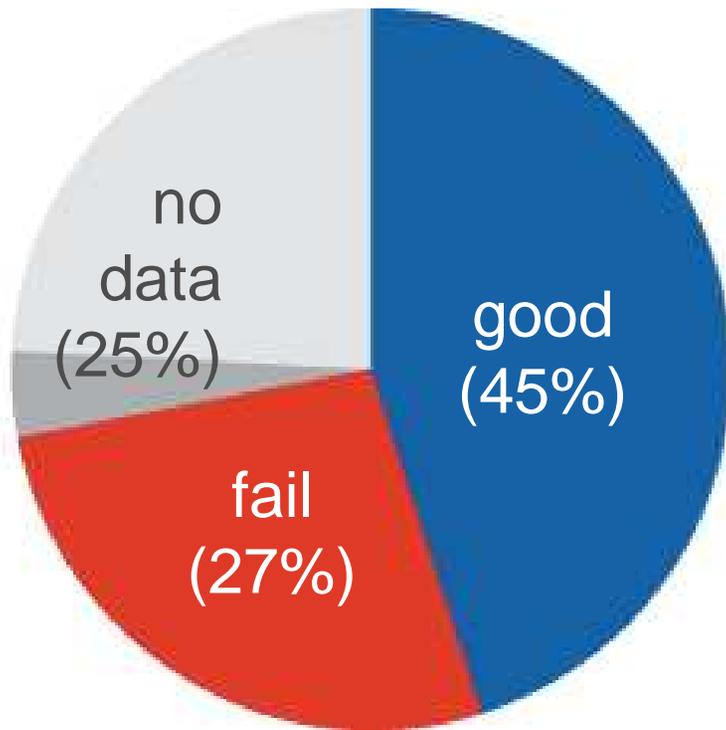
# Visions & Objectives: Hazardous Substances

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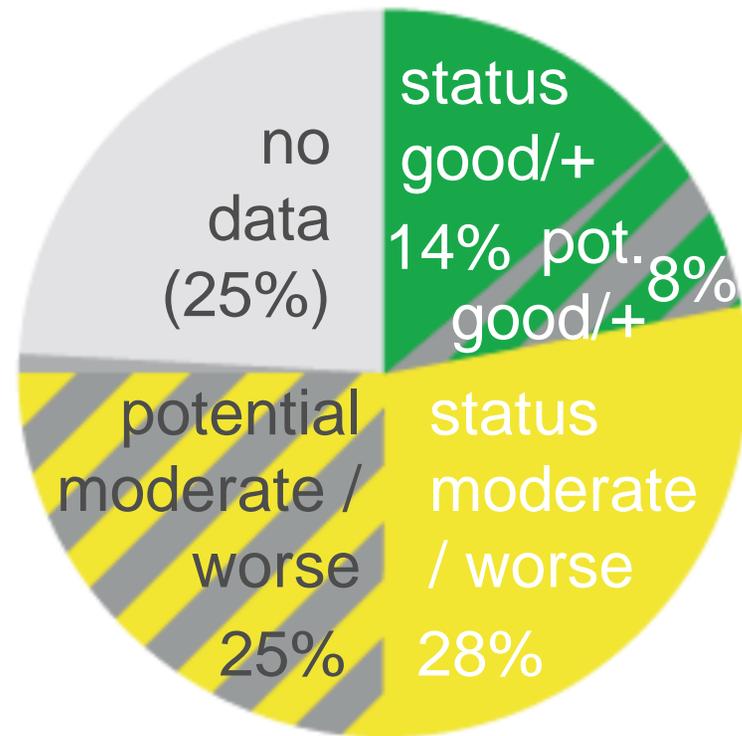


Hazardous substances are no threat to the aquatic environment of the waters in the DRB and Black Sea Basin. No untreated municipal/industrial wastewater is discharged into the waters of the Danube River Basin. Best available techniques are implemented for the treatment of industrial wastewaters to eliminate and reduce the discharge of hazardous substances.

# Condition of Danube & its Tributaries



**Chemical**



**Ecological**

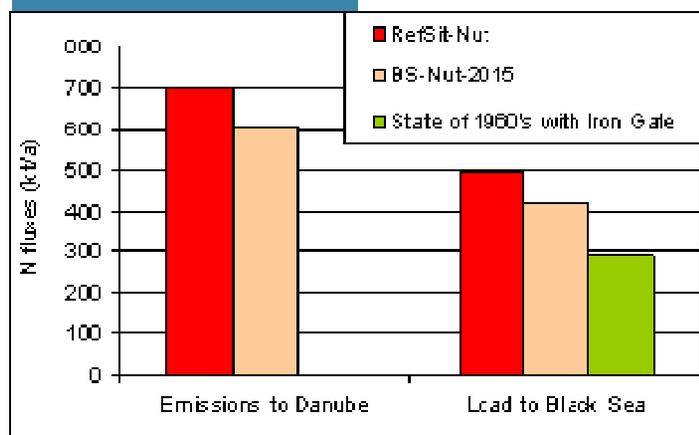


Nutrient  
Pollution

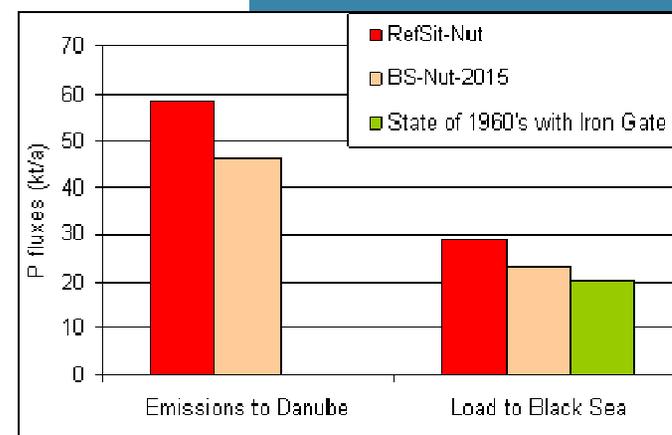
# Key Conclusions: nutrients pollution reduction by 2015



## Nitrogen



## Phosphorous



- **Management objectives and EU WFD objectives not ensured**
- **N emissions** to surface waters in 2015: 12% lower. Loads to the Black Sea still far above (40%) the load of the 1960's.
- **P emissions** to surface waters in 2015: 25 % lower. Load to the Black Sea still above (15%) that of the 1960's

⇒ **Introduction of Phosphate free detergents in the DRB**

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# P-free detergents

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A ban of P containing laundry and dishwasher detergents would further reduce the P emissions by approximately 2 kt/a to a level only 5% above the values of 1960s.

## EU regulation

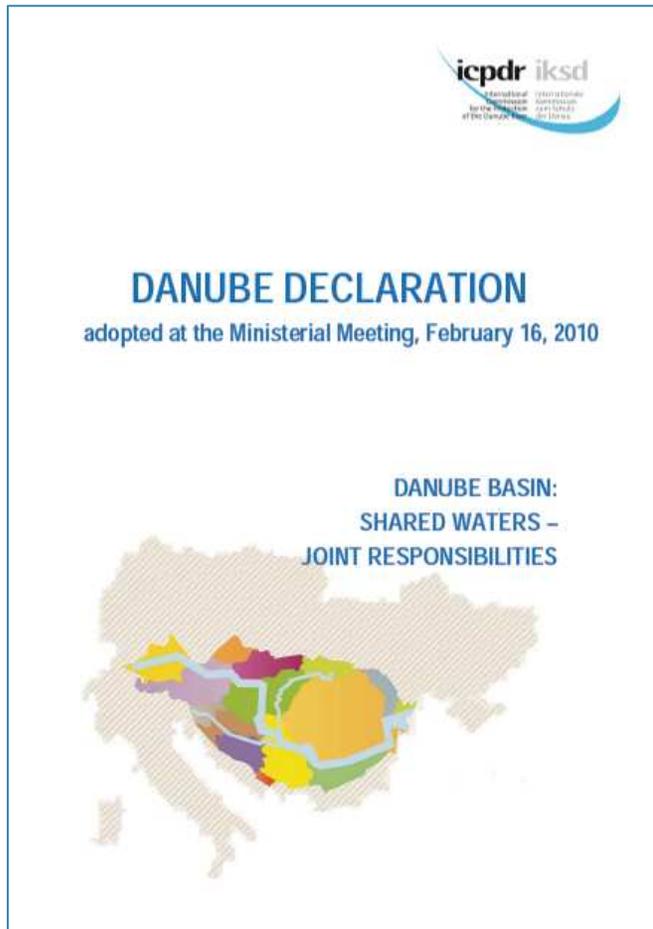
The limit value for consumer laundry detergents is set at “0.5 grams of P per washing process in a standard washing machine” and it will be applicable from 30 June 2013.

The limit value for consumer automatic dishwasher detergents is set at “0.3 grams of P in a standard dosage” and it will be applicable from 1 January 2017”.





# Danube Declaration

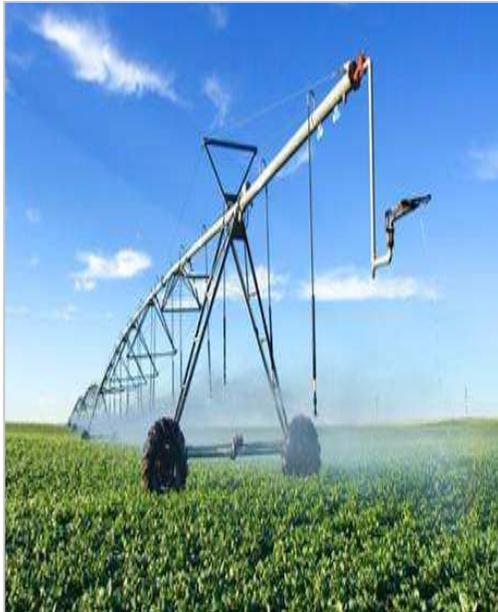


- Confirms will to contribute to the protection of Black Sea
- Agrees on need for additional initiatives to reduce nutrient loads
- Expresses concerns that a stronger increase in the intensity of agricultural development might offset pollution reductions

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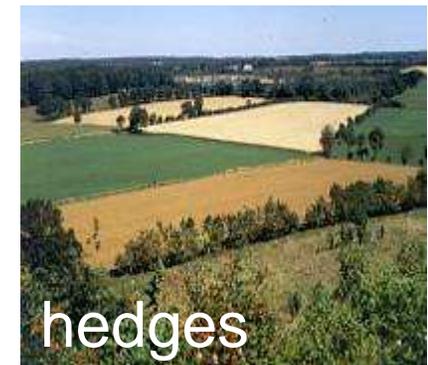
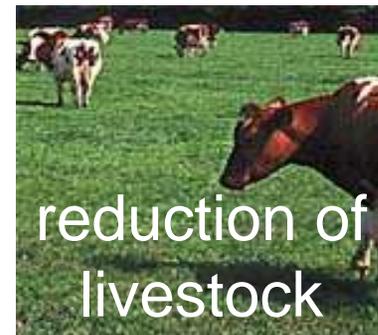
# Agriculture & Land Use Agri-environmental Policies

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- **Nutrients reduction**, e.g. limits in fertiliser use (time and type), nutrient balances on farm level
- **Pesticide reduction** in all farming practices
- **Organic farming**: input reduction, rotation, intensification of livestock
- **Soil erosion** measures
- **Wetlands** reconnection

# Areas for Best Agricultural Practice



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# Exchange of experiences

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Agriculture

- ⇒ Which measures do we have in place?
- ⇒ What do we plan to implement?
- ⇒ Which new measures are needed?

Cooperation between authorities responsible for Water –  
Environment and Agriculture

# Cooperation between business & governments

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# EU Grant DRBMP - 2012

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December 2010, to support key actions needed for the implementation and follow-up of the first Danube River Basin Management Plan and Tisza sub-basin Management Plan

Workshop on Water Management and Agriculture: an essential component of the EU Grant

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# EU Grant: Workshop on Water and Agriculture

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The workshop is aiming to facilitate the dialogue between stakeholders of agriculture and water management and to discuss these key questions:

*What is the* relevance of agriculture sector in the DRB and *which* are the main pressures from the agricultural activities impacting the quality and quantity of waters of the river basins?

*How* the implementation of the EU policies and directives facilitate the reduction of pressures due to agricultural activities in water ecosystems?

*Which* are the agricultural measures currently implemented?

*Why* dialogue between the actors of agriculture and water management sectors are crucial and *how the dialogue* between stakeholders – also including business sector - can facilitate the improvement of the status of the waters in long term?

# Thank you!

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The screenshot shows the ICPDR website homepage. On the left, there are two main navigation menus. The first, titled 'Danube Basin', includes links for 'RIVER BASIN', 'COUNTRIES', and 'BLACK SEA'. The second, titled 'Issue', includes links for 'ECOSYSTEMS', 'WATER QUALITY', 'WATER POLLUTION', 'GROUNDWATER', 'FLOODS & DROUGHTS', 'DAMS & STRUCTURES', and 'RIVER BASIN MANAGEMENT'. A third menu titled 'Sectors' includes links for 'HUMAN IMPACTS', 'MUNICIPALITIES', 'INDUSTRY', 'AGRICULTURE', 'NAVIGATION', and 'NATURE PROTECTION'. Below these is an 'ICPDR' menu with links for 'ABOUT US', 'PROJECTS & PROGRAMMES', 'PUBLICATIONS', 'MEETINGS & EVENTS', and 'THE CONVENTION'. There is also a search bar.

The main content area features a header with the ICPDR logo and the text 'ICPDR - International Commission for the Protection of the Danube River Working for the Danube River Basin and its People'. Below this is a 'Danube Day' banner with three images: a bird, a stone structure, and a child. A 'Welcome to ICPDR website!' message follows, accompanied by a photo of Mr. Wolfgang Stalzer, ICPDR President 2012, and a quote: 'We hope that this website inspires anyone wishing to know more about the environmental issues affecting the Danube river basin. And that it is a good source for everyone interested in ensuring the sustainable development of the most international river basin in the world.'

Three news articles are displayed in a grid:

- AUSTRIA TAKES OVER ICPDR PRESIDENCY**: In the framework of a ceremony held in Vienna today, Austria took over the presidency of the International Commission for the Protection of the Danube River (ICPDR). The former President, Mykola Malenewskiy of Ukraine, passes his office on to Wolfgang Stalzer of Austria.
- DANUBE WATCH 3-4/2011**: The new issue of the Danube Watch is out. Click here to read the full magazine online.
- CZECH VERSION OF THE PLATINA MANUAL PUBLISHED**: The recent publication of a Czech version of the PLATINA Manual is a major step in promoting good practices in inland navigation and waterway planning. The translated manual was...
- INLAND WATERWAYS COMES TOGETHER TO ADDRESS DIFFERENCES**: A groundbreaking conference in Brussels has seen two traditionally opposing waterways groups come together to discuss how to cooperate for the benefit of Europe's rivers and canals.

Further information: [www.icpdr.org](http://www.icpdr.org)