



Republic of Serbia
Ministry of Energy, Development and Environmental Protection
Serbian Environmental Protection Agency

*Regional workshop on Urban Waste Water Treatment Directive (UWWTD)
and SoE emissions to water
18th-19th June 2013, Skopje*

ANALYSIS OF DATA FOR COMMUNAL AND INDUSTRIAL WASTEWATER

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Department - National register of pollution sources



WATER RESPONSIBILITIES

- **Ministry of Agriculture, Forestry and Water Management**
i.e. its operational body **Directorate for Water**
- **Ministry for Energy, Development and Environmental Protection**
i.e. its operational body **Serbian Environmental Protection Agency**
- **Republic Hydrometeorological Service of Serbia**
- **Statistical Office of the Republic of Serbia**

Other Ministries responsible for certain aspects of **water management** are:

- **Ministry of Health**
- **Ministry of Infrastructure and Energy**
- **Ministry of Regional Development and Local Self-Government**
- **Ministry of Finance and Economy**
- etc.



The level of practical implementation in the water sector varies widely.

Serbia has contributed to the practical implementation of the Water Framework Directive, as an active participant in the International Commission for the **Protection of the Danube River**.

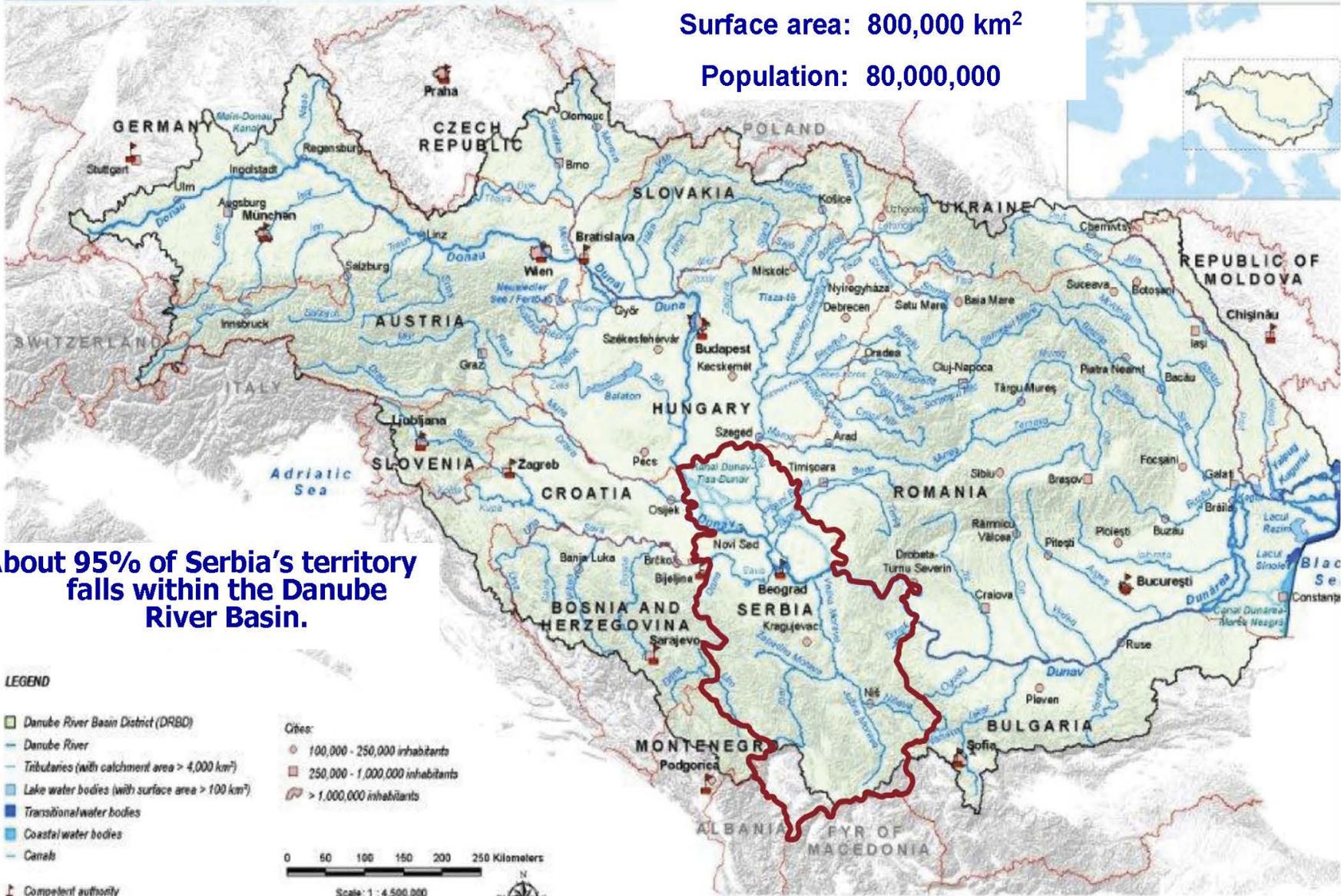
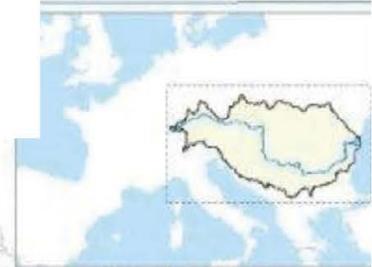
However, at the moment Serbia fails to achieve compliance with the main requirements for pollution control, listed in the Directive for the treatment of urban waste water (UWWTD) (91/271/EEC).

Data from Statistical Office of the Republic of Serbia, show following:

- Out of 2.5 million households in Serbia, only 1.3 million are connected to the public sewerage system;
- Out of 365 million m³ waste water discharged in 2009., only 51 million m³ had been treated (mostly to primary standards).

Surface area: 800,000 km²

Population: 80,000,000



About 95% of Serbia's territory falls within the Danube River Basin.

LEGEND

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

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

0 60 100 150 200 250 Kilometers

Scale: 1 : 4,500,000

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



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



Regarding to the fact that existing Law on Water or by-laws didn't formal define term "agglomeration", we have Preliminary assessment of agglomerations with more than 2000 p.e.

- Near 70 agglomer. >15000 p.e.
- Near 30 agglomer. between 10 000 and 15 000 p.e.
- Near 335 agglomer. between 2000 and 10 000 p.e.

Republic Directorate for Water will prepare plans and Regulation for Water Pollution Protection Plan

Waters in protected areas (zones of sanitary protection-for the sources of drinking waters, and areas protected as natural values) are subjected to more stringent measures of protection, in Serbian legislation, but there are no "sensitive areas" designated in accordance with the criteria of Annex II, Part A



The Regulation of Water Pollution Protection Plan (estimated year for adoption is 2013) will set the legal basis for the identification of agglomerations bigger than 15000 p.e. which is the precondition for technical assessment for every agglomeration.

In accordance with Regulation on emission limit values in waters and deadlines for their achievement, industrial plants should harmonized ELV of the industrial waters before discharging them into collecting system by December 31st, 2030.

Local self-government sets the ELV for industrial wastewaters discharged into collecting systems trough the act on discharge of waste waters into the public sewerage system.



Regulations in Republic of Serbia

- The Republic of Serbia (RS) ratified the Aarhus Convention in 2009 (Official Gazette, International agreement No 38/2009);

The Ministry of Environment, Mining and Spatial Planning (MEMSP) is focal point for its implementation.

- Also, the Republic of Serbia adopted The Law of ratification PRTR Protocol (Official Gazette, International agreement No 8/2011);

The Serbian Environmental Protection Agency (SEPA) is focal point for its implementation.



The presentation describes the data submitted to the Serbian Environmental Protection Agency in accordance with the Regulation on the methodology for the development of national and local register of pollution which is in compliance with the E-PRTR Directive EU.



*According to the law, some enterprises are obliged to submit annual reports on
wastewater – emissions into water*

Reports should be submitted by 31 March, for the previous year.

The Agency for Environmental Protection has received:

23 reports by public utility companies and **67 reports by PRTR Companies** (Pollutant Release and Transfer Register) **for the year 2012.**

It should be noted that presented data are not conclusive, the reports are still coming.

Many companies do not fulfill their legal obligations.

Many companies delivered partially completed or blank reports.

A small number of companies delivered completed reports.

We consider this as a major problem in the analysis of data.

The report must include:

- chemical analysis of the quality of waste water
- information of the water recipient
- information of the wastewater treatment plant
- basic data of discharges



Analysis of data on communal wastewater

23 public utility companies (waterworks and sewerage) have submitted the report on communal wastewater. This number represents only about 13% of PUC.

23 PUC have **41 discharges**.

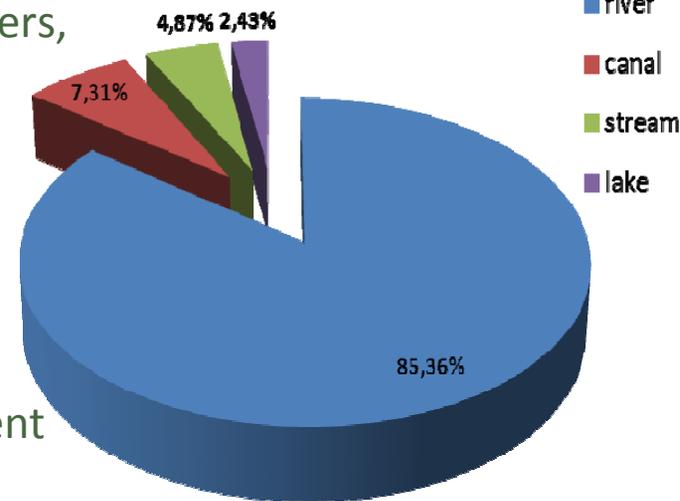
By the data analysis, the conclusion is:

- the largest percentage of wastewater is discharged into rivers, that is, **85.36%**
- into canals **7.31%**
- in streams **4.87%**
- the smallest percentage of wastewater is discharged into lakes, that is, **2.43%**

9 PUC stated that they have a plant for wastewater treatment

They treat their wastewater in the following ways:

- mechanically (most usually)/grating or precipitator
- biologically
- chemical processes have not been reported.





Emissions of pollutants into communal water

We analyzed the amount of:

- total nitrogen **N**
- total phosphorus **P**
- heavy metals (**Pb, Cd, Hg, As, Cr, Cn, Ni ,Zn**)

Reported amounts for 2012.

Emissions of pollutants into the communal water									
t/year									
N	F	Pb	Hg	As	Cd	Cr	Cu	Ni	Zn
4170,88	1324,42	0,67	0,02	0,47	1,11	11,27	4,41	1,96	13,62

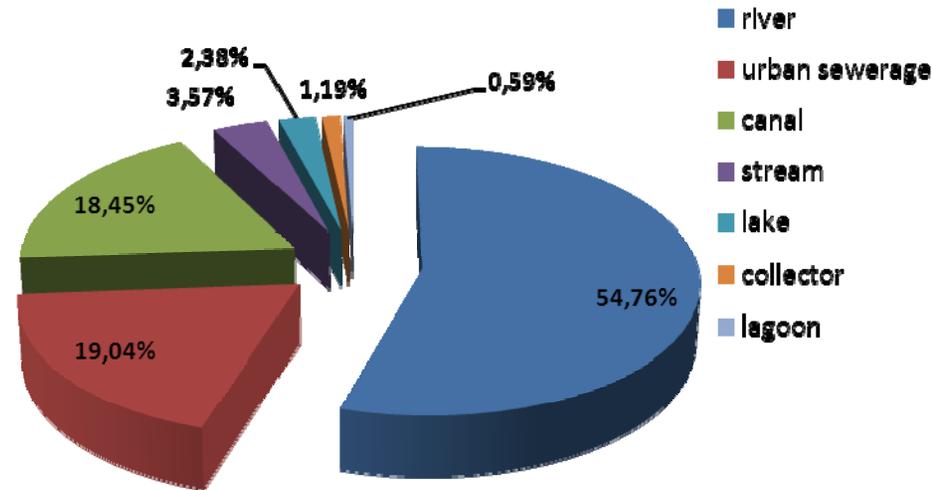


Analysis of data for industrial wastewater

The report on industrial wastewater has been delivered by 67 PRTR companies. They have reported 167 discharges.

By the data analysis, the conclusion is:

- the largest percentage of wastewater is discharged into rivers, that is, **54.76%**
- into urban sewerage **19.04%**
- into canals **18.45%**
- into streams **3.75%**
- into lakes **2.38%**
- into collectors **1.19%**
- the smallest percentage of wastewater is discharged into lagoons, that is, **0.59%**



Out of **167 discharges** of industrial wastewater, **80** discharges do not go directly into recipients, but they have a form of treatment:

- mechanically (most usually)/grating or precipitator
- biologically
- chemical processes have not been reported.



Emissions of pollutants into the industrial water

We analyzed the amount of:

- total nitrogen N
- total phosphorus P
- heavy metals (Pb, Cd, Hg, As, Cr, Cn, Ni ,Zn)

Reported amounts for 2012.

Emissions of pollutants into the industrial water									
t/year									
N	F	Pb	Hg	As	Cd	Cr	Cu	Ni	Zn
4358,53	63,76	4,56	1,29	35,13	0,71	65	78,74	1,45	26,92

Thermal power plants, chemical industry and food industry have the largest share of total nitrogen and phosphorus.



Conclusion

Current status:

- Collection and treatment of waste water is the least developed segment of the water.
- Low percentage of polluters with wastewater treatment plants (WWTPs).
- Low percentage of existing Comunal WWTPs which are operational.
- Insufficiently developed public sewerage systems (50% of the population connected).
- Certain areas do not have adequate access to water supply.
- Unbilled water/distribution and network losses exceed acceptable levels.

Required activities:

- Extension of sewer networks.
- Prioritized construction of WWTPs for all communities larger than 2000 P.E., taking in to account affordability.
- Construction of a number of regional water supply systems
- Upgrading of maintenance of existing groundwater sources.
- Reduction in water supply system losses.



Conclusion

IMPLEMENTATION OF EU DIRECTIVES

- Harmonization of national legislation with water related EU directives is a complex and long lasting process
- The harmonization of legislation which is defining responsibilities of several ministries, as well as adoption of new ones is finished to a high extent
- Financial aspect of EU directives implementation is an additional problem

Thank you for your attention