



**WAU** 

Department of  
Water, Atmosphere  
and Environment

# Overview of Status and organization of rural water service management in the Danube region

**The Last Mile: Rural Water Services Delivery in the Danube region**

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- EU legislation and practice relevant for rural water service delivery
- Situation of rural water service delivery in the Danube River basin
- Summary

# Introduction – SDG 6 targets

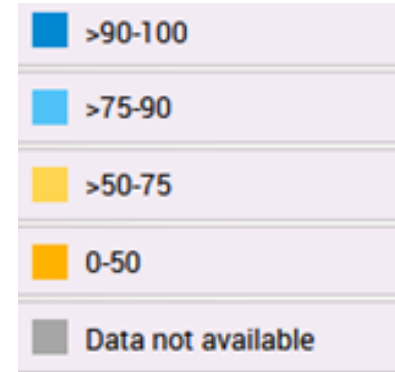
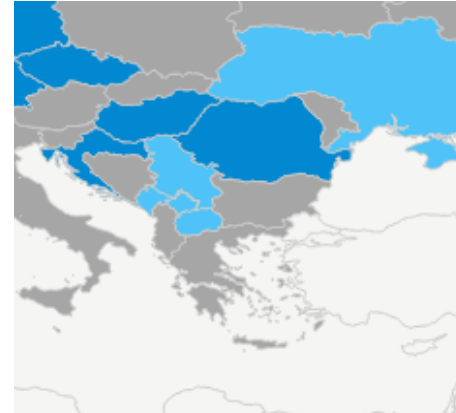
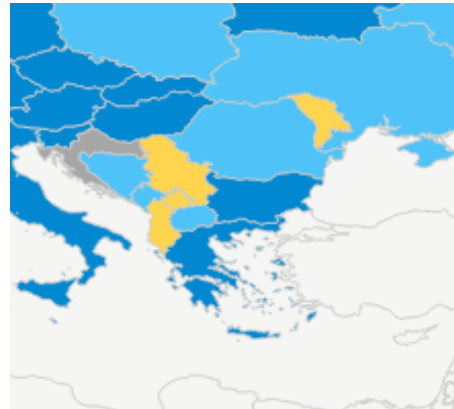


National

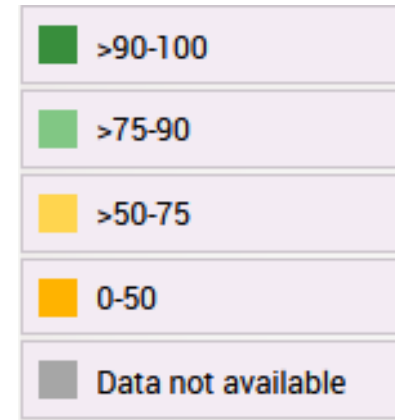
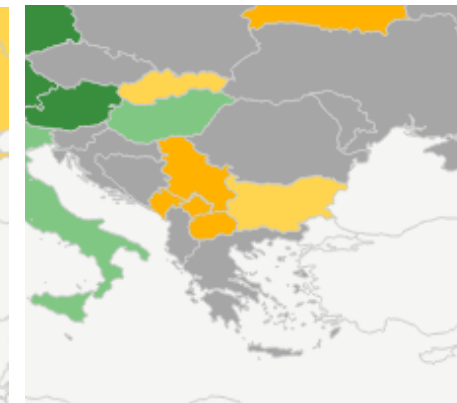
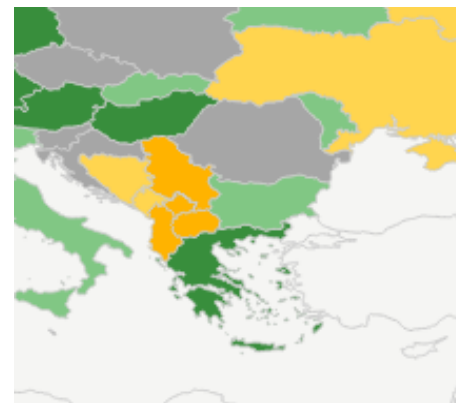
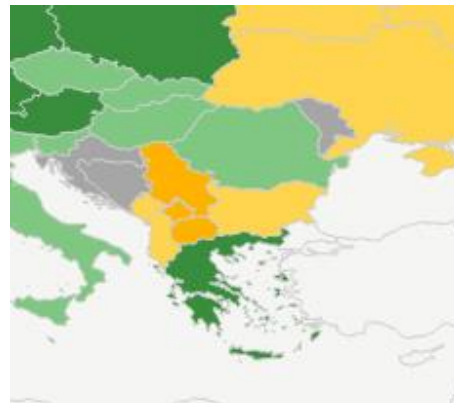
Urban

Rural

Proportion of population using **safely managed drinking water** services



Proportion of population using **safely managed sanitation** services



→ Water supply numbers higher compared to sanitation numbers

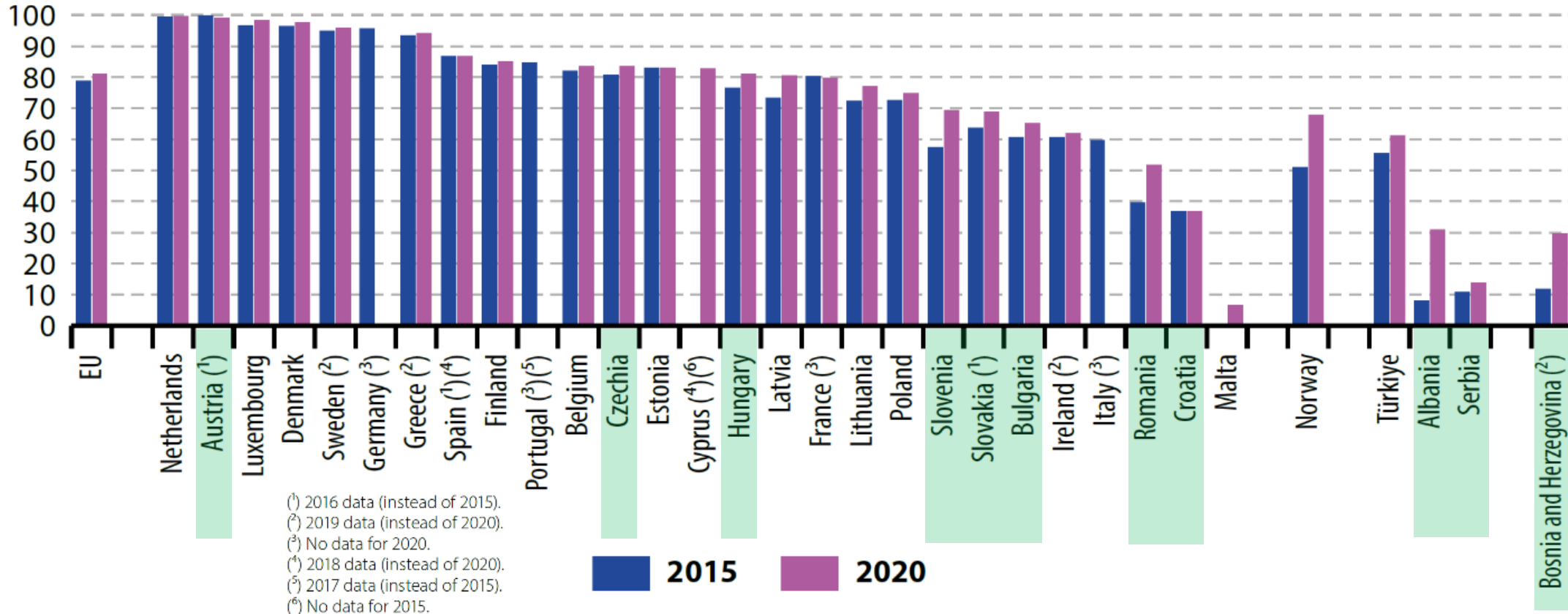
→ Rural areas generally less served

Source: <https://www.sdg6data.org/en>; 2022 data

# Introduction – SDGs



(% of population) connected to at least secondary wastewater treatment, by country, 2015 and 2020



Countries in the Danube region are marked in green (adapted from Eurostat, 2023, <https://ec.europa.eu/eurostat/en/web/products-statistical-reports/w/ks-05-23-188>).

# EU legislation and practice relevant for rural water service delivery



EU regulation is **relevant for all countries in the Danube River basin** as it comprises

- EU Member States,
- seven Candidate Countries (Albania, Bosnia and Herzegovina, Moldova, Montenegro, North Macedonia, Serbia, Ukraine) and
- one Potential Candidate country (Kosovo)

# EU legislation and practice relevant for rural water service delivery



## EU Drinking Water Directive (DWD, 2020)

Relevance of key factors for small water supplies:

- New [water quality standards](#):
  - Relevant for all suppliers
- Frequency of monitoring:
  - for water supplies  $< 10 \text{ m}^3/\text{d}$ : the Member States have to define the frequency
  - for water supplies between  $10 \text{ m}^3/\text{d}$  and  $100 \text{ m}^3/\text{d}$ : full list of parameters has to be analysed every 6 years.
- [Risk-based approach](#) → [risk management plans](#):
  - for water supplies  $< 100 \text{ m}^3/\text{d}$  the monitoring in the risk management plan can be reduced, however, a risk assessment is required for all suppliers.
- Information of public:
  - all water suppliers have to provide information on water price per  $\text{m}^3$  and information on water consumption.

# EU legislation and practice relevant for rural water service delivery

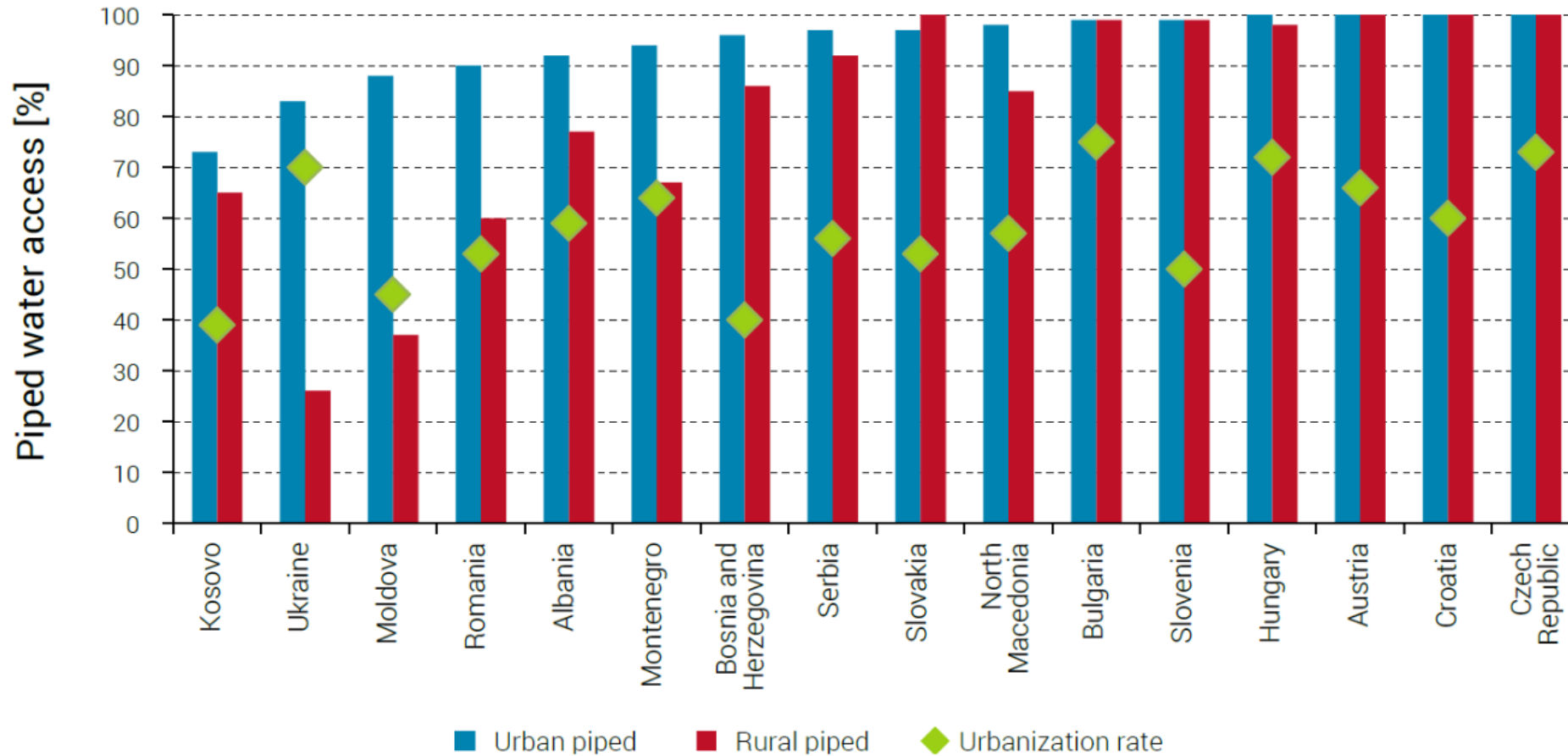


## EU Urban Wastewater Treatment Directive (UWWTD, 2024) – passed the EU Parliament on 10 April 2024

Relevance of key factors for rural areas:

- Scope of UWWTD now for all **agglomerations of 1,000 PE and above**
- agglomerations are defined as areas where the wastewater generated is concentrated, i.e., **> 10 persons per hectare**
- **“Individual systems”** as an exception ... *“... individual systems [...] are designed, operated and maintained in a manner that achieves the same level of human health and environmental protection as the secondary and tertiary treatments”*
- Commission can specify **minimum requirements** for
  - the design, operation, and maintenance of individual systems; and
  - the regular inspections of individual systems depending on type of the systems, and based on a risk-based approach.
- If more than *“2 % of the urban wastewater load at national level from agglomerations of 2,000 PE and above”* → justification of use and reports to the Commission.

# Rural water service delivery in the Danube River basin

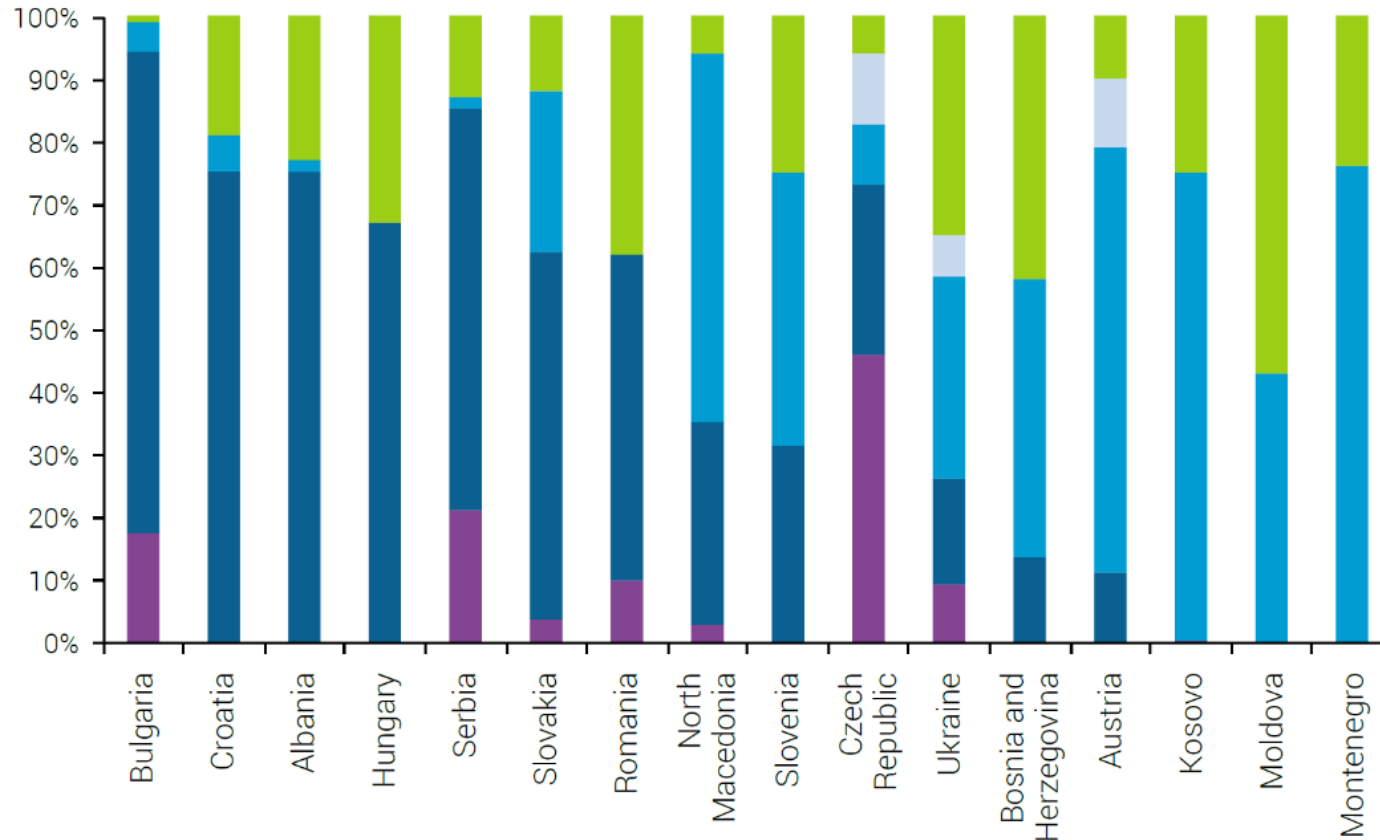


Share of population with piped water in the Danube region, 2015 (Source: World Bank Group, 2019).





# Rural water service delivery in the Danube River basin



- Self or informal providers
- Municipal providers
- Private providers
- Small formal providers
- Regional providers

Self or informal providers:

- 18 % or ca. 24.3 million persons;

Municipal providers:

- 28 % or ca. 37.4 million persons;

Private providers:

- 11 % or ca. 14.7 million persons;

Small formal providers:

- 6 % or ca. 8.4 million persons;

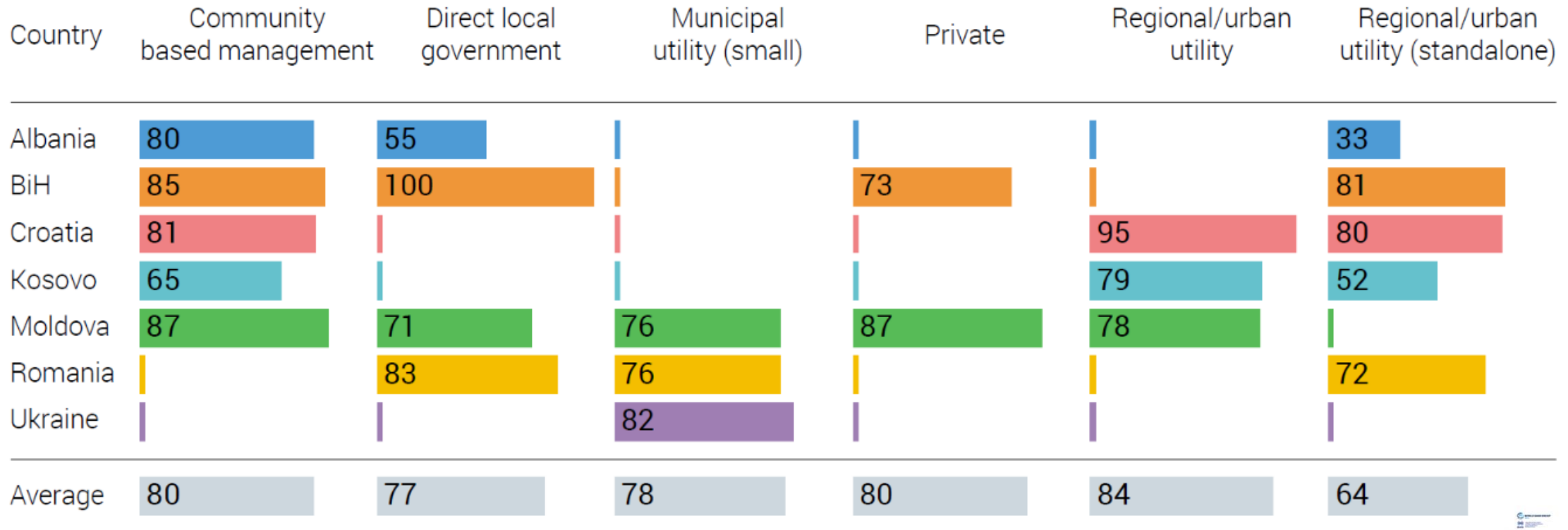
Regional providers:

- 37 % or ca. 48.9 million persons.

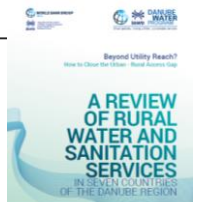
Water service providers' distribution in the Danube region by country, 2018 (Source: World Bank Group, 2019).



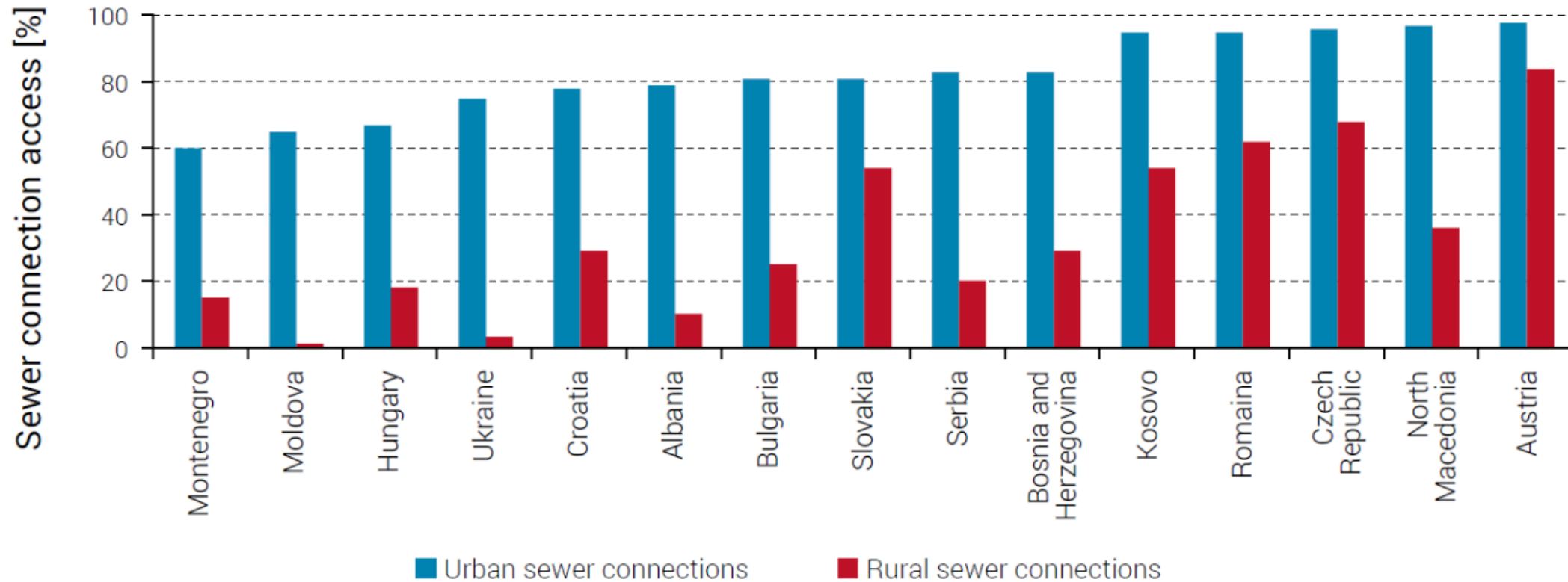
# Rural water service delivery in the Danube River basin



Share of connected households satisfied with water quality (Source: World Bank Group, 2018).



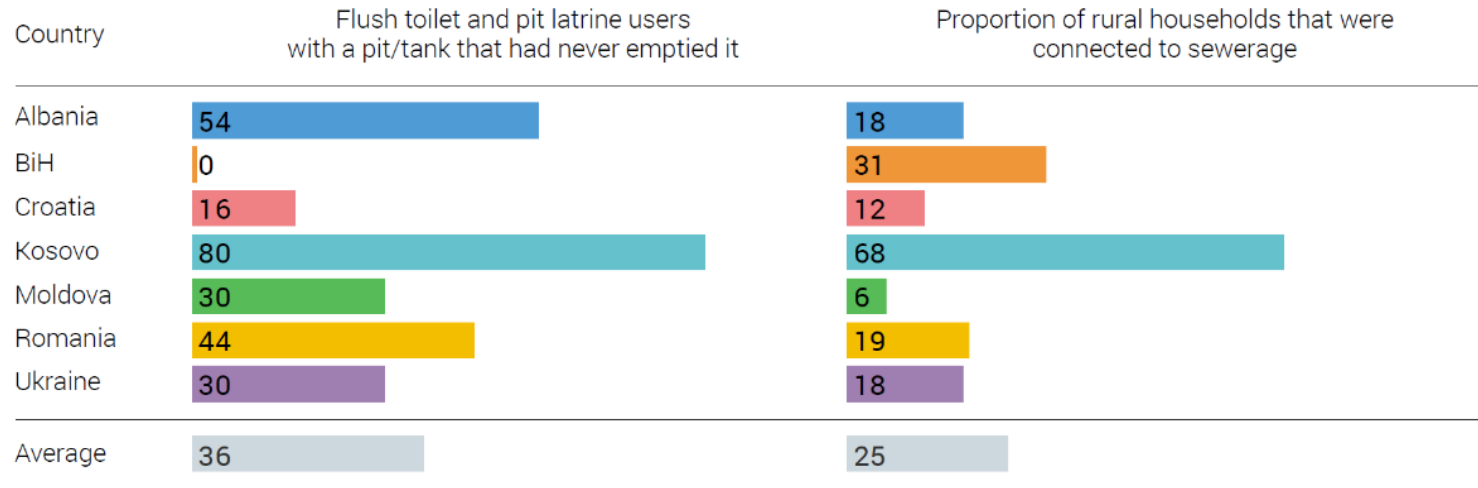
# Rural water service delivery in the Danube River basin



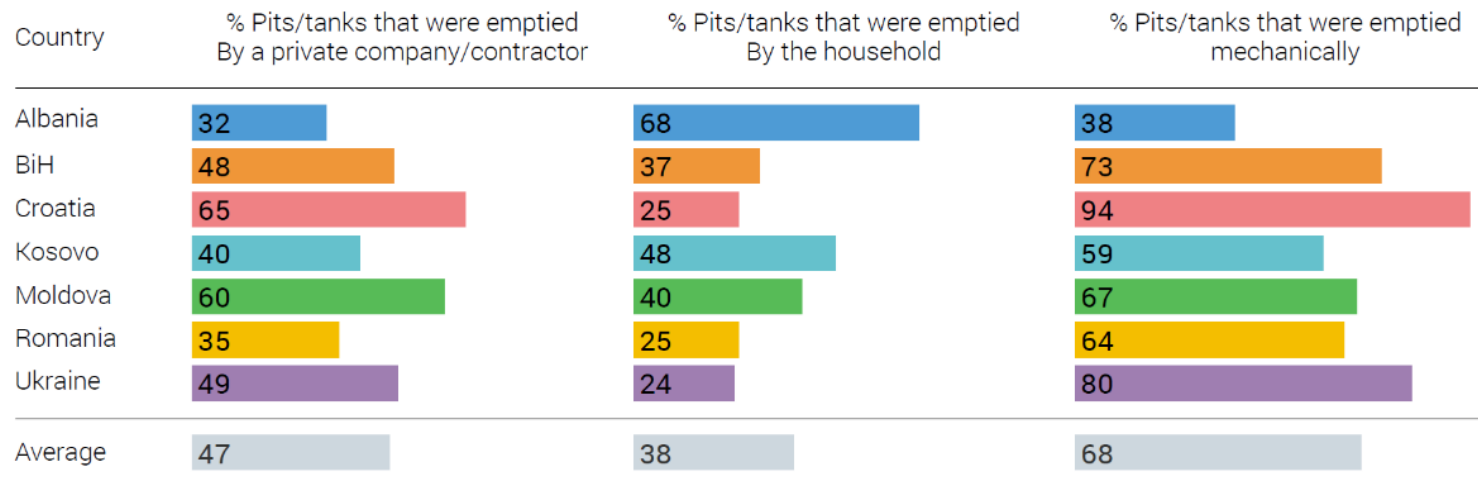
Share of population with sewer connection in the Danube region, 2015 (Source: World Bank Group, 2019).



# Rural water service delivery in the Danube River basin



Emptying practices of households connected to sewer network



Pit and tank emptying methods

Level of sanitation services by country (Source: World Bank Group, 2018).



# Rural water service delivery in the Danube River basin

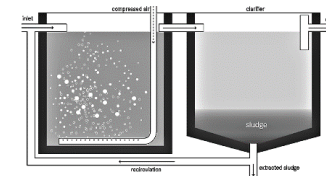
## Technologies for rural wastewater treatment

### On-site collection with off-site treatment

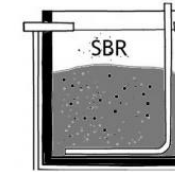
- Cesspits (with transport to next WWTP or faecal sludge treatment unit)
- Soil as recipient of treated (or partially treated or untreated) wastewater
  - Soak pits, leach fields, etc.
- Solutions with less than secondary treatment
  - Septic tanks, etc.

### Solutions with at least secondary treatment

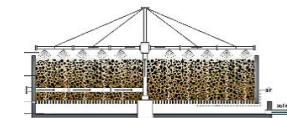
- Technological solutions with suspended biomass (e.g., conventional activated sludge plants, SBR – Sequencing Batch Reactor, MBR – Membrane BioReactor)
- Technological solutions with fixed biomass (e.g., Trickling filter, RBC – Rotating biological contactor, filtration systems)
- Nature-based solutions (e.g., treatment wetlands)



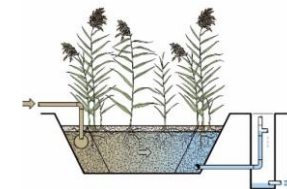
Conventional  
Activated Sludge



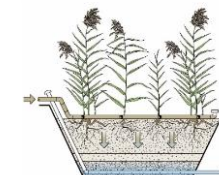
Sequencing Batch  
Reactor (SBR)



Trickling filter



Horizontal flow  
(HF) wetland



Vertical flow (VF)  
wetland

## ***Session 1: Setting the scene*** – Rural water service delivery in the Danube Region

✓ Presentation of status overview

- EU framework requirements, Data from the Danube, Update from WHO, Service provision models

## ***Session 2: The enabling environment*** – approaches to rural water services provision at national level (legal, financial, regulatory)

- Presentation of rural water services management experiences from individual countries, including policy and regulatory-related challenges  
Situation of rural water service delivery in the Danube River basin countries (Austria, Slovakia, Czechia, Croatia + Latin America)

## ***Session 3: Panel Discussion*** – The future of rural water services management

## ***Session 4: Wrap-up and closing***



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