

STUDY TOUR TO PORTUGAL

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Croatia – Water Supply and Sanitation sector
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WORLD BANK GROUP
Water



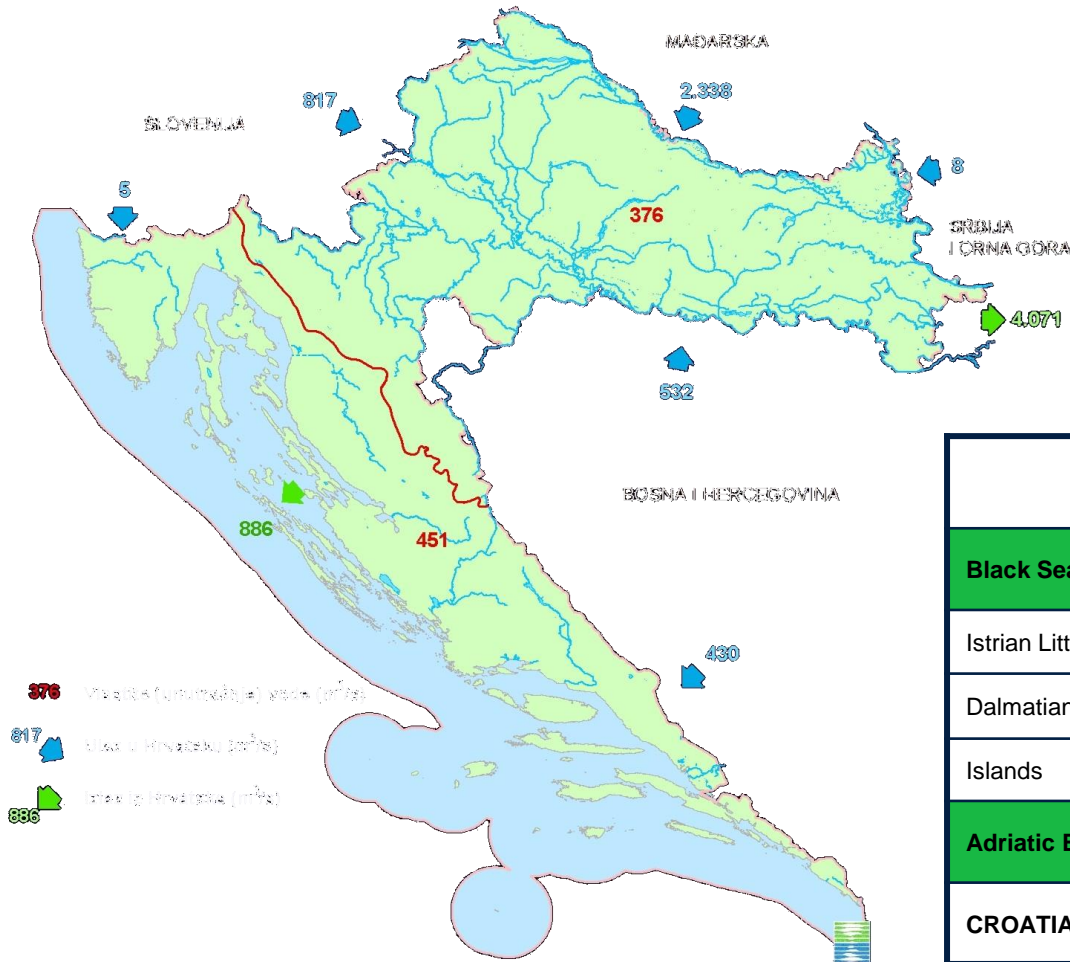
REPUBLIC OF CROATIA

MINISTRY OF ECONOMY AND
SUSTAINABLE DEVELOPMENT

Surface and groundwater resources

- Croatia can be considered as water-abundant country. Its overall renewable resources amount to 14 900 m³ per capita, out of which 60% is generated within the country.
- However, resources are unevenly distributed throughout the country.
- The major water resource is surface water, which is found in 20 rivers, 26 natural or artificial lakes and the Adriatic Sea. The major water courses total 6 829 km.
- There is a significant seasonal and annual variability in river runoff. In dry years, the annual runoff is less than 25% of the average year flow. The situation is more severe in the Adriatic basin.
- Groundwater resources are significant and represent about 20% of all renewable resources. In Sava and Drava basins, groundwater can be found in water bearing layers in areas with alluvial formations. Situation is more complex in carst formations, which are predominant in Dalmatian, Littoral and Istrian basins.
- Despite the water abundance there are quantity and quality problems at locations such as Adriatic islands, which have poor water resources.

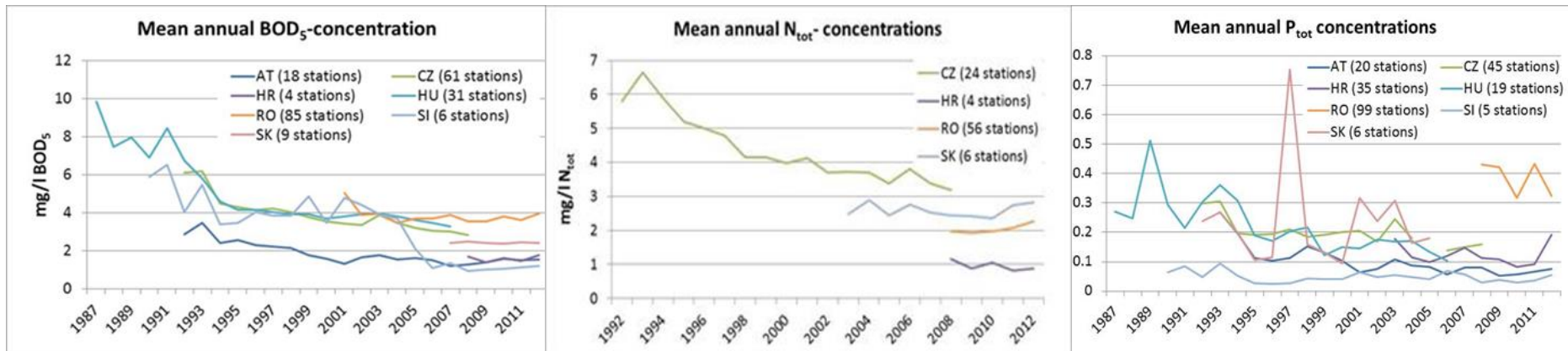
Terrestrial Waters –two river basins



	Surface Km ²	Precipitation mm	flow m ³ /s	specific drainage l/s/km ²
Black Sea Basin	35,132	1,001	376	10.71
Istrian Littoral Basin	7,567	1,622	194	25.63
Dalmatian Basin	10,566	1,394	227	21.48
Islands	3,273	1,073	30	9.2
Adriatic Basin	21,406	1,426	451	21.1
CROATIA	56,538	1,162	827	14.6

Water quality is gradually improving

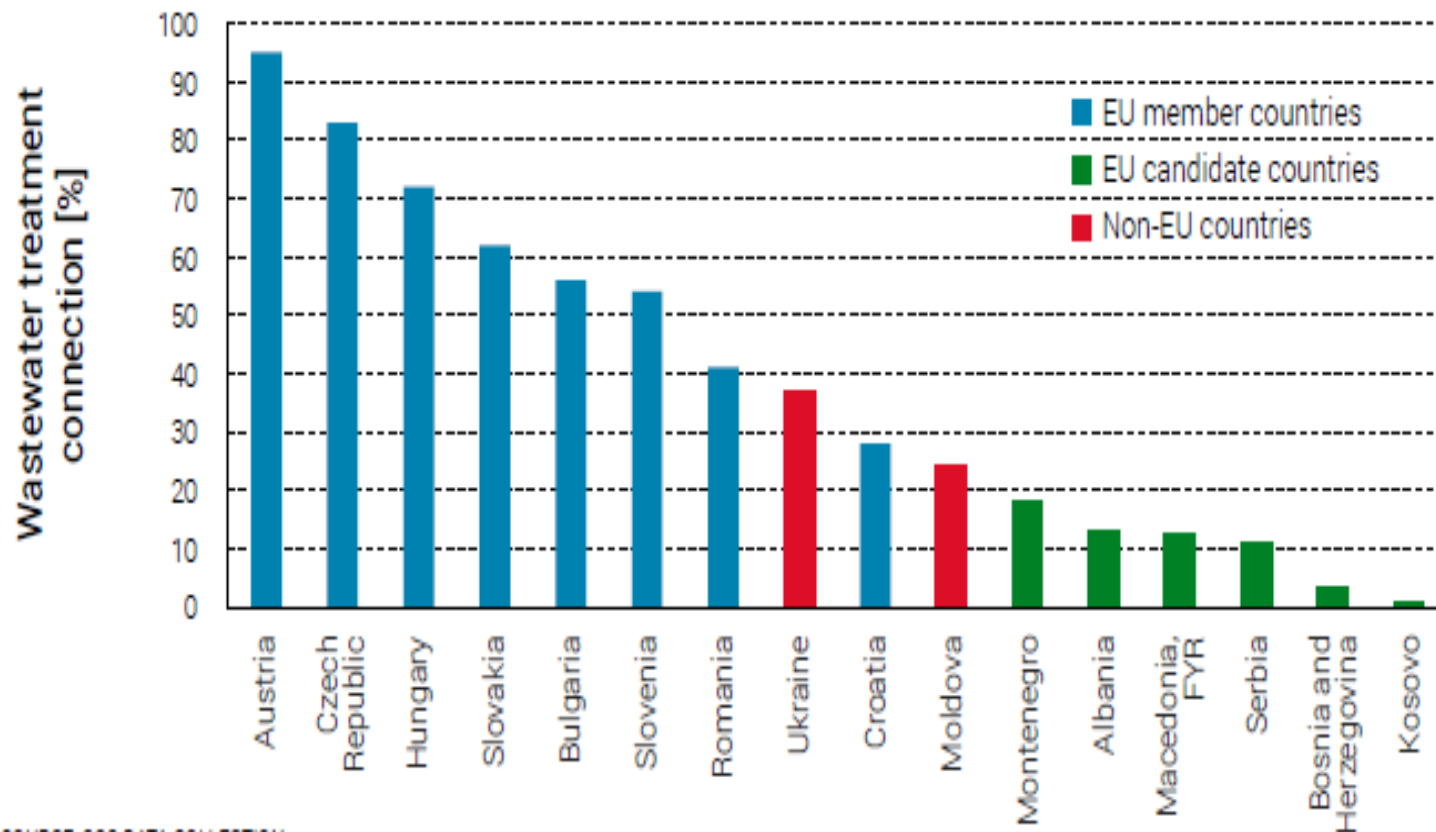
- The quality of groundwater is generally considered good throughout the country.
- In the case of surface water, the reduction of industrial activity and the drastic decline in the use of fertilizers and pesticides in agriculture, have considerably eased the pollution of water sources.
- The reports on the state of the sea and its water quality, indicate that a considerable part of the Croatian portion of the Adriatic Sea is oligotrophic and clean.



Water utility sector - key facts

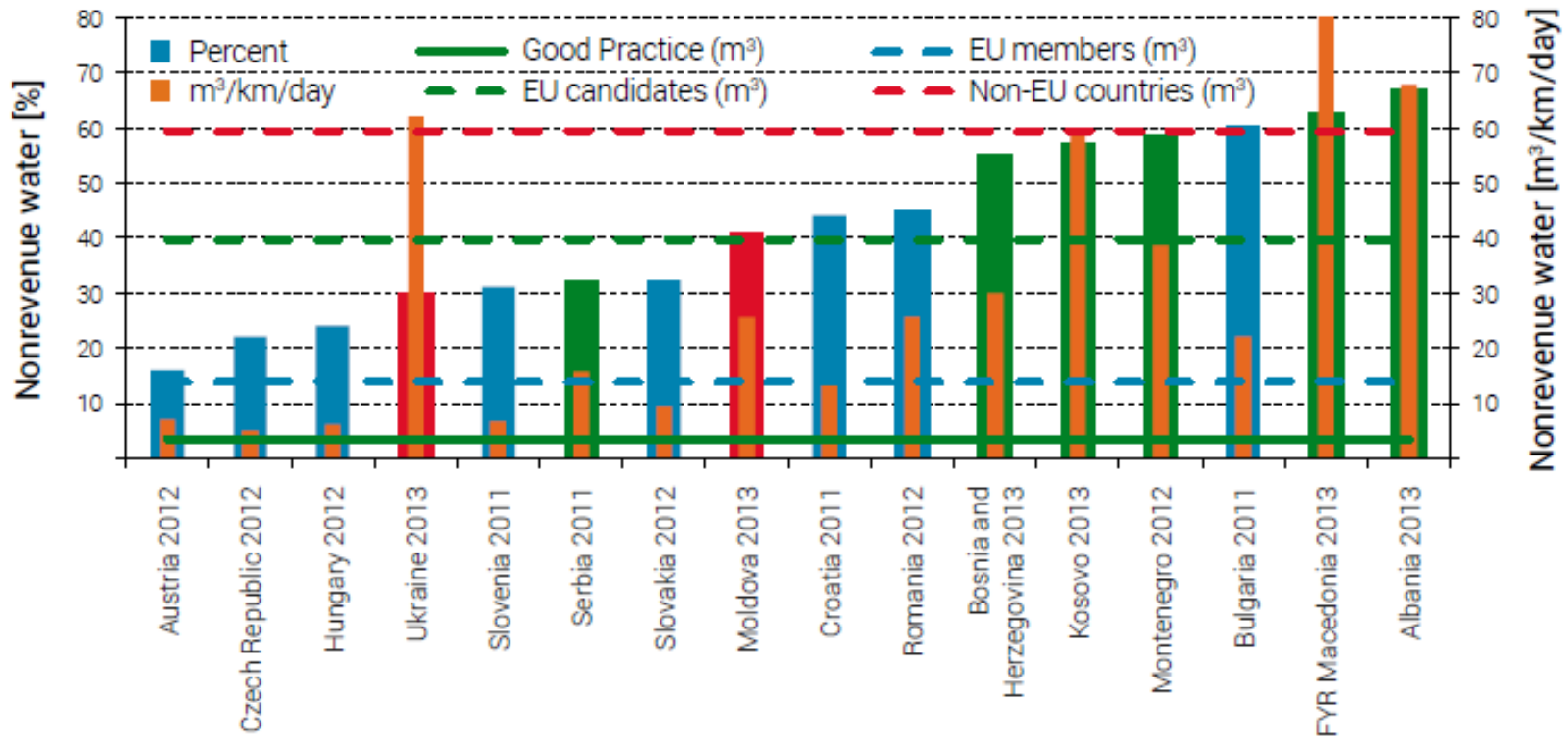
- public water supply available for **94%** of the population, unavailable mostly in rural areas and islands, only **86 %** connected
- **57%** of the population connected to the public sewerage system
- **44%** of the population is connected to wastewater treatment plants
- fragmented public water service providers (PWSP)
- ca. 8.400 employees
- **245 million m³ water delivered**
- **water losses increasing continuously** (46% in 2009, 49% in 2016, **50%** from 2017)
- **over 200 small unregulated water supply systems without adequate water quality control**
- turnover **543 million EUR /year**
- water prices before the implementation of EU investments are on average 1.39% of NRD (net disposable income of the household)
- business users still pay an average of 60% more than households

Wastewater treatment coverage is still low



SOURCE: SOS DATA COLLECTION.

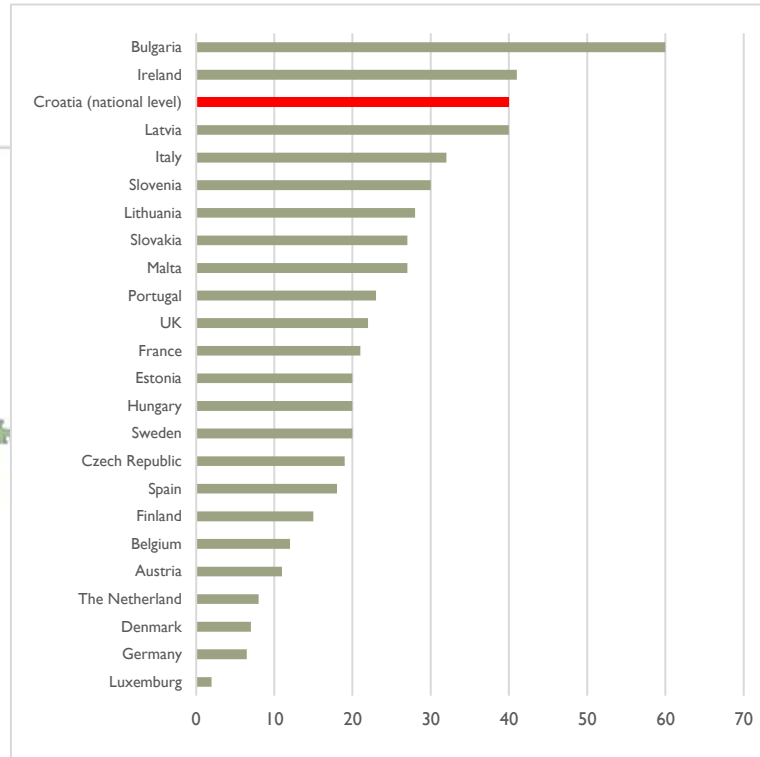
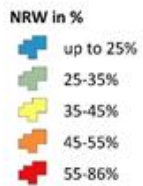
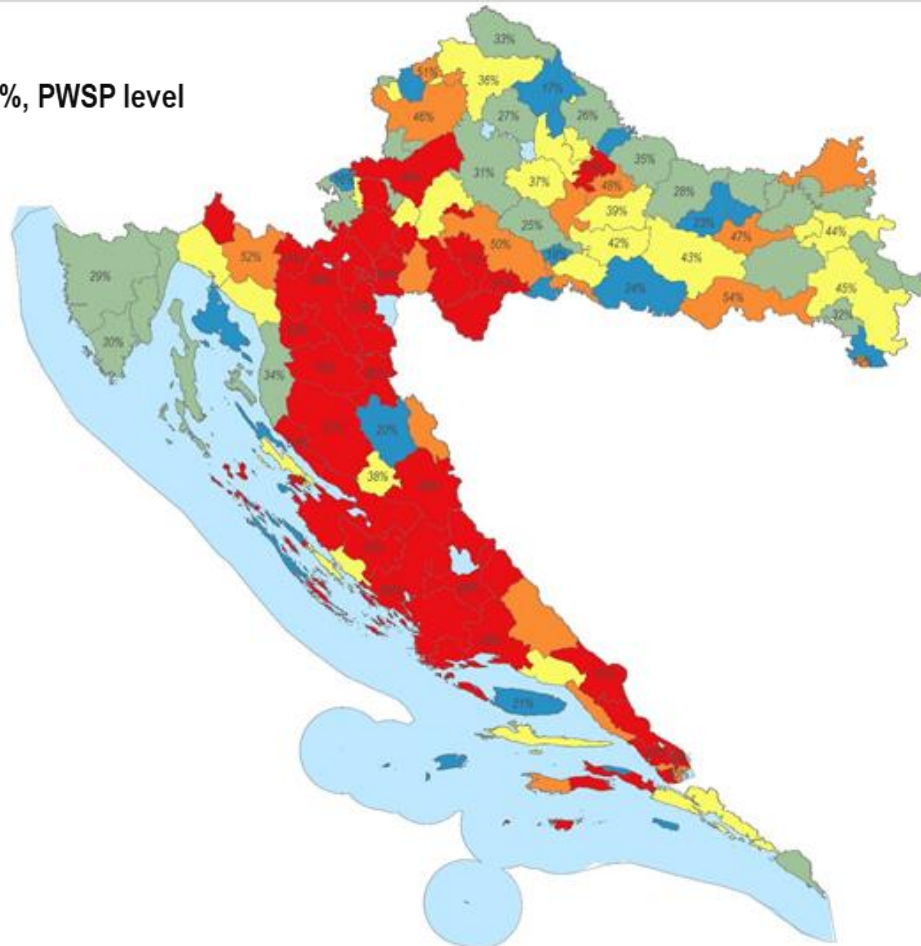
NRW is high by EU standards



SOURCE: SOS DATA COLLECTION.

Public water utility sector – NRW current status

NRW in %, PWSP level



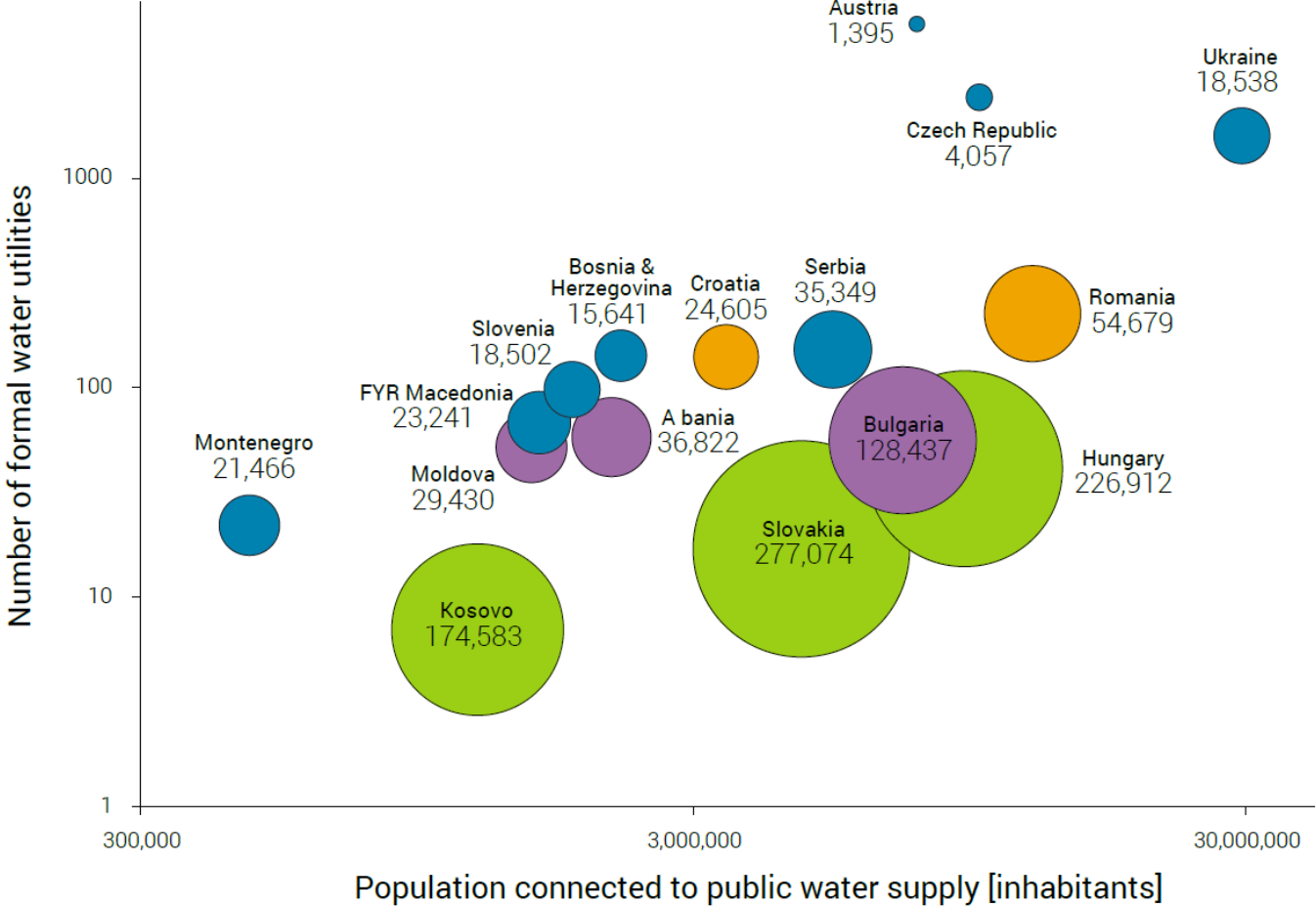
NLRAP PROJECT activities (ongoing activities in blue)

- **ACTIVITY 1: Stocktaking exercise**
- **ACTIVITY 2: Preparation of a draft National Loss Reduction Action Plan (NLRAP)**
- **ACTIVITY 3: Building the capacity of PWSPs for the implementation of the NLRAP**
- **ACTIVITY 4: Development of a knowledge base and indicators for utility performance evaluation**
- **ACTIVITY 5: Development of recommendations for establishment of a national monitoring body on water loss reduction**
- **ACTIVITY 6: Preparation of a final draft National Loss Reduction Action Plan (NLRAP)**

	Q2 - 22			Q3 - 22			Q4 - 22			Q1 - 23			Q2 - 23			Q3 - 23			Q4 - 23		
ACTIVITY	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Activity 1 - Stocktaking exercise																					
Activity 2 - Draft NLRAP																					
Activity 3 - Capacity building and p2p exchange																					
Activity 4 - Utility performance evaluation																					
Activity 5 - National Monitoring Body																					
Activity 6 - Final proposed NLRAP																					

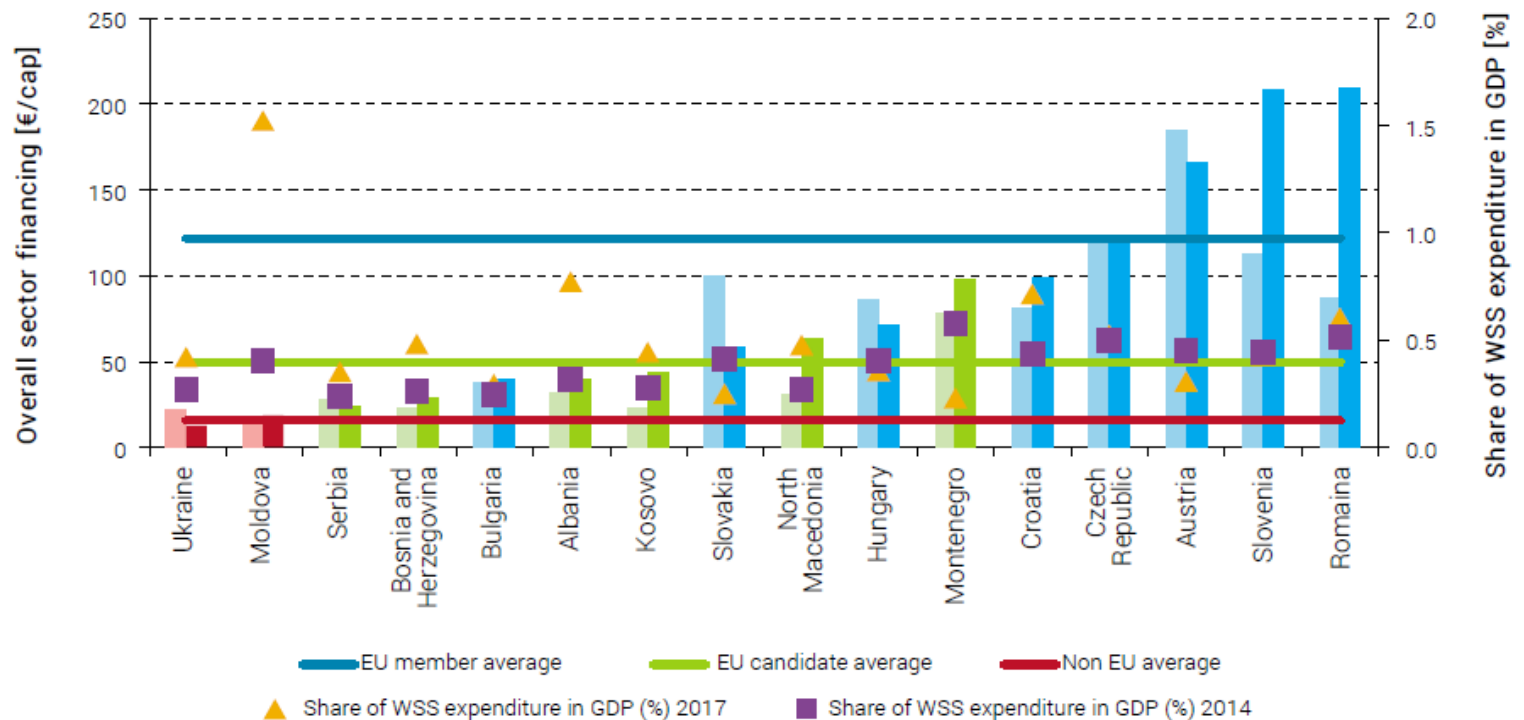
Measures under this project directly contribute to the implementation of the water utility sector reform and investments under the Croatia Recovery and Resilience Plan

Fragmentation of WSS sector service providers



Overall financing

- Among better countries in terms of level of expenditure over GDP and sector financing per capita



Efficiency and sustainability

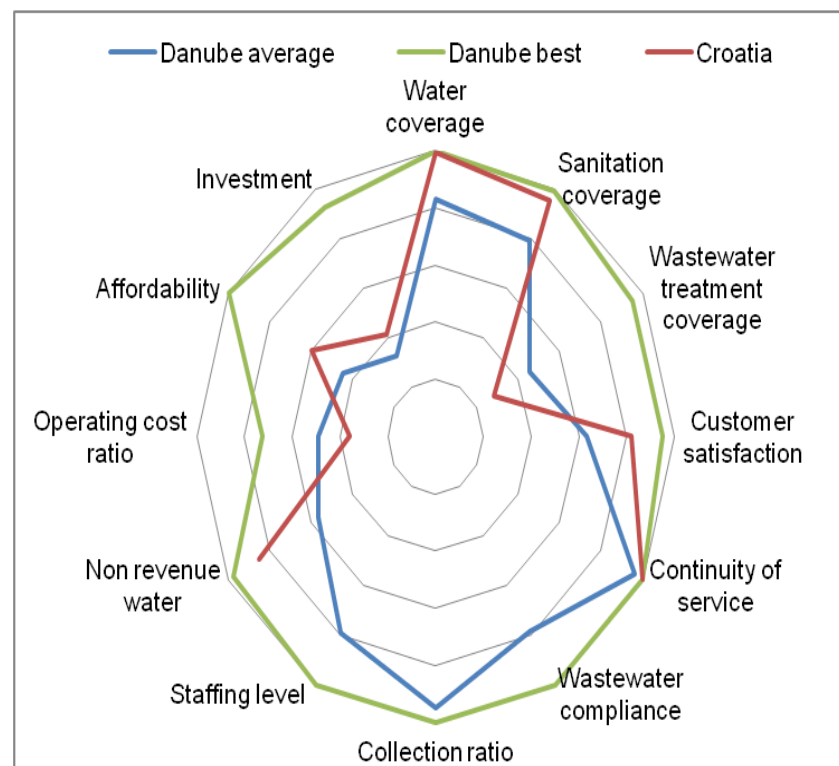
Croatia water supply and sanitation sector efficiency is close to regional average but significantly beyond EU standards

Indicator	Year	Source	Value	EU MS average	Danube average	Danube best
Nonrevenue water [%]	2011	DZS 2012	44	34	35	16
Nonrevenue water [m ³ /km/day]	2011	DZS 2012	14	14	35	5
Staff productivity [water and wastewater] [number of employees/1,000 connections]	2012	WB&DE 2012	3	8.7	9.6	2.0
Staff productivity [water and wastewater] [number of employees/1,000 inh. served]	—	—	—	1.0	1.7	0.4
Billing collection rate [cash income/billed revenue] [%]	2012	World Bank 2013a & World Bank 2013b	90	102	98	116
Metering level [metered connections/connections] [%]	2012	WB&DE 2012	100	96	84	100
Water Utility Performance Index [WUPI]	n.a.	Authors' elab.	73	80	69	94

In parallel, sector cost recovery and affordability is significantly below EU standards

Indicator	Year	Source	Value	EU MS average	Danube average	Danube best
Cost Recovery						
Average residential tariff [incl. water and wastewater] [€/m ³]	2012	WB&DE 2012	1.80	2.18	1.32	n.a.
Operation and maintenance unit cost [€/m ³]		Authors' elab.	1.43	1.77	1.20	n.a.
Operating cost coverage [billed revenue/operating expense]	2009	World Bank 2013a	0.97	1.10	0.96	1.49
Affordability						
Share of potential WSS expenditures over average income [%]	2012	Authors' elab.	2.3	3.1	2.6	n.a.
Share of potential WSS expenditures over bottom 40% income [%]	2012	Authors' elab.	3.6	4.7	3.8	n.a.
Share of households with potential WSS expenditures above 5% of average income [%]	2012	Authors' elab.	19.4	24.7	14.1	n.a.

Sustainability assessment



Croatia Water Sector Constraints and Priorities

Constraints:

(i) Low water services efficiency and sustainability

Croatia water supply and sanitation **sector efficiency, cost recovery and affordability** significantly beyond EU standards

(ii) Disbursement of EU funds and water directive compliance behind projections

(iii) Underutilized economic potential of WRM **Deeper integration of water management** is necessary across national borders as well as across water-dependent sectors to **lower investment costs**, and capture synergies

Priorities:

(i) Implement WSS utility sector reform: Focusing on efficiency, performance, cost recovery and affordability

(ii) Speed up EU funds absorption and UWWTD compliance

(iii) Water resource management: Strength cooperation on regional, integrated approach to manage Sava River including navigation, flood protection, tourism and environmental protection