



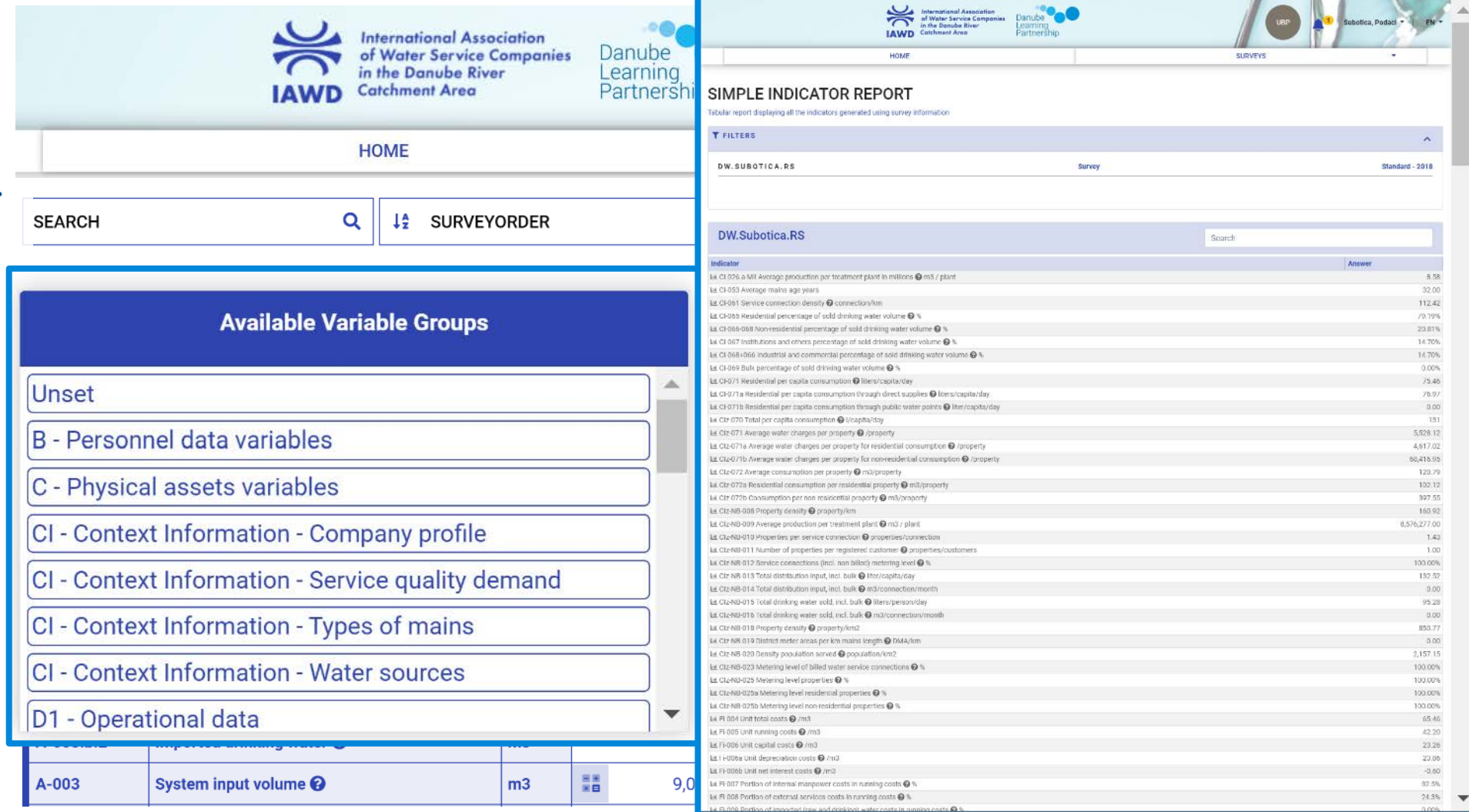
Utility Benchmarking Program

Cycle in 2021

UBP Webinar, June 8, 2021

Data Collection and Verification (Database)

- Variables names...
- ...and explanations
- Data entry fields, and...
- ...calculation formulas
- Historical data
- Automatic verification
- Validation by utility
- Validation by the Hub
- Collaboration tool
- Indicators calculation



The screenshot displays the IAWD (International Association of Water Service Companies in the Danube River Catchment Area) database interface. The top navigation bar includes the IAWD logo, the Danube Learning Partnership logo, and user information (URP, Subotica, Podaci, EN). The main content area is divided into two panels.

Left Panel: Available Variable Groups

This panel lists various variable groups for selection:

- Unset
- B - Personnel data variables
- C - Physical assets variables
- CI - Context Information - Company profile
- CI - Context Information - Service quality demand
- CI - Context Information - Types of mains
- CI - Context Information - Water sources
- D1 - Operational data

Right Panel: SIMPLE INDICATOR REPORT

This panel displays a tabular report for the survey "DW.SUBOTICA_RS". The report shows a list of indicators and their corresponding values. The table has two columns: "Indicator" and "Answer".

Indicator	Answer
la CI-026 a MI Average production per treatment plant in millions m3 / plant	8.58
la CI-053 Average mains age years	32.00
la CI-061 Service connection density connection/km	112.42
la CI-065 Residential percentage of sold drinking water volume %	79.79%
la CI-066-068 Nonresidential percentage of sold drinking water volume %	20.81%
la CI-067 Institutions and others percentage of sold drinking water volume %	14.70%
la CI-068+066 Industrial and commercial percentage of sold drinking water volume %	14.70%
la CI-069 Bulk percentage of sold drinking water volume %	0.00%
la CI-071 Residential per capita consumption liters/capita/day	75.46
la CI-071a Residential per capita consumption through direct supplies liters/capita/day	78.97
la CI-071b Residential per capita consumption through public water points liter/capita/day	0.00
la CI-070 Total per capita consumption l/capita/day	181
la CI-071 Average water charges per property /property	5,528.12
la CI-071a Average water charges per property for residential consumption /property	4,617.02
la CI-071b Average water charges per property for nonresidential consumption /property	86,415.95
la CI-072 Average consumption per property m3/property	120.79
la CI-072a Residential consumption per residential property m3/property	100.12
la CI-072b Consumption per non residential property m3/property	307.55
la CI-068-068 Property density property/km	160.92
la CI-069-069 Average production per treatment plant m3 / plant	8,576,277.00
la CI-069-010 Properties per service connection properties/connection	1.43
la CI-069-011 Number of properties per registered customer properties/customers	1.00
la CI-069-012 Service connections (incl. non billed) metering level %	100.00%
la CI-069-013 Total distribution input, incl. bulk liter/capita/day	132.52
la CI-069-014 Total distribution input, incl. bulk m3/connection/month	0.00
la CI-069-015 Total drinking water sold, incl. bulk liters/person/day	95.28
la CI-069-016 Total drinking water sold, incl. bulk m3/connection/month	0.00
la CI-069-018 Property density property/km2	850.77
la CI-069-019 District meter areas per km mains length DMA/km	0.00
la CI-069-020 Density population served population/km2	2,157.15
la CI-069-023 Metering level of billed water service connections %	100.00%
la CI-069-025 Metering level properties %	100.00%
la CI-069-025a Metering level residential properties %	100.00%
la CI-069-025b Metering level non-residential properties %	100.00%
la FI-004 Unit total costs m3	65.46
la FI-005 Unit running costs m3	42.20
la FI-006 Unit capital costs m3	23.26
la FI-006a Unit depreciation costs m3	23.08
la FI-006b Unit net interest costs m3	-0.60
la FI-007 Portion of internal manpower costs in running costs %	35.5%
la FI-008 Portion of external services costs in running costs %	24.5%
la FI-009 Portion of nonoperating and capital water costs in running costs %	0.00%

Variables standardization, hierarchy, online help

Answer survey - UBP

← → ↺ iawd-ubp.org/Survey/Answer/Index/11680?variableGroupId=1

HOME SURVEYS

Code	Variable	Unit
A - Water volume data		
A-003	Water system input volume ?	m3
A-003.a	Abstracted raw water from own sources ?	m3
A-003.a.1	Abstracted raw water from own upland surface water sources ?	m3
A-003.a.2	Abstracted raw water from own lowland surface water sources ?	m3
A-003.a.3	Abstracted raw water from own natural springs and wetlands ?	m3
A-003.a.4	Abstracted raw water from own well water sources ?	m3
A-003.a.5	Abstracted raw water from own borehole water sources ?	m3
A-003.a.6	Abstracted raw water from own saline and brackish water sources ?	m3
CI-023	Water sources protection area determined by authority ?	km2
A-003.b	Imported water ?	m3
A-003.b.1	Imported raw water ?	m3
A-003.b.2	Imported drinking water ?	m3

A1 - Water Balance - Utility Bench

← → ↺ academy.d-leap.org/1509890-187702786/step

Done

2 of 3

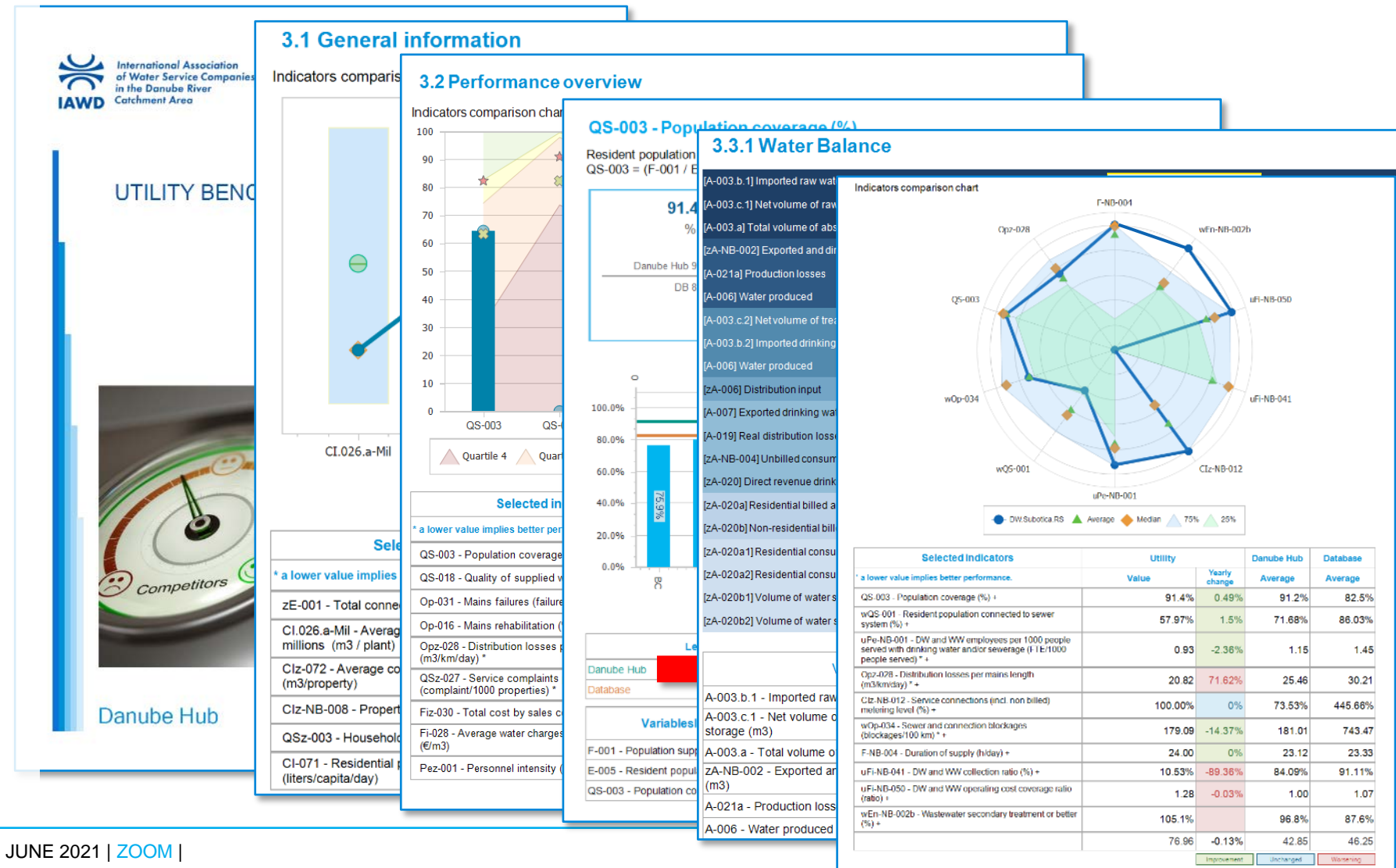
Danube Learning Partnership

TABLE 5: WATER BALANCE

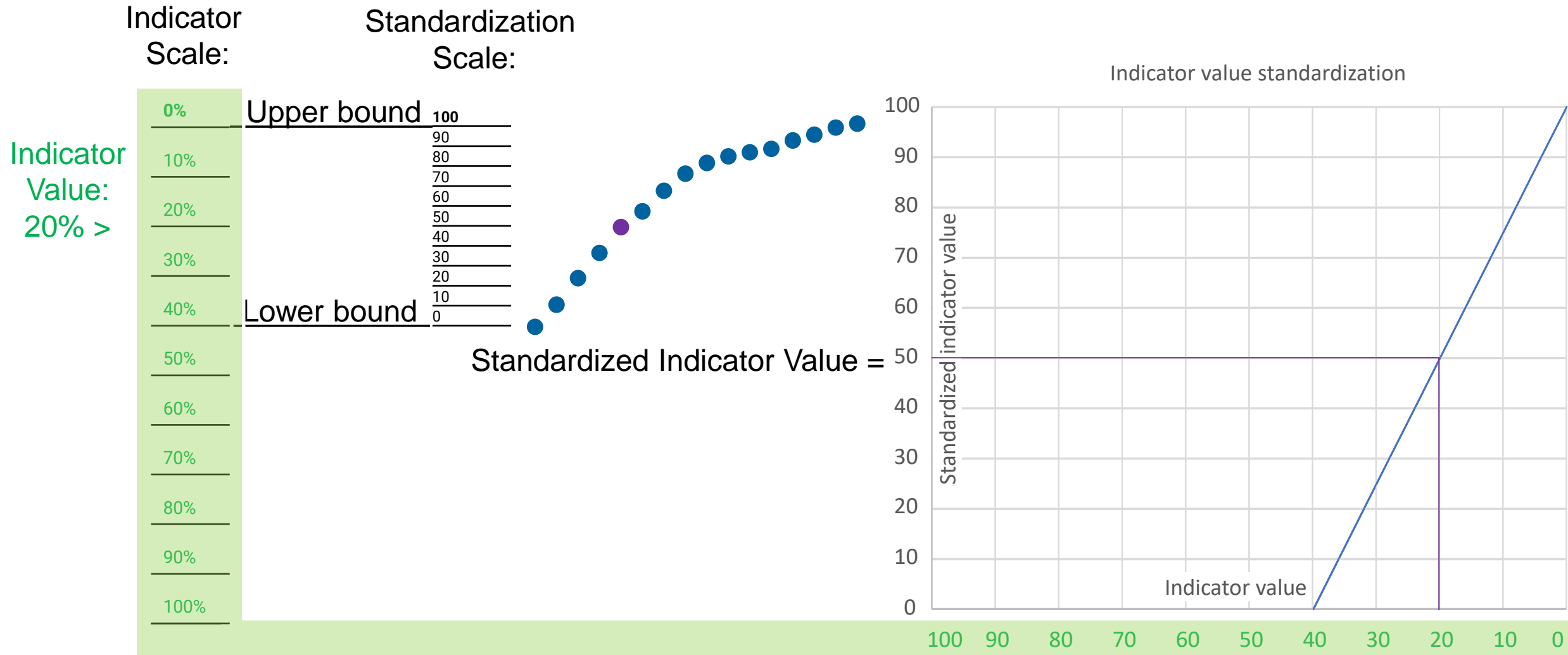
Codes	Levels	Annual system input volume	Unit
A-003	#	Water system input volume	m3
A-003.a	c	Abstracted raw water from own sources	m3
A-003.a.1	#	Abstracted raw water from own upland surface water s.	m3
A-003.a.2	#	Abstracted raw water from own lowland surface water s.	m3
A-003.a.3	#	Abstracted raw water from own nat. springs and wetlands	m3
A-003.a.4	#	Abstracted raw water from own well water sources	m3
A-003.a.5	#	Abstracted raw water from own borehole water sources	m3
A-003.a.6	#	Abstracted raw w. from own saline and brackish s.	m3
CI-023		Water sources protection area determined by authority	km2
A-003.b	#	Imported water	m3
A-003.b.1	#	Imported raw water	m3
A-003.b.2	#	Imported drinking water	m3
A-003.c	#	Net exchange water with large water storage bodies	m3
A-003.c.1	#	Net exchange raw water with large water storage b.	m3
A-003.c.2	#	Net exchange drinking water with large water st. b.	m3
Codes	Levels	Annual revenue water volume (RW)	Unit
A-020	#	Revenue water	m3
A-008		Metered revenue water	m3
A-009		Unmetered revenue water	m3
A-020.1	#	Raw revenue water (direct, export)	m3

Reporting, Analyses, Mining (Data Warehouse)

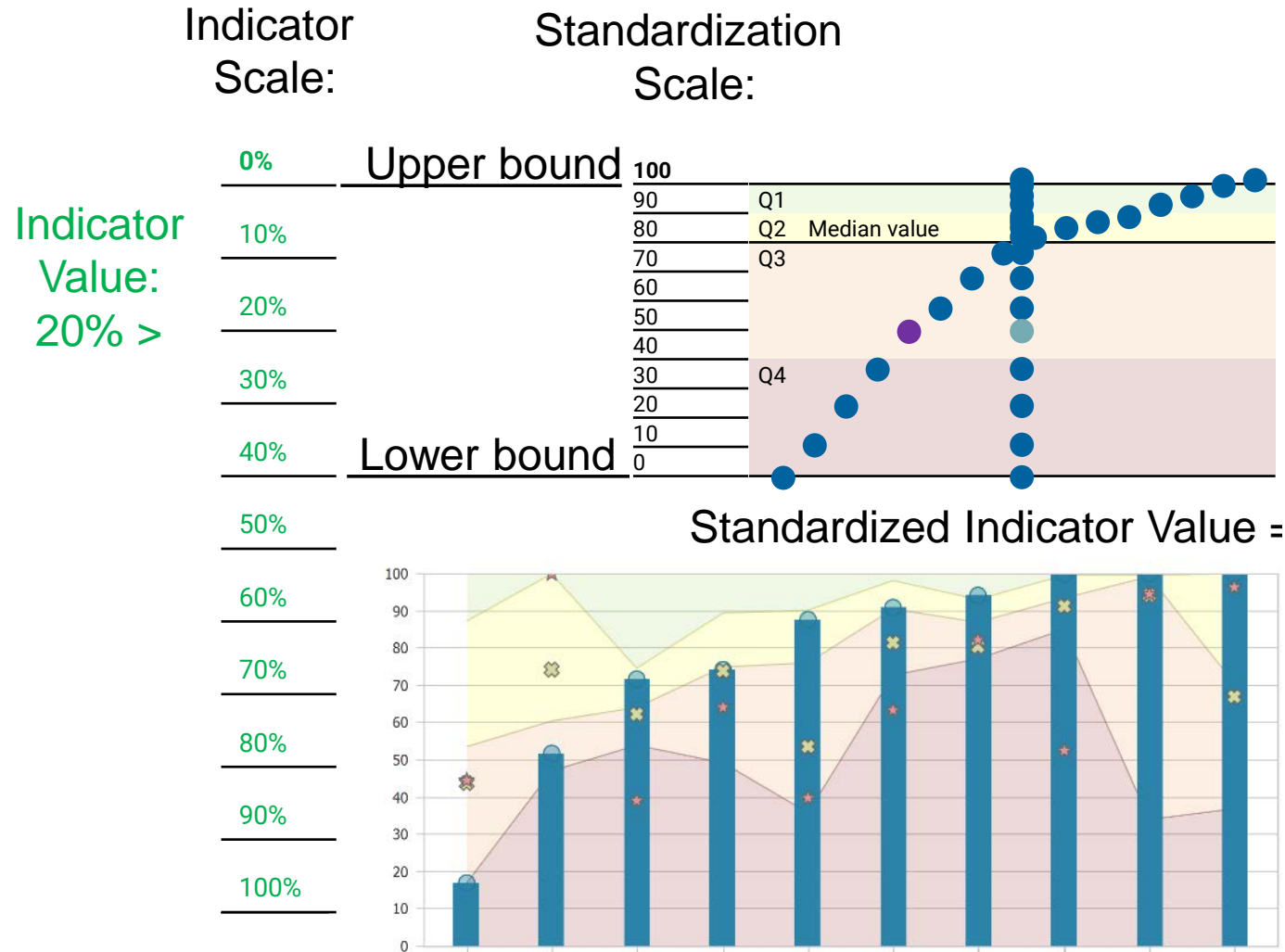
- Standard reports
- Context and...
- ...performance overviews
- Indicators compared:
 - Internally, in time ...
 - externally, ...
 - to Hubs averages,
 - Variables compared
- Balances and models
- Other queries (composite indicators benchmarking)



Indicator value standardization

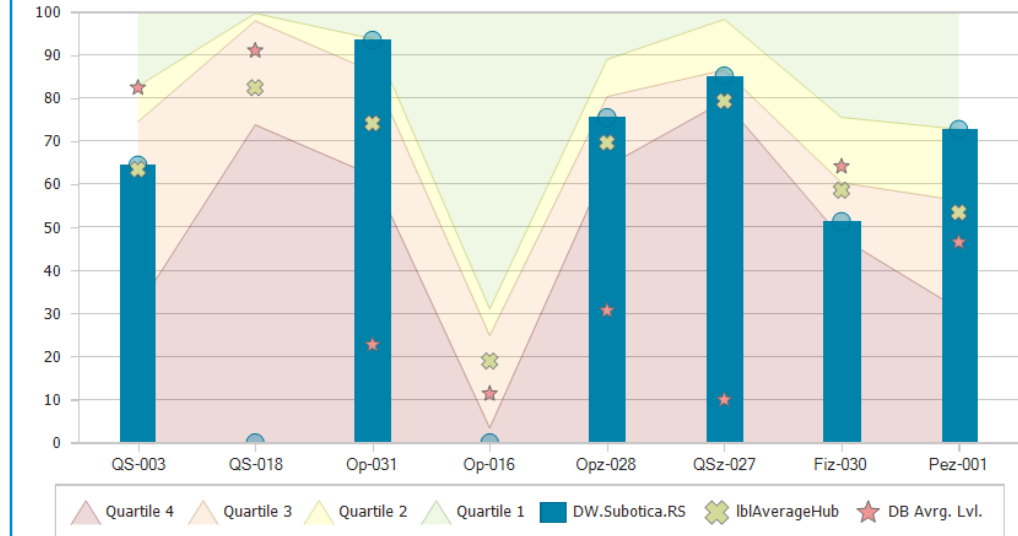


Comparisons: Quartiles, Medians, Multi-indicator comparis.



3.2 Performance overview

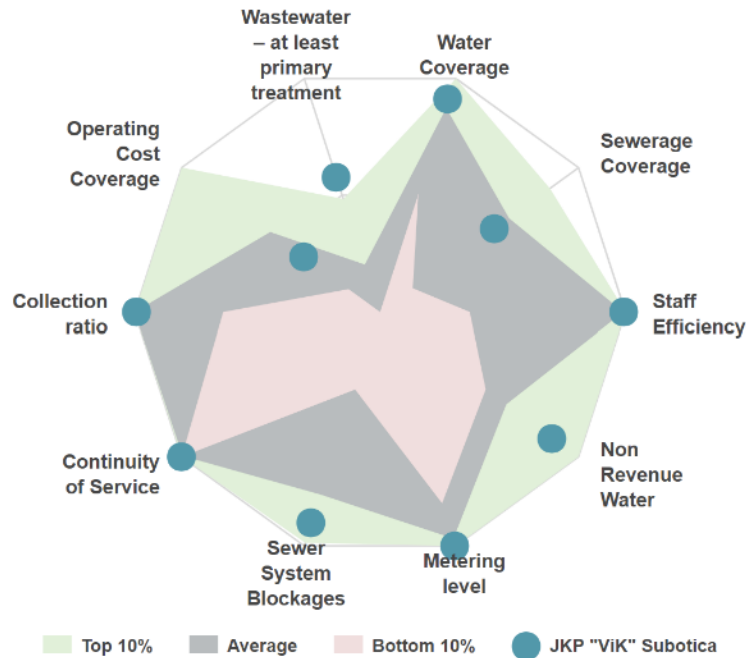
Indicators comparison chart



Selected indicators	Utility		Danube Hub	Database
	Value	Yearly change	Average	Average
* a lower value implies better performance.				
QS-003 - Population coverage (%)	91.4%	0.49%	91.2%	82.5%
QS-018 - Quality of supplied water (%)	70.62%	-1.86%	94.85%	97.34%
Op-031 - Mains failures (failure/100 km) *	0.40	-12.54%	1.61	1.42
Op-016 - Mains rehabilitation (%)	0.00%	0%	0.82%	0.88%
Opz-028 - Distribution losses per mains length (m3/km/day) *	20.82	71.62%	25.46	30.21
QSZ-027 - Service complaints per connected property (complaint/1000 properties) *	5.99	-9.4%	8.21	4.03
Fiz-030 - Total cost by sales coverage ratio (ratio)	0.70	-7.66%	0.80	0.87
Fi-028 - Average water charges for direct consumption (€/m3)	0.39	1.57%	0.61	0.43
Pez-001 - Personnel intensity (FTE / 1000 properties) *	2.29	-1.36%	3.18	4.05

Improvement Unchanged Worsening

Composite indicator - index - WUPI example



Water Utility Performance Index = **82.09**

Indicator Name		Value	% of companies with lower performance	Yearly change	Previous Year
Water Coverage i	%	91.25% ≈	63.8%	-2.4% =	93.50%
Sewerage Coverage i	%	57.66% ≈	64.0%	-1.8% =	58.69%
Staff Efficiency i #/000 W&WW pop served		0.48 ➡	94.1%	-1.5% =	0.49
Non Revenue Water i	m3/km/day	12.70 ≈	43.4%	74.1% ⬇	7.29
Metering level i	%	100.00% ≈	46.4%	0.0% =	100.00%
Sewer System Blockages i blockages/km/yr		2.08 ≈	53.6%	-3.8% =	2.16
Continuity of Service i	Hrs/day	24.00 ⬇	3.5%	0.0% =	24.00
Collection ratio i	%	98.72% ≈	60.9%	-0.9% =	99.63%
Operating Cost Coverage i	ratio	1.00 ≈	38.4%	-26.9% ⬇	1.36
Wastewater – at least primary treatment i	%	57.66% ➡	92.6%	-1.8% =	58.69%

Indicators	Higher bound	Lower bound
Water coverage	100%	0%
Sewerage coverage	100%	0%
Wastewater treatment coverage	100%	0%
Continuity of service	24 hours	0 hour
Sewerage blockages	0.1	20
Metering	100%	0%
Nonrevenue water	3	80
Staffing level	1	5
Collection ratio	100%	0%
Operating cost coverage	180%	50%

Composite indicators - index - MNE example



Pursuant to Article 49 paragraph 3 of the Law on Utility Activities (OGM 55/16) and Article 12 paragraph 2 item 1 of the Statute of the Energy Regulatory Agency (OGM 36/17), the Board of the Agency at its session held on 19 October 2018 adopted the

RULES ON THE BENCHMARKING OF BUSINESS OPERATIONS AND PERFORMANCE INDICATORS OF THE PROVIDERS OF REGULATED UTILITY SERVICES

- Confidence grade
- Utility Index
(Provider's index)
- Local Index (LSG
Index)
- National Index
(Country Index)
- Division of
competences
using weight factor

KEY INDICATORS – Public water supply						
Key indicator	Water delivery continuity	Degree of water quality compliance with special regulations	Degree of the coverage of people served by water supply through connections	Degree of nonrevenue water	Degree of the coverage of consumers by separate metering devices	Number of breakdowns per km of water supply network
	(%)	(%)	(%)	(%)	(%)	(#/km)
Weighting factor Provider's index	0.30	0.30	0	0.20	0.10	0.10
Weighting factor local index	0.25	0.25	0.20	0.10	0.10	0.10
Upper reg. limit	100	100	100	20	100	2
Lower reg. limit	80	70	50	80	50	8

New features under UBP / Danube Hub

- Greater focus on the company, not only on individual services
- Possibility to report indicators, without variables (reach to W.Europe)
- Comparison of utilities by predefined composite indicators:
 - Danube Hub WUPI (in development, to be piloted tomorrow)
 - NALAS and IAWD to jointly develop template report intended for LSGs
 - Greater cooperation with regulators (e.g. WAREG, 2nd EFRWS)
- Comparison of utilities against their 5(10)-year planned (custom) index
- Weekly “Open doors” (e.g. every Tuesday, 10:00 – 13:00)

Planning for 2021

- June: Beginning of 2020 data collection
- August: Collected data verification
- September: Final data verification
- Early October: Development of reports for utilities
- Late October: virtual Danube Water Conference
 - With Danube Hub event, possible virtual Danube Hub Workshop
- Nov-Dec: Workshops of national/subregional Hubs

Thank you for your attention !

IAWD Utility Benchmarking Team

All your inquiries are most welcome:

thedanubehub@d-leap.org



www.iawd.at



www.d-leap.org

The Danube Learning Partnership is supported by



www.danube-water-program.org