

Water Recycling Toolbox

Water recycling strategy for Berlin-Brandenburg / DE

KWB – Berlin Centre of Competence
for Water gGmbH



KWVB

WaterMan – Berlin Case Study

Industrial water reuse using water from large scale WWTP

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4. WWTP Berlin-Ruhleben
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6. Industrial area around
7. Berlin Master Plan Water

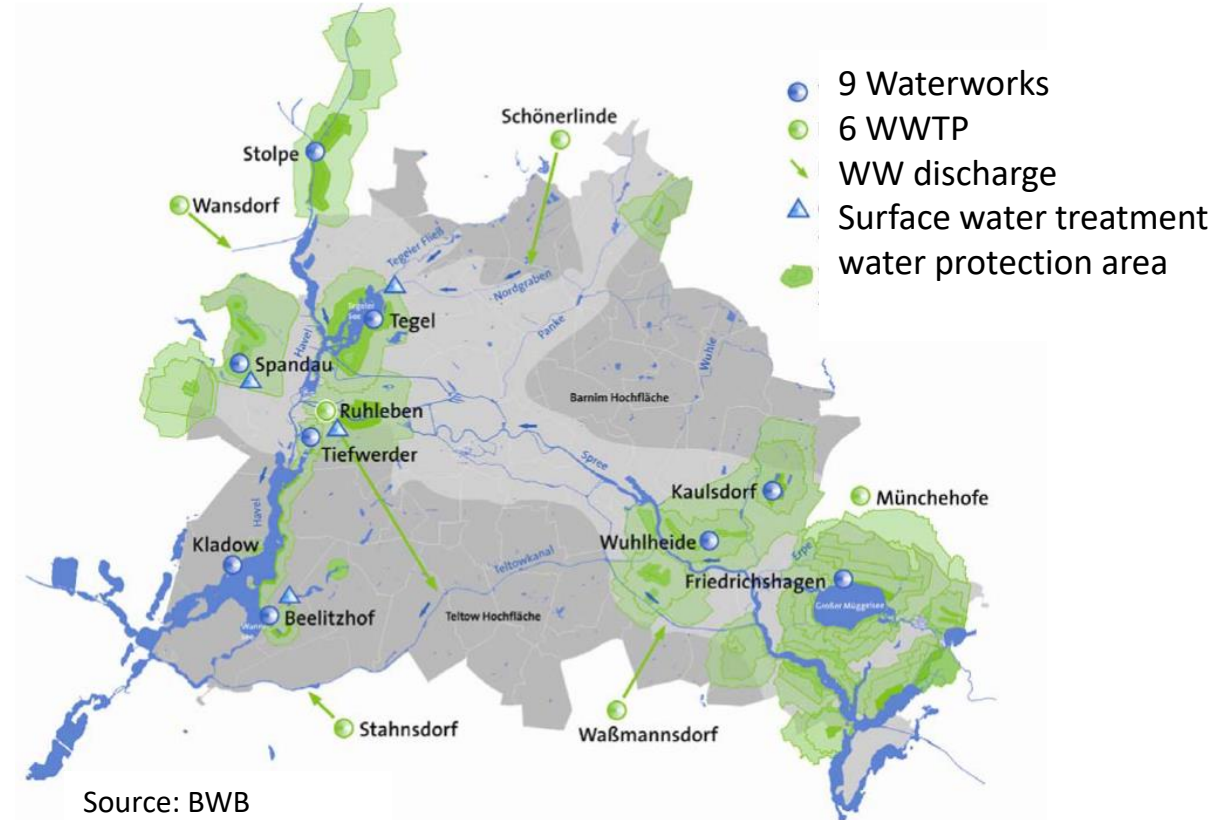


Background - Berlin



- Population: approx. 3.75 million inhabitants
- Area: 892 km²
- Surface waters coverage: approx. 60 km² of the city's area
- Annual average precipitation: 580 mm/a
- 2 local rivers (Spree & Havel): extreme periodic widenings & alternating river/lake-like characteristics

Berlin – Urban water cycle



- partially closed water cycle
 - low input and exchange rates
 - Surface water serves as recipient for treated wastewater
 - groundwater recharge & bank filtration → drinking water resource
- **integrated management of urban drainage, wastewater treatment and drinking water production**

Climate challenge: more frequent heats and droughts increase the water demand & at the same time reduce the water supply capacities in Berlin

WWTP Berlin-Ruhleben & WaterMan

investments for advanced wastewater treatment since 2021:

flocculation filtration + full stream UV-disinfection

→ Most probably also removal of micropollutants through ozone or activated carbon

Activities in WaterMan:

- workshops with local stakeholders (water users, utility & AO in Berlin)
- Strategy with public administration on **involvement & data collection** from private industry, its water usage & quality demands
- **Strategies** to overcome **barriers/bottlenecks** (risk, health, legal, acceptance, costs)
- **awareness measures** to expand network of possible industrial/commercial water users in large industrial zone
- **promotion video** on industrial water reuse
- Connect local strategy with updated of Berlin Master Plan Water

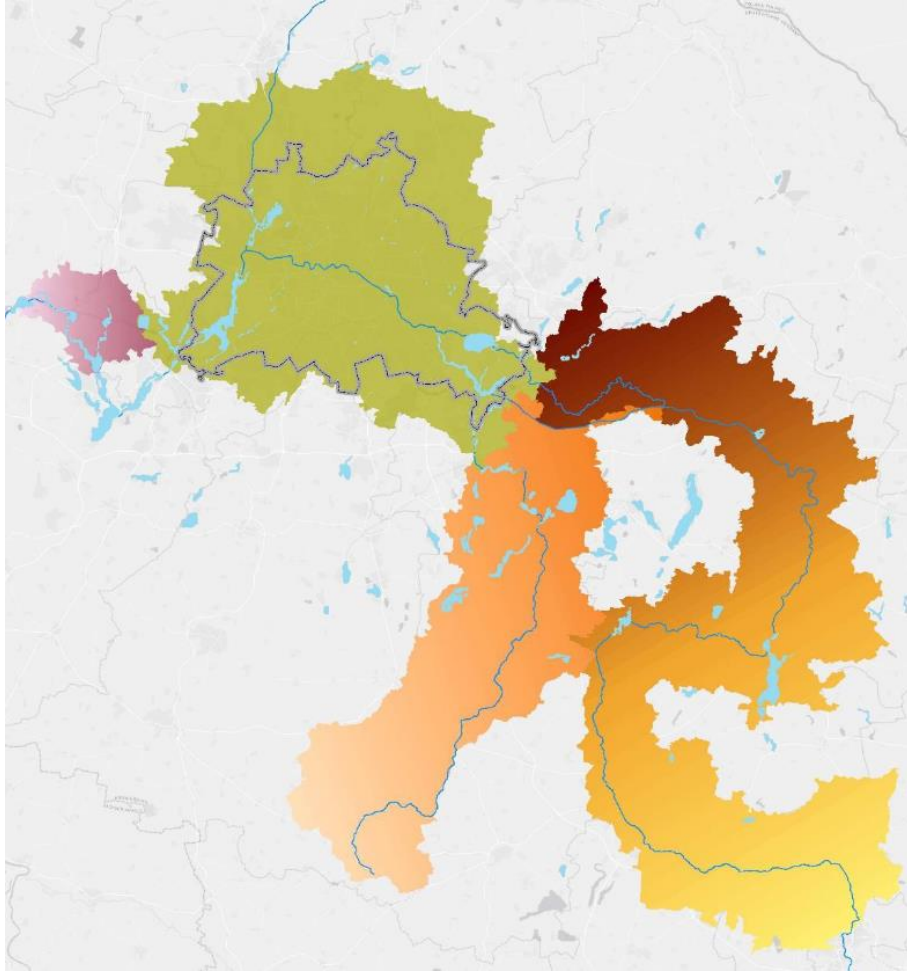


Berlin Master Plan Water



- future strategy for securing Berlin's drinking water supply in times of climate change and increasing demand (116 pages)
- guarantee water protection and to take account of diverse water uses
- Berlin's water balance and develops measures to meet water management challenges such as droughts and periods of low water levels
 - Inducement and objective
 - potential changes in water management framework conditions
 - scenario-based risk assessment for surface and groundwater
 - risks and uncertainties
 - measures and options for action
 - stakeholder involvement & next steps
- further developed and updated in the coming years

Joint strategy for trace substances



Source: Senate Berlin

"Position paper on the strategy for dealing with anthropogenic trace substances from WWTP" (Mar 2022)

- **Protection of ecosystems** (harmful effects, interactions between different substances, good ecological status or potential)
- **Upstream-downstream linkages** ("river basin approach", 6 WWTP in Berlin → cumulative inputs lead to higher pollution levels downstream & potential impact on drinking water quality)
- **Protection of drinking water resources** (Berlin & Potsdam's drinking water supply from surface waters via bank filtration)
- **Minimisation requirement** (Drinking Water Ordinance: "Concentrations of chemical substances that may contaminate drinking water or adversely affect its quality should be kept as low as possible in accordance with the generally recognised rules of technology with justifiable effort, taking individual cases into account")
- **Precaution before aftercare** (water management measures begin at the point of discharge (here: WWTP) to keep drinking water treatment as close to nature as possible)

cross-state water management



Source: Senate Berlin

"Position Paper of the Water Management Administration of the States of Saxony, Brandenburg and Berlin: Coal Exit in Lusatia and Water Management Challenges for the Region" (Sept 2022)

→ mining has serious consequences for region's water balance & water supply of Brandenburg/Berlin

- Climate adaptation measures
- Polluter pays principle
- Joint financial responsibility by the federal government


→ short-, medium- and long-term measures planned to deal with structural change to adapt groundwater and surface water management, e.g.

- cross-state support structures, e.g. River Basin Management working Group & water management centre
- establishment & operation of Lusatia groundwater model for sustainable groundwater management


KWVB

THANK YOU

Contact: Elisa Rose
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Berlin

 @kompetenzwasser

 www.kompetenz-wasser.de

1st Peer-review session

Water recycling strategy for Berlin-Brandenburg / DE

KWB – Berlin Centre of Competence
for Water gGmbH

14 March 2024





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WaterMan – Local Model Strategy Berlin

Klaipeda - March 2024

Pia Schumann

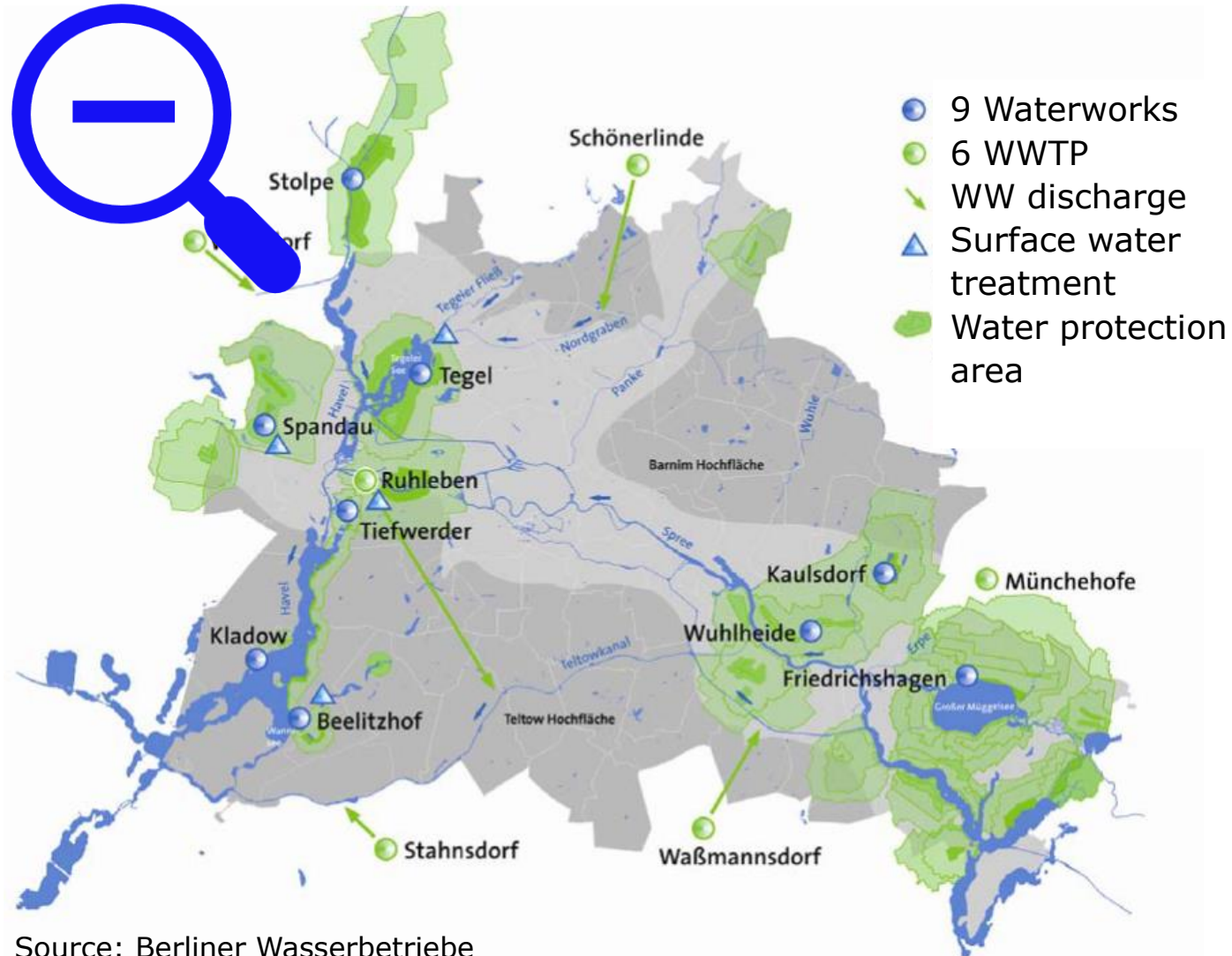
List of possible features – KWB scope

	Feature	KWB scope & approach
1	Climate scenario (depicting the local situation)	Yes, as literature research
2	Analysis of water demand vs. water availability (local data)	Yes, as literature research
	Overview of potential water sources in the region, incl.	
3	- Conventional sources (i.e. groundwater, surface water) - Alternative sources (recirculated storm water & reused wastewater)	Yes, literature review
4	Stakeholder analysis (incl. mapping / needs / positions) & visualization	Yes
5	Surveys / appraisals on local consumer acceptance	Yes: discussion with selected industries & businesses in the vicinity of Ruhleben
6	Roadmap for change management & related communication / PR measures, incl. a locally customized “narrative” & “storyline” on water reuse (considering the specific, local state of discussions)	Yes
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8	- The “own” WaterMan pilot measures implemented within the model region - WaterMan pilot measures implemented in other model regions - Good practices in other parts of Europe that were explored within WaterMan (e.g. industrial symbiosis in Kalundborg)	Yes
	Horizontal actions, in particular	
9	- Awareness raising / behavioural change on the side of water supply stakeholders & water consumers (incl. general public) - If relevant: Data platforms for analysis & monitoring water demand & supply	Yes No
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Berlin Context



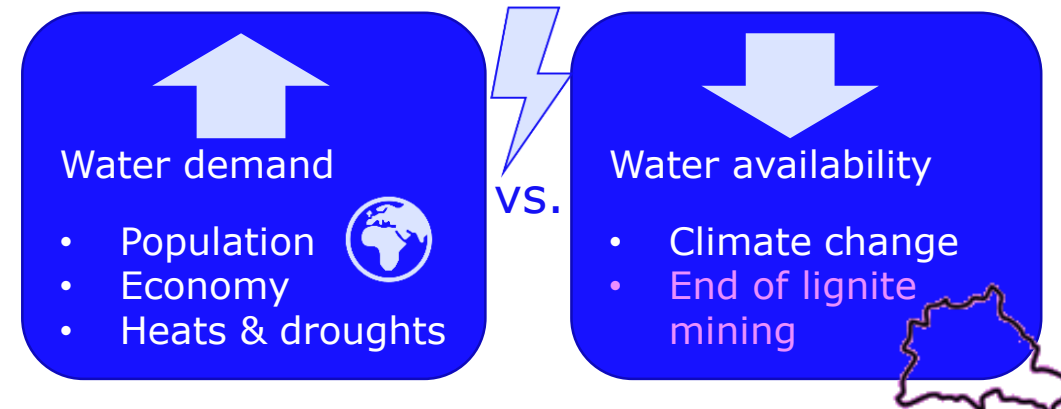
Source: Berliner Wasserbetriebe

Urban water cycle

- low input and exchange rates
- partially closed water cycle
- Surface water serves as recipient for treated wastewater
- groundwater recharge & bank filtration → drinking water resource

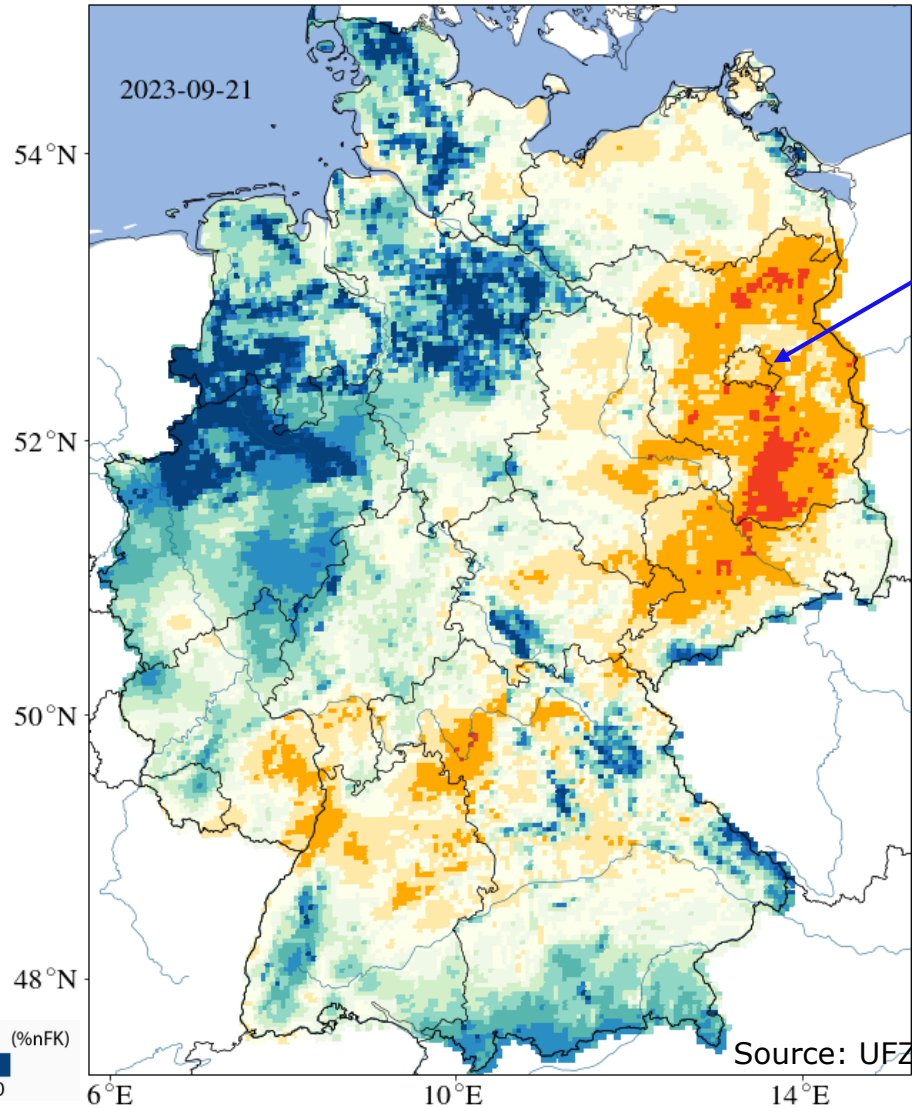
→ integrated management of urban drainage, wastewater treatment and drinking water production

Prediction

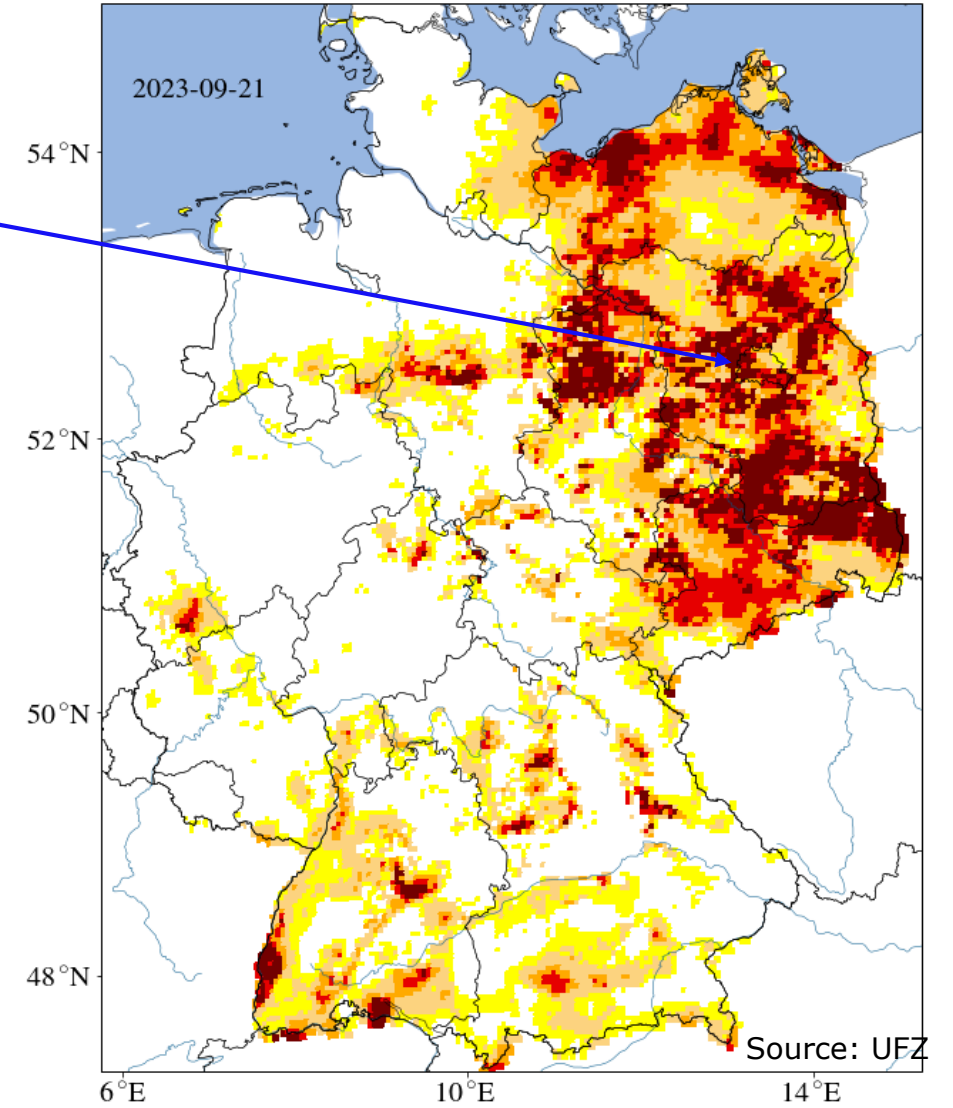


Berlin Context

Plant Available Water



Soil Dryness 1.8m



- Unusually dry
- Moderate drought
- Severe drought
- Extreme drought
- Exceptional drought

Berlin

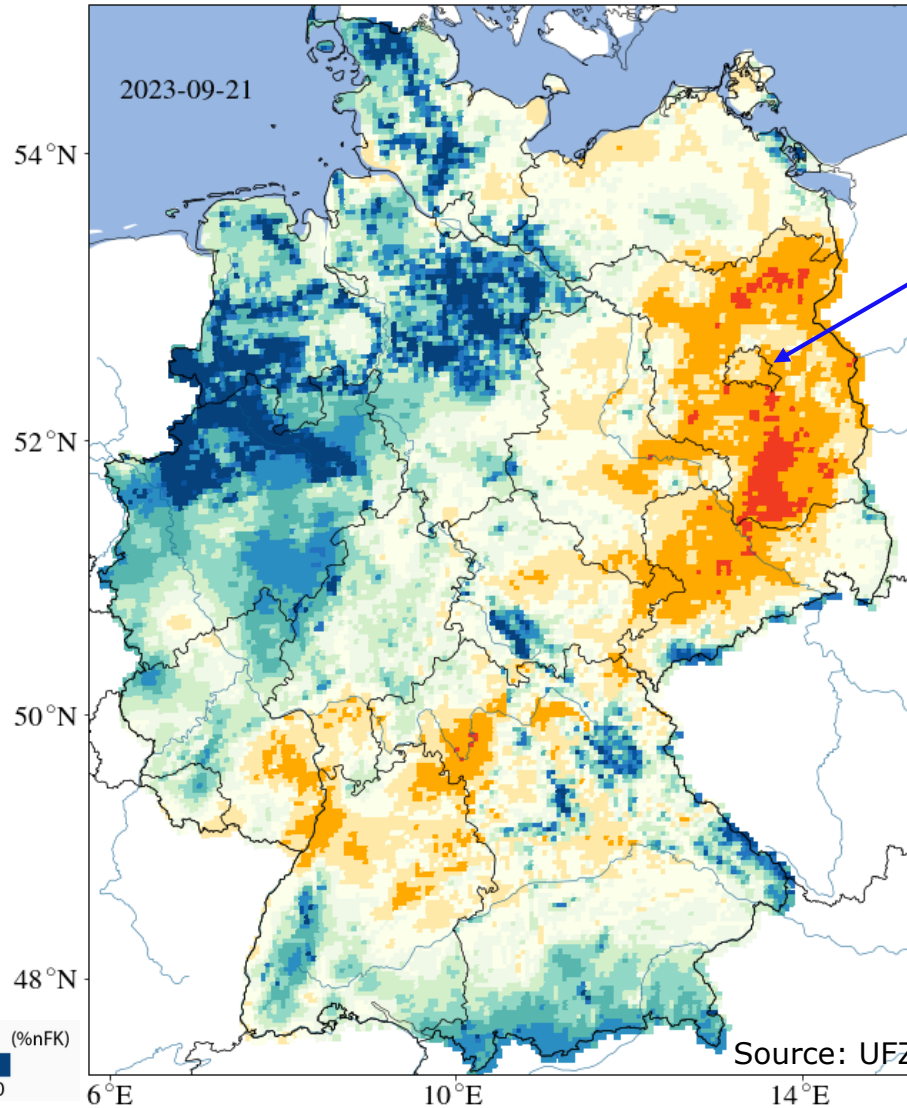
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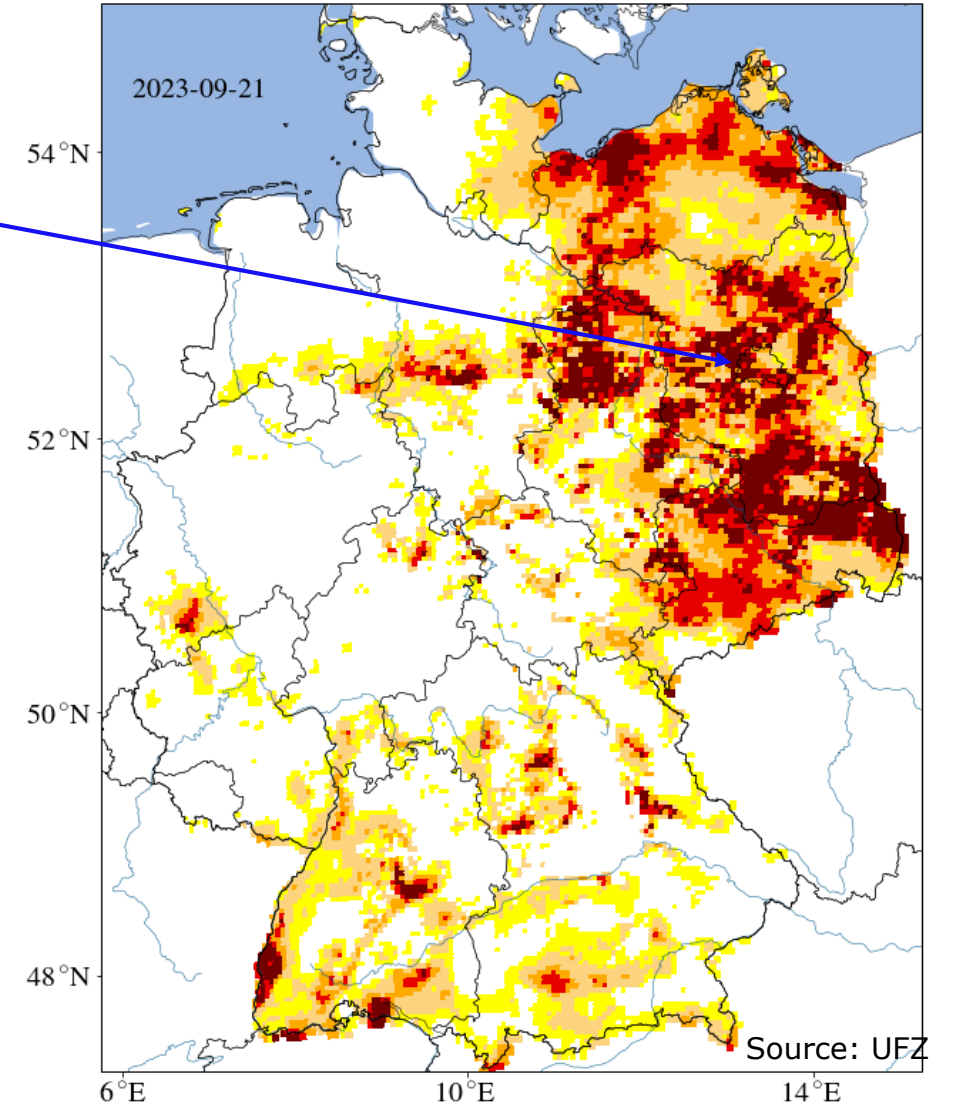
Status Sept 2024
Future scenarios

- Unusually dry
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Plant Available Water

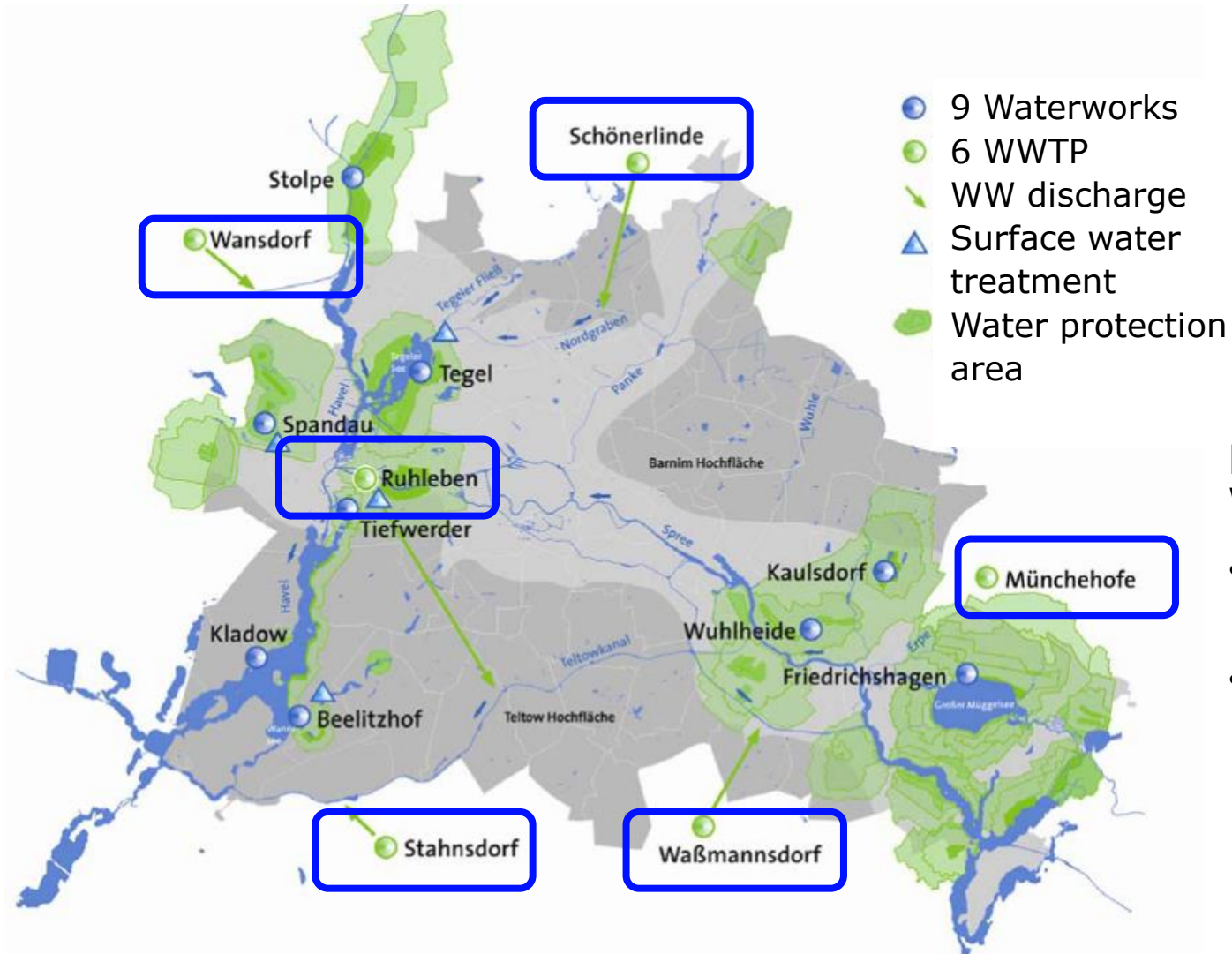


Soil Dryness 1.8m



Capitalize on synergy effects: Berlin

Berlin Implications



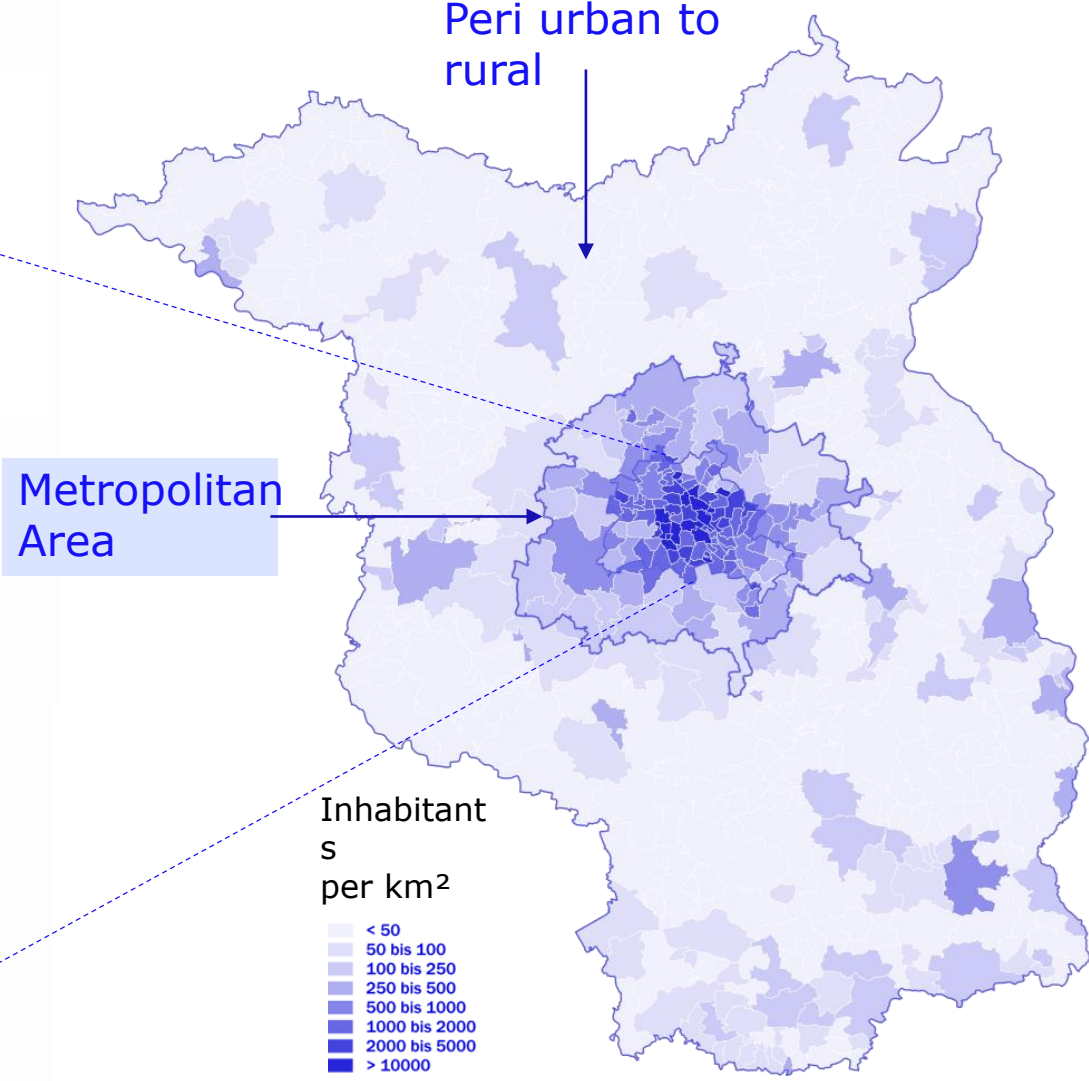
All Berlin WWTPs are >200.000 p.e. → advanced treatment for micropollutant removal will be mandatory

Berlin water utility plans extension of WWTPs with:

- Coagulation filtration to reduce nutrient emissions
- Advanced treatment (e.g. ozonation, adsorption onto activated carbon) to reduce micropollutant emissions

Scope: Berlin & Metropolitan Area

Berlin	vs.	Brandenburg
1	vs.	92 utilities
1	vs.	17 regional authorities
3.8	vs.	2.6 million people



Berlin

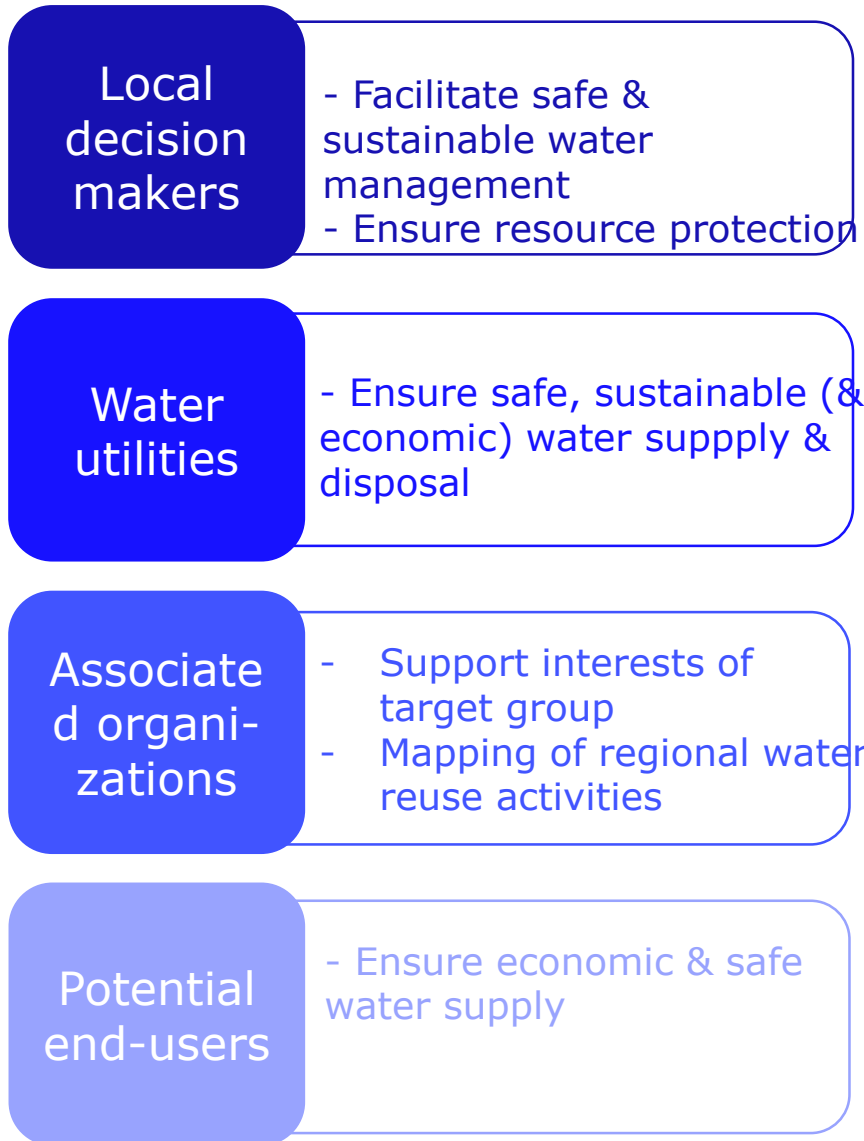
Metropolitan Area

Inhabitant
s
per km²

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Stakeholders



- Senatsverwaltung Berlin für Mobilität, Verkehr, Klimaschutz & Umwelt (SenMVKU)
- Ministerium für Landwirtschaft, Umwelt & Klimaschutz Brandenburg (MLUK)
- Landesamt für Umwelt (LfU)
- Gesundheitsämter (Public health authority)
- Pflanzenschutzamt Berlin (Plant protection authority)
- Senatsverwaltung für Justiz und Verbraucherschutz
- Local politicians & political parties
- Berlin: Berlin Water Utility
- Brandenburg: Organized on a local level in water and wastewater associations

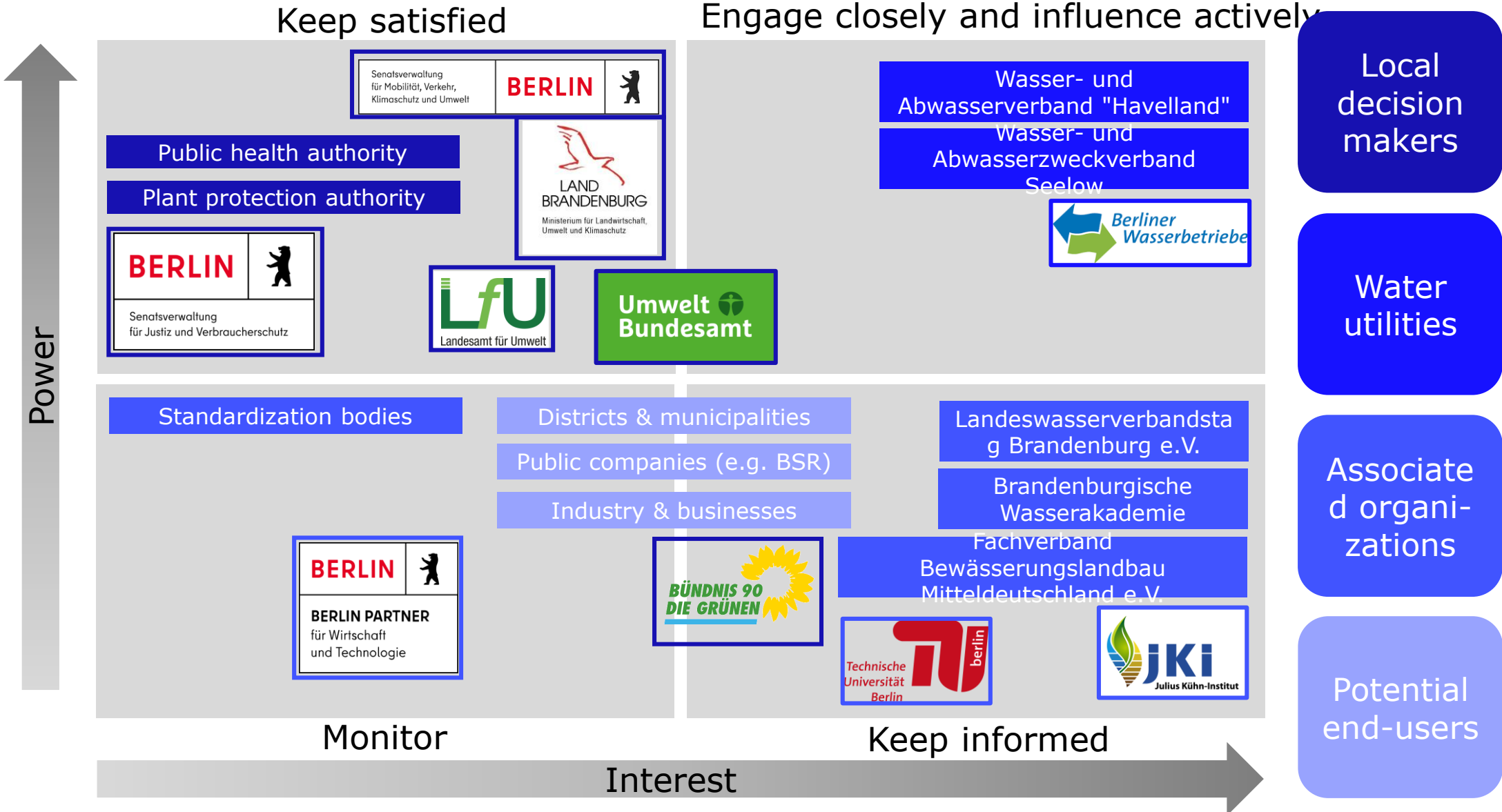


- German Environment Agency
- Chambers of Commerce & Industry Berlin & Brandenburg
- Landeswasserverbandstag Brandenburg e.V.
- Universitys: e.g. Technical University of Berlin
- Berlin Partner
- Julius Kühn Institute
- Standardization bodies: DIN ISO, DWA, VDI, DVGW
- Brandenburgische Wasserakademie
- Fachverband Bewässerungslandbau Mitteldeutschland e.V.



- Industry & businesses
- Public companies: e.g. municipal disposal company (BSR)
- Districts and municipalities

Stakeholder analyses – first draft



List of possible features – KWB scope

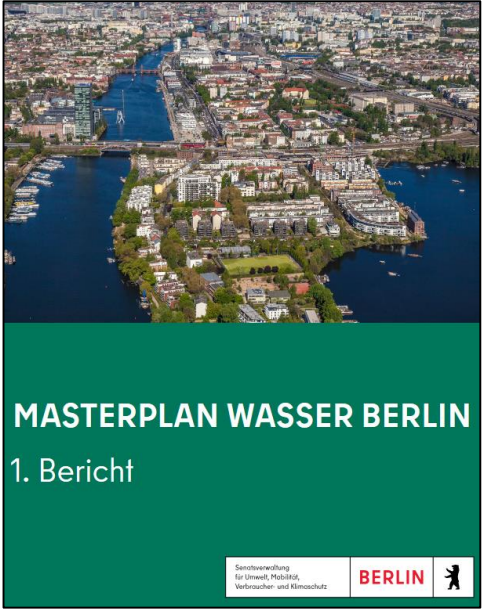
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Strategic Documents



National Water Strategy

1



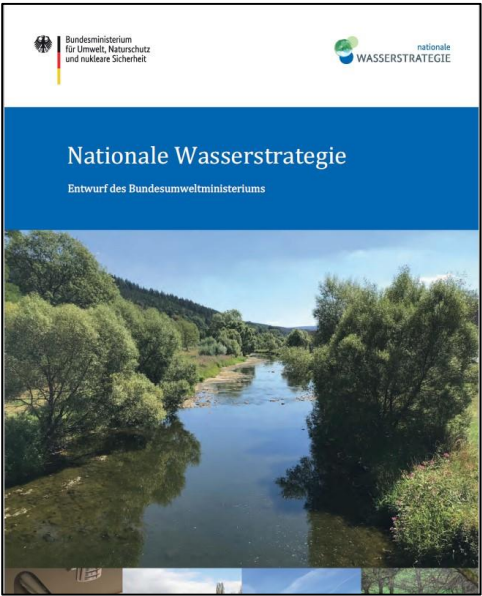
2



3



4



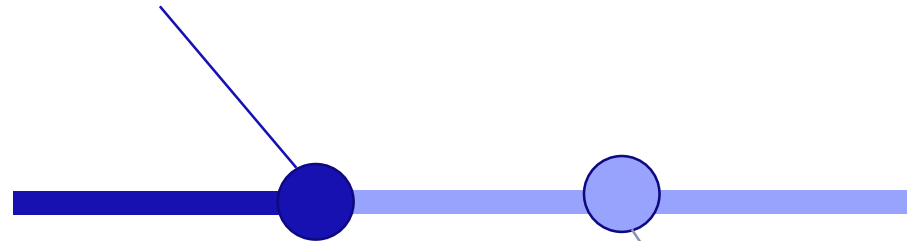
'Water Reuse Regulation' 2020/741



Working Group on Water Issues of
Federal States and Federal
Government: Report – Feb 2022



EU water
reuse
regulation



Guideline by German association for
water, wastewater and waste (DWA):
DWA-M 1200
- To be published in spring/summer 2024



Adoption into
national law

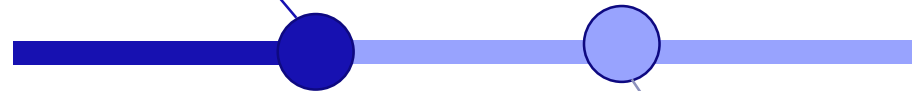
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Part I: Basics für
water use for
different purposes

Part II: Requirements
for water treatment

Part III: Use of
treated wastewater
for agriculture, parks
and greenery

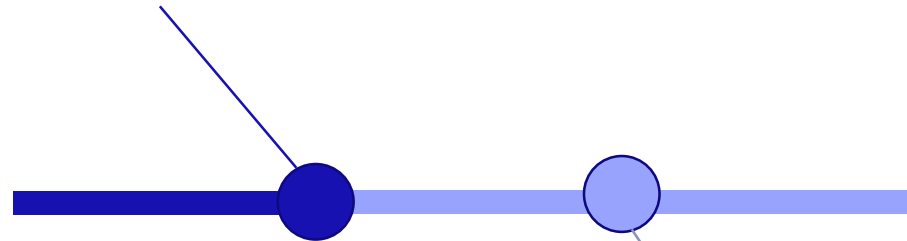
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Adoption into
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Stricter requirements
compared to EU
regulation

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Local activities

WasserWerkstatt

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Wasserwiederverwendung
Neue Perspektiven für die Industrie

16.04.2024 17:00–19:00
Audimax der Technologiestiftung Berlin

-Water reuse for industrial applications
- April 24

Local activities

WasserWerkstatt

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applications

- April 24

Agenda

17:00-17:10

Begrüßung zur WasserWerkstatt

Dr.-Ing. Pascale Rouault, KWB

Die Water Innovation Challenge Berlin

Sandra Thumm & Falko Carl, Startup Incubator Berlin

17:10-17:20

Das Projekt [WaterMan](#): Vorstellung & Ziele

[Pia Schumann](#), KWB

17:20-17:40

Vom Pilotprojekt zur großtechnischen Reuse-Anlage - Ein Beispiel zur Brauchwasserversorgung von Industriekunden des OOVV

Dr.-Ing. Michael Janzen, OOVV

17:40-18:00

Potenzialanalyse für die Industrielle Wiederverwendung von gereinigtem kommunalem Abwasser

Paul Heinrich, TU Berlin

18:00-18:20

Wasserwiederverwendung für die Industrielle Symbiose Kalundborg? – Ergebnisse aus dem EU Projekt [ULTIMATE](#)

Dr.-Ing. [Anne Kleyböcker](#), KWB

18:20-19:00

Panel Discussion

[Dr.-Ing. Anne Kleyböcker](#) (KWB), Prof. Dr. Matthias Barjenbruch (TU Berlin), Steffen Keller (Berliner Wasserbetriebe), Michael Janzen (OOVV)

Moderation: Dr.-Ing. Pascale Rouault, KWB

19:00 bis ca. 21:00

Apéro & Netzwerken

Interreg
Baltic Sea Region



Co-funded by
the European Union

SUSTAINABLE WATERS
WaterMan



Hochschule für
Wirtschaft und Recht Berlin
Berlin School of Economics and Law

Startup
Incubator
Berlin

SIB



IHK Berlin



Zukunft
findet
Start
Das Hochschulnetzwerk
für ein resilientes Berlin

BERLIN PARTNER
für Wirtschaft und Technologie

BERLIN



Local activities

WasserWerkstatt

WasserWerkstatt

Wasserwiederverwendung
Neue Perspektiven für die Industrie

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Audimax der Technologiestiftung Berlin

-Water reuse for industrial applications

- April 24

WasserWerkstatt 2



-Decentralized systems for water reuse

- Summer 2024

Local activities

WasserWerkstatt

WasserWerkstatt

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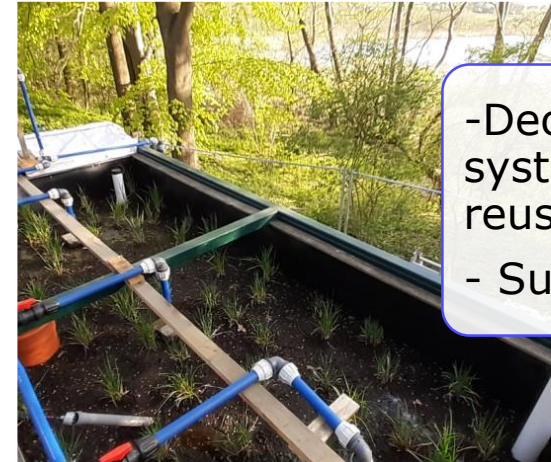
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WasserWerkstatt 2



- Decentralized systems for water reuse

- Summer 2024

Local Event



- Regional focus: Water reuse activities in Berlin & Brandenburg

- 14 November 2024

KWB

Ansprechpartnerin:
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(Elisa.rose@kompetenz-wasser.de)

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Cicerostraße 24, 10709 Berlin



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r



@Kompetenzzentrum Wasser
Berlin



www.kompetenz-wasser.de

1st Peer & expert review session: Recommendations & conclusions

Comments from the peer & expert review:

- National water strategy indicates that the local ones have to consider reuse of water. Consider how you can connect your document to the others.
- As you are not the “authority” that can create a regulation, consider how you will promote your strategy to be implemented. What is your “roadmap for change management”? Is the involvement of Berlin Wasserbetriebe enough, or do you need to engage closely and influence actively also other local decision makers?

Related project examples:

- TOPSOIL: <https://northsearegion.eu/topsoil/>
- Workshop 'How to use climate scenarios within your pilot' – minutes
https://northsearegion.eu/media/9856/20190522_minutesworkshoptopsoilfinal.pdf

Status update

Water recycling strategy for Berlin-Brandenburg / DE

KWB – Berlin Centre of Competence
for Water gGmbH

18 September 2024



2nd Peer-review session

Water recycling strategy for Berlin-Brandenburg / DE

KWB – Berlin Centre of Competence
for Water gGmbH

3 April 2025





KWVB

WaterMan – Local Model Strategy Berlin


Short Update – Latvia 2025

Elisa Rose, Pia Schumann

Scope of Local Model Strategy

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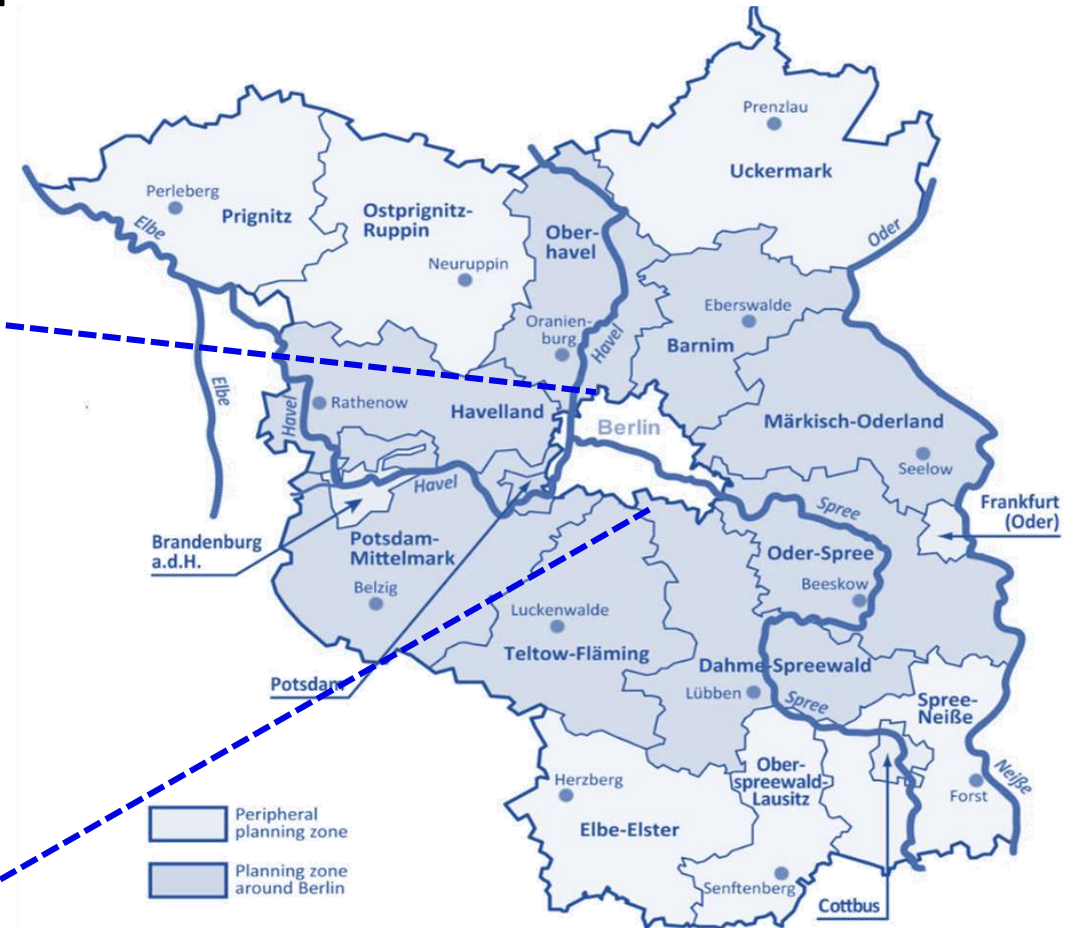
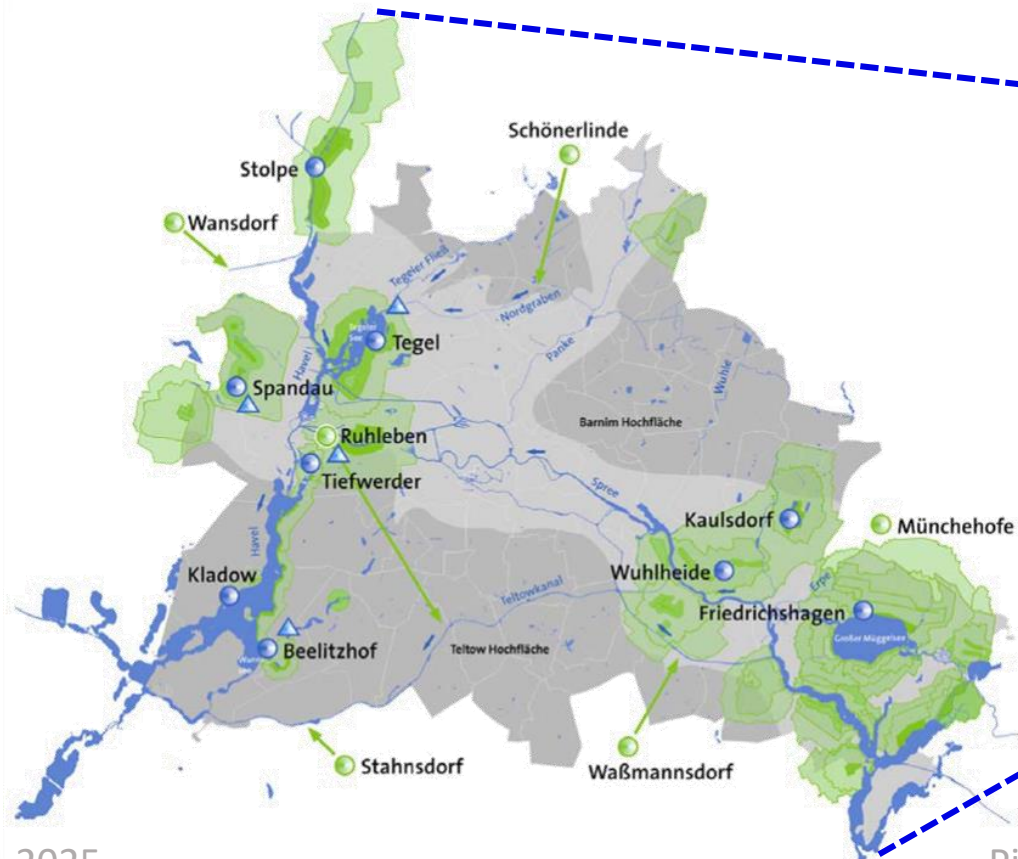
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5 Surveys / appraisals on local consumer acceptance	Yes: survey at event in Potsdam	✓
6 Roadmap for change management & related communication / PR measures, incl. a locally customized “narrative” & “storyline” on water reuse (considering the specific, local state of discussions)	Yes	In progress
7 Mapping of related strategic documents, incl. - Local strategies (e.g. local water supply plans, climate adaption strategies etc.) - National regulations (e.g. national adoption of EU Water Reuse Regulation)	Yes	✓
8 List of concrete local / regional use cases for water reuse (> local customisation of good practices), under special consideration of: - The “own” WaterMan pilot masures implemented within the model region - WaterMan pilot measures implemented in other model regions - Good practices in other parts of Europe that were explored within WaterMan (e.g. industrial symbiosis in Kalundborg)	Yes	✓
9 Horizontal actions, in particular - Awareness raising / behavioural change on the side of water supply stakeholders & water consumers (incl. general public) - If relevant: Data platforms for analysis & monitoring water demand & supply	Yes No	In progress
10 If applicable: “Lighthouse actions” / water reuse practices that are already ongoing (on top of possible future measures & actions contained in the strategy)	No, not applicable	

Berlin & Brandenburg

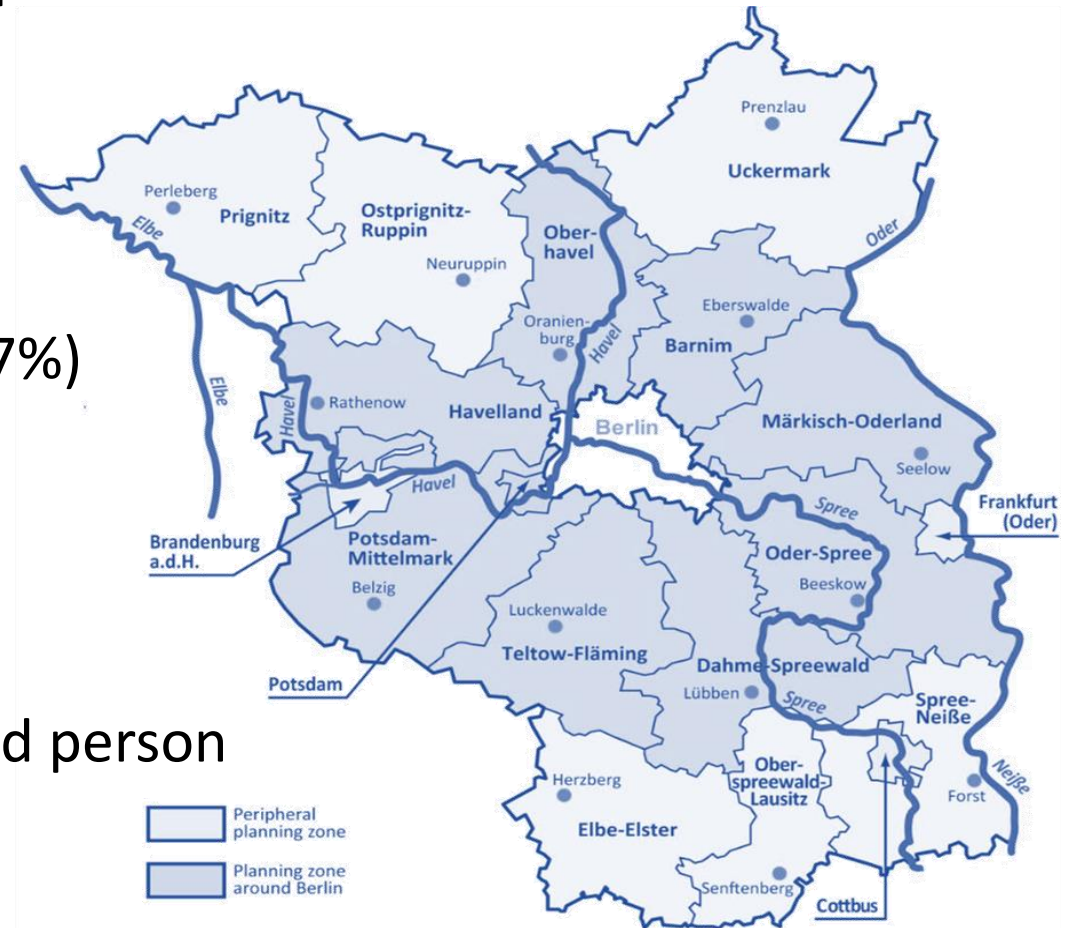
Pohle et al., 2024; <https://doi.org/10.5194/nhess-2024-187>

- Berlin-Brandenburg region lies in the North European Plain
- Dominated by the Spree-Havel river system
- Groundwater stored in a 150 m-thick aquifer



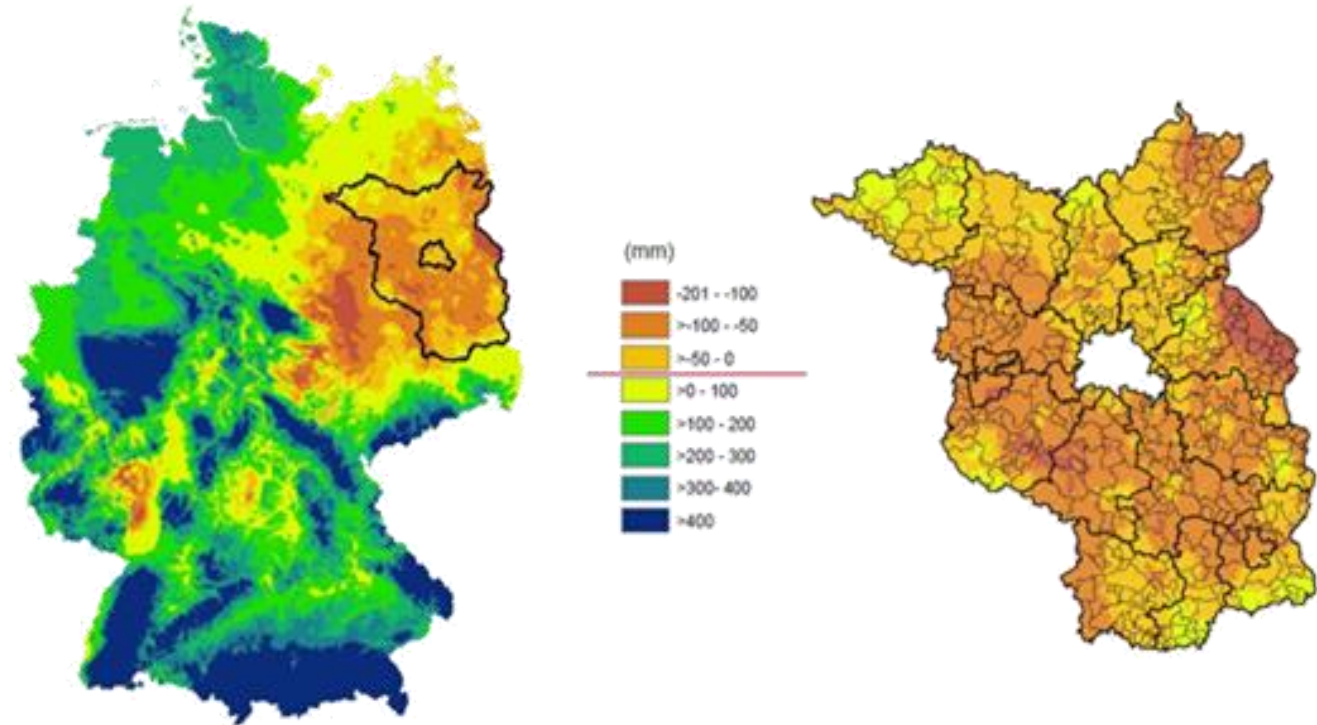
Brandenburg

- Berlin-Brandenburg region lies in the North European Plain
- Dominated by the Spree-Havel river system
- Groundwater stored in a 150 m-thick aquifer
- Major land uses: Agriculture (46%) & Forestry (37%)
- 2.5 million people
- 29,650 km²
- mean water consumption of 106 Liter per day and person (Dittmann et al., 2024)



Climatic conditions and water availability - Brandenburg

- one of the driest regions in Germany
- annual mean rainfall of 580 mm
- extreme droughts in recent summers
- negative annual climatic water balance of -52 mm
- mean temperature of 9.7°C (1.4 °C in winter, 18.4°C in summer).



Annual climatic water balance of Germany (left) and the state of Brandenburg (right) over the period from 1991 to 2021. Colors indicate the local water balances, calculated from precipitation minus potential evapotranspiration. Based on data from the German Climate Data Center ([CDC 2023](#)). Taken from

Dittmann et al., 2024; doi: 10.2166/wrd.2024.081

Irrigation potential in Brandenburg

- Water irrigated demand for agriculture in Brandenburg was calculated to be 23.1 Mio m³ in 2019 (average 72.2 mm)
- about 56.6 Mio m³ total wastewater is generated in the growing season from April to October

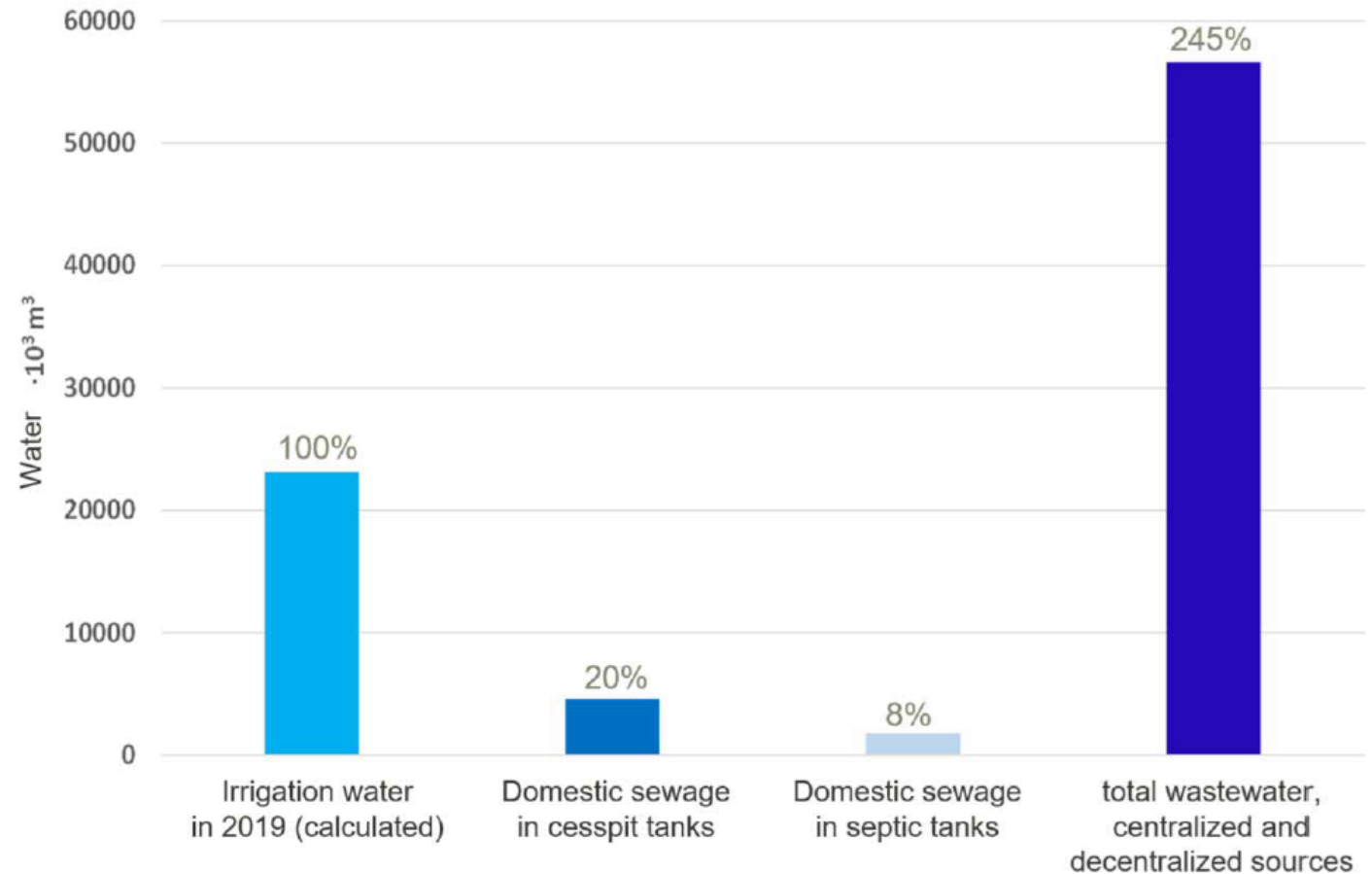


Figure 4 | Water balance during the growing season (April–October). Accounted for substitution potential for irrigation water used in 2019 with decentralized sewage sources and total wastewater in Brandenburg, Germany.

Dittmann et al., 2024; doi: 10.2166/wrd.2024.081

Let`s have a look into the video!

KWVB

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2nd Peer & expert review session: Recommendations & conclusions

- The prepared video with the aim to inform general public is easily comprehensible and informative. Well done! In the video the message on water recycling is simple and without too technical jargon.
- Keep on cooperating with the local / regional authorities in the development of the strategy.
- Very good that the strategy is not only concentrated on Berlin, but considers also Brandenburg.

Final review

Water recycling strategy for Berlin-Brandenburg / DE

KWB – Berlin Centre of Competence
for Water gGmbH

26 September 2025



Content

1. Scope and focus area
2. Local Background
3. Stakeholder analysis
4. Survey
5. Mapping of documents
6. Best practices
7. Water reuse activities in Berlin-Brandenburg
8. Core measures & activities
9. Process



1. Model Strategy: Scope & focus area

Water sources
& uses

Municipal Wastewater
(Greywater)

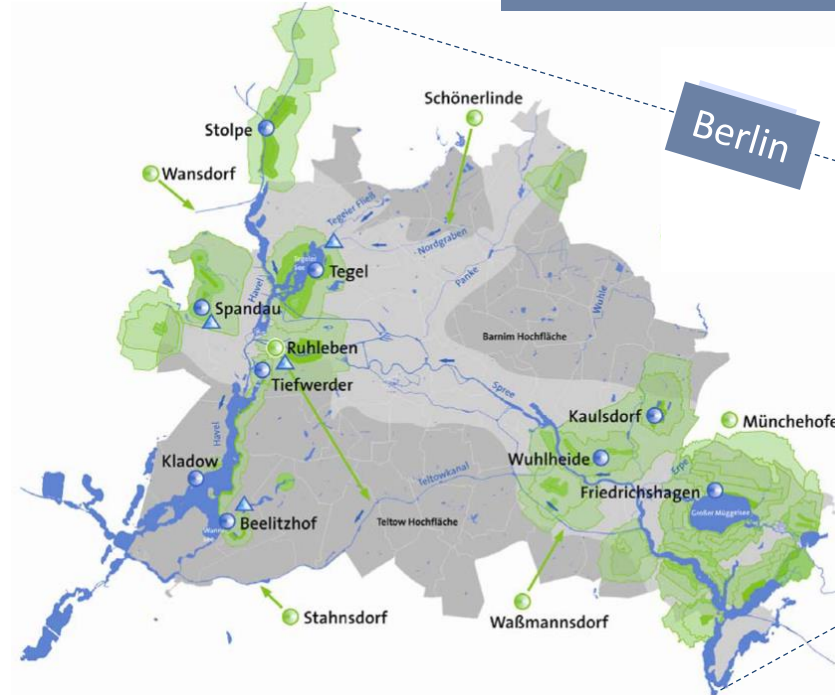


Industrial & commercial use
Agricultural & urban
irrigation

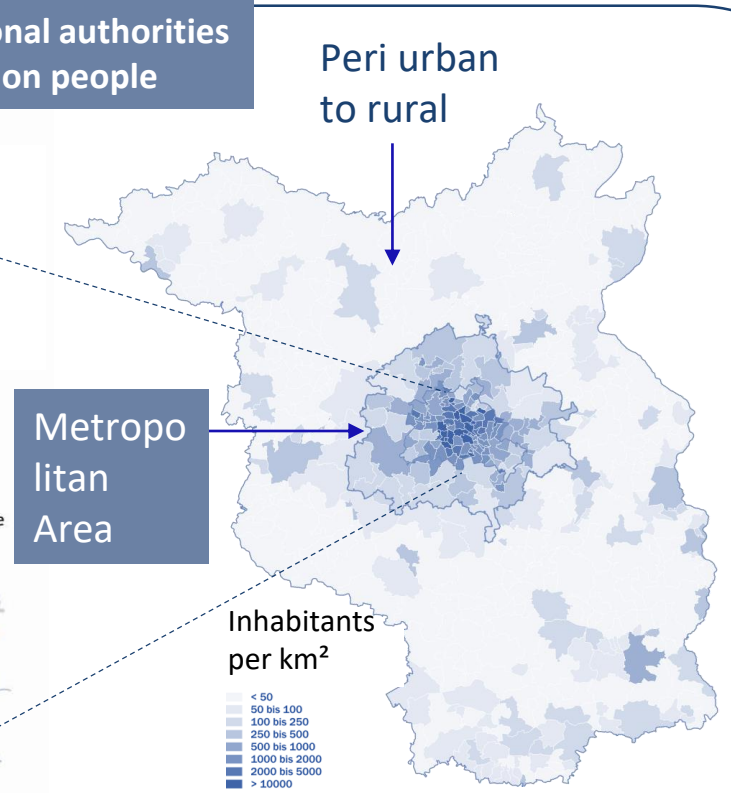
Focus area

Berlin vs. Brandenburg:

1	vs.	92 utilities
1	vs.	17 regional authorities
3.8	vs.	2.6 million people



Berlin water utilities (BWB)



Peri urban
to rural

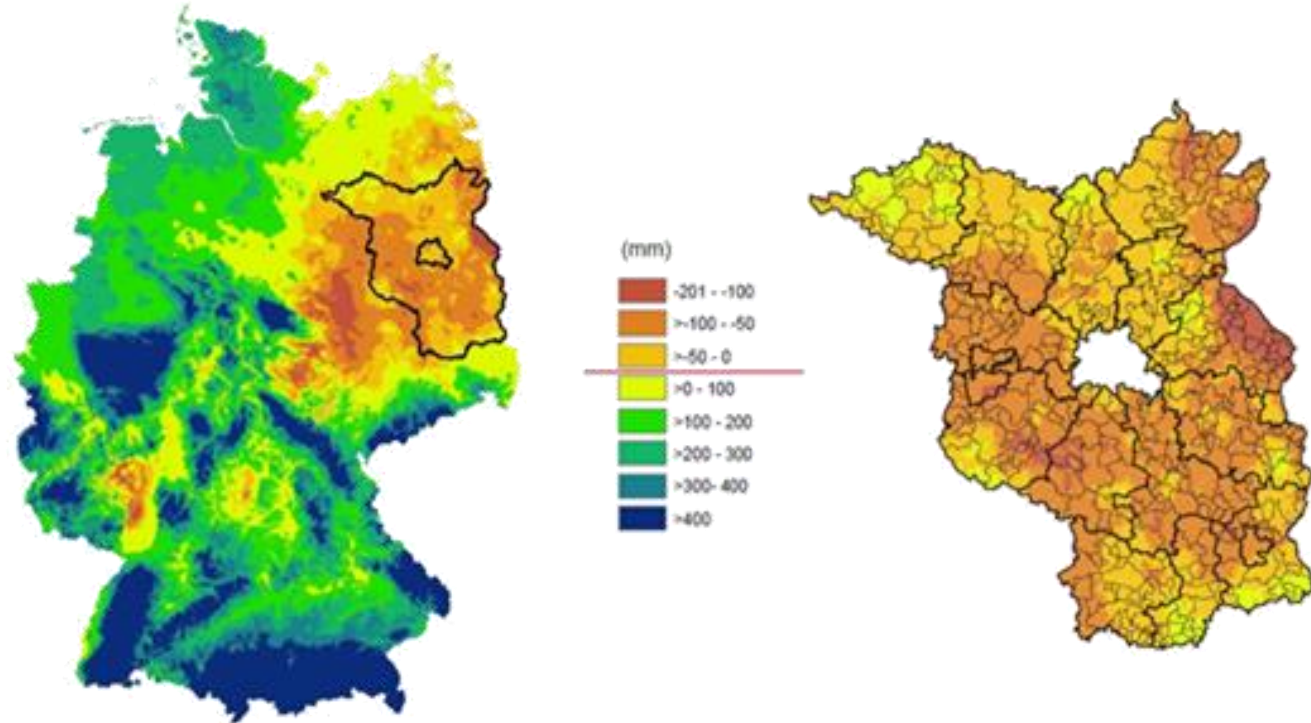
Metropo
litan
Area

Inhabitants
per km²

Alexrk2,
https://commons.wikimedia.org/wiki/File:Metropolregion_Berlin-Brandenburg_Einwohnerdichte.svg, change in color

2. Local background

- one of the driest regions in Germany
- annual mean rainfall of 580 mm
- extreme droughts in recent summers
- negative annual climatic water balance of -52 mm
- mean temperature of 9.7°C (1.4 °C in winter, 18.4°C in summer).



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Dittmann et al., 2024; doi: 10.2166/wrd.2024.081

2. Local background

Future challenges of water supply in the Berlin Brandenburg Metropolitan Region



- Population Growth: Rising demand due to increasing population



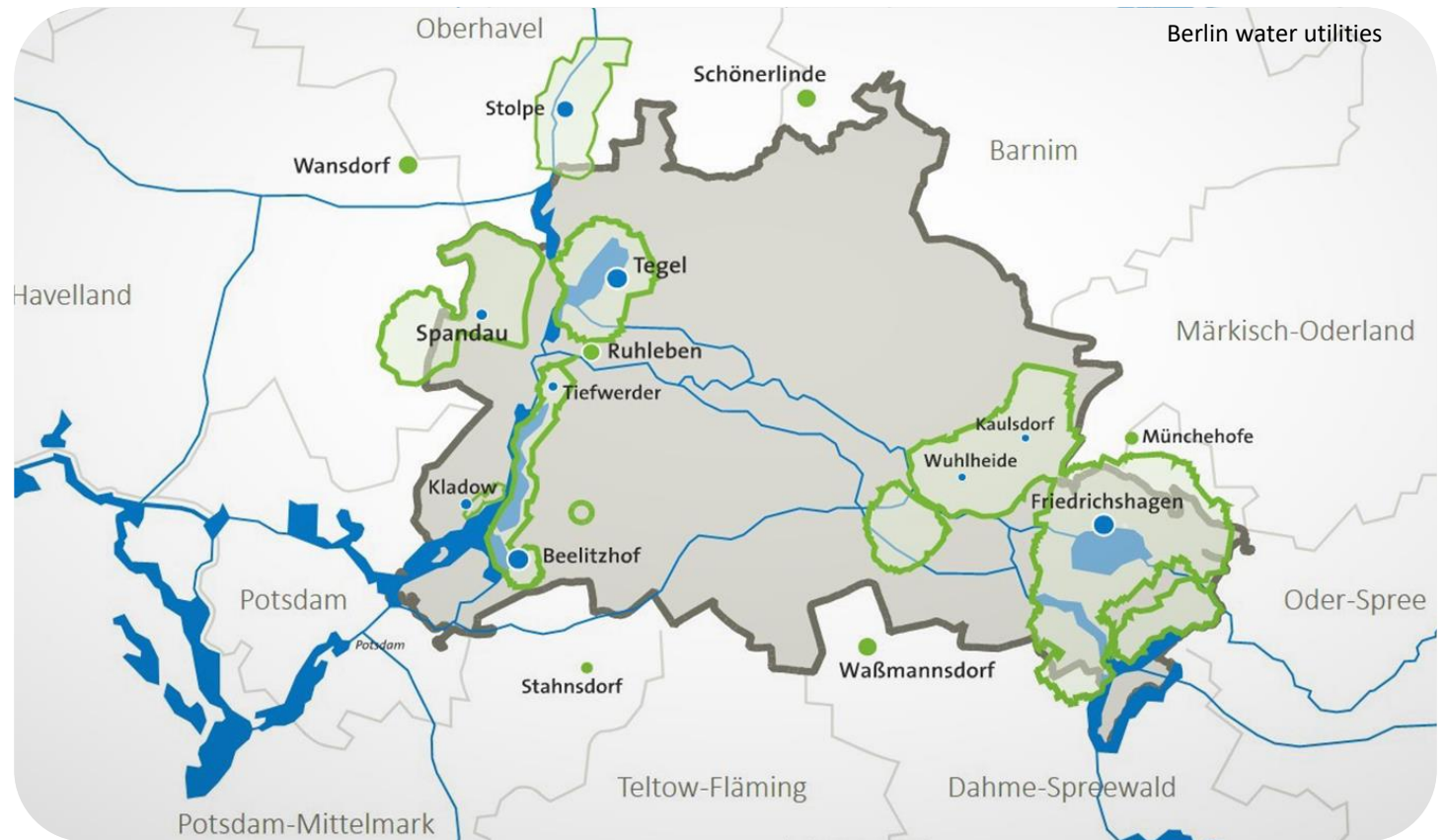
- Climate Change: Reduced water availability (e.g., the dry five-year period 2018–2022)



- Decline in Spree River Flow: End of lignite mining and related mine drainage inflows



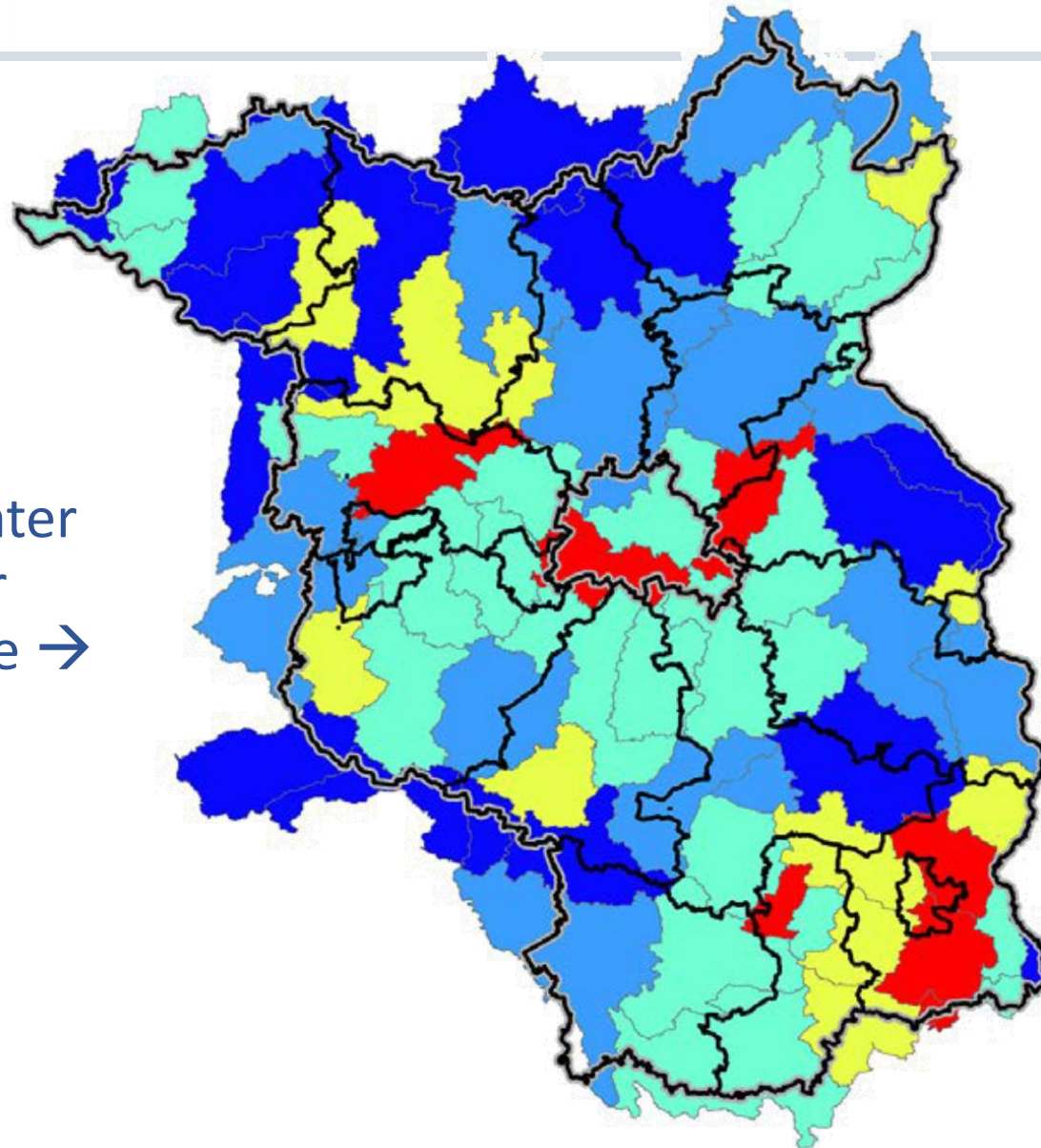
- Decline in Havel River Flow: Lower precipitation levels



2. Local background

Groundwater utilisation:

- Target: Utilisation < 30%
- High share in the metropolitan region has reached its groundwater use target capacity → no further sustainable abstraction possible → other options to be found



2. Local background: Current and future water demands

	Berlin	Brandenburg part of the metropolitan region
Area (km²)	891 ⁶	2888 ⁵
Status quo (years 2020–2022)		
Inhabitants (Mio. inhabitants)	3.78 ³	1.02 ⁵
Raw water demand (Mio. m³)	219 ¹	54 ¹
inhabitants supplied by BWB (%)	100 ²	7 (85,000 inhabitants, 5.7 Mio. m ³) ²
Future scenario(s)		
Inhabitants (Mio. inhabitants)	3.96 (2040) ³ 4.2 (2050) ¹	1.14 (2030) ⁴ 1.2 (2050) ¹
Raw water demand (Mio. m³)	248 (2050) ¹	77 (2050) ¹

1 ITM (2020), 2 BWB (o.J.), 3 SenWEB (2022), 4 Amt für Statistik B-BB (2021) (mittlere Entwicklungsvariante), 5 Amt für Statistik B-BB (2023), 6 Amt für Statistik B-BB (2024))

2. Local background

- Forecast for 2050: +49 million m³/a
 - Berlin: 28 million m³/a,
 - Metropolitan region in Brandenburg: 21 million m³/a
- Additional demand not evenly distributed across the metropolitan region
- Climate change issue: longer dry periods would reduce the available supply
- Assumption according to the Berlin Water Master Plan: loss of up to 55 million m³/a in Berlin (with 50% less groundwater recharge), requiring substitution
- Forecast: 50–100 million m³/a, additional and substitution demand



2. Local background: Measures in discussion

- Pipelines from
 - the Baltic Sea to Berlin (desalinated water)
 - reservoirs in the Central Uplands
- Local and regional interventions
 - Increased groundwater abstraction
 - Enhanced groundwater recharge (e.g., reuse, bank filtration)
 - Intensified water circulation (WWTP effluent discharge upstream)
 - Municipal wastewater reuse near WWTPs
 - Reduced water demand
 - Blue-green infrastructure for local infiltration
 - Remediation of contaminated sites



ITM 2020: Initiative Trinkwasserversorgung Metropolregion Berlin–Brandenburg. (2020). Masterplan Wasserversorgung Metropolregion Berlin–Brandenburg: Bestandsaufnahme und Ableitung von Erfordernissen für die Trinkwasserversorgung in der Metropolregion. Created by Wasserversorgungsunternehmen der Metropolregion. <https://www.ag-wasser.de/initiative-itm>

Kommunale Abwasserbeseitigung im Land Brandenburg – Lagebericht 2025, MLEUV

2. Local background: Measures in discussion

- Pipelines from
 - the Baltic Sea to Berlin (desalinated water)
 - reservoirs in the Central Uplands
- Local and regional interventions
 - Increased groundwater abstraction
 - Enhanced groundwater recharge (e.g., reuse, bank filtration)
 - Intensified water circulation (WWTP effluent discharge upstream)
 - **Municipal wastewater reuse near WWTP**
 - Reduced water demand
 - Blue-green infrastructure for local infiltration
 - Remediation of contaminated sites

→ **Local measures are highly promising due to simpler implementation and fewer stakeholders**



2. Local background: Irrigation potential in Brandenburg

- Water irrigated demand for agriculture in Brandenburg was calculated to be 23.1 Mio m³ in 2019 (average 72.2 mm)
- about 56.6 Mio m³ total wastewater is generated in the growing season from April to October

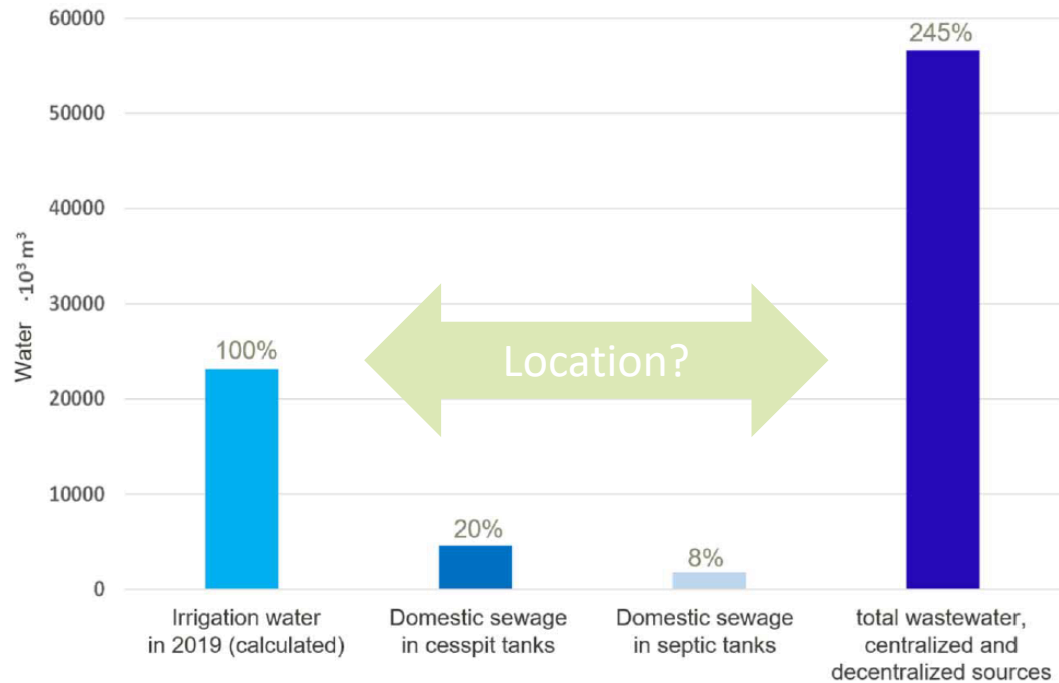
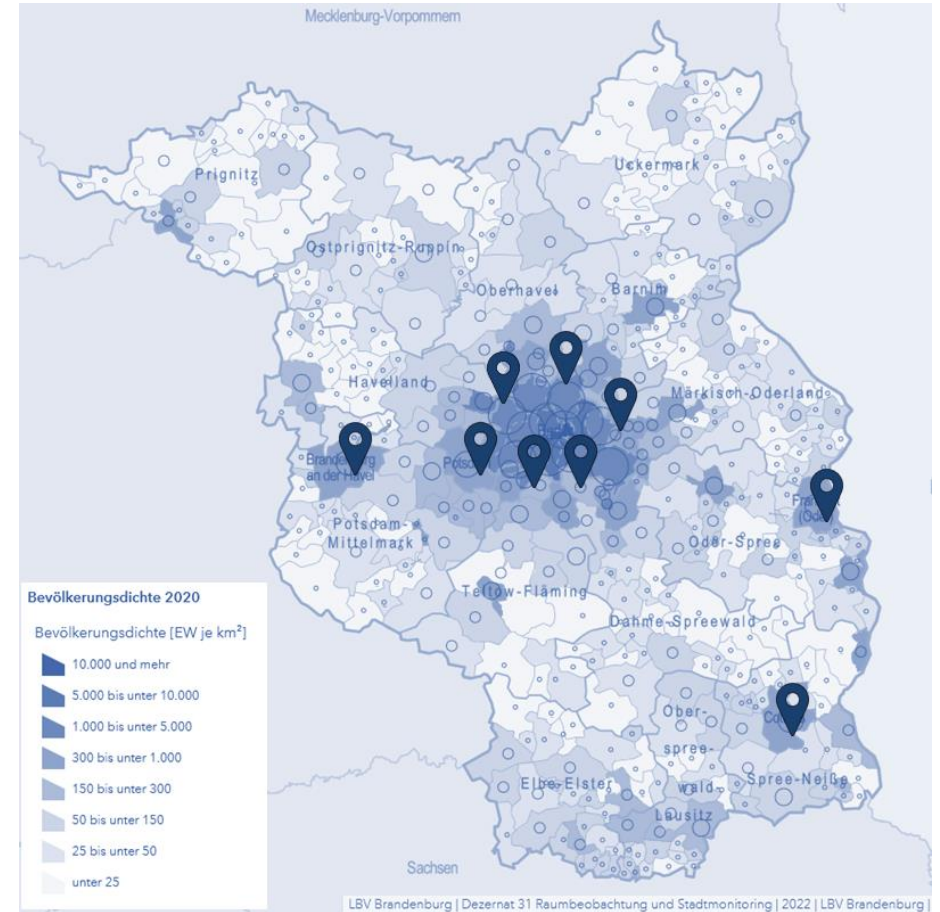
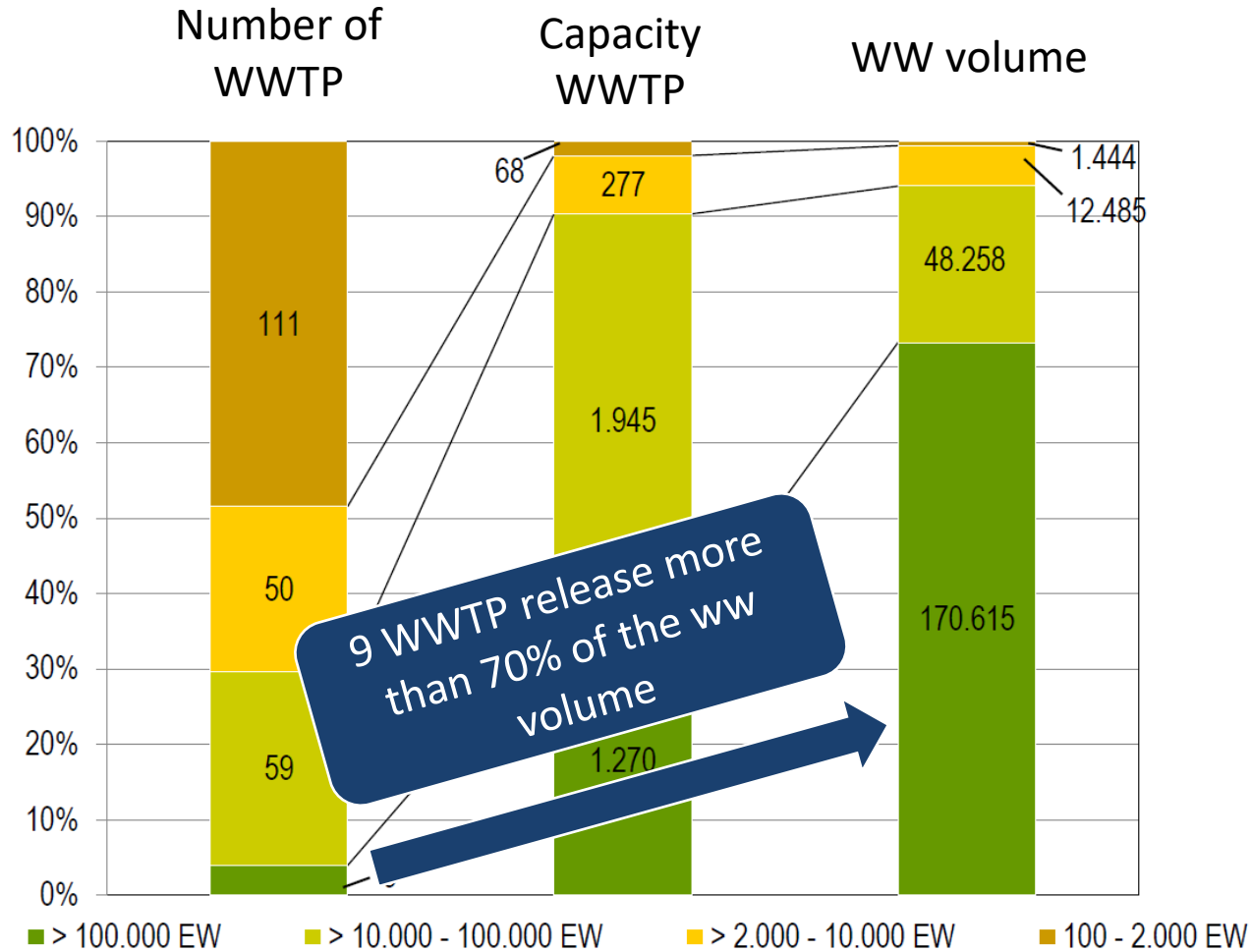


Figure 4 | Water balance during the growing season (April–October). Accounted for substitution potential for irrigation water used in 2019 with decentralized sewage sources and total wastewater in Brandenburg, Germany.

Dittmann et al., 2024; doi: 10.2166/wrd.2024.081

2. Local background: Wastewater volumes & spatial distribution



LBV Brandenburg | Dezernat 31 Raumbeobachtung und Stadtmonitoring | 2022;
<https://raumanalyse.brandenburg.de/rm-be-bb/?page=Bev%C3%B6lkerungsdichte-2020&views=2.3.4-Lokalisierung%2CLegende>

2. Local background: Status quo of water reuse adoption in Berlin-Brandenburg

- Despite its potential, water reuse is not yet widely adopted due to unresolved uncertainties and governance gaps.
- High level of uncertainty: Open questions regarding regulation, health risks, economics, and public acceptance
- Role of research: These uncertainties are currently addressed primarily through research and pilot projects

Focus on applied research as a prerequisite for scaling water reuse



3. Stakeholders

Local decision makers

- Facilitate safe & sustainable water management
- Ensure resource protection

Water utilities

- Ensure safe, sustainable (& economic) water supply & disposal

Associated organizations

- Support interests of target group
- Mapping of regional water reuse activities

Potential end-users

- Ensure economic & safe water supply

- **Senatsverwaltung Berlin für Mobilität, Verkehr, Klimaschutz & Umwelt (SenMVKU)**
- Ministerium für Landwirtschaft, Umwelt & Klimaschutz Brandenburg (MLUK)
- Landesamt für Umwelt (LfU)
- Gesundheitsämter (Public health authority)
- Pflanzenschutzamt Berlin (Plant protection authority)
- Senatsverwaltung für Justiz und Verbraucherschutz
- Local politicians & political parties

- Berlin: **Berlin Water Utility**
- Brandenburg: Organized on a local level in water and wastewater associations



- German Environment Agency
- Chambers of Commerce & Industry Berlin & Brandenburg
- Landeswasserverbandstag Brandenburg e.V.
- Universitys: e.g. Technical University of Berlin
- **Berlin Partner**
- Julius Kühn Institute
- Standardization bodies: DIN ISO, DWA, VDI, DVGW
- Brandenburgische Wasserakademie
- Fachverband Bewässerungslandbau Mitteldeutschland e.V.

- Industry & businesses
- Public companies: e.g. municipal disposal company (BSR)
- Districts and municipalities

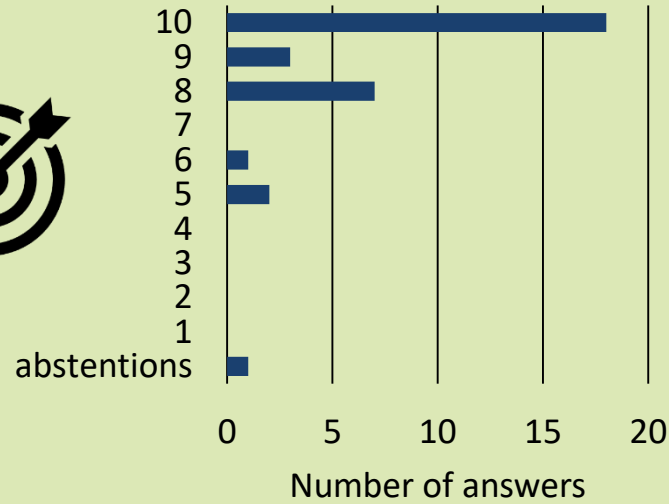


4. Survey

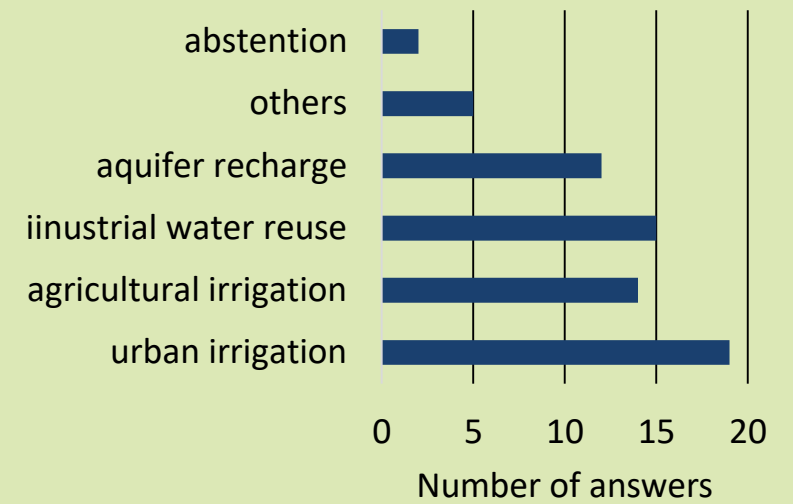
- Survey excerpt from local stakeholder event, Potsdam, November 2024 (n=32)
- More than 80% of participants work in Berlin and/or Brandenburg



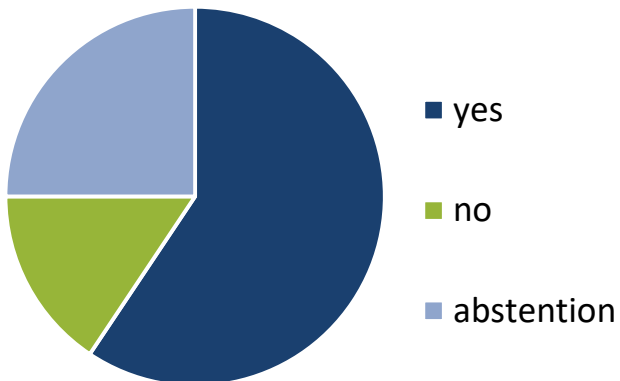
How interesting is water reuse for your work and region?



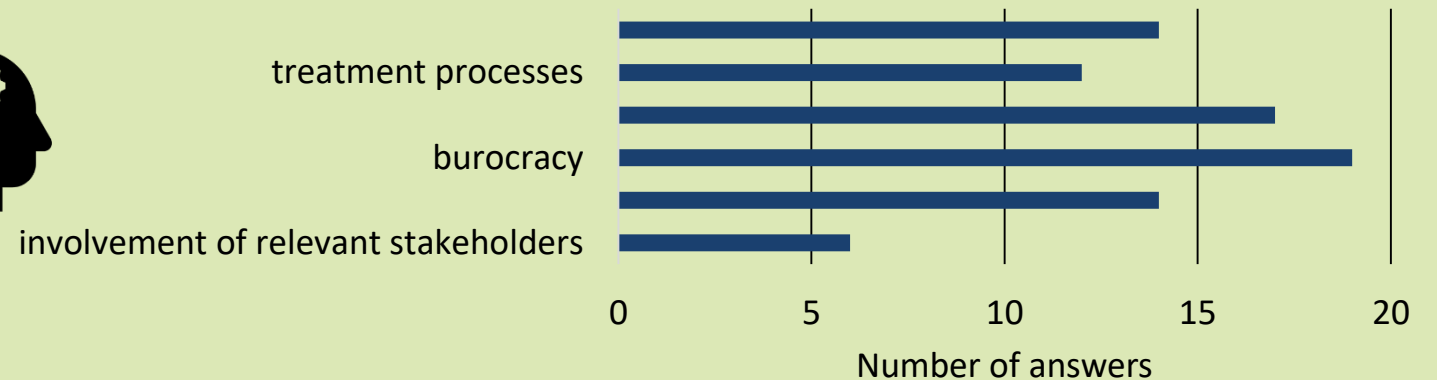
Which type of water reuse is most interesting for your region?



Are you considering implementing water reuse?



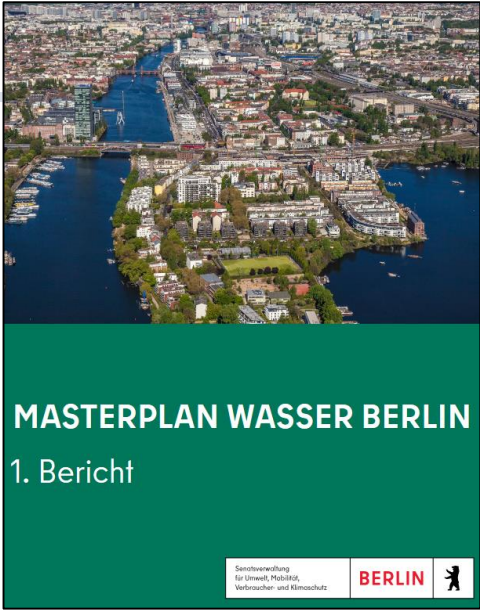
What are the main challenges for you in the context of water reuse



5. Mapping of documents



1



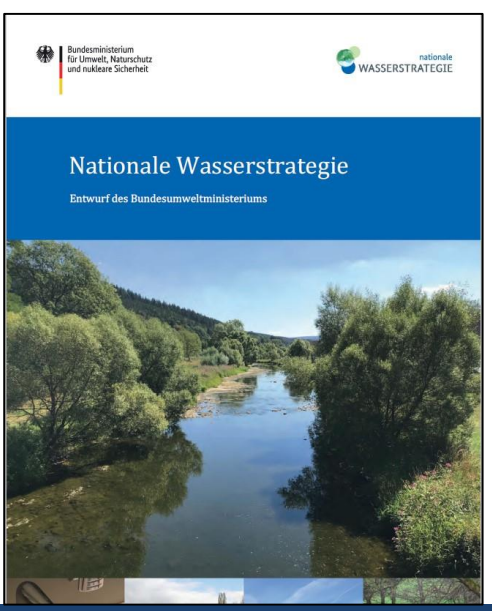
2



3



4



6. Best practices

Treated Municipal Wastewater Reuse in Terneuzen (The Netherlands)¹

- A cooperation between chemical industry (Dow Terneuzen) & the local water company
- Water Source: Secondary effluent from the WWTP Scheldestromen
- Further Treatment by: Evides
- Treatment: Reverse Osmosis
- Reuse Application: Cooling tower process

Upcoming: Nordenham (Germany)

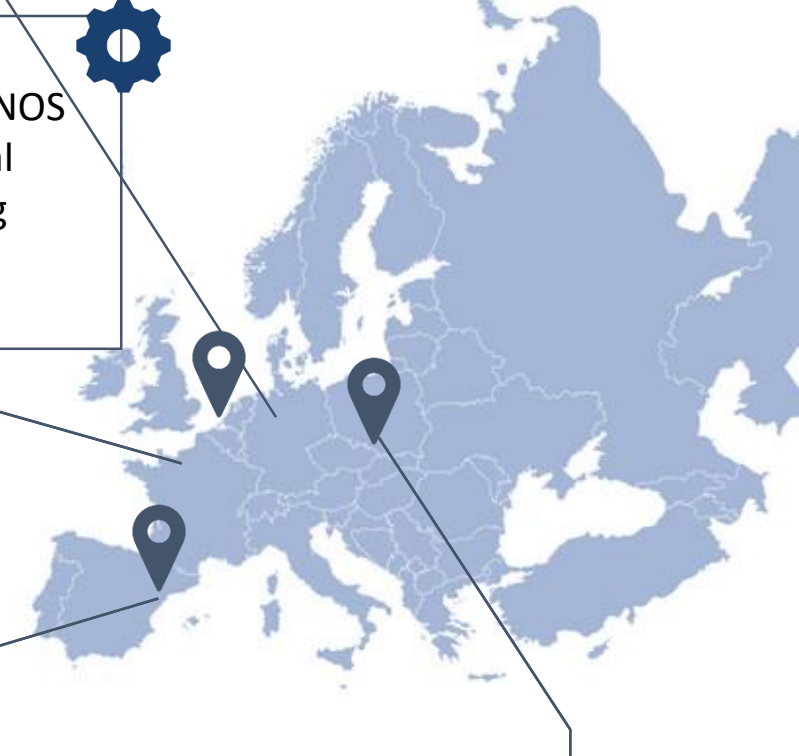
- Cooperation of OOWV and KRONOS TITAN to reuse treated municipal wastewater from 2026, reducing drinking water demand by up to 500,000 m³/year

Reuse of treated wastewater in Katowice (Poland)³

- Effluent flow 1,500,000 m³/y
- advanced treatment: microfiltration
- Reuse application: cooling tower

Camp De Tarragona Water Reclamation Plant (Spain)²

- Water source: Secondary Effluent from Tarragona and Vilaseca-Salou wastewater treatment plants
- Treatment capacity: Average of 19,000 m³/d (Phase I)
- Further extension: 29,000 m³/d (Phase II) and 55,000 m³/d (Phase III)
- Reuse Application: cooling water for Tarragona Chemical Complex & boiler feed water at cogeneration power plant



¹<https://corporate.dow.com/content/dam/corp/documents/science-sustainability/066-00202-01-industrial-water-reuse-case-study.pdf>, ²Sanz et al., 2015, doi: 10.2166/ws.2014.114, ³Ramm et al., 2024, <https://doi.org/10.1016/j.jenvman.2024.120890>

7. Water reuse activities in Berlin-Brandenburg

- WaterMan – Feasibility study in Ruhleben and Stahnsdorf
- Pu2R – Decentralized water reuse for agricultural irrigation
- Flexility – Water reuse for agricultural irrigation
- TrinkWave Transfer – Full-scale sequential groundwater recharge
- IWIQ – Real world piloting of greywater recycling
- BWB: Treated wastewater is used to restore nature: in Hobrechtsfelde (Berlin), ~4,900 m³/day of effluent from Schönerlinde WWTP rehydrates former fields into a biodiverse green area

8. Core measures & activities: The KWB perspective



8. Core measures & activities

1. Knowledge
generation

Capacity
building and
training

Stakeholder
engagement
and co-
creation

Policy support
and evidence
based
guidance

Communicatio
n and public
outreach

Research
projects
(national and
international)

8. Core measures & activities

1. Knowledge generation

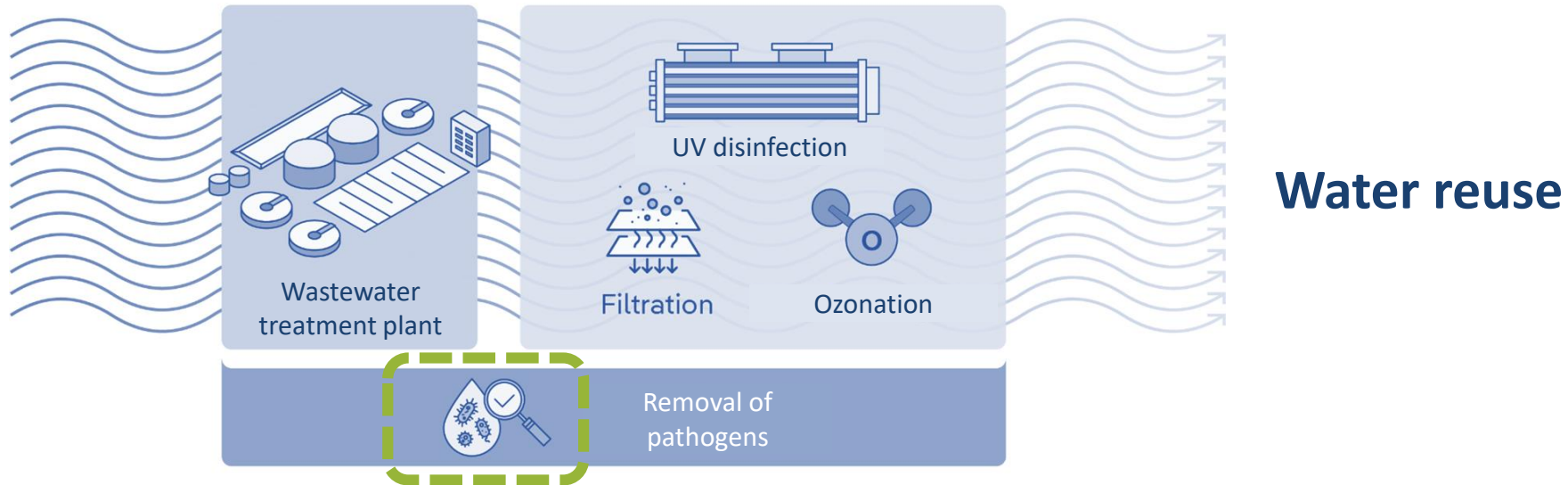
Capacity building and training

Stakeholder engagement and co-creation

Policy support and evidence based guidance

Communication and public outreach

Research projects (national and international)



8. Core measures & activities

1. Knowledge generation

Capacity building and training

Stakeholder engagement and co-creation

Policy support and evidence based guidance

Communication and public outreach

Research projects (national and international)

LCA workshop

QMRA Workshop & Tool Update

Workshop on water reuse, treatment technologies, risk assessment and management

WaterMan Excursion

Infographics

8. Core measures & activities

1. Knowledge generation

Capacity building and training

Stakeholder engagement and co-creation

Policy support and evidence based guidance

Communication and public outreach

Research projects (national and international)



Stahnsdorf

8. Core measures & activities

1. Knowledge generation

Capacity building and training

Stakeholder engagement and co-creation

Policy support and evidence based guidance

Communication and public outreach

Research projects (national and international)



Stricter requirements compared to EU regulation

8. Core measures & activities

1. Knowledge generation

Capacity building and training

Stakeholder engagement and co-

Policy support and evidence based

Communication and public outreach

Research projects (national and international)



Direct communication

Special: Regenwasser

Pia Schumann; Eliza Rose

Regenwasser als alternative Wasserressource im Ostseeraum

Im EU-Projekt WaterMan drehen sich alle Aktivitäten um die Wasserwiederverwendung als ein neues Element des Wassermanagements. Erste Anwendungsbeispiele aus Schweden, Lettland, Litauen und Polen zeigen, wie Regenwasser hilft, Trinkwasserressourcen zu schonen.



Bild 1 Beispiel Vasterik (Schweden): Ein Regenrückhaltebecken auf Granleby wird aus einem 10 ha großen Einzugsgebiet gespeist und dient der Bewässerung städtischer Flächen. Quelle: Andrijauskas

tigt werden sollten. Gegebenenfalls sollte eine Behandlung eingeplant werden, um eine sichere Wiederverwendung zu gewährleisten.

Synergien im Ostseeraum

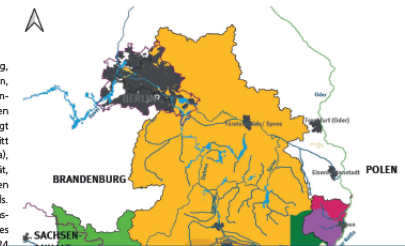
Das EU-geförderte Interreg-Projekt WaterMan demonstriert im Ostseeraum, wie solche Synergien entstehen. Die Kombination aus Klimaanpassung, Bildungsinitiativen und innovativem Wassermanagement eröffnet dabei neue Perspektiven für eine klimaresiliente Wasserwirtschaft. Im Unterschied zu den üblichen deutschen Standards wird hier der Begriff Wasserwiederverwendung breiter gefasst: Neben ge-

Wasserbewusstste Stadt

Eliza Rose; Pia Schumann

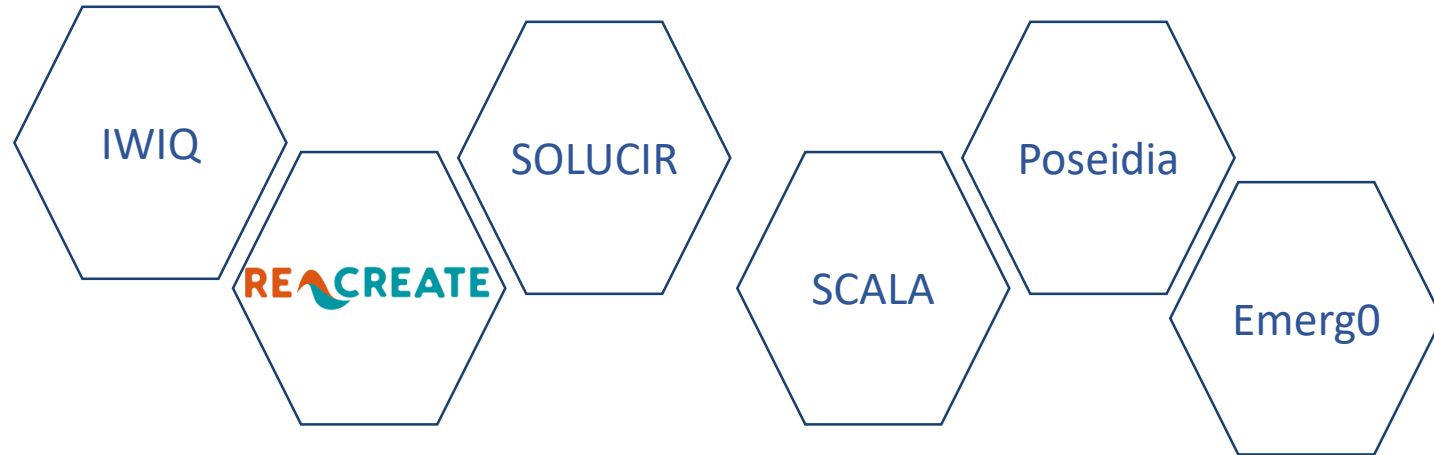
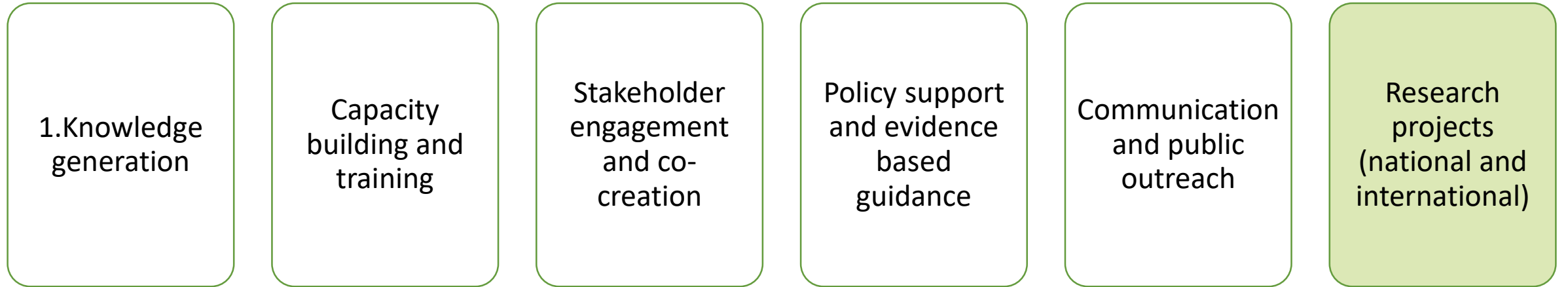
Wasserwiederverwendung in der Hauptstadtregion als Strategie

Wie kann die Wasserwiederverwendung in Städten effizient umgesetzt werden? Das Projekt WaterMan widmet sich dieser Frage und fördert den lokalen Kapazitätsaufbau im Ostseeraum. Am Beispiel Berlin-Brandenburg werden die Potenziale der Wiederverwendung von aufbereitetem Abwasser untersucht.



Die Metropolregion Berlin-Brandenburg, in der knapp 6,4 Mio. Menschen leben, steht vor großen Herausforderungen hinsichtlich einer sicheren und klimaresilienten Wasserversorgung. Die Region ist geprägt durch weit unter dem Bundesdurchschnitt liegende Niederschläge (< 600 mm/a), Sandböden mit geringer Wasserkapazität, zunehmende Hitzewellen und wachsenden Wasserbedarf aufgrund des Klimawandels. Die Oberflächengewässer und Grundwasserspiegel sinken langfristig, auch wenn es durch ungewöhnlich feuchte Jahre wie 2024

8. Core measures & activities



8. Core measures & activities: Building trust for scaling water reuse through local action and collaboration

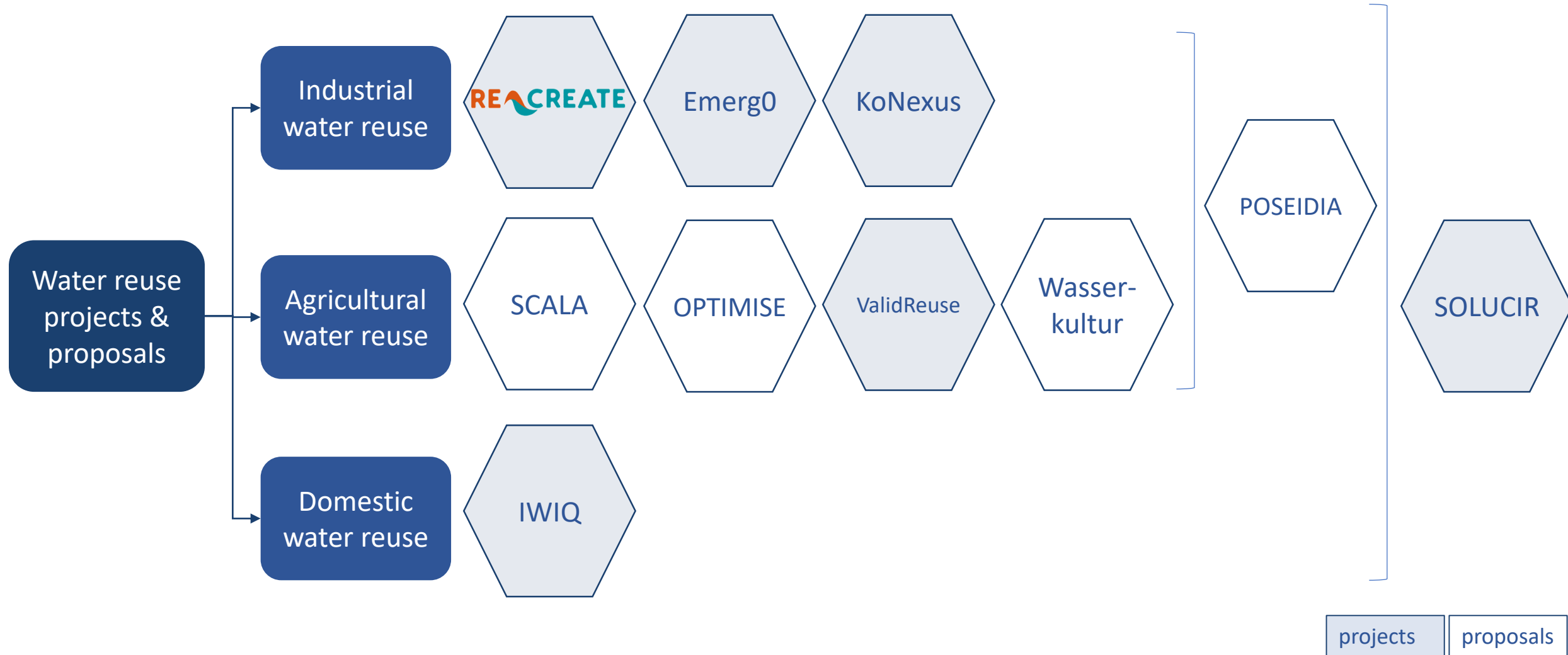
- **Lighthouse projects** at local level: Demonstration projects create continuity in water reuse
- Key enabling factors: **Trust, time, and transparency**, achieved through long-term, visible projects
- **Support through collaboration**: WaterMan supports project development through exchange



Governance challenge:

- The joint regional water strategy of Berlin & Brandenburg has been discontinued since early 2025
- No ongoing dialogue to contribute to is currently available

8. Core measures & activities: KWB projects and proposals



9. Process

- Strategy developed by KWB's Water Treatment and Reuse team
- Continuous input from BWB, regulatory authorities (UBA, Berlin Senate, Brandenburg water authorities) and other stakeholders shaped focus and priorities





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The „BSR Water Recycling Toolbox” was elaborated as part of the WaterMan project, which is co-financed by the European Union (European Regional Development Fund) and implemented within the Interreg Baltic Sea Region Programme. More information:

eurobalt.org/WaterRecyclingToolbox

interreg-baltic.eu/project/waterman

WaterMan promotes a Baltic Sea Region-specific approach to water recycling, which makes use of the alternation of too much and too little water that has become typical for humid areas in the EU to strengthen the resilience of local water supply. Building on this approach, the project supports municipalities and water companies in adapting their water supply strategies.

The contents of „BSR Water Recycling Toolbox” are the sole responsibility of the authors and can in no way be taken to reflect the views of the European Union, the Managing Authority or the Joint Secretariat of the Interreg Baltic Sea Region Programme.

