1 September 2025

Welcome

KWR

Bridging Science to Practice

KWR's identity

Who we are	KWR is the public-oriented, non-profit water knowledge institute
What we stand for	We bring the values of water to life through applied knowledge, from the conviction that water plays a key role in a thriving society
Our core values	Trustworthy, connecting, activating

Energy Transitions

Water Quality and Health

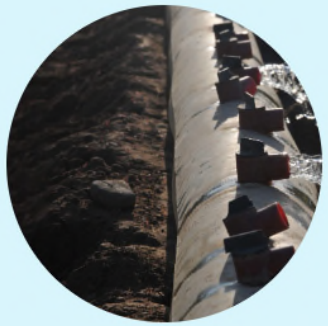
Freshwater resources management

Resource Recovery and Circular Systems

Digital water

Nature-inclusive water and biodiversity

Public design for water



Water Cycle

Waterkwartier

Community for inspiration & collaboration

Groningenhaven 7

Waterkwartier welcomes innovative water professionals from around the world to meet and work together to create a water-wise future.

KWR

ALLIED WATERS®

hysolar

watershare®

TKI WATER TECHNOLOGY

aqua minerals

WATER OPLEIDINGEN

RIWA

RIWA-Rijn

kaumera

Welcome to Waterkwartier

Waterkwartier is the meeting place for innovative water professionals from around the world. Located in the heart of the Netherlands, at the Groningenhaven in Nieuwegein, this sustainable complex is the home base of KWR and its partners. In this green oasis, we conduct groundbreaking, applied research and work together to create a water-wise future.

Waterkwartier, community for inspiration & collaboration

KWR
ALLIED WATERS®
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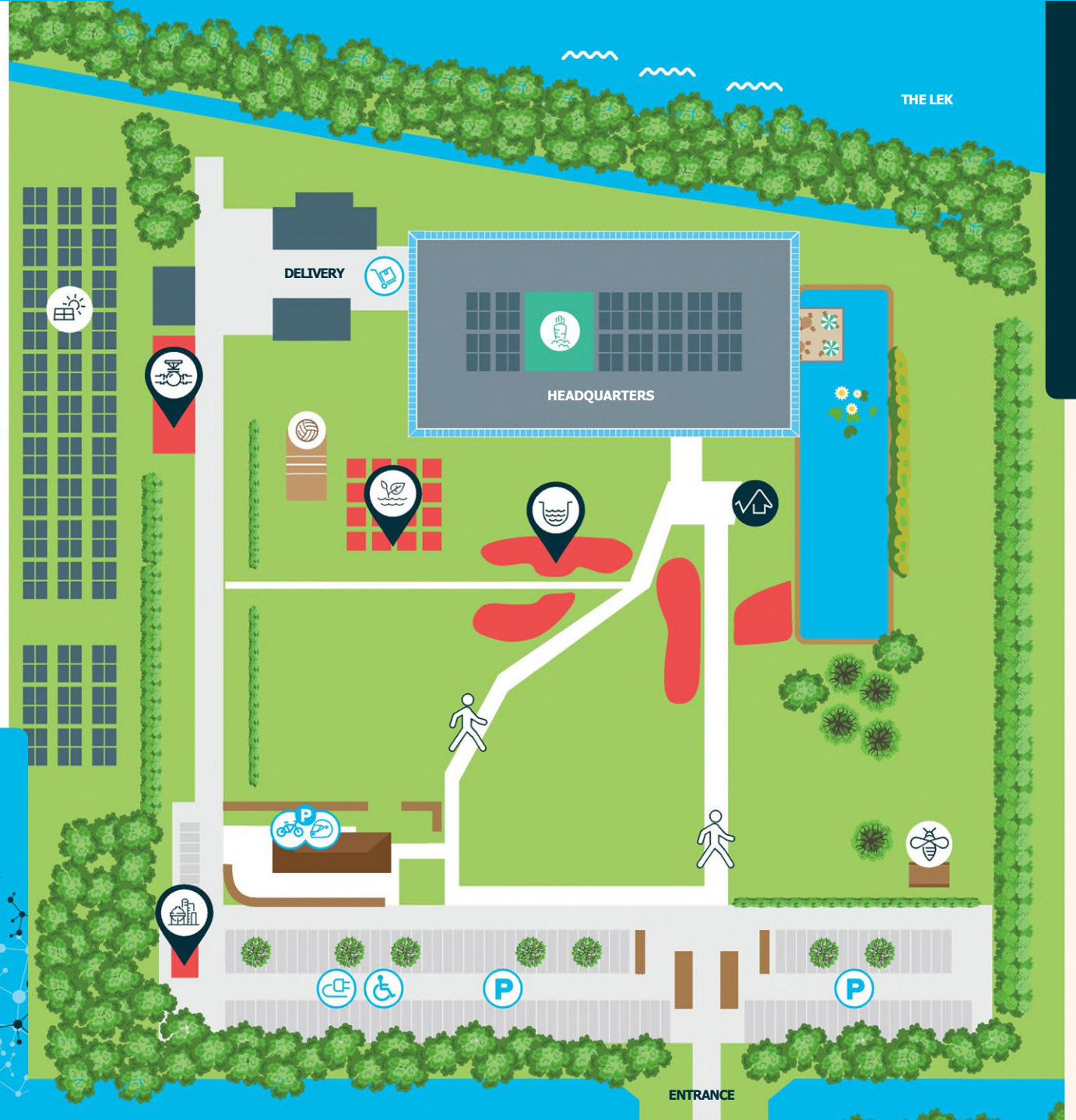
kaumera

Waterkwartier

Community for inspiration & collaboration

Welkom, Welcome, Willkommen, Bienvenue, Bienvenido, Benvenuto, Καλώς ήρθατε, ようこそ, Selamat datang, स्वागत है, ברוכה הבאה, مرحبًا, Murakaza neza, Добродошли, 欢迎



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Green hydrogen

Waterkwartier houses a 2.5 MW_e electrolyser part of Hysolar, which is used for the production of green hydrogen. The electrolyser is powered by green electricity and uses ultrapure water. The hydrogen is transported via an underground pipeline to the nearby Hysolar refuelling station.

Trench

A trench has been installed to improve water management. Its primary purpose is to drain excess water from the garden and roof into the pond. The biodiversity is further encouraged by applying special seed mixtures which are dedicated to the different moisture levels in the trench.

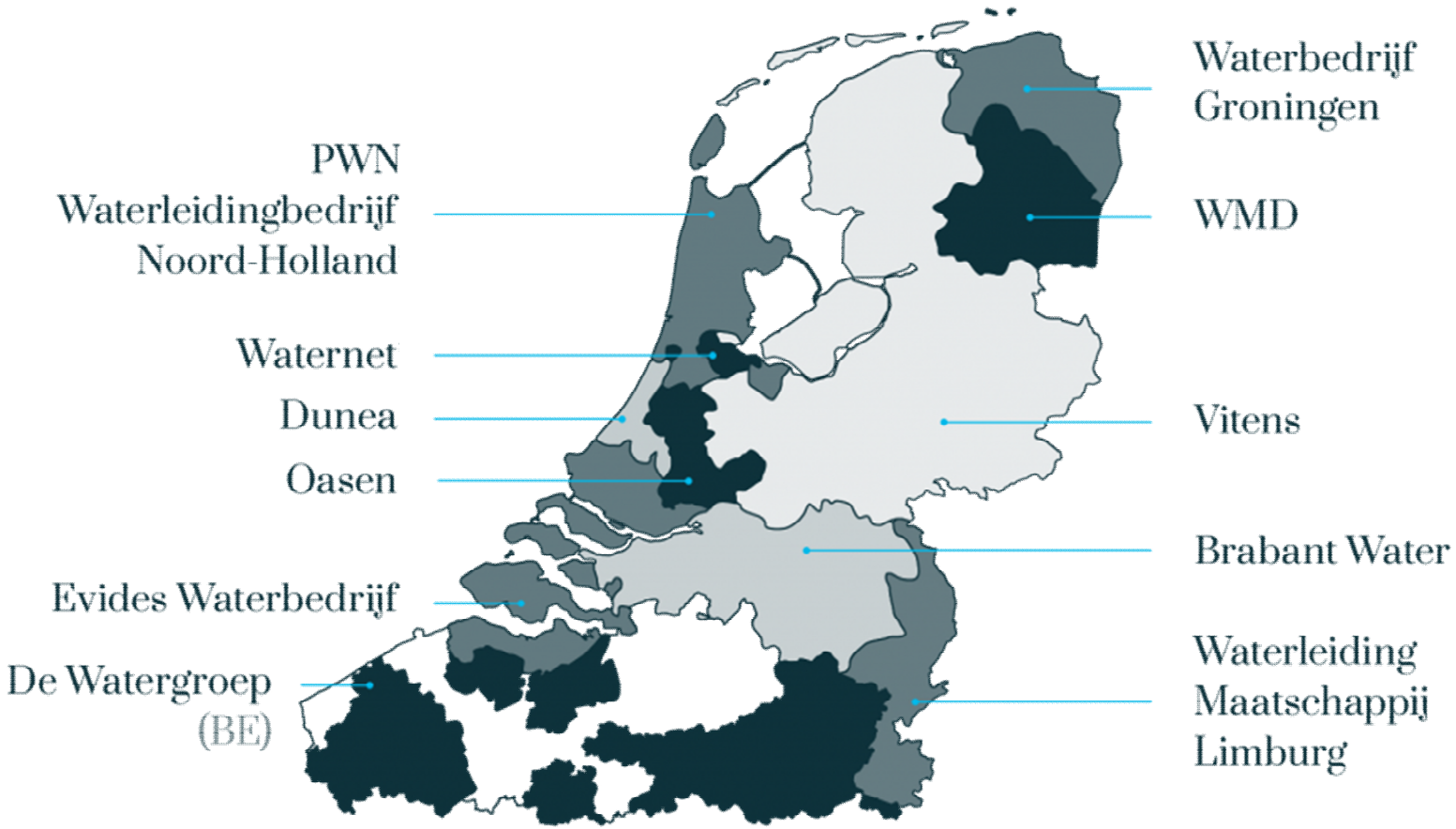
Paludiculture

Since 2023, Waterkwartier has been hosting a 4-year mesocosm experiment with 30 pond containers, where a new form of sustainable agriculture, known as 'paludiculture', is being tested as part of the Netherlands Peatland Innovation Programme (VIPNL). KWR is researching the water quality and quantity in wet cultivation.

TUBES

TUBES is KWR's outdoor facility for testing new technologies and operation methodologies before rolling them out in real, functioning drinking water distribution systems. International collaborations used fibre-optic technologies here to detect leaks, temperature changes, and vibrations in pipes. TUBES allows for safe, hygienic testing without risking disruption in operational networks.

Shareholders



WHO Collaborating Centre on Water Quality and Health

Water Europe

Technology & Innovation

Global Water Research Coalition

WaterWise Hub

Greenhood: Nutrient management strategies for regional ecosystem...

CIRSEAU: Building a water-smart economy and society

ANCHOR: Water reuse in the built environment

ToDrinQ: New tests to maintain drinking water quality

IDEATION: preparing a digital twin of the European inland waters

RECREATE: Alternative Water Resources for climate adaptation

Water-Futures: Designing urban drinking water systems

PUSH-IT: Demonstrating underground heat storage

WATERVERSE: Data management for water sector resilience

NATALIE: Nature-based solutions for climate adaptation

The Freshman project: Freshwater management in coastal zones

Six take aways on water resilience…

- A systems approach
- International dialogue and collaboration
- Flexibility
- Intergenerational actions and language
- Digital literacy
- Transformative change and transition costs

New York Times, 2022

REMKO DE WAAL/ANP, VIA AGENCE FRANCE-PRESSE — GETTY IMAGES

ROB ENGELAAR/EPA, VIA SHUTTERSTOCK

Across the Netherlands, the changing climate is reconfiguring Dutch life, which has long revolved around very wet conditions. Clockwise from top left: Fighting a fire this summer at a parched nature preserve in Schijf; farmers working this spring to dam a ditch to capture water in Meijel; a tractor crossing a dry field near Strijen in May; and a container ship arriving in Rotterdam's port in August.

The 'World Champions' of Banishing Water Now Work to Keep It

The Dutch Mastered a Soggy Environment, but as It Dries, New Solutions Are Needed

By RAYMOND ZHONG

ENSCHEDE, the Netherlands — The story of the Netherlands' centuries of struggle against water is written all over its boggy, low-lying landscape. Windmills pumped water out of sodden farmland and canals whisked it away. Dikes stopped more from flooding in.

Now, climate change is drying out great stretches of Europe, and, once again, the Dutch are hoping eas could deepen a housing shortage. Curbs on water use could exacerbate tensions with farmers, who have staged furious protests against a plan to cut nitrogen emissions.

When it comes to drought, a major problem is that the Netherlands, one of the world's most 159,000 people, water has at times been so scarce that farmers have resorted to siphoning illegally, at night, from ponds and other water sources. After a rash of such episodes in 2018, the local water board began issuing warnings and fines, said Stefan Kuks, the board's chairman. It assigned em- extra drop from the waterlogged land so it could sustain crops and cows.

The Netherlands' water boards have been helping growers dry out their fields since the Middle Ages. Now, some of them are trying to encourage farmers to keep the land wet and to conserve wa-

Heat and drought are also hindering the Netherlands in its Sisyphean battle against rising seas. As less fresh water flows down the Rhine and other rivers and toward the North Sea, more seawater creeps up them instead, threatening water supplies for homes and farms. Heat waves are also

One concerns the fate of Rotterdam, Europe's largest port. Today, the city has an open channel to the North Sea so cargo ships can move in and out easily. But the channel also lets seawater in, forcing the Dutch government to send huge amounts of fresh water down the rivers to push it back.

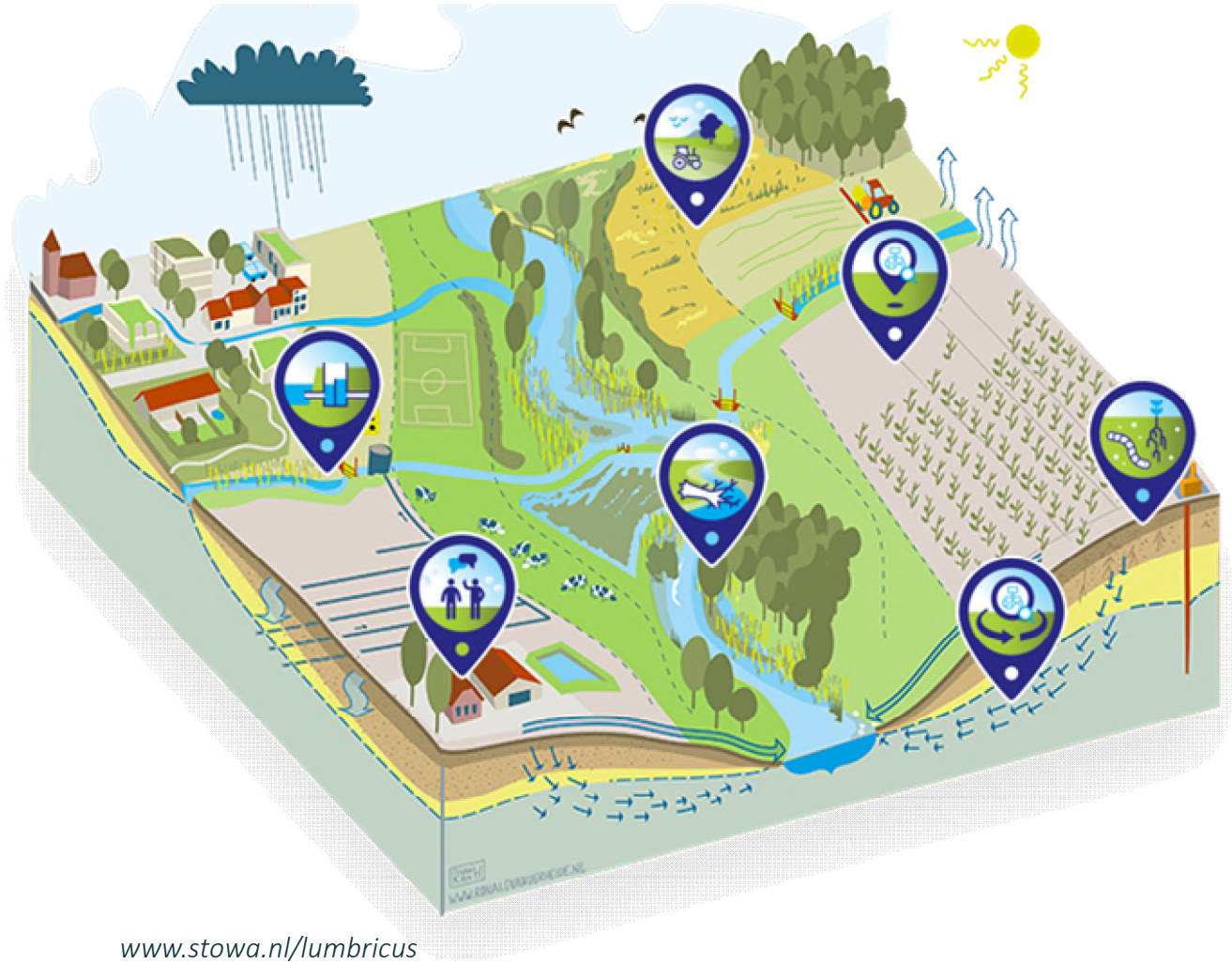
As sea levels rise, "you're going to need more and more water to keep that sea out," said Niko Wanders, a water expert at Utrecht

Working on solutions

Water supply: ‘system restoration’

Towards a new balance between

retaining, **using** and **discharging**

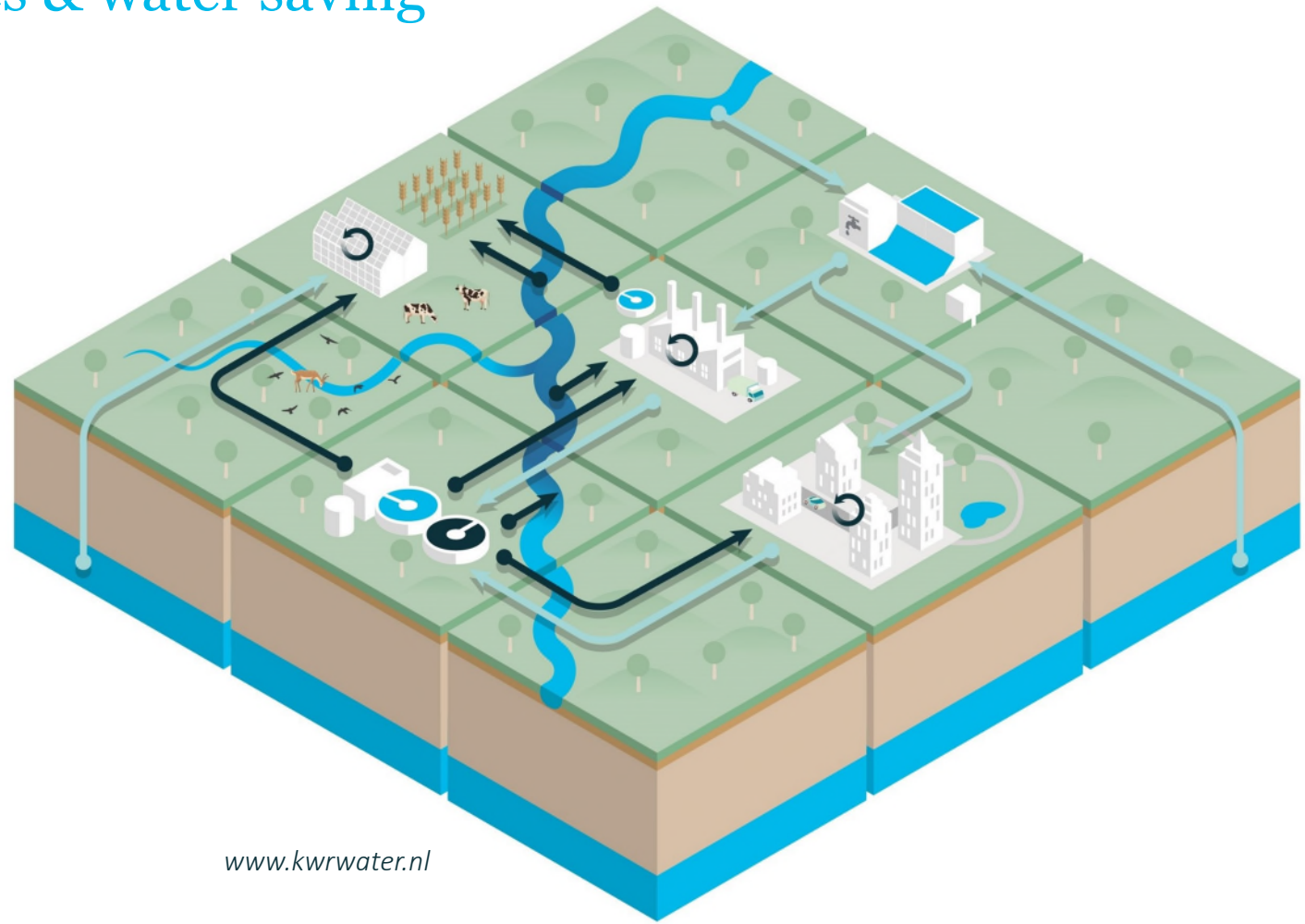


www.stowa.nl/lumbricus

Working on solutions

Water supply: additional sources & water saving

From linear to a more **circular** water system and water use



www.kwrwater.nl

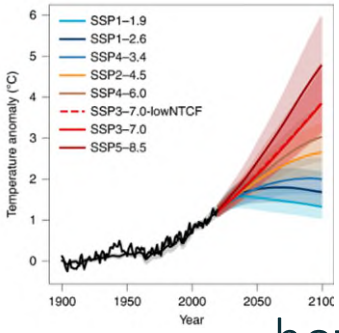
Peter van Diepenbeek

Hydroloog

Vervuiling over de grens legt inname Maaswater in Limburg stil

In het water zit een bestrijdingsmiddel dat door de tuinbouw in Wallonië wordt gebruikt.

Divergent future scenarios



IPCC's SSP2-4.5, SSP3-7.0, SSP5-8.5

hotter, dryer summers, wetter winters, more extreme weather, sealevel rise


DutchNews 28 AUGUST 2025

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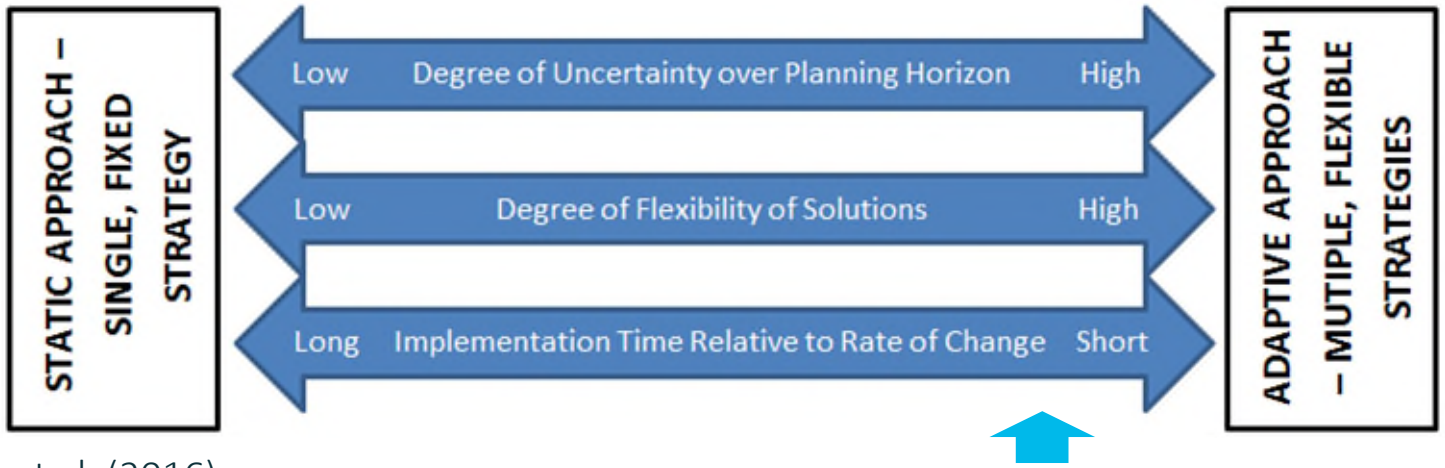
Gulf Stream collapse may happen sooner, Dutch scientists predict

August 26, 2025

AMOC/Gulf Stream collapse

colder (winters!), dryer, more winter storms, stronger sealevel rise

If you know more or less what to expect

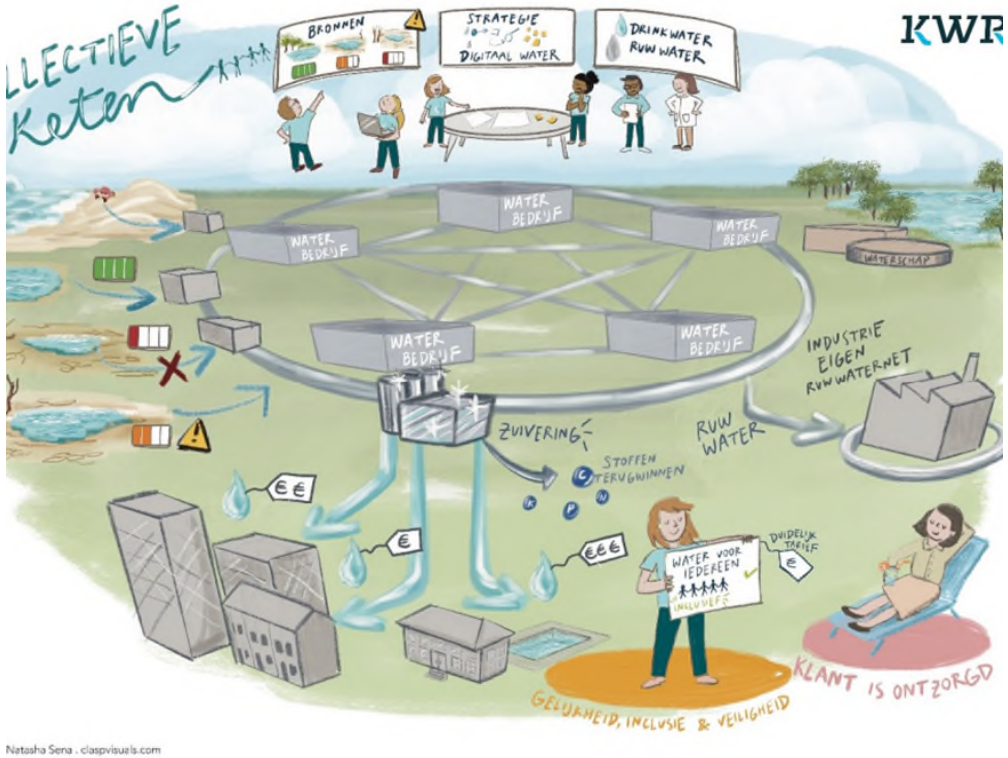


Maier et al. (2016)

If you do not know what to expect, if things can go either way

Governance framework that facilitates rapid adaptation needed

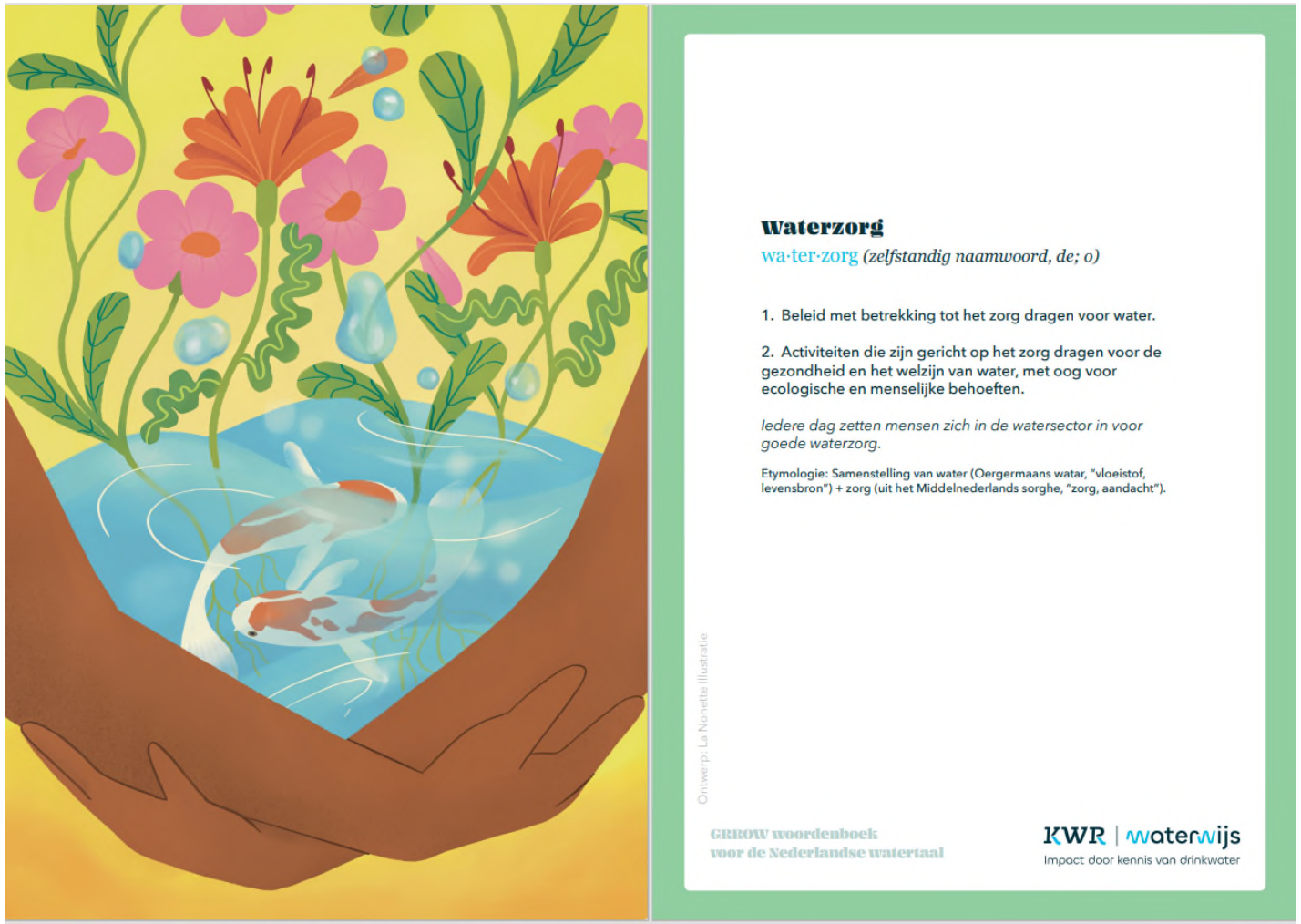
The importance of intergenerational dialogue: Generational Radical Rethinking of the Water Sector



Words do matter…

A perspective of **living with water**…

in stead of only focussing on using water



Words do matter…

A perspective of **living with water**…

in stead of only focussing on using water

WATERVERSE approach

- Actively **engage** end-users and stakeholders to assess the main gaps and challenges the water sector and contribute to quality European data spaces.
- **Identify, extend, and integrate** a wide set of data management tools to implement the Water Data Management Ecosystem (WDME).
- **Comprise** building blocks, tools, and methods to ensure security and energy efficiency of the whole WDME.
- **Setup** and **demonstrate** the WATERVERSE WDME in a real environment with relevant and diverse case studies involving water sector stakeholders from 6 countries.
- **Set** clear and measurable indicators for assessing the **fairness of data** in water-related data spaces.
- **Ensure** the viability and sustainability of the WATERVERSE WDME, as well as its replicability, scalability and business applicability.

The project's outcomes

- Contribute to the EU goal in becoming a globally attractive, secure and dynamic data-agile economy.
- Provide the first-of-its-kind next generation water-cycle data space.
- Enable the European single market for data, with the corresponding water data spaces and trustworthy AI ecosystems.
- Deliver unique services to a highly decentralized market into Smart Water Network technologies.

About WATERVERSE

KEY FACTS

- **Start date:** 01 October 2022
- **Duration:** 36 months
- **Budget:** €4,510,509.90
- **Project coordinator:** Centre for Research and Technology Hellas (CERTH)

Information Technologies Institute · CETAQUA BARCELONA · eurecat · KWR · VTT · ENGINEERING · PHOEBE RESEARCH & INNOVATION · egm · Water Europe · FIWARE · PWN · HIDRALIA · KEYPRO · Water Board of Lemesos · HST SYSTEMTECHNIK · University of Exeter · South West Water

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TWITTER: @WaterverseEU

LINKEDIN: Waterverse

Co-funded by the European Union

WATERVERSE

MAKING DATA MORE INTEROPERABLE TO CONNECT WATER STAKEHOLDERS FOR IMPROVED DECISION-MAKING

KWR

Transformative change and transition costs

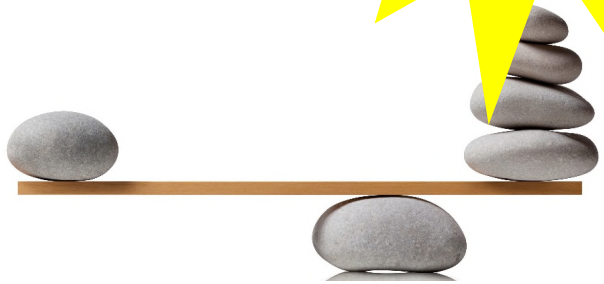
Integral exploration: **Extended Producer Responsibility**

- Financing of advanced wastewater treatment
- Just distribution of transition costs

Opportunity in the MFF 28-34!

Thematic exploration: **Justice as Pillar for the Water Sector**

- Justice as a condition for transformation
- Kaleidoscope offers new perspectives for decision-makers to weigh impacts and interests at the local level



Thematic exploration: **Law as Transition Accelerator**

- Change-inducing properties and application of the law
- Agency for decentral governments to stimulate change in gridlocked situations

Six take aways on water resilience…

- A systems approach
- International dialogue and collaboration
- Flexibility
- Intergenerational actions and language
- Digital literacy
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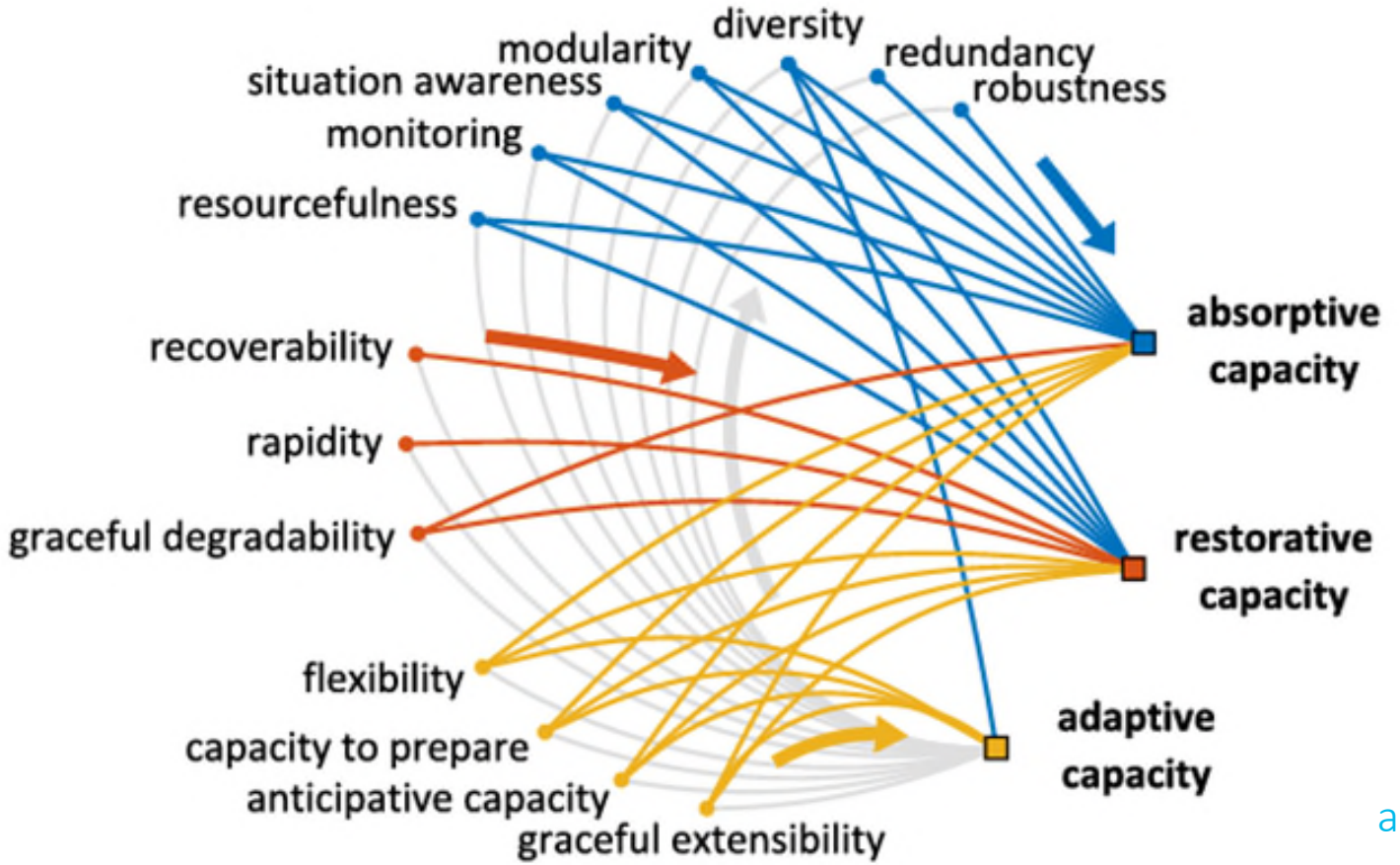
Resilience is a multi-faceted concept



continuing to function without disruption

rapid recovery after a disruption

adapting to changes to prevent disruption

Mentges et al. (2023)

KWR's comprehensive approach to water resilience

Chemical & biological analyses & sensors

Alternative sources & treatment

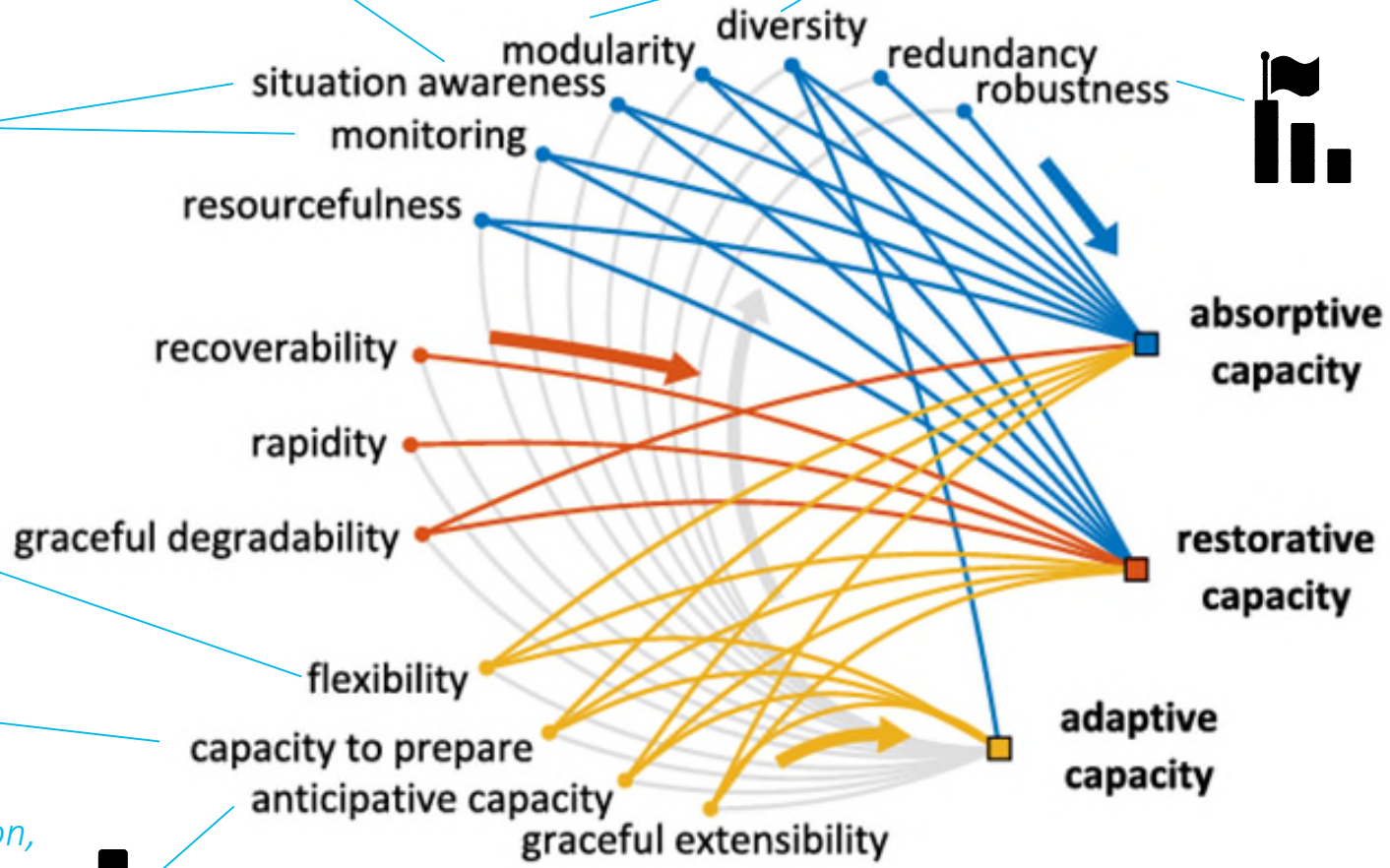
Data, dashboards & digital twins

Robust numerical optimization of infrastructure

Infrastructure flexibility

Deep adaptation

Scenario generation, plausible futures, Decision making under deep uncertainty



Mentges et al. (2023)