

August 14, 2024, Toronto



# Chemicals of Emerging Concern

Looking at Individual  
Contaminants, Chemical Mixtures,  
or the Exposome

Milou Dingemans & Aleida Hommes

**KWR**

Bridging Science to Practice



**Utrecht  
University**

# Program

15.40-15.45	Welcome and opening
15.45-16.15	Presentations (plenary)
16.15-16.40	Round table discussions (parrallel)
16.40-17.00	Key messages from tables and closing (plenary)

**KWR** & Friends

## Chemicals of Emerging Concern: Looking at Individual Contaminants, Chemical Mixtures, or the Exposome

**Wednesday, 14 August 2024, 15:30-17:00**  
Harbourfront Room (Delta by Marriott Hotel,  
connected to MTCC South Building)  
Toronto, Canada



# Speakers and Moderators



**Rinnert Schurer**

Senior Researcher, Evides Water Utility (NL)

**Prioritized Chemicals of Emerging Concern**

*Managing risks of one prioritized chemical at a time*



**Simon Ayley**

Director, Water Research Centre (UK)

**Grouping of Chemicals of Emerging Concern**

*Managing risks of aggregated and mixture exposures*



**Milou Dingemans**

Principle Toxicologist, KWR (NL)

**Water and the Exposome**

*Health impact of all combined environmental factors throughout life*

*Moderator roundtable*

**'Tailor-made Water'**



**Arash Zamyadi**

Senior lecturer, Monash University (AU)

*Moderator roundtable*

**'Collective Water Chain'**



**Aleida Hommes**

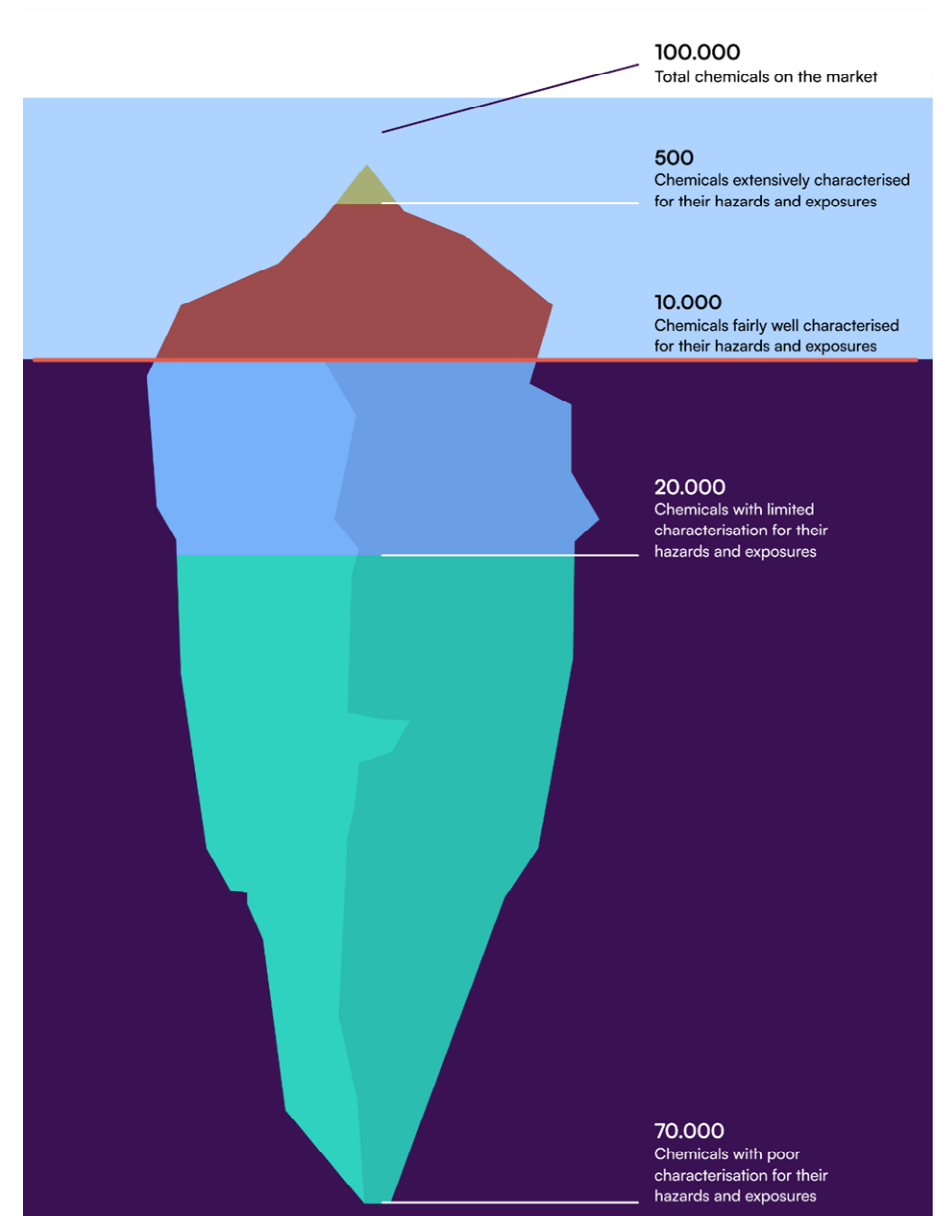
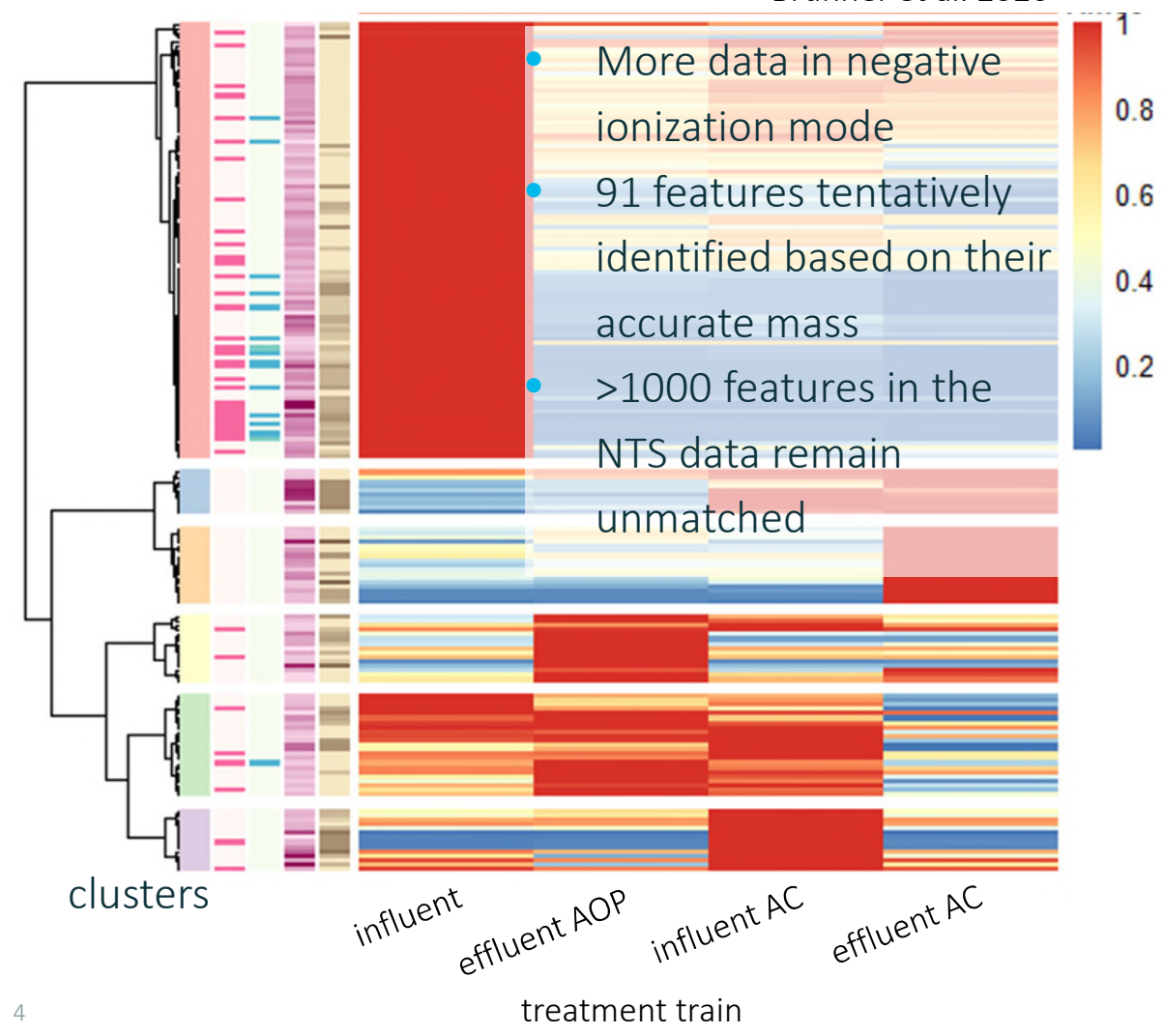
Researcher, KWR (NL)

*Moderator roundtable*

**'Dischargers are Dismissed'**

# Introduction

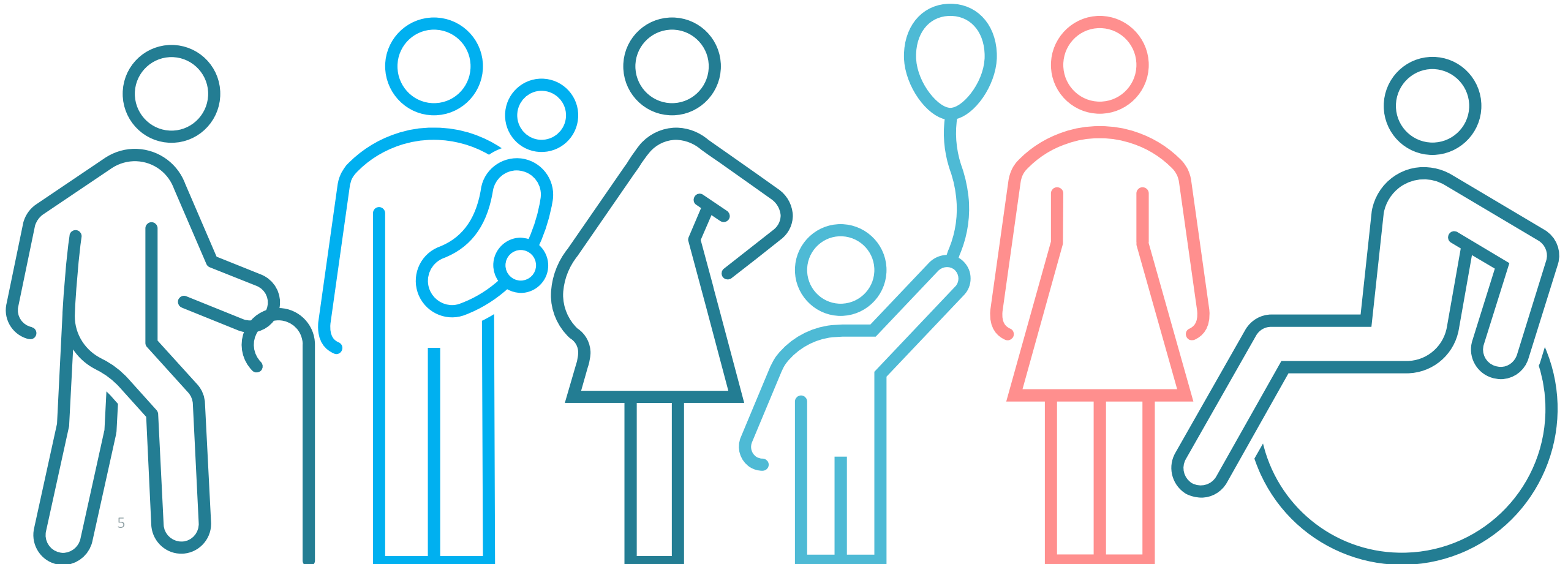
Brunner et al. 2020





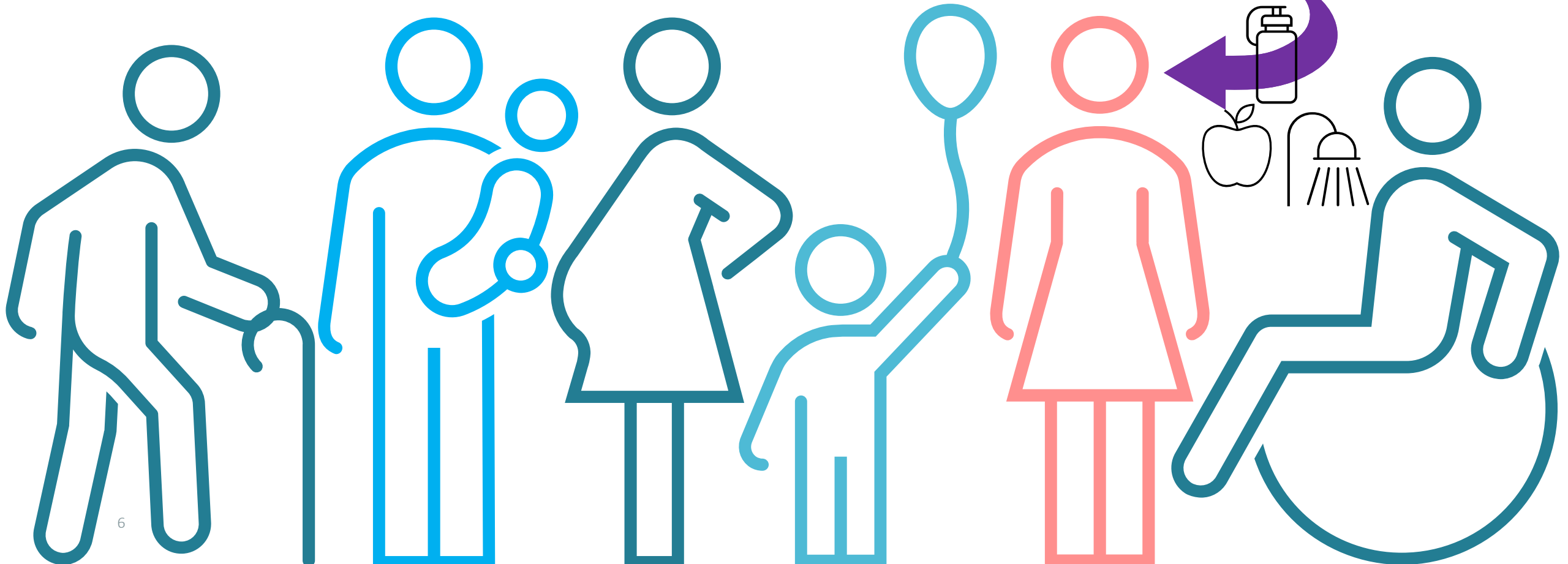
Risk = hazard x exposure

Individual substances (route-specific/aggregated)





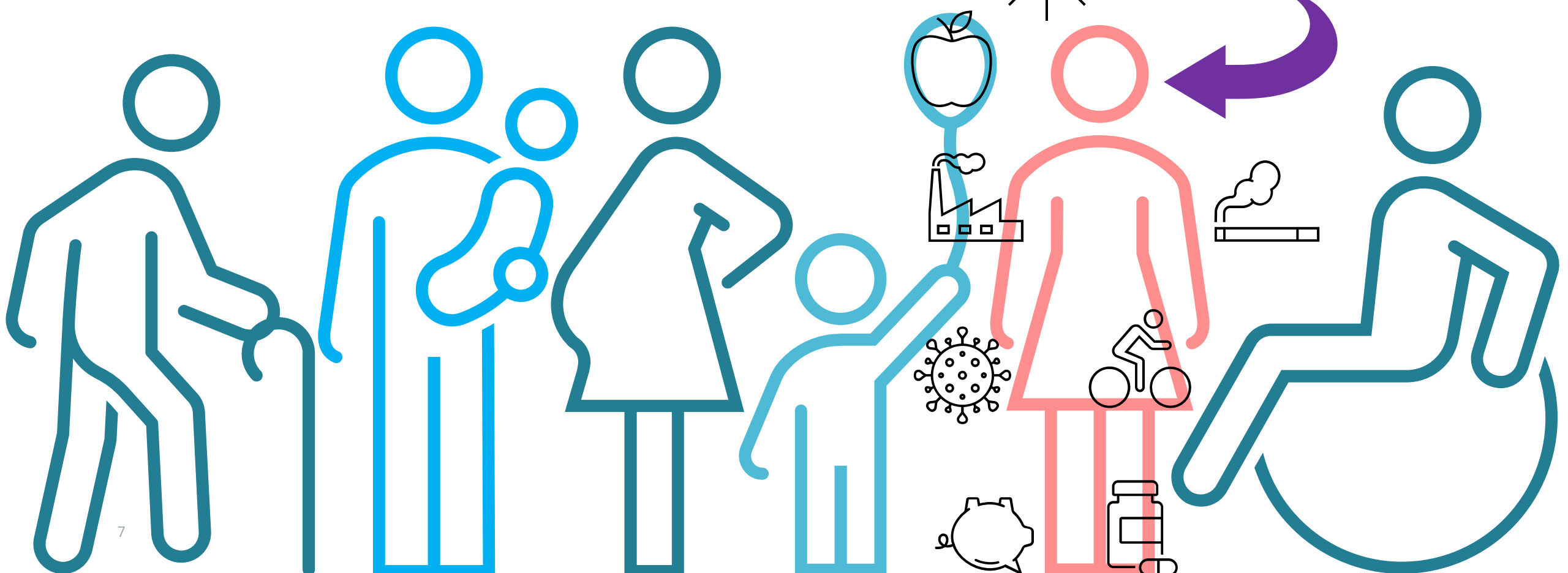
Risk = hazard x exposure  
Cumulative exposures





Risk = hazard x exposure  
Exposome

KWR



# Roundtables

Aim: address key questions, advantages, and challenges of monitoring and managing water quality, exposures, and risks at different levels of resolution

Roundtable discussions are organized around future scenario's based on the intergenerational dialogue within the GRROW network

*Generational and radical rethinking of the watersector*

Aim: inspire discussions on how the assessment and management of CECs may be different in these future scenarios, compared to current water supply systems.







# Roundtables

## Tailor-made Water

Water companies supply high-quality drinking water to domestic users, only intended for drinking. For lower-value uses, local cycles would be set up.

## Collective Water Chain

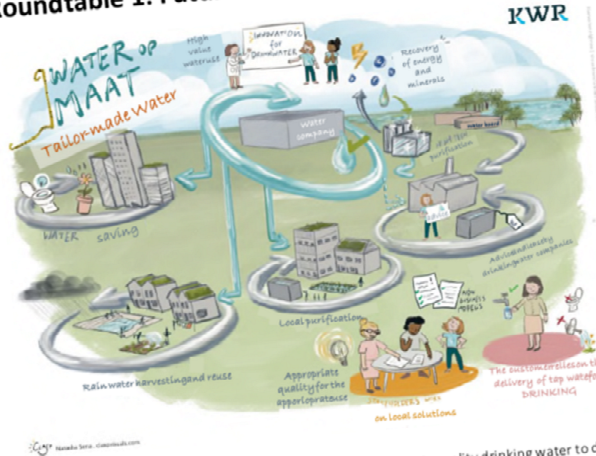
Ensuring water supply is central, regardless of geographical location. All resources of water companies are interconnected through a raw water network.

## Dischargers are Dismissed

Source protection is central. Water is available for various uses, both domestic and business, but can only be returned to the water system in high quality.

[Report BTO 2023.033 \[available via \[library.kwrwater.nl\]\(https://library.kwrwater.nl\)\]](#)

Roundtable 1: Future Scenario *Tailor-made Water*

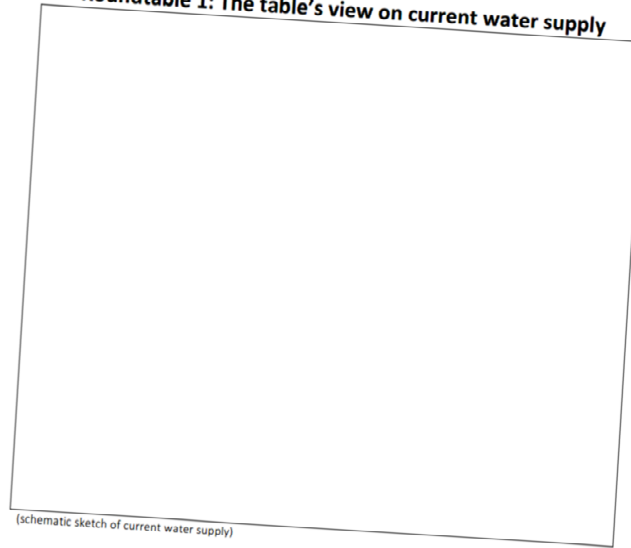


In the *Tailor-made Water* future scenario, the water company delivers high-quality drinking water to domestic users. In this, the water company focuses on the product being delivered and there is less focus on the source. Thanks to technical purification steps, drinking water can be extracted and produced from almost any source. As it is now, this is done through a centrally organised distribution network per drinking water company. Drinking water is mainly used for drinking, and no longer used for other low-grade applications. For low-grade applications, local cycles have been set up that supply toilet water and irrigation water. These local water cycles do not fall under the authority of the drinking water company and can be organised differently geographically, depending on possibilities and local conditions. At district level, (rain) water is collected and treatment and reuse systems are installed. In addition, industry is no longer supplied with process or drinking water (only when drinking water quality is necessary). This will also be set up through local cycles as much as possible. The water company will no longer be responsible for this, but they can provide expertise or installations to support these processes. Also, water companies could make a business and value case of raw material recovery from central and local cycles. Carrying out these business activities would mean that the drinking water company would have to need to train and/or attract staff to offer these services and products.

The water company focuses on its core task: supplying drinking water. The reliable supply is therefore seen as a great asset. Thanks to this facility, everyone has access to water for drinking, but the availability of water for other uses is not guaranteed. Coordinating with other (local) actors (citizens, municipalities, water boards, contractors, etc.) on the location and positioning of installations and pipes requires attention and expertise. Thanks to these local cycles, it is possible to use smart and innovative ways to save and purify water, but also to recover raw materials from (residual) flows. Thanks to the local approach supply and demand can be optimally matched and it is possible to offer area-specific and customer-oriented solutions.

Report BTO 2023.033 'Generational and Radical Rethinking of the Water Sector' [available via [library.kwrwater.nl](http://library.kwrwater.nl)]

Roundtable 1: The table's view on current water supply



At your table, please discuss what would be the most helpful perspective(s) in different scenario's in water practice

Any comment is welcome!

Roundtable 1: Future Scenario *Tailor-made Water*

	Characterization and management of exposure, hazard and risks from the perspective of:			
	individual substances	aggregated exposures	mixture exposures	Exposome
A known, regulated substance is found in a water body connected to a drinking water source				
A new, potentially toxic transformation of a permitted plant protection product is found in the water				
There are early signs that a soil contamination of unknown composition will reach a drinking water source				
A health disparity is observed between different regions				

What would be the right perspective for exposure and risk assessment, and why? What type of substances could they be? Who are the exposed populations (human and environment)?

Please leave your name and e-mail address on the participation list

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## Join us at our 'KWR & Friends' booth

Here, we showcase our collective research, innovative technologies, and solutions for a water-wise world, all centered around and inspired by collaboration.



kwr\_water



KWR Water Research Institute





Groningehaven 7  
3433 PE Nieuwegein  
The Netherlands

T +31 (0)30 60 69 511

E [info@kwrwater.nl](mailto:info@kwrwater.nl)

I [www.kwrwater.nl](http://www.kwrwater.nl)



@KWR\_Water



KWR



KWR\_Water



**Milou Dingemans**

[milou.dingemans@kwrwater.nl](mailto:milou.dingemans@kwrwater.nl)

+316-21997524



**Aleida Hommes**

[aleida.hommes@kwrwater.nl](mailto:aleida.hommes@kwrwater.nl)

+316-21806042



**Raül Glotzbach**

[raul.glotzbach@kwrwater.nl](mailto:raul.glotzbach@kwrwater.nl)

+316-21683760



**Nicolien van Aalderen**

[nicolien.van.aalderen@kwrwater.nl](mailto:nicolien.van.aalderen@kwrwater.nl)

+3130-6069664

BTO Collective Research Programme