Vereniging van waterbedrijven in Nederland

Combining science and legislation to protect the surface water sources of our drinking water

A call for concerted action

Harrie Timmer, Vewin / André Bannink, RIWA

Berlin, March 26th 2021

Summary & outline presentation

PROBLEMS

- PMT substances pose a serious hazard for drinking water sources
- On EU level: WFD and ICPR ambitions for 2027 and 2030 are high, but Improvement on water quality plateaus & proper registration is lacking
- Not all EU regulations are well implemented

SOLUTIONS

- All necessary insights and regulatory framework are there
- It only needs to be combined and implemented
- The EU ambitions and revisions provide a lot of opportunities

Vewin RIWA

Vewin

Vereniging van waterbedrijven in Nederland

RIWA

PROBLEMS

Netherlands: Endpoint Rhine & Meuse

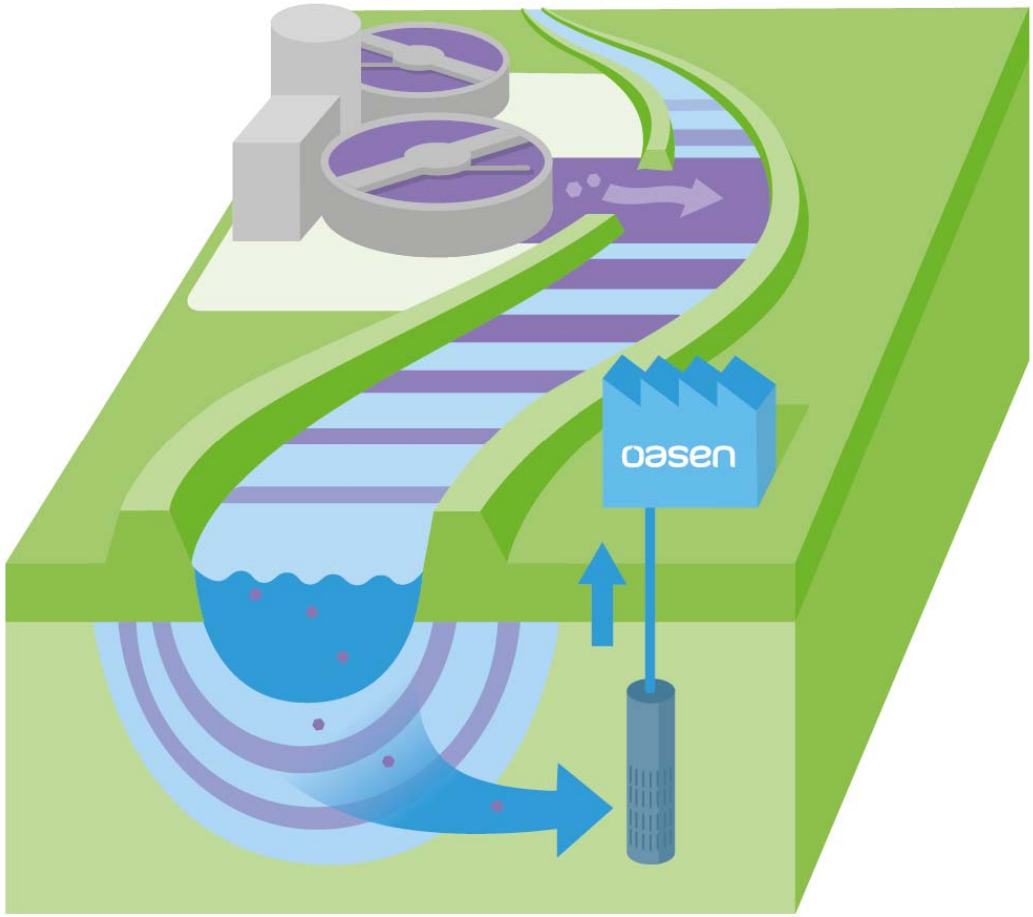
Drinking water sources

40% River

60% Groundwater

Hazards for sources drinking water

- Pharmaceuticals
- X-ray contrast media
- Endocrine disrupting compounds
- Pesticides
- Industrial emissions
- Cosmetics
- Detergents
- Dyes and micro-plastics
- Etc



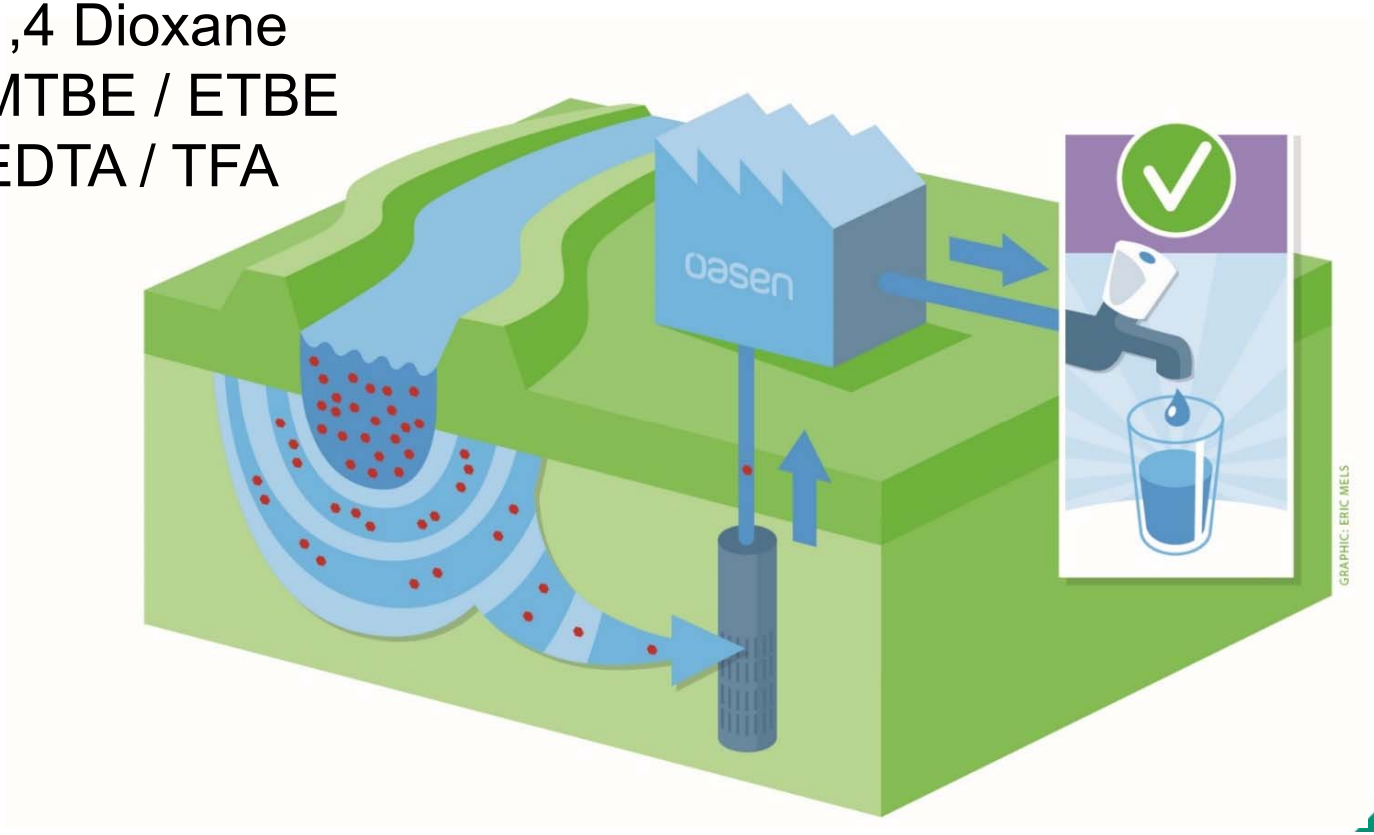
Vewin RIWA

A small percentage slips through….

We measure > 1000 substances

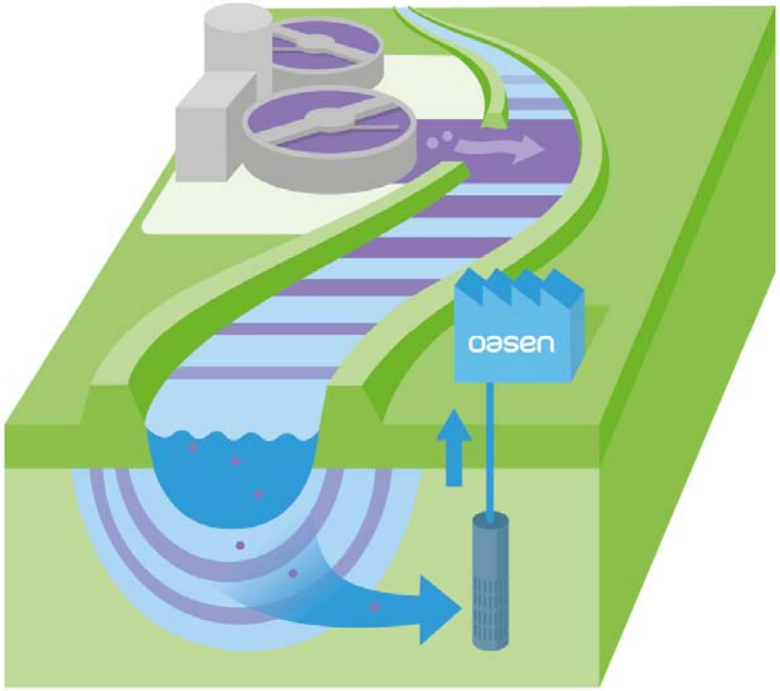
Problematic: PMT / vPvM substances, like:

- PFOA, PFOS, GenX (etc)
- 1,4 Dioxane
- MTBE / ETBE
- EDTA / TFA



Today's focus: emission of industrial substances

- Industrial emissions: important hazard
- Pesticides → Plant Protection Products Regulation
- Pharmaceuticals etc. → Waste Water Treatment Directive
- Biocides, Nitrates …



Good: EU ambitions are high

Improve ground- and surface water quality in river basins

- Water Framework Directive (WFD), article 7.3
- Urban Waste Water Treatment Directive (UWWTD)
- Industrial Emissions Directive (IED)
- “Rhine 2040” (ICPR)
- EU Chemicals Strategy / zero pollution ambition
- Improving REACH: classify vPvM/PMT as SVHC

Improve transparency on (industrial) emissions

- Article 8 and 9 Drinking Water Directive (DWD)
- Aarhus convention
- Kiev Protocol
- Pollutant Release and Transfer Registers (PRTRs)

Vewin RIWA

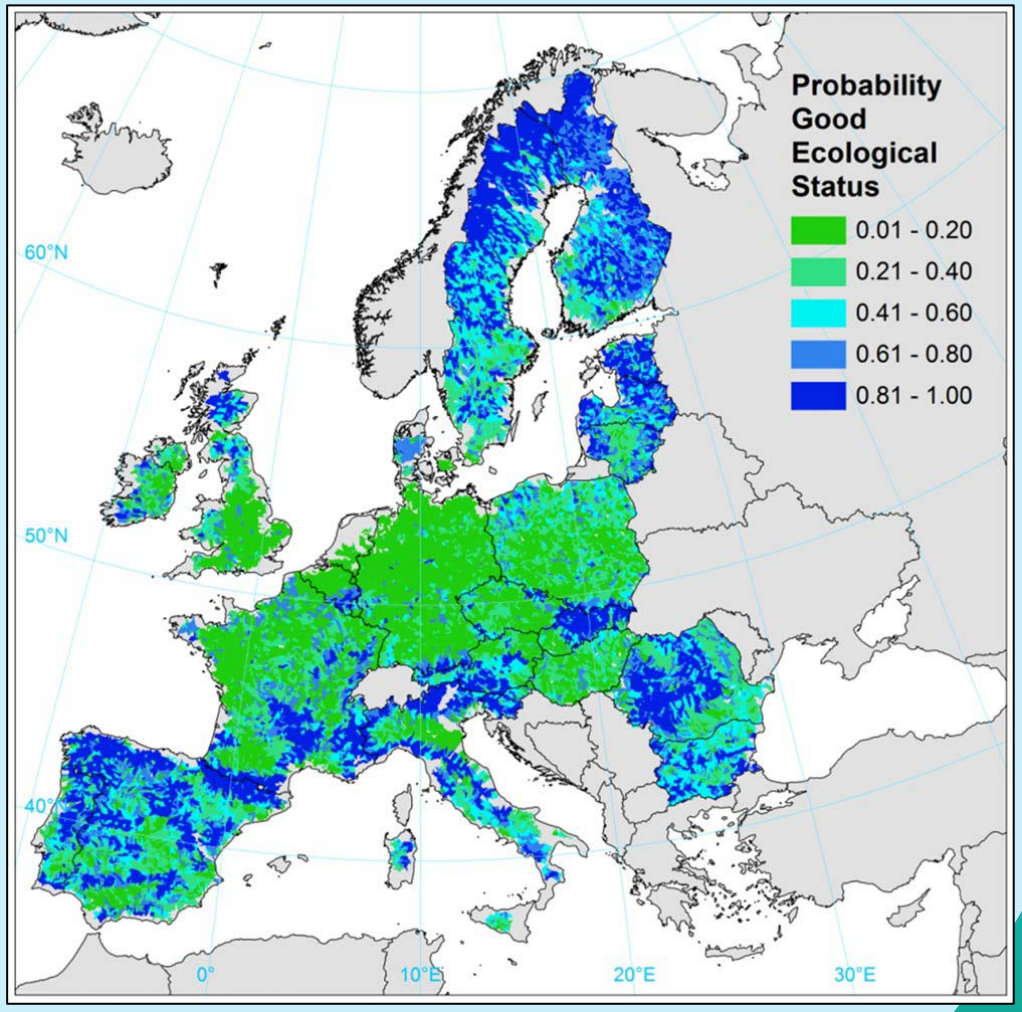
Bad: Improvement on water quality plateaus

WFD will not be achieved in 2027

European Environmental Agency

Grizetti et al. (2016)

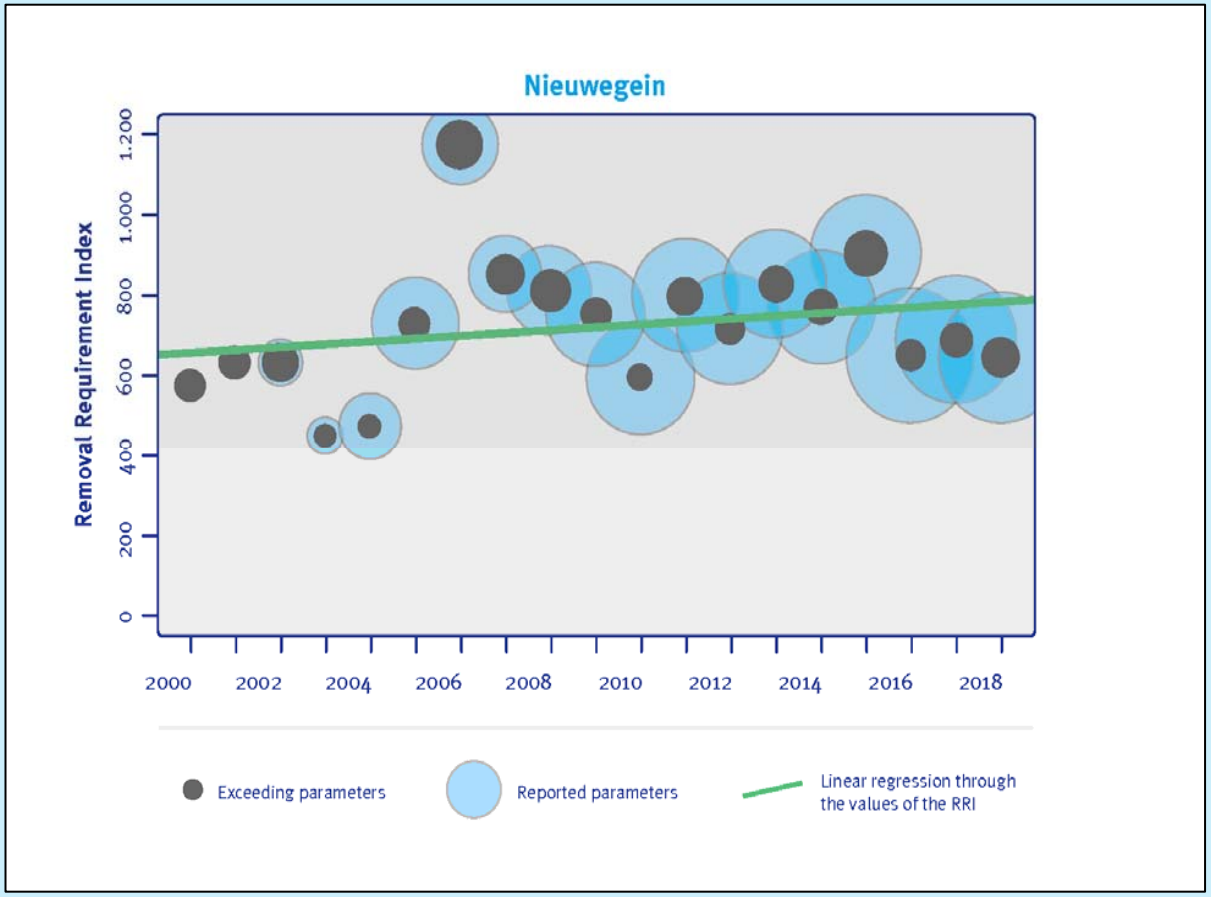
DOI:10.1038/s41598-017-00324-3



Bad: Improvement on water quality plateaus

Removal Requirement Index increases:

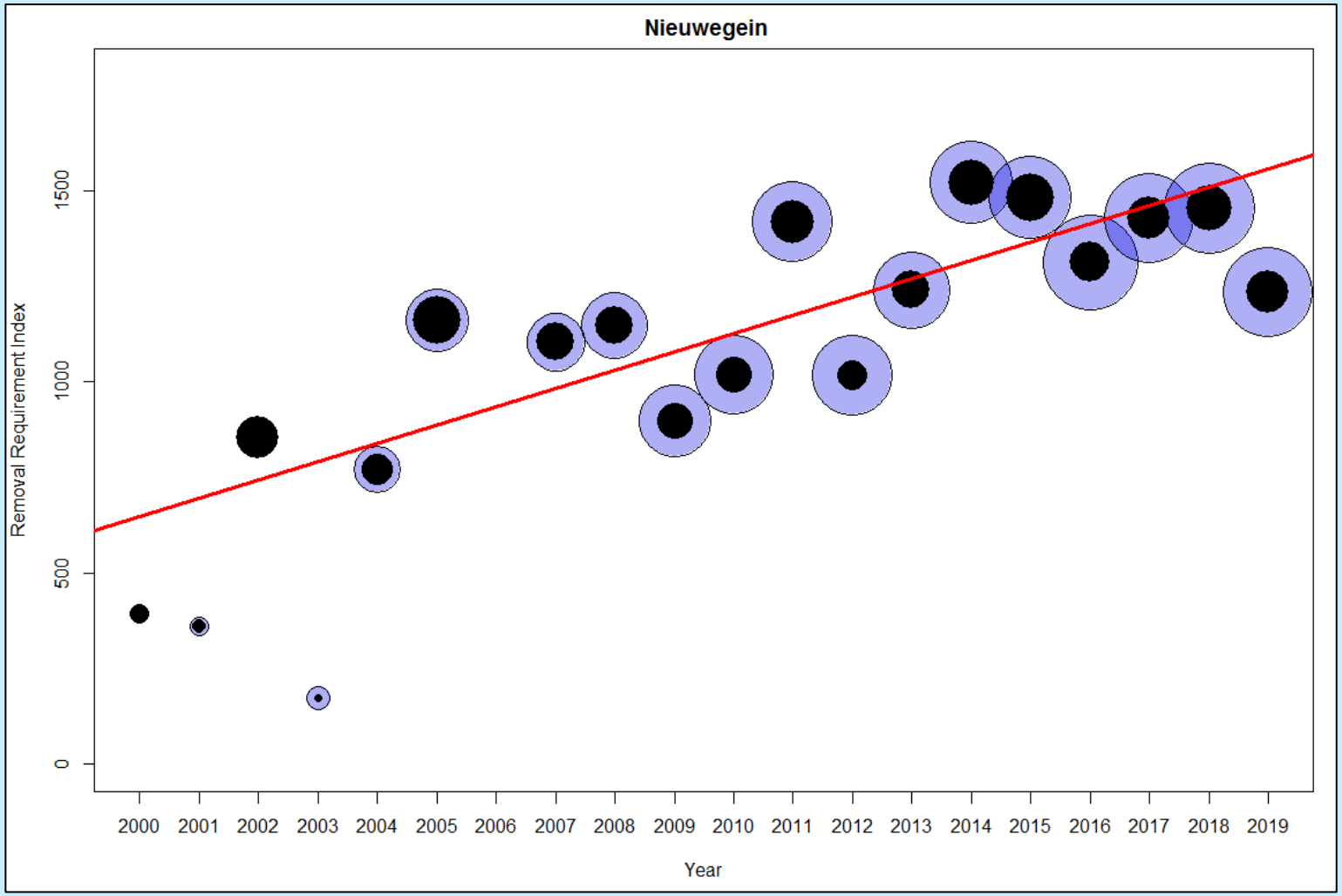
(What we have to do more to meet the drinking water standards)



T. E. Pronk, R. C. H. M. Hofman-Caris, D. Vries, S. A. E. Kools, T. L. ter Laak, G. J. Stroomberg;
A water quality index for the removal requirement and purification treatment effort of micropollutants.
Water Supply 1 February 2021; 21 (1): 128–145. doi: https://doi.org/10.2166/ws.2020.289

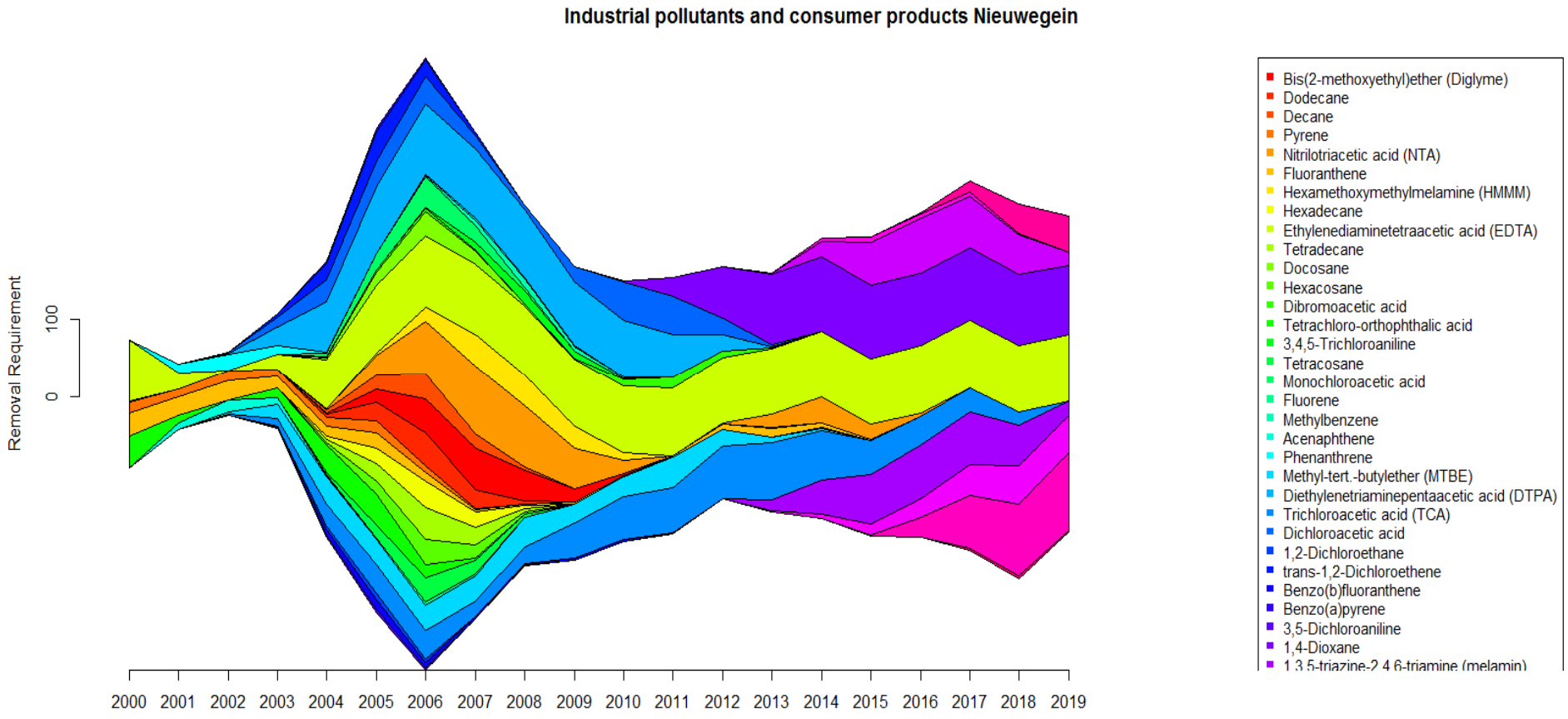
Vewin RIWA

Removal Requirement Index increases especially for PMT



Removal Requirement Index increases

especially for PMT, varies over time



Vewin

Vereniging van waterbedrijven in Nederland

RIWA

SOLUTIONS

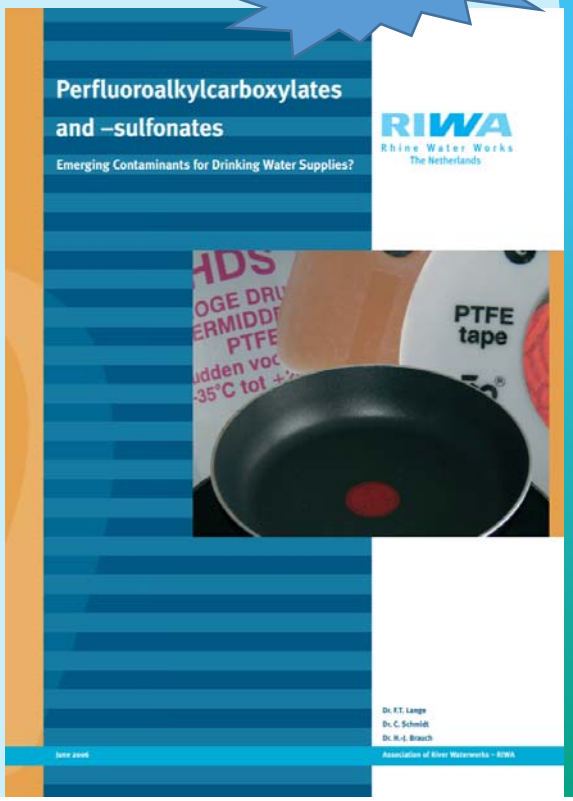
Why precautionary principle is key

Human and eco-toxicological standards move downwards…

Example: PFOA (A forever chemical…)

YEAR	µg/l	INSTITUTE
2006	10	RIVM
2009	0,4	EPA (USA)
2015	0,3	EPA (Denmark)
2016	0,087	RIVM
2017	0,014	DEP (New Jersey)
2020	0,0??	EFSA

2006



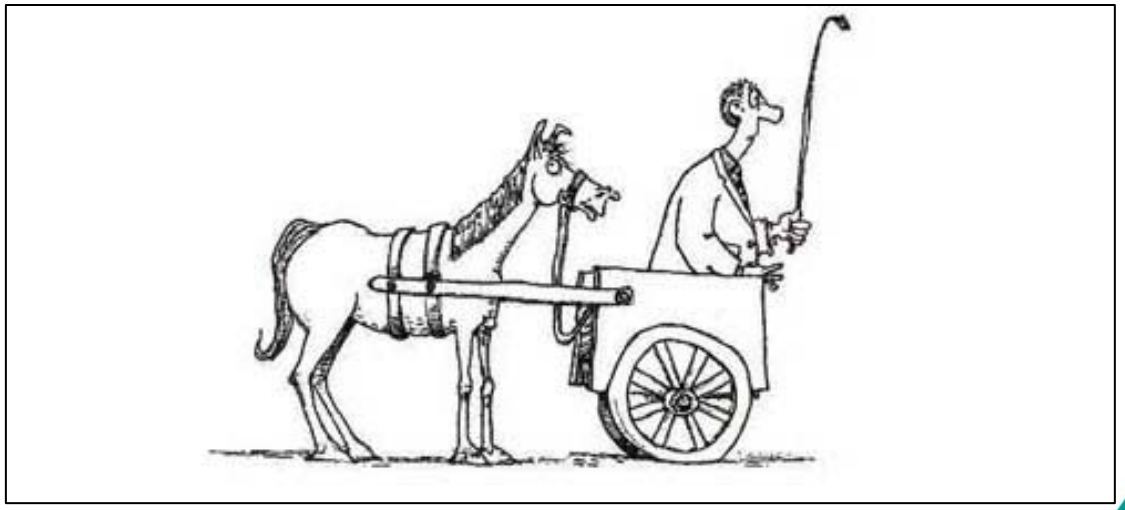
Vewin RIWA

Why precautionary principle is key

In order to prevent disasters, we have to identify problems **beforehand** at the source of the problem, and prevent pollution.

WFD regulations (watch lists, priority substances) unfortunately identify problems **after** they have entered the environment

REACH / SVHC provides handles



What's needed: science & regulation

- A fully operational and complete system within REACH, in which all relevant substances (PMT/vPvM) that can potentially harm drinking water sources are identified as SVHC;

- This SVHC label should be used by the licensing authorities in the EU to minimize the emissions of these specific substances to a level that is below the level that poses problems for the ecological or human use of these waters. This minimization should apply to both indirect discharges into wastewater systems (UWWTD) and direct discharges to surface waters (IED);

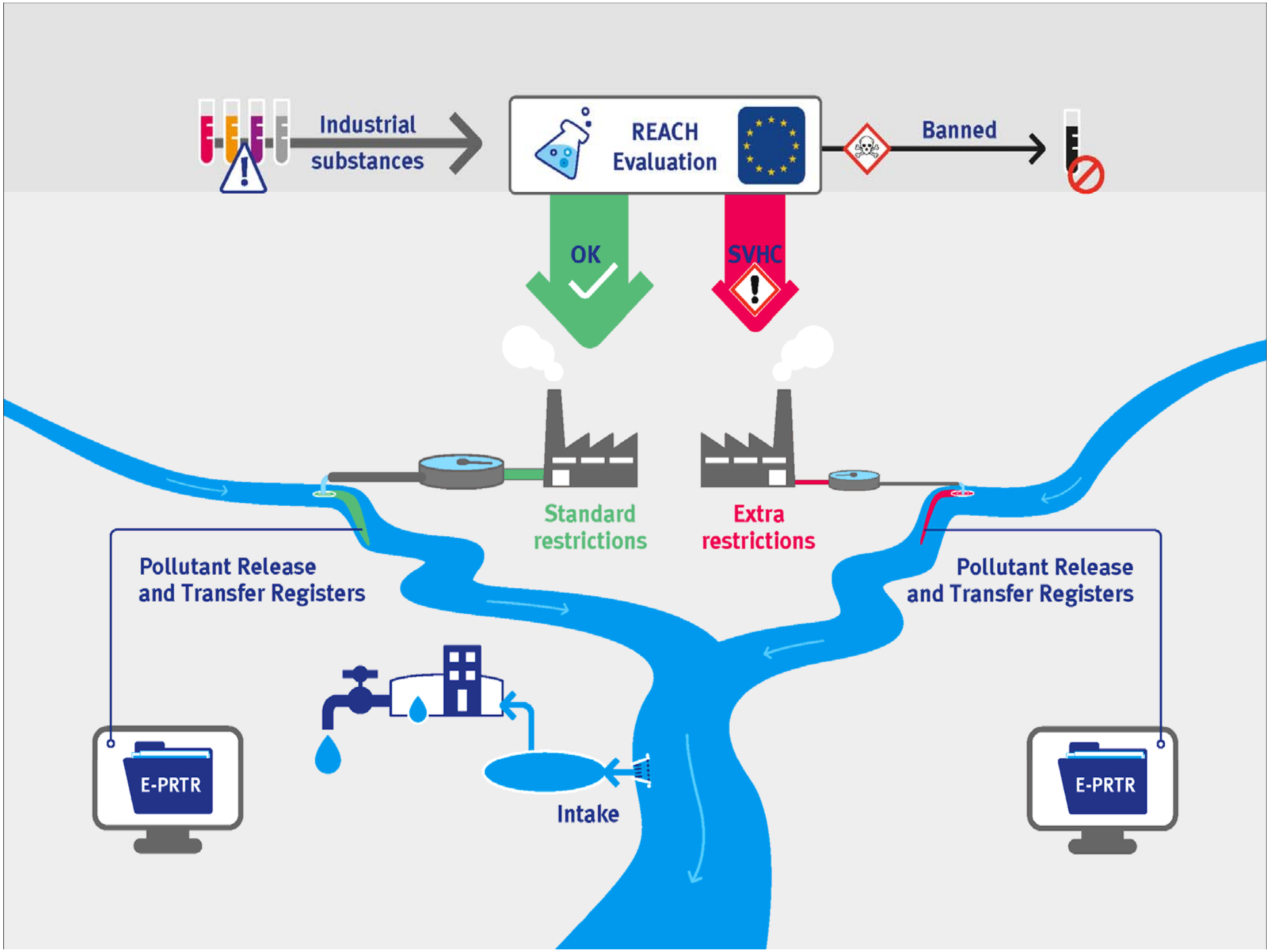
- An easily accessible, complete registration system for industrial (and other) emissions in the framework of the European Pollutant Release and Transfer Registers (E-PRTR), including emissions of SVHC substances.

Vewin RIWA

What's needed: science & regulation

- Classify (PMT/vPvM) substances as Substance of very High Concern (SVHC)
- Use this SVHC label to minimize the emissions of these specific substances
- This minimization should apply to both indirect discharges into wastewater systems (UWWTD) and direct discharges to surface waters (IED);
- Imroove and implement the European Pollutant Release and Transfer Registers (E-PRTR), with at least emissions of SVHC substances.

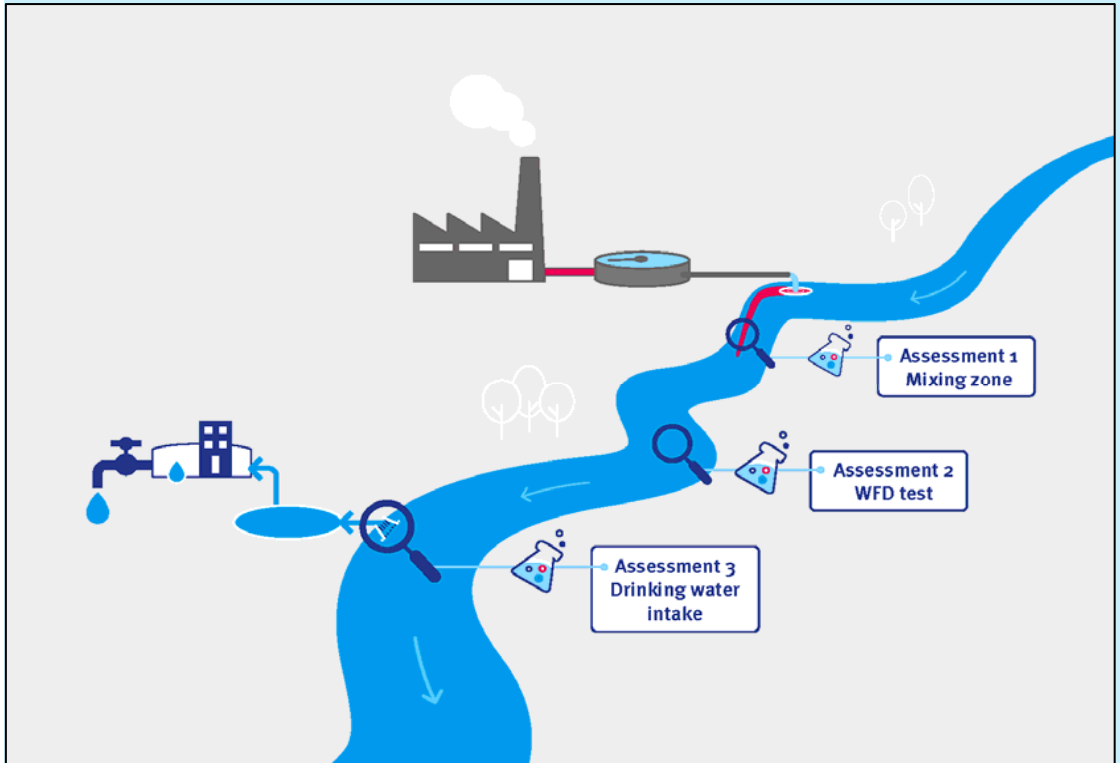
Vewin RIWA

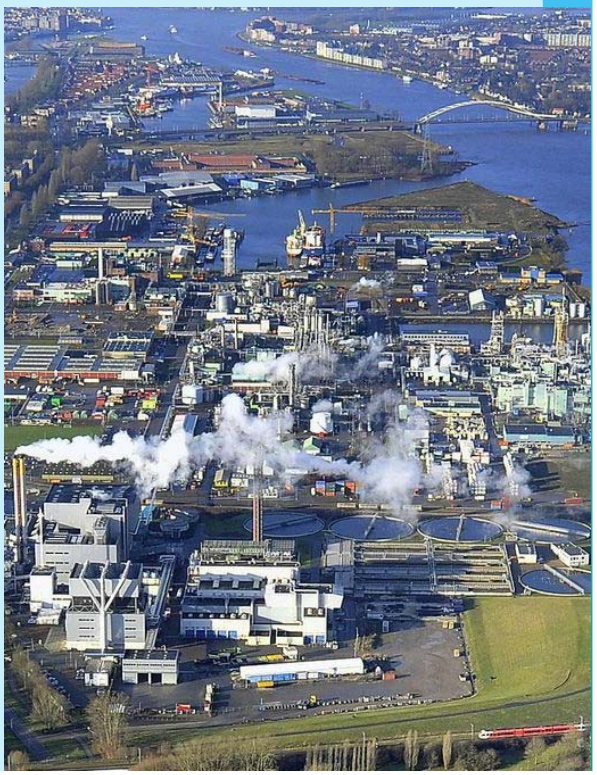

Industrial substances
REACH Evaluation
Banned
OK
SVHC
Standard restrictions
Extra restrictions
Pollutant Release and Transfer Registers
Pollutant Release and Transfer Registers
E-PRTR
E-PRTR
Intake

Licensing of industrial discharges

Discharge test (General Assessment Methodology) at 90% low-flow conditions

- Basic: → BAT / BREF
- SVHC: → BAT+
- When > drinking water standard or > 1 µg (unregulated substance) at drinking water intake: extra effort needed.





Conclusion (what to do: EU & Member states) 1/2

1. EU: Identify PMT and vPvM substances as SVHC in REACH

2. Member States: Use SVHC label in regional/national licensing process
   - Indirect: wastewater systems (UWWTD)
   - direct discharges to open water (IED)

3. Consider catchment area for drinking water a “vulnerable area”
   - include impact at intake for drinking water when assessing industrial emissions;
   - Dutch system of the General Assessment Methodology (GAM) can be used as example;

Vewin RIWA

Conclusion (what to do: EU & Member states) 2/2

5. Consider improved methodology for licensing and assessment in current evaluation/revision of Industrial Emissions Directive (IED) 2021

5. EU/Member States/Industry: Optimize current E-PRTR

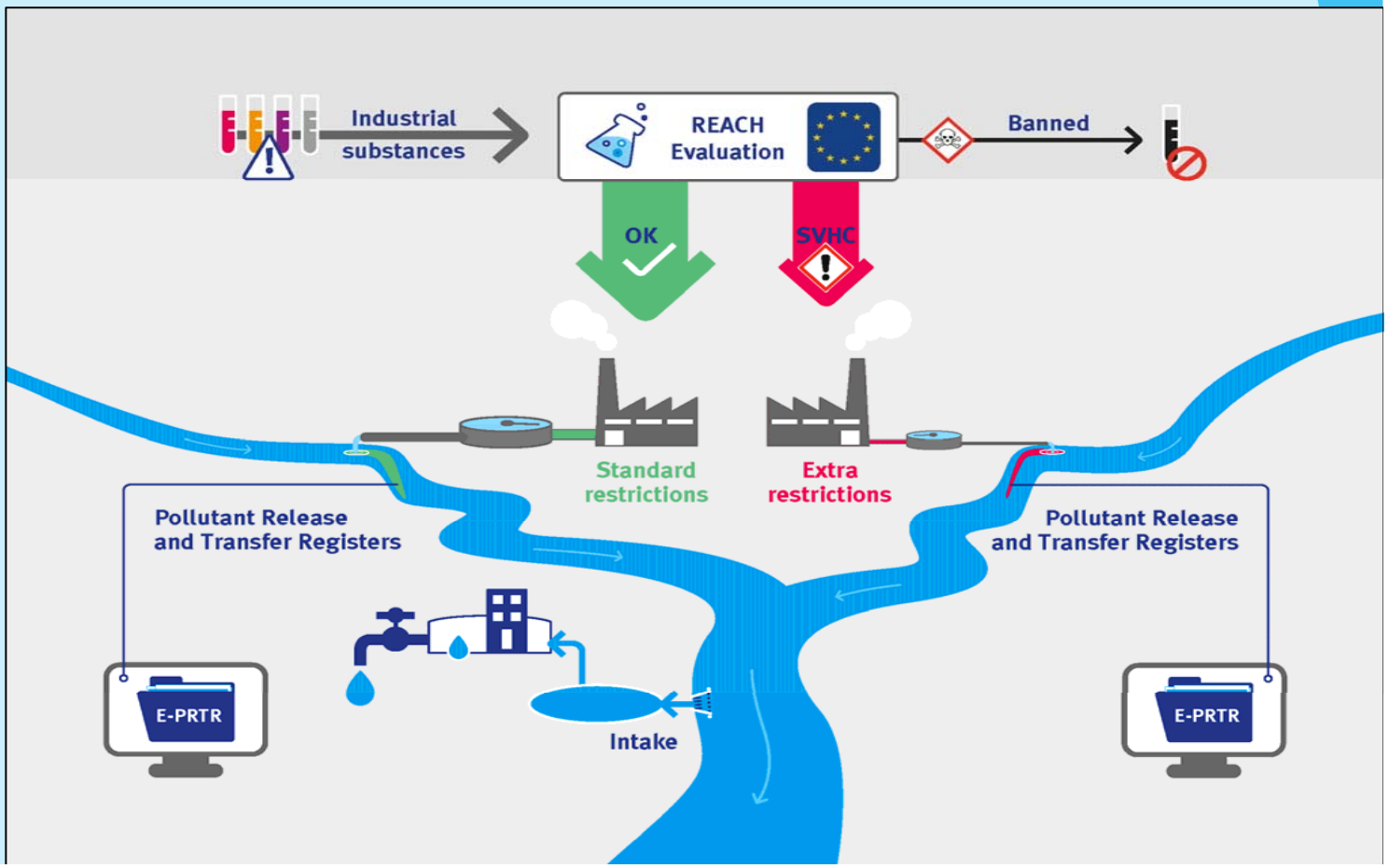
6. EU/Member States of the Rhine River Basin: prevent discussions on confidentiality and protection of legitimate economic interests
   - start with pilot of E-PRTR optimization for emissions more than 300 kg/a using existing (restricted access) system of ICPR (proposal RIWA-Rijn);

7. EU/Member states: use review and revision of the Industrial Emissions Directive (IED) and Urban Waste Water Treatment Directive (UWWTD) for alignment

Vewin RIWA

Summary: combine science & legislation

- Classify PMT/vPvM as SVHC within REACH and use this classification for emission assessment in IED, UWWTD
- Register emissions (including SVHC) in the E-PRTR



Vewin

Vereniging van waterbedrijven in Nederland

RIWA

Thank you for your attention

The content of this presentation will be published together with André Bannink in the GWF Wasser|Abwasser and the “WaterSolutions” on the GWF website