

A dynamic splash of clear blue water against a white background, with droplets and ripples visible. The water flows from the top left towards the bottom right.

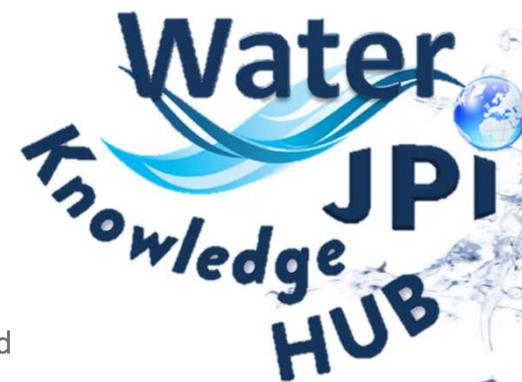
Exploring opportunities for enabling international networking in the frame of the Water JPI activities

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Water JPI Workshop

Exploring opportunities for the scaling-up of the JPI activities for water challenges in Europe and beyond
WebEx Jan 28th 2021



Kreuzinger - Water JPI Workshop WebEx Jan 28th 2021



KH-CEC

- Knowledge Hub on Contaminants of Emerging Concern
 - 2018 03 – workshop 1 - Start
 - 2018 06 – workshop 2 - Helsinki
& Selection of Scientific coordinator
 - 2019 03 – workshop 3 - Madrid
 - 2019 10 – workshop 4 - Dublin



Lessons learned and recommendation

- Experience of KH-CEC
 - „Less is more“
 - Clear idea of the message to be transported
- Output documents based on a communication strategy
 - First strategy and message(s)
 - Stakeholder identification
 - Only after that: selection on type of output

Examples Output

- Initial Policy brief

Emerging Pollutants – an emerging risk in our waters

Climate change and rising demands to satisfy human and economic needs put increasing pressure on our water resources. The amount of chemicals used in our daily life has increased tremendously over the last decades and new chemical substances are regularly put on the market. During or after their use these compounds find their way into our water bodies and in the environment where they can be found together with their transformation products.

Denoted as emerging pollutants (EP) or contaminants of emerging concern (CECs), these substances are not regulated (and therefore not included in routine monitoring programmes). Their widespread occurrence in the environment raises specific concern because their potential adverse effects on environmental and human health are not yet elucidated.

The concern is not limited to chemicals, but involves also other emerging concerns such as, antibiotic resistance, microplastics and novel pathogenic organisms. Our knowledge on their effects on environmental and human health, as well as their fate in the environment and as a result of abatement techniques, is still limited.

Effects on human and animal reproduction, cancer, antibiotic resistance as well as on the environment – to name only few – nowadays are accepted as being caused by certain EPs that can be found in effect triggering concentrations in surface and ground water bodies. By far not all correlations between occurrence of EPs and effects are understood. However, new chemicals are detected on a regular base and we do not know what effects they could trigger in the environment and the human.

Findings indicate that effects from EPs take their time to have an impact on environmental systems. E.g. decrease in fertility and reduction of resilience, may not affect an individual, but result in a steady weakening of environmental and human societies over time. This is even amplified by the situation, that both, in the aquatic environment and the urban water cycle we observe a multitude of EPs at the same time. This results in mixed substance exposure that can boost effects exponentially.

Knowledge of emerging pollutants in our society must be improved – the problems we are aware of today are just the tip of an iceberg.

We need to use a precautionary principle to protect future generations. Research on how these substances behave, their toxicity and health impact are crucial.

- Despite the yet existing knowledge gaps to be filled in by scientific research, there is an urge to set immediate measures targeting EPs in the aquatic environment.
- The implementation of new technologies for monitoring, wastewater treatment and risk assessment are all non-regret steps that even support the precautionary principle.
- New technologies and approaches will only occur with accompanying legislation in place that could stimulate such preliminary non-regret steps.



The most important actions needed and possible are:

- Implement new monitoring strategies focusing on EPs to establish a sound database for risk assessment, trend observation and success control.
- Implementation of advanced technologies in wastewater treatment to significantly decrease species and amounts of EPs.
- Development of standards for environmental quality, drinking water and wastewater reuse following new approaches like effect based methods that consider toxicity of a mixture of substances.
- Harmonization of till now isolated legislation like registration of chemicals, biocides, water quality, human health and others.
- Courage and confidence to implement new approaches in legislation.
- Consolidation of knowledge on EPs and CECs and development of strategic approaches for research and information management.
- Raising awareness for the importance of EPs and CECs on a broad base.
- Further financial support for targeted research on various aspects of EPs and CECs.

Advances in sustainable energy production and mobility, health care and resilience, IT and digitalisation will all become compromised and meaningless, if we do not react on the proven indications of effects from EPs and CECs. As successful as we have been in handling traditional water quality issues such as organic pollution, we are facing much greater challenges today due to a changing world that leaves its footprint in the water we rely on for drinking, for economy and for the future generations we today have a huge responsibility.

What is Water JPI Knowledge Hub?

The purpose of the Water JPI Knowledge Hub is to share knowledge that can be used by regulatory authorities, environmental scientists and that allow professionals to make informed decisions. Another purpose is to raise awareness of these issues to the public.

The Water JPI Knowledge Hub brings together experts from several research areas to collaborate and communicate across different scientific disciplines and with decision makers. It closely works together with other European Networks as the NORMAN Association. Emerging Pollutants is the first research area developed within the Water JPI Knowledge Hub.

More information and contact:

- www.waterjpi.eu/
- Implementation/Thematic Activities/Water JPI Knowledge Hub

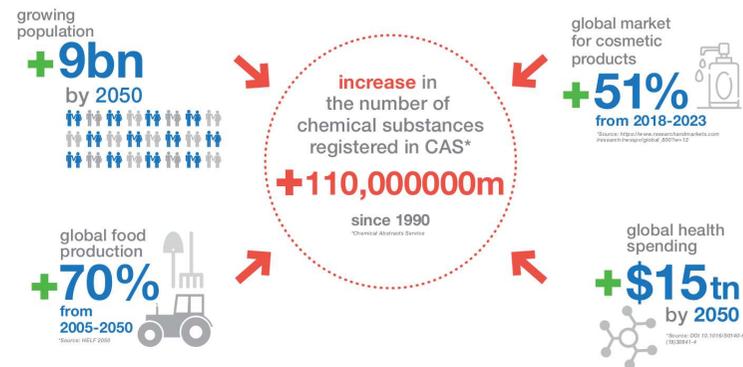


Examples Output

- Infographs

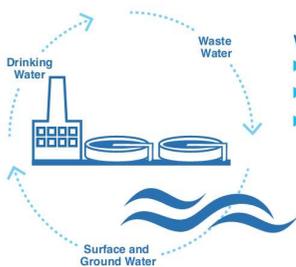
CONTAMINANTS OF EMERGING CONCERN ARE CONTAMINANTS WHICH HAVE RAISED CONCERN ABOUT THEIR ECOLOGICAL OR HUMAN HEALTH IMPACTS.

Population growth, along with associated increases in sanitary and personal care products, advances in medicines, and therapies, and a greater demand for food are all contributing to a growing number of chemicals in the environment



PRIORITY ACTION 2: WASTEWATER TREATMENT PLANTS (WWTP) DON'T ALWAYS REMOVE CECs TO THE DESIRED DEGREE WHICH CAN RESULT IN THE CONTAMINATION OF WATER RESOURCES.

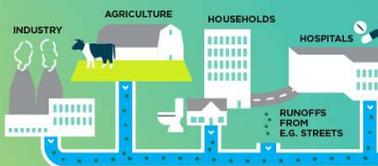
Improving wastewater treatment, together with controlling the source of the contaminants, will be essential to close the water cycle and maintain the quality of water. This can be done by implementing new treatment technologies that have demonstrated the further removal of CECs.



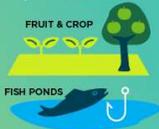
WATER FIT FOR USE

- ▶ Advanced WWTP technology
- ▶ Novel treatment methods
- ▶ Optimised design and operational conditions

FIGURE 1: The pathways of the Contaminants of Emerging Concern



WATER & FOOD CECs can travel through wastewater treatment all the way to water and food we consume. They pose potential risks to humans and the environment.

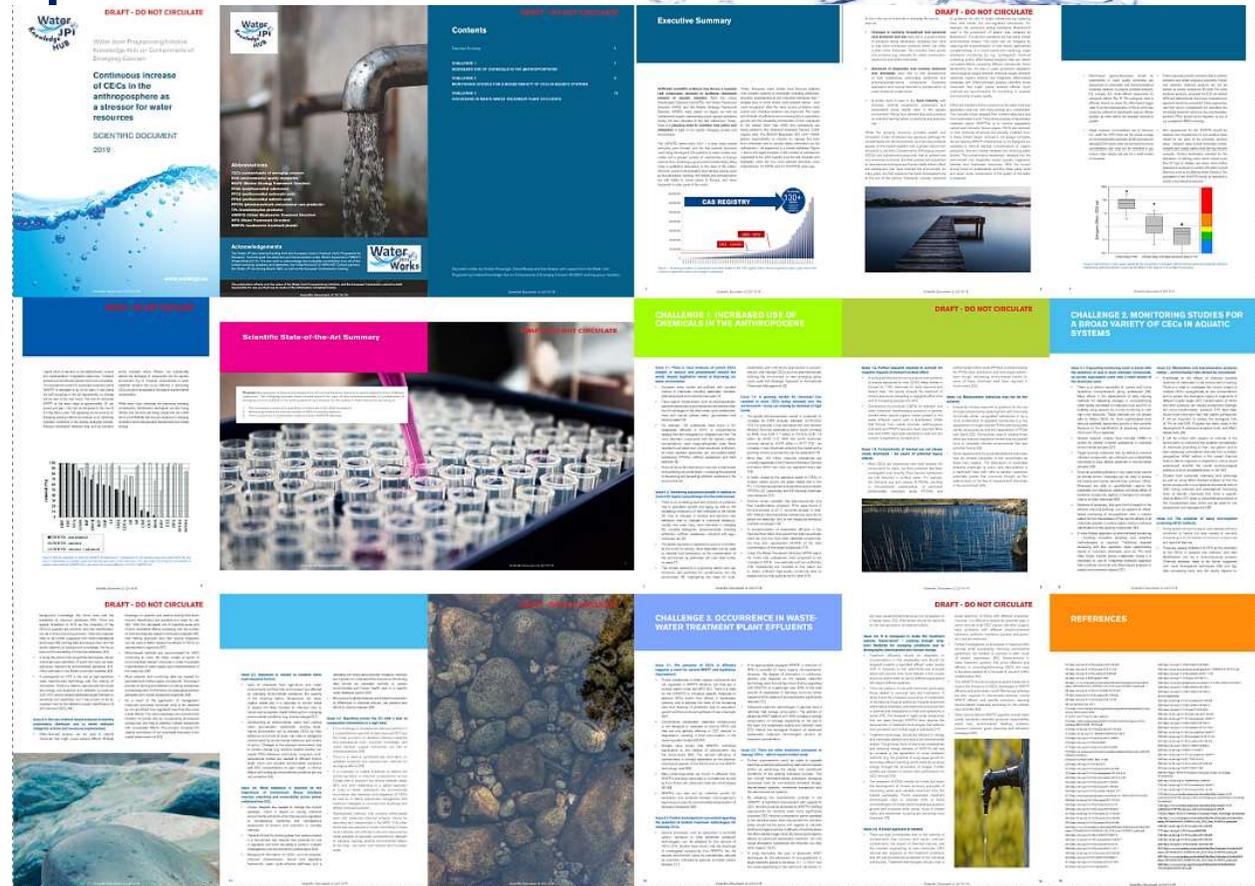


What is contaminating our waters next?



Examples Output

- Scientific Document as base for communication campaign
 - Message
 - Science
 - Literature





Targeted group / stakeholders

- Target group is NOT the scientific community!
- Target group has influence on:
 - Type of output
 - Way of communication
 - Complexity of language
- What message for what target group
- Same message has to be transported to different target groups in different ways



Lessons learned and recommendation

- Active and “pressing” facilitator as structural backbone
Does the “heavy lifting” together with the SC
- National seed group members have to be well connected in their countries and have to know the stakeholder structure (incl. national stakeholder associations as multipliers)
- Distribution of distinctive tasks and time frames
- Avoid scientific discussions!
- Reduction of administrative burden
- Do not forget language aspects / translation to national languages



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