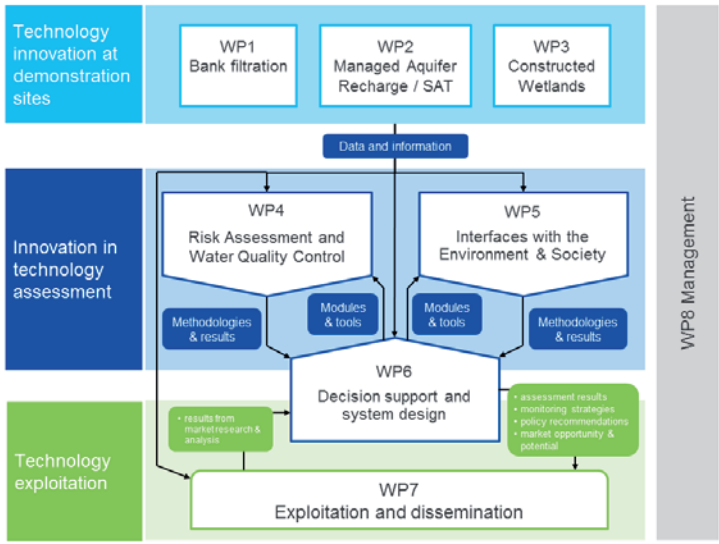
The AquaNES Approach

AquaNES will demonstrate and validate in WP1-3:

- the benefits of post-treatment options such as membranes, activated carbon and ozonation after bank filtration for the production of safe drinking water,
- the treatment and storage capacity of soil-aquifer systems in combination with engineered pre-treatments,
- the combination of constructed wetlands with different technical post- or pre-treatments (ozone or bioreactor systems) as a wastewater treatment option.

AquaNES will further

- assess relevant water quality aspects (WP4),
- apply targeted tools to analyse environmental effects and interfaces with the society (WP5),
- develop a robust risk assessment framework and a design and implementation guidance for combined natural and engineered systems (WP6),
- deliver new market opportunities for cNES in Europe and overseas and promote their exploitation (WP7).



AquaNES Consortium

The AquaNES consortium consists of 30 partners from seven European countries, Israel and India. Water utilities, SMEs and industries as well as academic partners and research institutes represent a good balance along the technology innovation value chain.

SMEs & Industry

AKUT Partner · AUTARCON · imaGeau · géo-hyd · HydroBusiness · BDS BioDetection Systems · microLAN · WatStech · PENTAIR · xylem Let's Solve Water · WADIS Water Disinfection · VERTECH

Water Utilities

IWB · Budapest Waterworks · ΔΕΥΑΘ · Δήμος Αντιπάρου · MEKOROT · Erft Verband · Berliner Wasserbetriebe · drewag NETZ

Universities & Research Institutions

n|w Fachhochschule Nordwestschweiz Hochschule für Life Sciences · KOMPETENZZENTRUM WasserBerlin · brgm · KWR Watercycle Research Institute · Cranfield University · National University of Public Service · UAM Adam Mickiewicz University in Poznań · HTW Hochschule für Technik und Wirtschaft Dresden University of Applied Sciences

Contact

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AquaNES

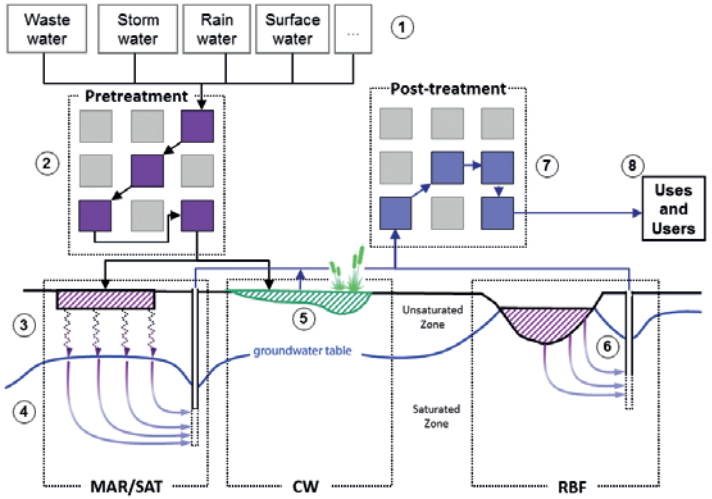
Demonstrating synergies in combined natural and engineered processes for water treatment systems

The AquaNES Project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no. 689450

AquaNES project

AquaNES pursues the concept of combined natural and engineered water treatment systems (cNES) as response to water management challenges. We consider

- bank filtration (BF),
- managed aquifer recharge (MAR)/soil-aquifer treatment (SAT),
- constructed wetlands (CW),
- plus engineered pre- and post-treatment options.



AquaNES objectives

- to demonstrate cNES as adaptation to issues such as water scarcity, excess water in cities and micropollutants in the water cycle
- to advance the innovative cNES technologies from from small scale testing to prototype validation
- to evidence reductions in operating costs and in energy consumption
- to aid water governance by addressing the unclear responsibilities of the various stakeholders
- to provide decision support by delivering a sound basis for water managers and governments for proper process assessment and selection

Demonstration sites

The project focuses on 13 demonstration sites in Europe, India and Israel covering a representative range of regional, climatic, and hydro-geological conditions.

Bank filtration

Five sites to demonstrate the benefits of post-treatment options such as

- nanofiltration, and other membrane technologies,
- activated carbon,
- ozonation and
- electrochlorination

after bank filtration for the production of safe drinking water. Sites no. 1-5 located in Germany, Hungary, Poland and India

Managed aquifer recharge (MAR)

Four sites to validate

- the full exploitation of the treatment and storage capacity of soil-aquifers systems,
- in combination with conventional or oxidative pre-treatments in both drinking water production and water reuse.

Sites no. 6-9 located in France, The Netherlands, Switzerland and Israel.


Infiltration site at Lange Erlen | © Christian Flierl

Constructed wetlands (CW)

Four sites to demonstrate the combination of constructed wetlands (CW) and other natural treatment systems with different technical post- or pre-treatment options such as

- ozonation,
- bioreactor systems or
- disinfection processes

in pilot and full-scale sizes for innovative and resource-efficient treatment of wastewater and combined sewer overflows.
Sites no. 10-13 located in UK, Germany and Greece.