

March 2017

## Research Success Story



### C L E A N   W A T E R :   N A T U R E   A N D T E C H N O L O G Y   W O R K I N G   T O G E T H E R

*Traditional, engineered water management systems have their limitations, especially in widely differing climatic conditions. Now, with funding from Horizon 2020, the project “AquaNES” (Demonstrating synergies in combined natural and engineered processes for water treatment systems) seeks to bring nature into the equation, by combining new knowledge of natural processes of water treatment with innovations in engineering solutions.*

Providing adequate clean water in distinctly different environments is one of the challenges of the 21st century. The AquaNES consortium takes an international, integrated approach to the problem. The 30 partners from 8 European countries as well as Israel and India include water utilities, SMEs and industries, universities and research institutes. “AquaNES is a broad assessment of the combination of natural and engineered systems for water treatment and re-use,” explains Prof. Thomas Wintgens from the School of Life Sciences at the University of Applied Sciences and Arts Northwestern Switzerland, coordinator of AquaNES.

#### **Help from Euresearch**

Coordinating such a large consortium with such diverse partners is in itself a major challenge, with different national administrative

processes and regulatory frameworks, as well as the different requirements of SMEs, large companies and research institutes. Wintgens credits Euresearch with helping AquaNES to meet this challenge. “Early on, Euresearch provided information on programme requirements and helped to clarify uncertainties for Swiss participants,” he says.

*“We need to determine how best to transfer this knowledge”*

Nature offers resource-efficient ways of managing and cleaning water (e.g., bank filtration, aquifer recharge and wetlands) that require less infrastructure investment than purely engineered systems. “But natural treatment systems are vulnerable,” says Wintgens. “Combining them with engineered pre- and post-treatment solutions can

overcome these vulnerabilities and open unexploited potential. As an example, pre-treatment can make aquifer recharge more stable over the long term, and post-treatment can help to polish water quality.”

#### **New water management**

AquaNES’ 13 demonstration sites in Europe, India and Israel will test a range of conditions. “Our case studies will investigate aspects of technological and health safety, and ecological and economic impact,” explains Wintgens. “We are looking at new water supply and wastewater treatment methods in different climatic, geographical, hydro-geological and socio-economic conditions. Then, we need to determine how best to transfer this knowledge because the water sector needs concrete examples of how combined systems can be used to achieve advantages.”

# About AquaNES



*“AquaNES is a broad assessment of the combination of natural and engineered systems for water treatment and re-use”*

**Prof. Thomas Wintgens**  
AquaNES Coordinator,  
School of Life Sciences,  
University of Applied Sciences and Arts Northwestern Switzerland

## CONTENT SUMMARY

AquaNES is a 30-member consortium coordinated by the University of Applied Sciences and Arts Northwestern Switzerland. Using 13 different test sites, the project aims to demonstrate how natural and engineered methods can be combined for optimal, resource-efficient water treatment and management, opening new market opportunities for these combined systems in Europe and abroad.

## FACTS AND FIGURES

**Project Name**  
AquaNES – Demonstrating synergies in combined natural and engineered processes for water treatment systems

**Research Area**  
Environment, Water treatment

**Organisations**  
School of Life Sciences, University of Applied Sciences and Arts Northwestern Switzerland (Coordinator) and 29 partners

**Start Date – End Date**  
01.06.2016 – 31.05.2019

**Duration**  
3 years

**Project Cost**  
€10.74 million

**Project Funding**  
€8.71 million

**Programme**  
Horizon 2020 Societal Challenge: Climate Action, Environment, Resource Efficiency and Raw Materials

**More Information**  
[www.aquan.es.eu](http://www.aquan.es.eu)

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