

Executive Summary

Water Reuse Report

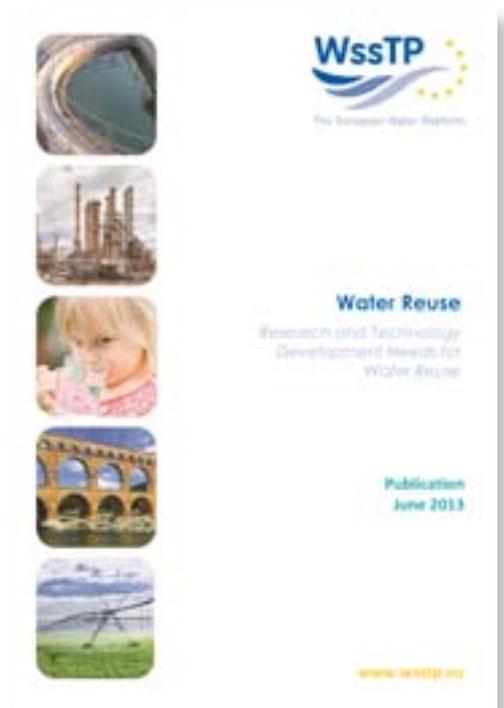
THE BACKGROUND OF THE WATER REUSE REPORT

With the constantly growing population comes the challenge that many communities are currently facing: the lack of the available water supplies.

Amongst other solutions, experts have considered Water Reuse as a logical and integrated alternative to tackle with this obstacle as well as to boost the conservation and extension of the available water supply.

This increasing importance and recognition of water reuse within the industry, has led WssTP to the need of creating a specialized working group which will focus on three main objectives, which were the guides to set up the basis for this report:

- (1) Identify research needs
- (2) Identify the bottlenecks to implementation
- (3) Identify major opportunities and benefits for water reuse



THE PURPOSES AND CHALLENGES OF THE WATER REUSE MANAGEMENT REPORT

In order to achieve these three main objectives the WG has undertaken the following:

- To summarise the most relevant projects which have been carried out to provide a better understanding of how and where Water Reuse currently fits into the overall concept of Integrated Water Resources Management (IWRM)
- To elaborate and communicate the market potential for water reuse is, by analysing barriers (legislative, social and market) and the uptake of existing technologies
- To involve industry and point out its role in demonstrating technologies for water reuse
- To highlight the need for and benefits of innovation as to justify a dedicated topic on water reuse both in the context of European Union (EU) member states and EU international collaboration
- Develop project ideas which focus on developing discourse on the subject to improve opportunity for greater public acceptance

MAIN FINDINGS AND FUTURE RESEARCH NEEDS

The report was divided into three working areas: Agriculture, Urban and Industry. Within these three areas the following needs were identified:

Agriculture:

- Agricultural irrigation systems with a decreased carbon as well as water footprint have to be developed, considering as a whole food production, food consumption, waste management etc.
- There is a need for better understanding of water buffering and storage components including their respective water quality impact

A Common Vision for Water Research and Innovation

- Interactions between different actors in the agricultural sector have to be considered. Methods for the identification and participation of stakeholder groups have to be validated

Industry:

- Selective separation technologies for different industrial waters, energy efficient hybrid membrane technology for targeted removal of components and solving the problems of scaling, biofouling, concentrates and brines are important within this framework. New technology development is still needed in this area, but the demonstration of these technologies, and of combinations of new and existing biological and chemo-physical treatment technologies (treatment trains) are important steps in these innovations
- Evaluation/modelling tools for identifying the most efficient focus for water recycling in the production chain, from raw material supply to packaging, are required
- Applying water reuse closer to the process steps and make it a more integrated part of the process can contribute to a faster innovation towards a more sustainable process industry. Risk governance is an important part of this integration

Urban:

- Research should seek innovations which drive forward knowledge and understanding of urban water reuse system processes and management, thereby reducing both the actual and perceived risks of such schemes
- Risk governance frameworks which integrate risk analysis across the various elements of water reuse schemes are urgently needed, as are studies which expose the risks for reuse scheme investors and develop tools to analyse and present these in a balanced way
- Identify attractive business models for those wishing to invest in water reuse initiatives, charging / pricing arrangements such that full cost pricing is consistent regardless of source
- Identify urban uses susceptible to be fulfilled with reclaimed water and define related-qualities (public and private parks, cleaning cars, etc.

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Report Credits:

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Authors:

Thomas Wintgens, FHNW and David Smith

Editing:

Ana de León, WssTP

Pictures:

WssTP