FINAL WORKSHOP
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Substitution of conventional treatment of raw river water by ultrafiltration membrane technology
Cornellà de Llobregat (Barcelona)

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**Project context**

Drinking water treatment plants (DWTPs) need to be accepted according to current and future stringent water regulations (e.g. consumption of chemicals). Ultrafiltration (UF) can be appropriate technology to substitute and/or update conventional pre-treatment mainly for reverse osmosis (RO) in surface water treatment plants. However, its long-term efficiency needs to be assessed at demonstration scale (with real surface water) not only in technical terms but also in environmental and economic ones.

The project has a total duration of three years (01 September 2010 – 31 August 2013), two of which are focused on the demonstration of the efficiency of three UF membrane configurations at prototype scale in parallel with the conventional pre-treatment installed in DWTP at Sant Joan Despí (Barcelona). The impact of the above-mentioned pre-treatments, both conventional and UF, on the subsequent RO step will also be assessed at pilot scale.

**Objectives**

1. To demonstrate that direct ultrafiltration (UF) can be an efficient alternative to conventional pre-treatment for reverse osmosis (RO) in drinking water treatment plants (DWTP)
2. To evaluate the efficiency of 3 UF prototypes with different configurations and membrane materials as direct surface water pre-treatment
3. To assess the impact of direct UF on the subsequent RO performance
4. To evaluate reagents’ needs, energy consumption and water yield of the conventional and direct UF pre-treatment
5. To perform Life Cycle Assessment and Cost Efficiency Analysis of direct UF and conventional pre-treatment
6. To disseminate the results obtained and transfer the knowledge gathered to other DWTPs in Europe