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## **Demonstrate Ecosystem Services Enabling Innovation in the Water Sector (DESSIN)**

### **Project**

### **Research Program**

[FP 7](#)

### **Duration**

Jan 2014 - Jan 2018

Urban water use is a major pressure impacting the ecological status of European rivers. The DESSIN project promotes more sustainable, adaptive, and cost-effective urban water management through the testing and promotion of innovations. The project aims to demonstrate the benefits of innovative solutions to deal with water challenges with a focus on water quality and water scarcity. In addition, it develops a methodology for the valuation of ecosystem services which will help catalyse for innovation uptake.

### **Background**

The improvement and protection of European rivers is a significant challenge faced by European countries, and was set as a top priority of the European Union through the Water Framework Directive (WFD). New solutions and innovations are needed to meet these challenges, but they typically face great implementation barriers. In particular, innovation uptake is limited by the lack of a comprehensive comparison between the value of established and new technologies and management options. The ecosystem services approach may enable a standardised evaluation of impacts from innovations, in particular by integrating economic, environmental and societal dimensions. Using the ecosystem service approach to compare technologies and management options may help generate additional incentives and arguments for market uptake and practical implementation of innovations.

### **Objectives**

The DESSIN project is primarily a demonstration project for innovations in urban water management. It supports innovation and competitiveness in water management by enabling a more informed selection of the most promising solutions, as regards their impact on the water body and their economic implications. In addition, the adoption of the ecosystem service approach may enhance the accounting of benefits from the implementation of the WFD Programmes of Measures and expand policy dissemination by portraying the objectives of the WFD in a broader social and economic context.

DESSIN has the following objectives:

- To develop and apply an Evaluation Framework to assess the sustainability aspects of innovations in urban water management and value changes in ecosystem services of water bodies that result from the implementation of these solutions.
- To develop a range of technologies and management options for water quality improvement and water scarcity reduction, and operationalise the Evaluation Framework through an interactive and user-friendly software.
- To demonstrate the applicability of the developed technologies and management options in five case-studies representative of global water challenges.
- To promote and disseminate project's results, and facilitate the market uptake of the project's technologies and management options.

Innovations tested within the project include decentralized water treatment units, real time control of large scale systems, ICTs for local treatment units, sewer mining, and storage of freshwater in aquifers amongst others.

Five demonstration sites have been selected. The Emscher (Germany) and Hoffselsva (Norway) are focused on water quality improvement and meeting the Water Framework Directive. The Westland (Netherlands), Athens (Greece) and Llobregat (Spain) are focused on water scarcity. Project activities at these sites are structured around public and private water management organisations and end-users, technology providers (SMEs), supporting RTD experts and relevant public authorities.

## **Ecologic Institute in DESSIN**

Ecologic Institute co-ordinates the preparation of the Evaluation Framework consisting of an ecosystem services valuation toolkit complemented with a sustainability assessment module. In addition, Ecologic Institute leads the work on developing a governance assessment tool to examine innovative and innovation-friendly modes of governance, and contributes to the identification of innovative economic policy instruments to foster innovation in the water sector.

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European Commission, [Directorate-General Research & Innovation](#) (DG Research & Innovation), International

## **Partner**

University of Duisburg-Essen, [IWW Water Research Institute](#) (UDE IWW), Germany  
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[AMPHOS 21](#) (AMPHOS 21), Spain  
[Athens Water Supply and Sewerage Company](#) (EYDAP SA), Greece  
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[KWR Watercycle Research Institute](#) (KWR), Netherlands  
[Leif K  rner Ingeni  rfirma](#), Norway  
[National Technical University of Athens](#) (NTUA), Greece  
[SEGNO](#), Germany  
[SINTEF](#), Norway  
[TELINT RTD Consultancy Services](#), United Kingdom  
[Umwelt- und Fluid-Technik](#) (UTF), Germany  
[University of Duisburg-Essen](#) (UDE), Germany

## Team

[Gerardo Anzald  a](#)  
[Dr. Manuel Lago](#)  
[Rodrigo Vidaurre](#)  
Marius Hasenheit  
[Mandy Hinzmann](#)  
[Hugh McDonald](#)  
Katrina Abhold  
Sarah Beyer  
[Dr. Josselin Rouillard](#)

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