

EUREAU

European federation of national
associations of drinking water
suppliers and waste water services

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Content

1. EUREAU
2. The European water sector
3. WSSTP: technology drivers & business opportunities
4. Financial engineering

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31 full and 1 observer
member association

29 countries

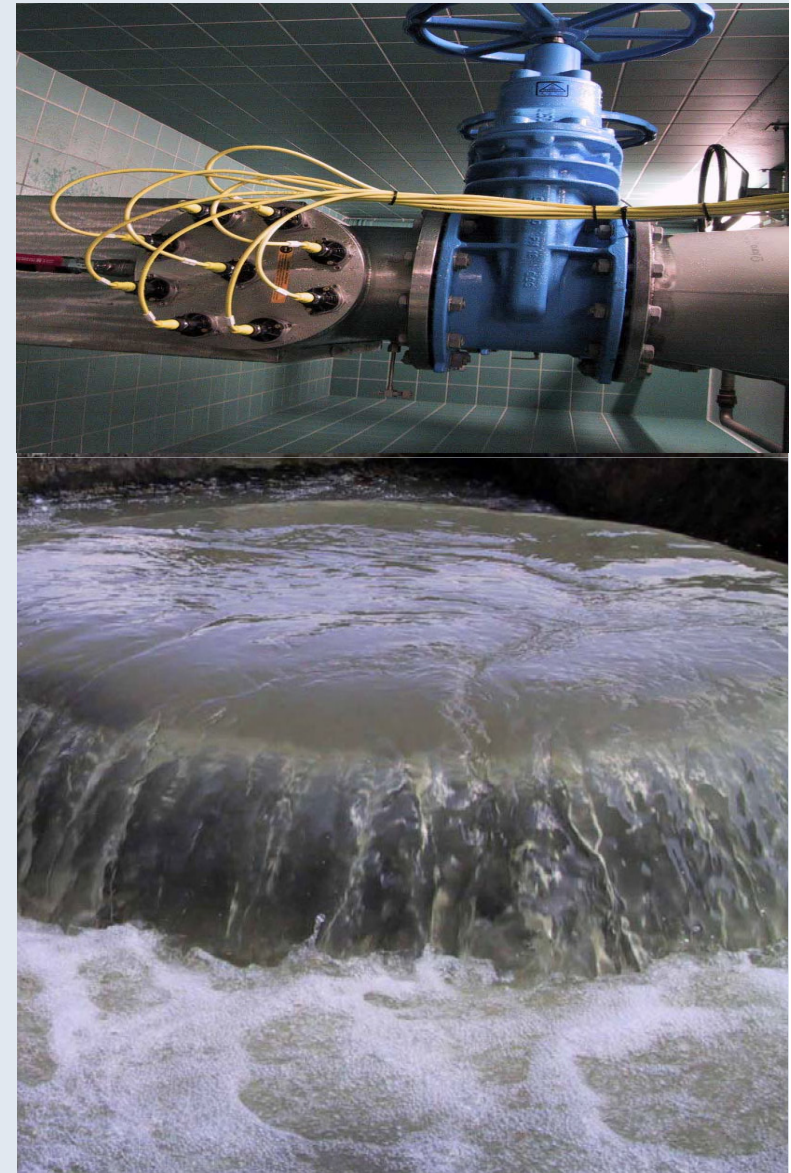
> 400 million of customers

- Full members
- Full members (EFTA countries)
- Observer members
- Non members (EU countries)



Characteristics of the European water sector

- Water supply and sanitation is needed everywhere
 - ↳ Knowledge is scattered
(e.g. 16,300 water suppliers in France, but 23 in UK)
 - ↳ local SMEs dominate in market
- SMEs (including water utilities) do not invest in R&D
- Fragmented and duplicated R&D efforts
- EU water sector annual turnover: € 80 billion
- Annual growth rate 5%





Water Technology Platform

- Background
 - ⇒ Lisbon agenda
 - ⇒ Environmental Technology Action Plan
- Objectives
 - ⇒ Enhancing the competitiveness of the European Water Industry
 - ⇒ Solving the European water challenges
 - ⇒ Contribute to reaching the Millennium Development Goals

The European Commission would like to see all research proposals related to water and asking EU funding coordinated through the WSSTP.

Three majors drivers

Worldwide, the water sector is facing a dramatic evolution because of three major “drivers”:

⇒ Climate change

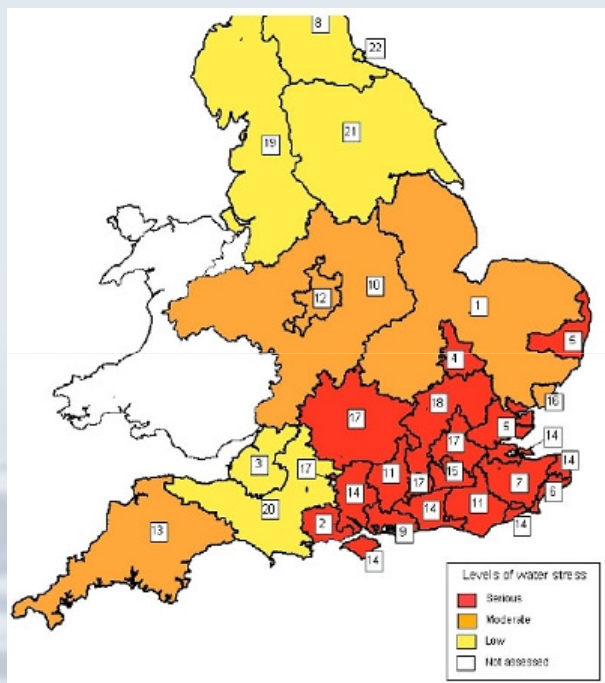
⇒ Existing infrastructure is aging and deteriorating

⇒ Population growth

Challenge 1:

Increasing water stress and water costs

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- Quantity** issue
- Deterioration of **water quality**
- Lack of **appropriate water management.**

- To solve quantity issues investments can be replaced by a consumption management
- But quality issues have to be solved by treatments investments



Challenge 2 : Urbanisation



High **demand for water and food**

- **Increase of waste-water generation**
- Difficult to plan and ensure appropriate water services
- Need for flexible and innovative solutions



Challenge 3: Extreme events



New extreme climatic conditions:

- Impact the average volume of available water resources**
- Need for an integrated approach**
- Need to develop tools and technologies to anticipate and manage these events**



Challenge 4:

Rural and under-developed areas

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- ❑ Lack of basic infrastructure
- ❑ adverse effect of waste water and agricultural water management
- ❑ The lack of infrastructure makes these **areas less attractive**
- ❑ Water supplies, waste-water treatment... need to be: **Non-conventional, decentralised, easy to service ,and reliable**



Areas of research

Five areas of research have been identified to meet the major challenges the water sector faces

1. Balancing demand and supply
2. Ensuring appropriate quality and security
3. Reducing negative environmental impacts (agriculture, wastewater)
4. Novel approaches to the design, construction and operation of water infrastructure assets
5. Establishment of an enabling framework



R1: Balancing demand and supply

Goal:

Different types of water users together should not use more water than is naturally replenished, and should not use water of a higher quality than needed.

What needed to achieve this goal ?

- Water saving concepts and technologies.
- Increased knowledge of water quality requirements for all applications and purposes.
- Technologies which enable usage of new and alternative resources of water, including wastewater.
- Aquifer recharge and recovery technologies.
- Decision support systems and demand management systems to efficiently allocate and use water resources.



R2: Ensuring appropriate security

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Goal:

- 1) Identify potential synergies between different water users
- 2) Developing appropriate treatment and water use technologies

Research necessary to achieve this goal:

- Management of risks and development of best practice** at all levels of the water cycle
- Availability of comprehensive water quality and nutrient **monitoring tools**, including **early warning systems** for pollution and pathogen detection
- Availability of emergency water supply **tools**



R3: Reducing negative environmental impacts

Goal:

A reduction in the negative environmental impacts that water users can have upon the water cycle and greenhouse gases.

Research necessary to achieve this goal:

- Better methods & tools to set environmentally sustainable river flows
- Better technologies for monitoring, controlling and removing diffuse and point source pollution
- Reduce energy consumption & produce less waste in the water cycle
- Develop usable products from sludge recovered during wastewater treatment in order to save energy and protect environment
- Develop rain water management systems

R4: Novel approaches to the design, construction and operation of water infrastructure assets

Main goals:

1. to develop technologies to allow the monitoring of the condition of water infrastructure, and
2. to design and implement solutions to optimise the costs and rate of infrastructure improvements.

Research necessary to achieve this goal:

- New integrated concepts for water distribution and re-use
- Smart asset management strategies **software**
- Technologies** and **analytical methods** to assess the condition and remaining life of assets
- Better understanding of deteriorating and disturbing processes
- Advanced **technologies** to maintain, replace and renew existing assets (without digging)

R5: Establishment of an enabling framework

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Main goals:

To break the four major barriers for cross cutting issues impeding the deployment of integrated water solutions: compliance with regulations and directives, public and political acceptance, financing of infrastructure & water value pricing.

What is needed to achieve this goal

- Trends in economic globalisation & its impact on water systems issues
- Trends in climatic changes and their potential impact on the availability of quality water for all communities and the adverse effects of extreme events
- Major driving forces governing political decisions and legal compliance
- Overall expectations of every community of users in terms of availability and quality of water, environmental impact, affordability and economics provision

Pilot programmes



A pilot is an **organizational structure** that embraces:

- The whole conception**
- Feasibility**
- Prototype development**
- Piloting and deployment of cases.**

.....that brings together consortia of...

Researchers

Applied scientists

Utilities

Municipalities

Supply chain stakeholders

Technologists



Financial Engineering

Generic and Enabling Research and Technologies (RTD)

- Grants & subsidies:

National research funds & bilateral EU - 3rd countries funds, FP7, EUREKA Cluster WATEAU, ERA-NET+, 'Regions of knowledge'

- Risk sharing support:

EIB/FP7 RSFF (Risk Sharing Finance Facility)

Implementation Cases

- Public-Private partnerships (Private co-investment)

- Structural/Regional/Cohesion funds

- Debt financing:

EIF (Venture Capital Funds)

EIB (project finance model, corporate finance model)

Natl banks guaranteed by EIB



Thank you for your attention