Development and application of integrated technological and management solutions for wastewater treatment and efficient reuse in agriculture tailored to the needs of Mediterranean African Countries: the MADFORWATER project

Background

Mediterranean African Countries (MACs) face a relevant water crisis, due to low water availability per capita, insufficient rate of wastewater treatment, overexploitation of renewable water resources, high demand of water for agriculture and non-optimized irrigation practices. In the next decades, population and economic growth combined with climate change will make the situation even more dramatic, unless significant and rapid actions are taken. In response to this crisis, the general goal of the MADFORWATER project is developing integrated technological and management solutions to boost wastewater treatment and treated wastewater efficient reuse for irrigation in selected hydrological basins in Egypt, Morocco and Tunisia.

Aims of MADFORWATER

General goal

to develop integrated technological and management solutions to boost wastewater treatment, treated wastewater efficient reuse in selected hydrological basins in Egypt, Morocco and Tunisia

Specific goals

• improved analysis of water vulnerabilities in Egypt, Morocco and Tunisia
• development of technologies for wastewater treatment and agricultural reuse
• development of integrated water & land management strategies
• increased capacity building in relation to water management
• promotion of business opportunities for water & irrigation enterprises

The MADFORWATER concept

➢ Madforwater is based on 2 pillars: water supply (wastewater treatment) and water demand (irrigation)
➢ Transversal key concepts:
   ✓ adaptation to the local conditions of Egypt, Morocco and Tunisia
   ✓ integration (i) within each pillar, between technologies, water management strategies and economic instruments; (ii) transversally, between wastewater treatment and wastewater reuse for irrigation

The project’s technologies

<table>
<thead>
<tr>
<th>Wastewater treatment technologies</th>
<th>Irrigation technologies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canalized lagoon with nitrification/denitrification capacity</td>
<td>Phenolic compounds adsorption + anaerobic digestion</td>
</tr>
<tr>
<td>Nitrifying trickling filters</td>
<td>Micro-sprinkler and calibrated nozzle adapted to treated WW</td>
</tr>
<tr>
<td>Constructed wetlands with plant growth promoting bacteria</td>
<td>Aerobic sequenced batch reactor</td>
</tr>
<tr>
<td>Enzymatic degradation of emerging pollutants, dyes and fungicides</td>
<td>Granulated sludge bioreactor</td>
</tr>
<tr>
<td>Catalytic disinfection beds activated by solar UV light</td>
<td>Flotation + Moving Bed Biological Reactor (Integrated)</td>
</tr>
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<td>Dyes adsorption with innovative resins</td>
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The project’s strategy

➢ Analytical phase → evaluation of the water vulnerabilities in the 3 target countries
➢ Technological phase → lab-scale development and adaptation of technologies; implementation of the best technologies in 4 demonstrator plants of wastewater treatment and agricultural reuse
➢ Implementation phase → decision support tools, basin-scale water management strategies, policy recommendations, capacity building, industrial exploitation

The MADFORWATER pilot plants

➢ The most promising technologies are being scaled-up and validated by means of 4 pilot plants. Each pilot integrates wastewater treatment and treated wastewater reuse for irrigation. The wastewater flow-rate varies between 10 and 250 m³/d.


The MADFORWATER consortium

University
Research Institute
SME
International Organiz.
Pilot plant

www.madforwater.eu

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