DEPURANAT : Natural wastewater treatment systems for small communities

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The **DEPURANAT** Project, financed by European FEDER funds, focused on wastewater treatment for productive purpose in the rural and natural environments of the Atlantic Space, thanks to **natural treatment or low energy consuming systems**.

A consortium made up of **ITC** - **Instituto Tecnologico de Canarias**, project leader, University of Minho - Portugal, " **CENTA - Centro de Nuevas Tecnologías del Agua**" - Spain and of a certain number of Canarian and Portuguese municipalities as well as of IOWater **- International Office for Water** - France, has been working for 3 years on the building and operation of such facilities.

6 treatment plants, already equipped with such technologies in Spain and Portugal, and 6 others, especially built to use these treatment principles, were followed up to :
* **draw up technical guides** to help the project contractors build their wastewater treatment plants according to the code of practice, while taking into account the diversity of the natural wastewater treatment techniques now available ;
* **work out decision-making supporting methods** to select the best techniques according to the criteria which the building operator and the municipality are facing in the field.
For this purpose, IOWater designed an expert system to help selecting technologies according to the characteristics of the effluents to be treated and of the site chosen for their building.
This tool was enriched with the results obtained on the pilot units in order to be close to field realities ;
* **develop by-products** (sludge, organic matter, treated wastewater, etc.) to focus on the best integration of the plant from a social and environmental viewpoint, landscape considerations included ;
* **build the potential market for such techniques in the Atlantic Arc**, taking into account the economic advantages and environmental costs (in accordance with the European Framework Directive), but also the "relation" which is built around such sites with the surrounding population (water classes for the children, market-gardening products, floral products, etc.) ;
* **develop training tools** for formalizing true engineering on natural wastewater treatment, thanks to the professional support which will result from DEPURANAT.

Not very expensive and simple to install, these decentralized systems will contribute to improve water treatment and will support sustainable economic and financial development in rural areas.
Thanks to these systems, DEPURANAT aims at promoting the use, for decorative or handicraft purposes, of quality products resulting from water treatment, such as aquatic plants.

In the long term, these new activities will enable these areas to develop traditional agriculture and rural tourism. It concerns little populated rural areas, a characteristic of the Atlantic Space, where the lack of wastewater treatment systems means discharging the effluents in neighboring natural environments, thus leading to non-point pollution in areas with great ecological value.

DEPURANAT shows that there are sustainable wastewater management systems, which consist in storing the locally collected water, in treating it on the spot in small decentralized systems (lagooning, filtering garden, planted filter, infiltration bed, sand percolation, etc.), and in reusing the obtained by-products. A catalogue of the pilot systems used in Spain and Portugal has been established.

CENTA and IOWater provide technical support for the development of know-how after construction and during operation for better making known these often forgotten techniques, which are better integrated into the environment, especially for a number of population-equivalents ranging from 100 to 500, which is the case of many building lots.

In the continuity of DEPURANAT, CENTA organized, from 11 to 15 November 2007 in Seville, SMALLWAT, an International Congress dedicated to wastewater treatment in small communities.