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Hi-tech and sustainable agriculture against soil degradation

A new European project LIFE, coordinated by the University of Bologna, aims to create an innovative system of irrigation management can cope salinization in agro-ecosystems of Mediterranean wetlands

Wireless sensors that detect moisture and soil salinity by providing valuable information for irrigation management. Agriculture becomes hi-tech and sustainable thanks to Agrowetlands, the new European project coordinated by the University of Bologna.

The project, co-funded by the LIFE program 2014-2020 (LIFE15 ENV / IT / 000423 SMART WATER AND SOIL Salinity MANAGEMENT IN AGRO-WETLANDS), aims to create an innovative and user-friendly system for proper irrigation management in agro-ecosystems of Mediterranean wetlands, environments often put at risk by the problem of salinization. With a careless irrigation, the salts present in water accumulating in the upper layers of the soil undermine the growth of most plants: a serious problem of soil degradation that can lead, in extreme cases, even to desertification .

To cope this phenomenon, Agrowetlands II relies on precision agriculture, fielding an innovative system of irrigation management that guarantees the preservation of the quality of soil and water, maintain productivity, the protection of biodiversity, objectives the EU Soil Thematic Strategy, the EU Water Framework Directive and the EU Strategy on Adaptation to Climate Change.

To test the new technology will be some farms of the cooperative Agrisfera, in Ravenna, a few kilometers from the Adriatic coast, between the mouths of the Rhine and Lamone: a land reclaimed during the 60s and is now suffering from high salinization, to causes of different origin. Using information captured by a network of wireless sensors to monitor humidity and salinity of the soil, a Decision Support System consists of ad hoc companies will provide indications for proper and effective management of irrigation. The same system will be replicated at the Comunidad de Carrizales, other Mediterranean agricultural area at Elche-Alicante, in southern Spain, where the soil is affected by salinisation problems.

The Agrowetlands II project is coordinated by the University of Bologna with the Department of Agriculture and the Department of Civil Engineering, Chemical, Environmental and Materials. The other partners of the project, in addition to agricultural cooperative Agrisfera are Onfield Smart Vision Villa Poma (Mantova), a manufacturer of technologically advanced equipment for the agricultural sector, and the Innovació i Recerca Industrial i Sostenible of Barcelona (Spain), a R&D company, specializing in process engineering.



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The kick off meeting of the project was held in Bologna, at the Palazzina della Viola, on 22th September. A second launch was held in Brussels, October 14th, at the headquarters of the Executive Agency for Small and Medium-sized Enterprises with the participation of leaders of all eight EU funded LIFE projects on the theme ENVIRONMENT-Resource Efficiency / Soil.