

DEMETER – Helping farmers to improve irrigation with reduced water and energy consumption

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by Martin Klopfer, Pilot Activities coordinator, and Gráinne Dilleen, Communication and Dissemination coordinator, for the DEMETER project



With the impact of climate change being felt by farmers across the EU, the need for irrigation has become an increasing issue. Offering solutions based on open standards allows farmers not only to save water and energy, but to choose and combine hardware and software from different providers. This adds a level of long-term investment security.

The Horizon 2020 project [DEMETER](#) supports the digital transformation of Europe's agri-food sector by addressing both challenges. **Twenty real-world pilot projects, grouped into five pilot clusters, are running within DEMETER to demonstrate and evaluate how agricultural innovations and extended capabilities benefit from the interoperability mechanisms.** Cluster 1 focuses on an efficient water management system, improving the consumption of water and energy in irrigated arable crops.

One pilot within this cluster addresses optimised irrigation by improving the automation of the irrigation zones. Running in two irrigation community locations in Spain, the pilot uses interoperable remote-control systems and robust management systems adapted to each particular condition.



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Mr Klopfer holds a degree in Geography, has been working with OGC in various roles since 1997 and [coordinates the pilot activities in DEMETER.](#)



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Pilot site demonstrating rice crop fertilization and irrigation system.

Inputs from both soil sensors and meteorological stations, as well as satellite images, will optimise the irrigation system, resulting in considerable savings of water and energy. In addition, if irrigators need to change components of their system in the future, the interoperability and open-standards mechanisms developed within DEMETER will ensure easier facilitation.

Another pilot focuses on the management and automation of rice and maize irrigation, along with nitrogen zonal fertilisation. Running in sites in Greece and Central Macedonia, the pilot will provide a service for maximising water use efficiency through the deployment of sensor systems and science-based decision making. For example, real-time salinity and water height sensors can automatically control electric water input valves for irrigation and water outputs valves for drainage. This pilot will result in water quality and quantity optimisation and nitrogen fertilisation savings, decreasing the carbon and environmental footprint of both crops.

Achieving greater efficiencies in water and energy savings, whilst safeguarding the farmer's investments, are one example how standards-based and interoperable technologies developed within DEMETER help to tackle climate change.



Smart irrigation sensor at pilot site measuring salinity and water height.



For more information
www.h2020-demeter.eu