FONDAZIONE BRUNO KESSLER
MAGAZINE

NEW TECHNOLOGIES FOR SUSTAINABILITY IN AGRICULTURE

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Fondazione Bruno Kessler coordinates the SAPIENCE project. The first experimental installations on the pilot sites, dedicated to the production of grapes in Trentino and agricultural produce in Emilia Romagna, are ready.

Incentivizing sustainable practices in agriculture thanks to the use of new technologies. This is the aim of the **SAPIENCE** project coordinated by Trento-based **Fondazione Bruno Kessler** and funded by the **European EIT Climate** KIC program.

The first experimental installations on the pilot sites have been already set up. Dedicated to the production of grapes in Trentino and to agricultural produce in Emilia Romagna, they are aimed at the efficient use of irrigation water.

In particular, thanks to a capillary monitoring system developed in collaboration with the newly established FBK spin-off **TESSA Agritech** srl, it will be possible to determine exactly how much water to use for crops based on environmental conditions through sensors and IoT (Internet of things) technologies, wireless communication networks (LPWAN), data collection platforms and artificial intelligence solutions. Through a system based on blockchain technology that will be connected to the sensors, it will also be possible to work out in detail the savings obtained and distribute incentives to the most virtuous farmers.

In addition to **Fondazione Bruno Kessler**, which coordinates the work with **Raffaele Giaffreda**, and **TESSA Agritech** srl, which follows the installations, other organizations participate in SAPIENCE, investing their time and resources in the innovation of the project. These are in particular the partners engaged in the experimental part: in Trentino, the **Giuliano Preghenella winery**, the **Roveré della Luna winemaking cooperative** and the **Roveré della Luna irrigation consortium,** will provide applications for the reduction of vineyard irrigation water; in Emilia Romagna, a number of members of **Consorzio Agribologna** will support other use cases in the agricultural produce industry.

“With the SAPIENCE project” Raffaele Giaffreda explained, “Fondazione Bruno Kessler literally fielded its advanced IoT technologies skills for the monitoring of production cycles and precision agriculture. The project was prompted by European directives and the effects of climate change which are generating increasing attention to the issue of sustainability in agricultural practices. Irrigation in particular is among the most demanding in terms of the use of natural resources. Besides for the environment, reducing the amount of water needed for irrigation can also be beneficial for crops: in many cases, it has been shown that it even helps obtain better quality crops, for example in the case of grapes, and to reduce waste in the vegetable sector. The most innovative component of the project is certainly the incentivization of virtuous agricultural practices: SAPIENCE plans to monitor individual contributions to the overall cost savings of an irrigation consortium, rewarding proportionally the farmers who have contributed the most to the overall savings. This reinvestment of part of the benefits obtained by the entity that controls irrigation, in fact prompts further actions that promote behavioral change. A model that could be applied in the future even outside the context of irrigation”.

Find out more at https://sapience-it.fbk.eu/

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