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# Irristrat<sup>TM</sup> - A complete decision support system for irrigation management

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## Abstract

In the last decade of the 20th century, agriculture production in Portugal went through a major modernization, in particular with the development of the irrigated crops sector. Widespread adoption of drip irrigation and automatic control lead to significant increases in yield due to greater irrigation uniformity and efficiency in the use of water, as well as to a reduction in operation costs. After the second half of the first decade of the new millennium, with better irrigation infrastructures and a great pressure to increase competitiveness through higher yields, consistency and quality of products, Portuguese farmers turned to the adoption of decision support systems, that would complement empirical practices such as the use of historical references and field observations. Agricultural policies and incentives to usage of more efficient and sustainable production practices, promoted the access to new decision support technologies to a great number of farmers and allowed Farmers Organizations to add value to the relationship with their associates by becoming the support vehicle in the process. At this stage, Hidrosoph started developing a digital platform designed to deliver decision support information for irrigation management, that would be simple to use, to potentiate adoption by the ones that take decisions at the field level and at the same time integrated and powerful, without being conditioned by solutions of sensor manufacturers that could be many times generalist. The result was the platform Irristrat<sup>TM</sup>, a complete system integrating Irristrat<sup>TM</sup>19 for operational management, Irristrat<sup>TM</sup> Mobile for greater access mobility and Irristrat<sup>TM</sup> BI for data exploration and analysis. Today, Irristrat<sup>TM</sup> continues to be an advanced and unique smart irrigation tool, accessible from anywhere with an Internet connection, that combines all information collected in the field by sensors, images or farmer observations, Sentinel 2 satellite imagery processed data and advanced modeling to provide real time decision support for irrigation management.

**Keywords:** Irrigation, Smart Irrigation, Irrigation Management, Decision Support System, Web App

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