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Monitoring and data collection of agricultural water uses in Italy to face water scarcity: approach and tools

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According to European approach (art. 9 WFD 2000/60/EC), the collection of data relating to the quantification of water abstraction represents an important phase to promote efficiency in the use of water resources. Through the collection and subsequent study of the data provided, in fact, it is possible to apply a water pricing policy, based on the volumes currently used, to cope environmental sustainability and agricultural resilience to climate change, in a context of water scarcity.

In Italy, for agricultural sector, guidelines to collect and monitoring data are in force at national scale and detailed methodologies are applied at regional scale. A WebGIS platform called SIGRIAN (National Information System for Water Management in Agriculture (<https://sigrian.crea.gov.it/sigrian/>)), managed by CREA- Research Centre for Agricultural Policies and Bio-economy and realized in collaboration with Italian Regions, is adopted as national reference database for the collection and share of data resulting from the monitoring of water volumes for irrigation.

SIGRIAN also fits in the logic of Integrated Water Management (IWRM) approach. In order to coordinate the development and management of water and related resources, this platform is setup to link itself with Google satellites and Copernicus programme in order to obtain and process satellite information and earth observation data. In addition, SIGRIAN website (<https://sigrian.crea.gov.it/index.php/cosesigrian/>) provides an OPEN DATA section, (in this section is possible to use a WMS (Web Map Service) Enquiry service and a WFS (Web Feature Service) Service, both related to the borders of authorities irrigation.

All data collected and monitored in this system are useful to support planning, programming and management processes of policy making and enforcement, such as CAP common indicators, water pricing based on water uses, monitoring and evaluation of investment programs, support economic analysis for Agricultural sector in the context of the Water framework directive.

Otherwise, SIGRIAN data can be useful to support the definition and application of Sustainability standards related to water use in agriculture through defining reference parameters for territories that uses water for irrigation in a sustainable way and in a multidisciplinary approach.

Keyword: SIGRIAN, irrigation volumes, sustainability standards, open data, monitoring, resilience.