



UNIVERSITÀ
DEGLI STUDI
DI PADOVA

HORIZON EUROPE
PROJECTS FUNDED AT THE UNIVERSITY OF PADOVA

REWATERING - REalistic WATER budgetING in protected agriculture

Protected agriculture makes use of technology to create an optimal environment for crops growth. In particular, protected agriculture makes use of covers to shield crops from adverse meteorological events including storms, droughts, temperature extremes and strong winds. However, these controls inherently disrupt the water budget terms currently accounted for in hydrological modelling (runoff, evapotranspiration, soil moisture storage, infiltration, etc...). For the first time, the project REalistic WATER budgetING in protected agriculture (REWATERING) will deliver and validate a methodology for catchment-scale models (i.e., CATHY) to explicitly account for the role of protected agriculture on water quantity and quality. REWATERING will also unprecedentedly monitor water quality in a stream draining a small catchment mainly used for protected agriculture by means of high-resolution mass spectrometry.

I will carry out REWATERING in a globally recognised research group for hydrological modelling. Overall, the host university will be the perfect interdisciplinary hub to accomplish the proposed research because it will provide internal collaborations with excellent academics in hydrology, agriculture and environmental chemistry. Protected agriculture is a growing reality worldwide, currently covering 15% of the agricultural lands, and often occupying entire hydrological catchments. The socially relevant and scientifically innovative interdisciplinary activities proposed in this research are urged to expand catchment-scale hydrological models to predict short- and long-term water quantity and quality resulting from water management characteristic of protected agriculture.

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