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Irrigation for a resilient and sustainable food-energy-water nexus: science, technology and innovation – Short summary

It was an interesting meeting with a lot of intriguing presentations. Leonor, Fatima, Daniele and I tried to do the best for the success of the session.

Active presentations in the session were 31 and, among them, 24 were uploaded to be displayed. The number of active participants during the session was 65. To all the corresponding authors having submission with displays was requested to briefly present highlights and/or major results. Following the author presentation, a brief discussion was made with questions posted in the chat. However, the time assigned to the presentation and the discussion was in some cases too short; to write the answers required some time to the presenter and attendants waited a few minutes to see the answer. Probably, it should have been better to give more time for the session or to reduce the number of presentations. I also think that presentation in streaming should have been more successful.

At the end of the session, after thanking the participants, the conveners summarized the following outcomes of a sure interest in the future of irrigation.

Research activities should go on with the aim to improve the resilience of productive systems at different spatial scales, mainly when water and soil are limiting factors. Among other activities, at the farm level, it is necessary to transfer, into practical applications, the mature technologies, already existing, and characterized by a TRL=7. It is also important to improve the estimation of crop transpiration/crop water requirement, even considering the possibility to apply water deficit conditions during specific phenological stages of crop growth.

Research activities must continue on reducing the cost of technology aimed at monitoring soil and plant water status, on improving the quality of data acquired from the sensors, as well as on integrating the acquired data into easy-to-use Decision Support Systems.

At higher spatial levels (large farms, irrigation districts) the research should assess the high potential of already available remotely sensed data, mainly referring to those platforms acquiring frequently high-resolution data.

Moreover, improving the integration of weather forecast into agro-hydrological models can allow the elaboration in real-time of soil and plant water status, and improving the estimation of irrigation scheduling parameters.

I hope that after the “surreal period” we are living, we will continue to work with renovated enthusiasm, to achieve these and much more objectives!

Thank you again to all the authors and to who took place in the session, with the hope to continue working for EGU and to meet in Wien next year!

Giuseppe Provenzano, co-convener