



OPERA

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OPERA

Operationalizing the increase of water use efficiency and resilience in irrigation



www.waterjpi.eu



Focus

- ▶ Challenge-1) Increasing the efficiency and resilience of water uses
 - ▶ Sub-topic-1.a. Efficiency issues include the development of:
 - i. Innovative water use systems and practices, including precision irrigation technologies (e.g. models, sensors, ICT);
 - ▶ (Sub-topic-1.b. Resilience to climatic variability)



Consortium



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Work Packages

WP1 - Identifying sector needs to increase resource use efficiency

lead: Evenor Tech, Spain

WP4 - Conceptualization of practical service models for irrigation

lead: CREA, Italy

WP2 - Forecasting water availability and critical water demand

lead: INRA – EMMAH, France

WP3 - Guidance for optimal irrigation water strategies (case studies)

lead: ITP, Poland

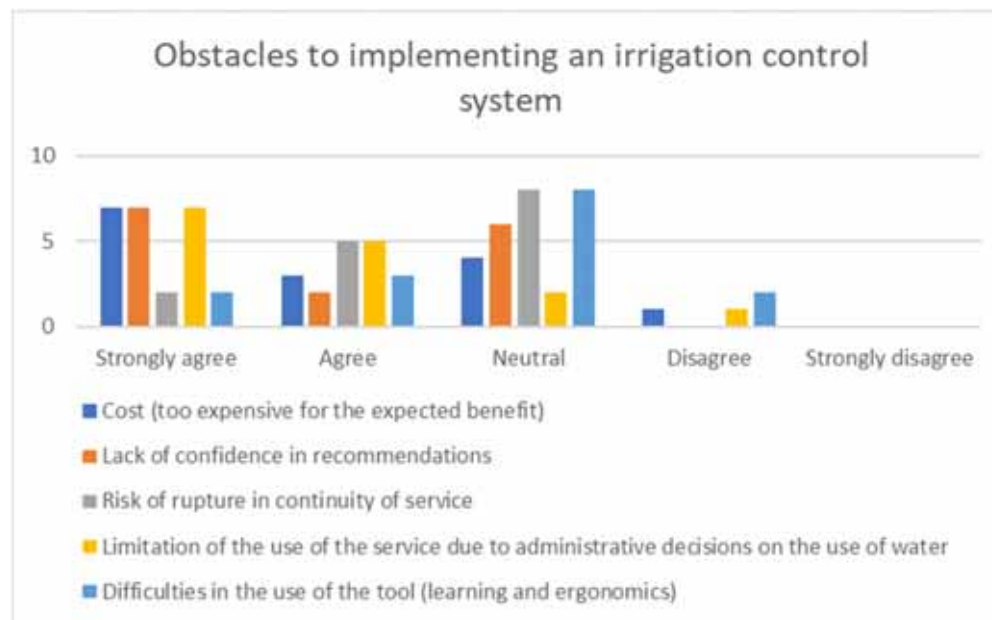
WP5 - Project management and dissemination

lead: WENR, The Netherlands



Progress (1)

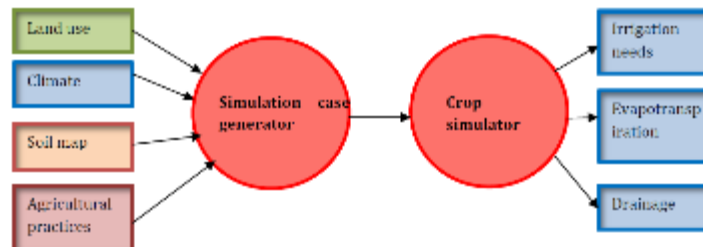
- ▶ WP1 & WP4 - First round of workshops/interviews finished (second round on-going)
- ▶ D1.1 - Assessment of user requirements of the sector



Progress (2a)

- ▶ WP2 & WP3
 - ▶ (Concept) description of methods (WP2)
 - ▶ Concept description of case studies (WP3)
- ▶ D2.1 - Portfolio of methods developed in OPERA to improve irrigation (fact sheets per partner)

of the vegetation development, at high spatial resolution able to address small fields, which are frequent in irrigated area, and rich spectral content useful to characterize plant traits (LAI, fapar, vegetation water content ...).



- Step2 : set up the water estimation modelling framework. The simulator is based on two components: a simulation case generator to address the spatial variability and a crop simulator to represent the crop behaviour and in particular quantity linked to the water cycle.
 - The crop simulators differed from one crop to another. The STICS crop model² (Brisson et al., 1998, Brisson et al., 2008) will be privileged when possible (Irrigated grass in the



Progress (2b)

- ▶ Focus on 3 lines of technologies:
 - ▶ The use of RS data at high spatial and temporal resolution for water demand (case studies Italy, France, Spain)
 - ▶ Improving knowledge using in situ sensors (crop, soil) and upscaling (case studies Poland, Netherlands, Spain)
 - ▶ Ensemble weather forecast and decision making under water uncertainties with farmers (case studies Netherlands, Poland, Spain, France, South Africa)



Progress (3a)



► Impressions from the fields

Group picture mid-term meeting Poland



Field visit kick-off meeting Spain



Progress (3b)

► Sensors

Soil-based sensors



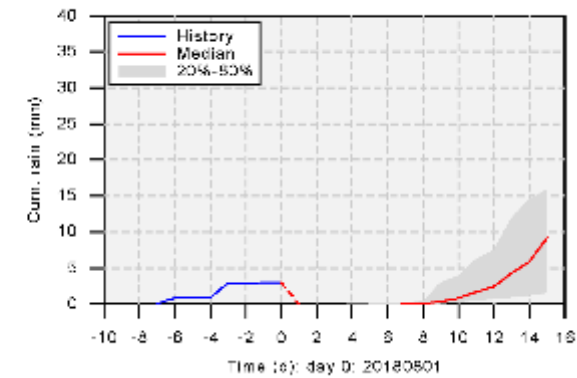
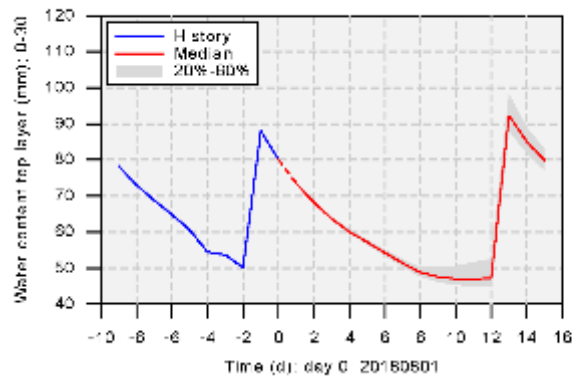
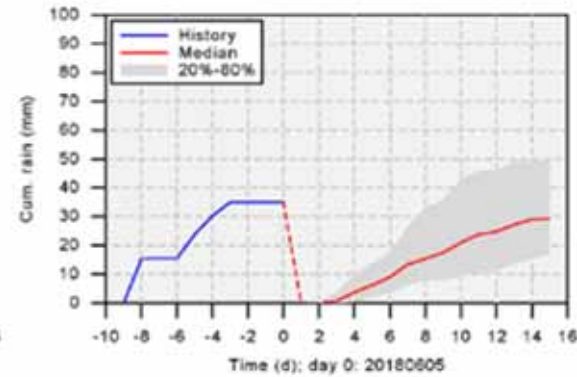
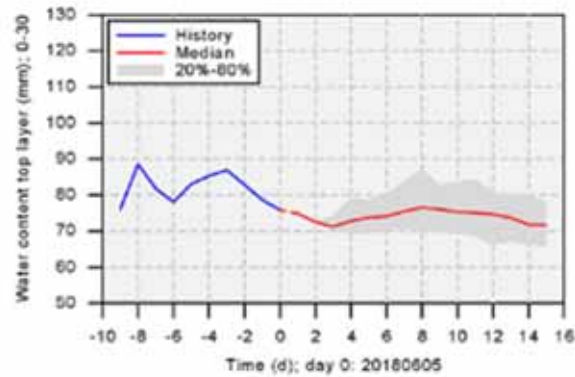
Satellite information



Plant-based sensors



Progress (3c)



Progress (4)

- ▶ WP5 – project management
 - ▶ Consortium Agreement
 - ▶ Kick-off meeting (OPERA; Water JPI)
 - ▶ Mid-term meeting (OPERA; Water JPI)
 - ▶ Regular skype/webex meetings with all partners
 - ▶ Mid-term report (submitted: July, 2018)
 - Note: 30 months duration (finished: September, 2019)



Collaboration, coordination, mobility

- ▶ Good collaboration (regular skype/webex meetings; E-mail)
- ▶ Partners communicate well with coordinators
- ▶ Mobility: not specifically exchange or visits of researchers
 - ▶ (no funds)
 - ▶ all present at project's kick-off and mid-term meeting



Stakeholder/industry engagement

- ▶ Stakeholders present at workshops or interviews (WP1, WP4)



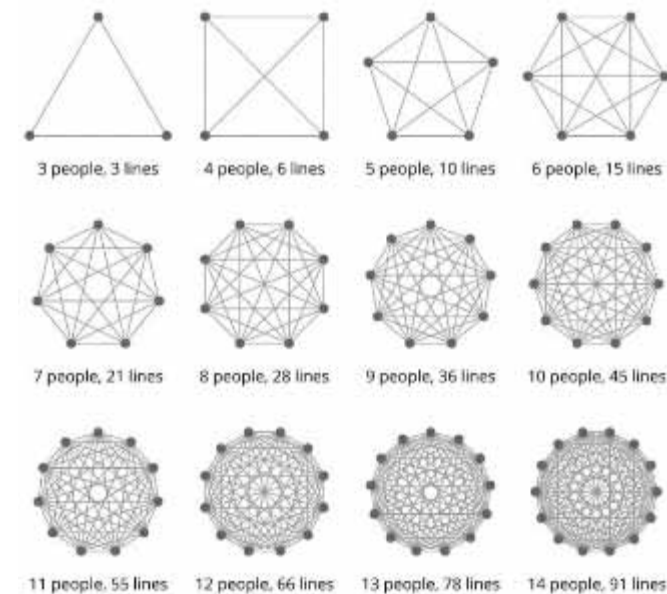
Dissemination

- ▶ Several oral/poster presentations
- ▶ Two scientific publications
 - ▶ Hernandez-Santana et al., 2018. Agric Forest Meteo
 - ▶ Labedzki & Ostrowski, 2018. Atmosphere
- ▶ At the end: “scientific booklet”



Identified problems, risks

- ▶ Different disciplines involved: takes time to understand each others way of working
- ▶ Funding problems 2 Italian partners
- ▶ Delay in funding: Spain, South Africa
- ▶ (NL: unexpected VAT)



Summary

- ▶ Progress conform proposal
- ▶ WP1 & WP4: stakeholder involvement
- ▶ WP2 & WP3: methods development and case studies
- ▶ September 2019: finish of project



Farm = airport



Thank you

Acknowledgement

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Any comments?



