



Contribution ID: 49

Type: **Poster presentation**

WRI - A climate service for seasonal and weekly predictions of agricultural irrigation needs

Water management is a crucial issue in Mediterranean countries, especially in summer, when precipitation is at its climatological minimum and water resources are needed by economic activities and civil use. This conflict is expected to increase, according to future climate change impact studies, as more frequent and intense drought periods will likely occur. This will bring remarkable effects on agriculture because of losses in terms of income and yield to farmers. To address this adaptation issue, stronger and innovative technical support is needed by irrigation water management authorities (e.g. water procurement and allocation agencies). Climate services, based on longer time scales than standard weather services forecasts, are available and can be applied to improve irrigation water use and reduce related energy demand.

On this regard, the climate service Water Requirements for Irrigation (WRI), developed within the CLARA project, addresses these needs by providing, on a GIS platform, seasonal and 7 day forecasts of irrigation needs for the actual crops in the fields. WRI foresees the use of different technological tools and data: I. early crop classification maps obtained from satellite data; II. downscaled seasonal forecasts combined with local weather and climate data; III. 7-day numerical forecasts and IV. technical data and soil map of study areas.

The strength of WRI is that early seasonal irrigation forecasts make water managers aware of the expected seasonal demand anomaly allowing them to manage the irrigation demand at mid-term. Repeated forecasts during irrigation season can help them in fine tuning water procurement and distribution to farming districts in order to better set up supply and distribution of water to irrigation districts.

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Track Classification: UEF2020