

Irrigation decision support systems for climate change adaptation

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Climate change is expected to further stress the water resources of the Mediterranean countries, having a strong impact on irrigation, which is the predominant water consumer in the region. Irrigation decision support systems could contribute to climate change adaptation by safeguarding agricultural production and developing water saving irrigation schedules. More efficient irrigation could also help farmers to offset the increasing cost of irrigation water, resulting from new water pricing policies required by the The European Union's Water Framework Directive. In response to the above, the FP7 ENORASIS project has developed an integrated irrigation management decision support platform for farmers and water management organizations that could save water and increase agricultural productivity. The system includes high-resolution, ensemble weather forecasting (WRF), a GIS widget to locate fields and sensors and a decision support and database management software package to optimize irrigation schedules. The field component includes wireless, solar-powered soil moisture sensors, small weather stations, and remotely controlled irrigation valves. A mobile App and a web-package are providing user-friendly interfaces for farmers, water companies and environmental consultants. The platform is currently being tested at a large citrus production farm in Cyprus (Figure 1). The first season of measurements indicate that the ENORASIS system could serve as an important tool for reducing on-farm irrigation water use.



Figure 1. The ENORASIS system at a citrus production farm in Cyprus