

The DIANA Case Studies...



The case of Bembézar MD in Spain....

Interview with Elena Navarro, responsible of DIANA project; Pedro Parias, responsible of Feragua - Association of Water Users Associations of Andalucía and Luciano Mateos, external scientific advisor

1. What are the main "pains" that your organisation is facing when implementing the water management activities?

Our pilot area is located in the mid Guadalquivir valley in the south of Spain. This region is well known for its agricultural productivity and its efforts for improving efficiency of resources. These efforts included great investment in modernizing irrigation systems in most Water Users Association of the territory. However, Andalucía is characterized by Mediterranean weather with recurrent draught periods. In the last 40 years, irrigation water allocation was limited in 30 irrigation seasons with severe restrictions in 10 of them. Managing this is a complicated task for the different water management levels, but particularly for agriculture, the main economic activity in the region.

Bembézar Margen Derecha pilot area has 12000 ha divided into sectors each of them supplied by a pumping station. Pressurized irrigation reaches all farmers on demand. Water is measured at the farm hydrants using propeller-type flowmeters and remote-control tools are more and more used. With on-site reading of the water counters, the operation staff need to visit all hydrants at least three times per year in order to charge water use per volume. Remote control is a significant improvement because reduces the number of field visits, allows recording daily water use and allows distinguishing between peak and valley energy price periods of electricity consumption. It is a traditional citrus-producing area (citrus orchards occupy more than 60% of the surface) and the tendency is to increase the area of woody crops.

Water saving awareness is rising up every year in the scheme from the farmers to the River Basin Authorities: the collective irrigation systems are under continuous modernization and on-farm equipment is the most advanced in the irrigation market. All the sectors are involved in the process, creating each day more connection between research organizations, users and specialized enterprises. However, climate uncertainty forces to be prepared for future water shortages.

2. What are the main benefits that you envisage from DIANA solution?

In drought periods, the water allocated for irrigation by the River Basin Authority will decrease considerably, below the crop water requirements. In normal years the allocation could be around 6000 m³/ha while in years of shortage this can be reduced to 3000-3500 m³/ha. Therefore, water managers need water control methods substituting traditional inefficient methods (manual on-place reading of water counters).

The boom of satellites and remote sensing tools opens new avenues that DIANA can profit of to detect water over use.

FERAGUA represents more than 100 Water Users Associations and mediates between individual WUAs and the basin water authority. If proper tools that offer quality, transparent and measurable products for improving water management, as DIANA are further used by Water Management Authorities, then their impact can be very positive and extendable to a large number of areas. Concretely managers and farmers can gain a lot of benefits from such tools/services if they allow detecting water deficit in woody crops.