



Inspirational ideas: 'Mission possible' to preserve wetlands in Spain

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Las Tablas de Daimiel wetlands national park (Ciudad Real, Spain) has for centuries been a very important stopover site for migratory birds coming from Africa to Europe. However, for the past 30 years, the intense use of water to irrigate agricultural land in the Upper Guadiana basin has almost dried out the aquifer which usually supplies water to the wetlands. As a result, in 2012 the project 'Misión Posible' was set up to work with farmers in the area using decision support tools to help save water.

Saving water thanks to decision support tools

In 2009 the wetlands almost dried out, causing fires and deterring birds from staying in the area. This critical point led WWF Spain to launch the project *Misión Posible* (literally 'a possible mission') in cooperation with a major private investor. The project aimed to help farmers in the area to save water by providing them with three innovative decision support tools. These tools would help them to decide on how to use the available water resources to their advantage whilst ensuring enough supply to the wetlands.

These tools were:

- **ACUAS:** is a software tool that advises farmers on which crop to grow depending on the amount of legally available water by plotting and defining the suitable crop area in accordance with the crop type selected by the farmer and the annual Water Permit he has for each plot.
- **SITAR:** is a software tool that helps the farmer to optimise his water allocation by providing easy access to official irrigation recommendations based on several parameters (e.g.. the irrigation system efficiency, the phenology of the crop, soil characteristics, etc.). The tool translates this information into irrigation data for the farmer, such as the watering duration in hours/minutes for each crop in a given period. This information is then sent to the farmers by an SMS message.
- **OPTIWINE:** is a methodology that estimates the exact amount of water to apply to vineyards so as to improve grape quality whilst reducing water consumption. These calculations are made taking into account both satellite data and data gathered by sensors (weather, soil and plant data) installed on plots. Farmers can consult the watering recommendations on their phones and technicians are also available to answer their questions directly.

WWF Spain is leading the project and coordinated the development of the tools by SERYSOL (ACUAS), CSIC-Ministry of Innovation and Industry, Spain (SITAR) and ALIARA (OPTIWINE). In addition, the project technicians carried out and supported the assessments with the tools among the local farmers. The collaboration of Daimiel and Manzanares Irrigation Communities in the project was particularly important. Up to another eleven Irrigation Communities have also taken part on the dissemination of the tools in the region.

Applying the tools

All the decision support tools were implemented as user-friendly software packages and used SMS format so that they are easy to use and the information provided is more accessible. In addition, the project ran specific training courses and provided advice to Irrigation Communities, farm cooperatives and individual farmers in the area.

Nearly 300 farmers in the upper Guadiana have been using AQUAS, SITAR and OPTIWINE since 2012. Between 2012 and 2015 this has saved 1.7 hm³ of water (nearly equivalent to 728 Olympic swimming pools) in 8 161 hectares of farmland (approximately the size of Paris). In the period 2016-2017, WWF intends to spread the use of the tools to more farmers by engaging further farm cooperatives and irrigation communities and providing more training and advice.

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