

Success story



EUROPEAN
TERRITORIAL
COOPERATION
PROGRAMME
"GREECE-
BULGARIA 2007-
2013"

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Joint reference strategies for rural activities of reduced inputs'

AGRO_LESS

Reduced input agriculture: mixing satellite imagery with in-situ sensors to decrease the inputs in agriculture resulting in minimizing pollution and the cost of productivity, while providing high-quality agricultural products, mainly asparagus and kiwi.

Located in Northern Greece, in the Kavala Region, the Agricultural Cooperative of Nestos (A.C. Nestos) was founded in 1988 when asparagus was introduced as a new crop species. Kiwi plantations were added to the production in 2004, to diversify production and allow farmers to enter new markets. The cooperative resides on 23,144 sqm of land and serves 70 members.

The challenge

As farming moved away from self-sustaining cycles towards a mass-production model, the quantity of chemicals (fertilizer and pesticides) was continuously raised to increase production yields. On the other hand, the mismanagement of the water resources mainly during the summer months results at loss of water and degradation of the soil ecosystems. Thus, it became apparent that a series of environmental problems emerged in relation to soil quality. In time, the applied chemicals found their way into water courses contaminating human water supplies and ecosystems. The EU Nitrification Directive and the Water Framework Directive require farmers to keep high environmental standards. What's more, production yields are under strain to respond to a growing market demand. Adding to these, austerity measures coupled with nation-wide budget cuts, left cooperatives in need of an improved site-specific crop management.

Despite the obvious benefits of using new technology tools and machinery, farmers were hard to convince to move away from their traditional practices. Few agreed to undergo training. Moreover, due to the high technological cost, EU funding was essential to acquire the high-tech infrastructure. Without such funds and the scientific expertise provided by i-BEC, it may have been impossible to take on such a project. Therefore, financial and social challenges make mass application of low-input agriculture techniques strenuous outside well organized cooperatives. It makes even harder to discuss individual farmer implementation.

The satellite solution

A. C. NESTOS offered parts of its lands for a pilot case study within the Agro_less project (European Territorial Cooperation Programme "Greece-Bulgaria 2007-2013). The EU funded project, coordinated and supported by i-BEC, used Copernicus satellite imagery with in-situ inter-calibrated sensors to set up a telemetric monitoring network for the kiwi and asparagus plantations. During the Agro_less project i-BEC developed protocols on reduced inputs agriculture. Local agronomists have been educated to apply these protocols, and those agronomists have been in charge to advise and support the local farmers regarding this type of management.

With the help of a user friendly dashboard, the cooperative can monitor crop health and control irrigation. Through reduced input operations, the usage of water has been reduced up to 60%, while there had been a much better temporal and spatial distribution of fertilizers and pesticides

#reducedinput