

## **Monitoring and managing carbon inputs and outputs in commercial olive orchards in Greece**

Georgios Psarras, Emmanouil Markakis, Nektarios Kourgialas, Chrysa Sergendani, Nektarios Kavroulakis, and Georgios Koubouris

ELGO DEMETER, Institute for Olive Tree and Subtropical Plants, Chania, Greece (koubouris@nagref-cha.gr, +30 28210 93963)

The LIFE+ OLIVECLIMA project is focused on modifying traditional farmer practices in Greek olive orchards, towards a more cost-effective approach that will facilitate mitigation and/or adaptation to climate change, while at the same time reducing external inputs to the orchard, through the increase of internal carbon recycling and reduction of greenhouse gases emissions. In the early phases of the five-year-long project, the traditional agricultural practices in olive orchards at three Prefectures of Greece (Heraklion, Lasithi and Messinia) were monitored in a total of 120 orchards and the resulting inputs and outputs of carbon and mineral nutrients were measured. Data on practices like harvesting, pruning and weed management were collected. A new set of modified practices was designed for application in half of the orchards, including, among others, return of prunings to the orchard, reuse of olive mill wastewater, modification of orchard flora, application of compost prepared with orchard and olive oil industry residues, etc. The application of the traditional (control) and modified practices will be monitored throughout the project for estimating the inputs and outputs of carbon and nutrients. Preliminary data from the first two years of the project highlight a significant potential for modification of the farm-scale carbon balance and reduction in mineral nutrient inputs on the long run.

With the contribution of the LIFE + financial instrument of the European Union.