

Agricultural interventions for water saving and crop yield improvement, in a Mediterranean area - an experimental design

Giasemi Morianou (1), Nektarios Kourgialas (1,2), George Psarras (2), George Koubouris (2), George Arampatzis (3), George Karatzas (1), and Elisavet Pavlidou (4)

(1) School of Environmental Engineering, Technical University of Crete, Polytechnioupolis, 73100 Chania, Greece, (2) ELGO DEMETER, NAGREF, Institute for Olive Tree, Subtropical Crops and Viticulture, Agrokipio, 73100 Chania, Greece, (3) ELGO DEMETER, NAGREF, Soil and Water Resources Institute, 57400 Sindos, Greece, (4) HYETOS, Navarinou Square, 54622 Thessaloniki, Greece

This work is a part of LIFE+ AGROCLIMAWATER project and the aim is to improve the water efficiency, increase the adaptive capacity of tree corps and save water, in a Mediterranean area, under different climatic conditions and agricultural practices. The experimental design as well as preliminary results at farm and river basin scales are presented in this work. Specifically, ten (10) pilot farms, both organic and conventional ones have been selected in the sub-basin of Platania in western Crete - Greece. These ten pilot farms were selected representing the most typical crops in Platania area (olive trees and citrus trees), as well as the typical soil, landscape and agricultural practices differentiation for each crop (field slope, water availability, soil type, management regime). From the ten pilot farms, eight were olive farms and the rest two citrus. This proportion correspond adequacy to the presentence of olive and citrus crops in the extended area of Platania prefecture. Each of the ten pilot farm has been divided in two parts, the first one will be used as a control part, while the other one as the demonstration part where the interventions will be applied. The action plans for each selected farm are based on the following groups of possible interventions: a) reduction of water evaporation losses from soil surface, b) reduction of transpiration water losses through winter pruning and summer pruning, c) reduction of deep percolation water and nutrient losses, d) reduction of surface runoff, e) measures in order to maximize the efficiency of irrigation and f) rationalization of fertilizers and agrochemicals utilized. Preliminary results indicate that water saving and crop yield can be significantly improved based on the above innervations both at farm and river basin scale.