

FORESTERRA Enhancing FOrest RESearch in the MediTERRAnean through improved coordination and integration



¹ Note: This information could be published in the webpage of FORESTERRA.



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long and wide, with two levels of access by gangways at 0.5 m and 3.5 m height. A hut some meters from the experimental plot allows to easily stock material and devices, to use the flat roof for additional installations and a place to efficiently evaluate current measurements. Both the scaffolding and the hut are supplied with electricity and access to the local area network (LAN). A field laboratory has been equipped to (pre)treat samples (sterile bench, autoclave, fume hood, incubators, drying ovens, fridge, freezer - 20°C, balances, optical microscope, tools etc.).

A device is installed above 300 m² of canopy, that dynamically excludes a defined fraction of precipitation (rain & hail) by extending automated covers, and which allows to re-irrigate part of the excluded water. The system manages a reduction in precipitation by 40 % using temperature-derived functions based on 50-year records of local meteorological data. This results in a scenario of 500 mm annual precipitation corresponding to about 2°C temperature increase, which is in line with climate predictions for the Mediterranean region (Giorni & Mearns, 2002). The reduction is piloted dynamically between 20% and 60% for year 2100 in relation to year 2000. Therein lays the originality of the system, whilst environmental conditions are hardly affected. During leaf development in spring, exclusion of precipitation events is performed at night-time as not to disturb photomorphogenesis. Intercepted precipitations are evacuated to a temporary reservoir. An irrigation (sprinkler) system attached to the metal structure use this water to fine-tune the fraction of excluded precipitation.

A network of different sensors at different levels of the forest (including soil) allows then to regularly measure and record wind speed and direction, atmospheric pressure, precipitation, heated, global radiation, PAR radiation, soil water content, soil matrix potential, soil temperature, soil conductivity, leaf wetness, sap flow, stem diameter, leaf gas exchange, soil respiration, phenology, leaf area index, etc.



SCIENTISTS AND/OR TECHNICIANS IN CHARGE OF THE INFRASTRUCTURE

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