



# DESERT ADAPT

PREPARING DESERTIFICATION AREAS FOR INCREASING CLIMATE CHANGE

## NEWSLETTER

LIFE16 CCA/IT/000011

| Issue 5 | Date: June 30<sup>th</sup> 2018

### MEET THE PARTNERS: L8 – Cab Cor FREGUESIA DE CABEÇA GORDA (PT)



Located 12 kms south of the capital of the Lower Alentejo, it is one of the youngest parishes in the municipality of Beja, Cabeça Gorda stands out for its dynamism and solutions that have locally promoted new development policies that value local resources and the diversification of rural activities.



A Montado system (320 ha) characterizes the majority of the environment.

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### NETWORKING with LIFE MediNet



**Desert –Adapt presented at  
MediNet Participatory Workshop on Gain  
and Losses in Soil Organic Carbon  
Viterbo, Italy 14<sup>o</sup> June 2018**



LIFE-MediNet Report  
**“Soil Carbon data in Cropland and Grassland in  
the Mediterranean Region”**  
visit <http://www.lifemedinet.com>

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# Soil and hydrology studies at IT

During the field activities soils were monitored by SUN with 5TE Decagon portable sensors in order to measure bulk electrical conductivity (EC), in addition to volumetric water content (VWC) and soil temperature. The 5TE determines VWC by measuring the dielectric constant of the media using capacitance/frequency domain technology. The sensor uses a 70 MHz frequency, which minimizes salinity and textural effects, making the 5TE accurate in most soils. The 5TE measures temperature with an onboard thermistor, and electrical conductivity using a stainless steel electrode array.



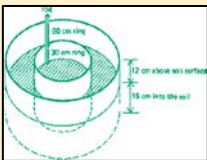
## Insect monitoring in Desert Adapt sites

Butterflies and “flower visiting” Hymenoptera are considered a good bioindicators of habitat fragmentation and pollution, and modification in vegetation structure. The environmental stress and changes can affect richness, abundance, diversity and composition of their communities. Their census is frequently used to estimate terrestrial biodiversity. UNIPA (IT) was in charge of measuring these bioindicators in all the project sites in collaboration with the local experts from ADPM and UNEX



## TIP: measuring infiltration test

“Water Infiltration Capacity” is the velocity or speed at which water enters into the soil. It is usually measured by the depth (in mm) of the water layer that can enter the soil in one hour.



A double ring infiltrometer was used by SUN to measure the infiltration rate in the project areas. The infiltrometer consists of two concentric metal rings which are driven into the soil, a driving plate, an impact absorbing hammer, measuring bridges and measuring rods with floats.

### 1- Installation

- Place the inner down on the ground.
- Put the driving plate on top of the inner ring and use the impact-absorbing hammer to insert the infiltration ring about 5 cm vertically into the soil.
- Place the outer ring around the inner ring and insert into the soil as explained above.
- Place the measuring bridge with measuring rod and float on the inner ring
- Fill the outer ring with water, then the inner ring, to approximately 5 - 10 cm.

### 2- Measuring

- The measuring is taken in the inner ring, by noting the time and the water level as indicated on the measuring rod.
- Determine the drop in the water level during a certain interval. Start with short intervals (for instance 1-2 min) and conclude measuring with a longer interval (20 - 30 min).
- Stop measuring only if the infiltration rate has reached a constant value.

### 3- Calculation

- Calculate the cumulative time and time steps. Determine the infiltration by calculating the water level differences between intervals.
- Calculate the infiltration capacity (mm/min) by dividing for each interval the infiltration by the time step.

