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LIFE THE GREEN LINK: RESTORING DEGRADED AREAS WITH THE COCOON ECOTECHNOLOGY

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The impacts of climate change in the Mediterranean area are becoming increasingly perceptible. Many semi-arid regions are suffering significant declines in water availability. This led to faster desertification and to increase forest fires occurrence. Therefore, implementing adaptation and mitigation measures is needed to reduce the vulnerability of these Mediterranean ecosystems and strengthening their resilience.

The Green Link is a collaborative LIFE project (LIFE15 CCA/ES/000125) that aims to demonstrate the environmental and economic benefits of an innovative tree growing method. This consists of replacing traditional planting techniques with the “Cocoon”, a low-cost and biodegradable device that improves water supply to seedlings during the first months.

To prove the viability of the Cocoon technology and demonstrate its potential, the project has planted a variety of woody species on different soil types located in areas on a climate gradient from semi-dry to extremely dry across the Mediterranean basin and the Canary Islands. As a whole, 7 experimental areas located in Italy, Greece and Spain, covering more than 70 ha and 30 plant species (4 subspecies).

The main expected results of the project are:

1. Demonstrate that the Cocoon technology allows planting woody species in dry climates and poor soils to combat desertification phenomena.
2. Offer a competitive market solution to plant trees without the need of irrigation, using the Cocoon device.
3. Improve long-term soil quality through microorganisms and mycorrhiza facilitation that will enhance the association among roots and soil.
4. Improve ecosystem services, mainly by increasing biodiversity and soil carbon stock over time.

First characterization of the seedlings, planted autumn-winter 2016-17, was conducted in May-June 2017, according to a monitoring protocol. Despite the measurements were previous to the summer drought, important survival differences were detected between controls and Cocoon treatments. Globally, 9% of the seedlings were classified as dead trees, but referring to the controls this percentage increased to 30% while in Cocoons group the mortality ratio was only 3%.