



**COCOON planting technology as a model to enable
the growing of trees in arid conditions in West Bank
and Gaza Strip**

INTRODUCTION:

- **Implemented In partnership with Fanack (as the sponsor) and LLC (as the cocoon inventor).**



- **The Palestinian Territory suffers from fluctuating rainfall and low rainfall. This resulted in a decline in the cultivation of rain-fed fruit trees throughout the Palestinian territories as a result of the scarcity of rainwater and the lack of access to water-related natural resources for supplementary irrigation.**

FOLLOW.... INTRODUCTION:

- **All of this has led to a general deterioration in the Palestinian territories and the expansion of the desert tide in large areas of the land. Nevertheless, the Palestinian farmers are struggling to cultivate these lands using traditional methods of harvesting water to provide water from the rainwater to be used to irrigate these planted trees.**
- **The need for Palestinian farmers to support low-cost irrigation technologies supports the growth of planted crops, Increase the success rate of tree planting and reduces the cost of purchasing water to irrigate these trees.**

THE COCOON TECHNOLOGY: source LLC

The most **effective incubator**
for arid tree planting

Protects and nurtures
from seedling to healthy ecosystem

100% **biodegradable** - COCOON dissolves
into organic substrate for the plant

less water

80-95% **survival rates**

Low maintenance - after planting, NO follow
up irrigation or maintenance

Low-cost - 10 x cheaper than traditional tree
planting.



THE COCOON TECHNOLOGY

- The COCOON is designed to support a seedling through its critical first year. By providing water and shelter while stimulating the seedling to produce a healthy and deep root structure, tapping into the sub-surface water supply within its first year. **(LLC & Fanack)**
- This way, the COCOON produces independent, strong trees which are not reliant on external irrigation and can survive harsh conditions. **(LLC & Fanack)**

HOW IT WORKS: SOURCE LLC



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The Cocoon is filled with **25 liters of water** and buried subsurface with the seedling



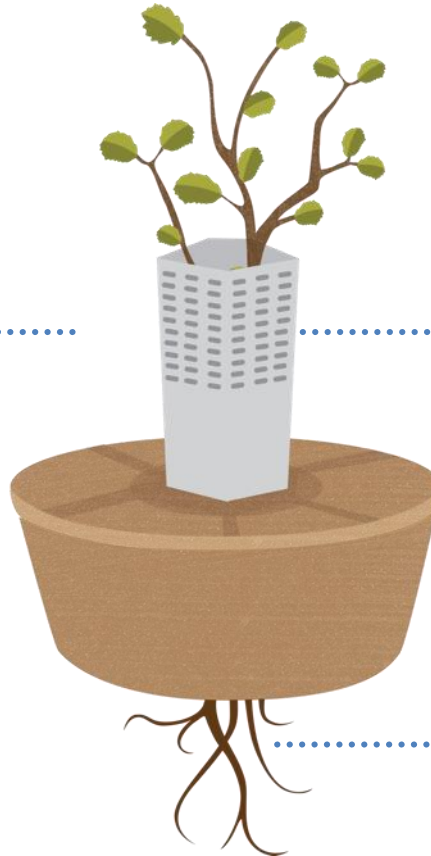
The Cocoon **prevents water evaporation** and **weed growth**



Seedlings are protected from harsh rays, desiccating winds and small animals



Wicks drip feed water straight to the roots, encouraging a **deep, wide root system**



1

You will need

- A Cocoon (reservoir and lid)
- A tree shelter
- A healthy seedling
- Mycorrhizae soil enhancer (if applicable)
- 25 liters of water
- A shovel
- A measuring device
- Sticks or string to mark your Cocoon planting area

2

Selecting your seedling

Make sure your seedling is healthy and no larger than a 4 liter pot. You can always ask your nursery to help you select a suitable seedling.

3

Let's get started!



Dig a hole 55cm in diameter and 25cm deep.
a. Pre-water the hole with 25 liters of water if needed.
b. Make sure the hole is level and free of rocks or sharp objects that may puncture the Cocoon.



Place the Mycorrhizae in the center of the hole



Place the seedling in the center and pack soil around the seedling roots to create a solid mound.



Place the wicks in the slits of the Cocoon and hold the wicks with both hands



Lower the Cocoon over the seedling gently and push down the wicks beside the seedling roots.



Temporarily place the lid on the Cocoon to prevent soil getting in the reservoir.



7 Add extra soil in the center, packing down firmly to fill up the space between the Cocoon edge and the seedling roots. Make sure you can still see where the seedling trunk meets the roots (the root collar)!



8 Remove the lid and fill the Cocoon to the rim with water.



9 Place the lid on the reservoir, tightly closing the Cocoon all the way around.



10 Water the seedling in the center with about one liter of water.



11 Pack soil around the Cocoon for a snug fit and cover the top with about 3cm of soil. Place the tree shelter over the seedling and make sure it is firmly anchored.



12 Be careful not to step on the Cocoon! Mark the Cocoon area with stones or string to help prevent damage.

CONGRATULATIONS!

You have planted a Cocoon tree that needs no follow up irrigation!

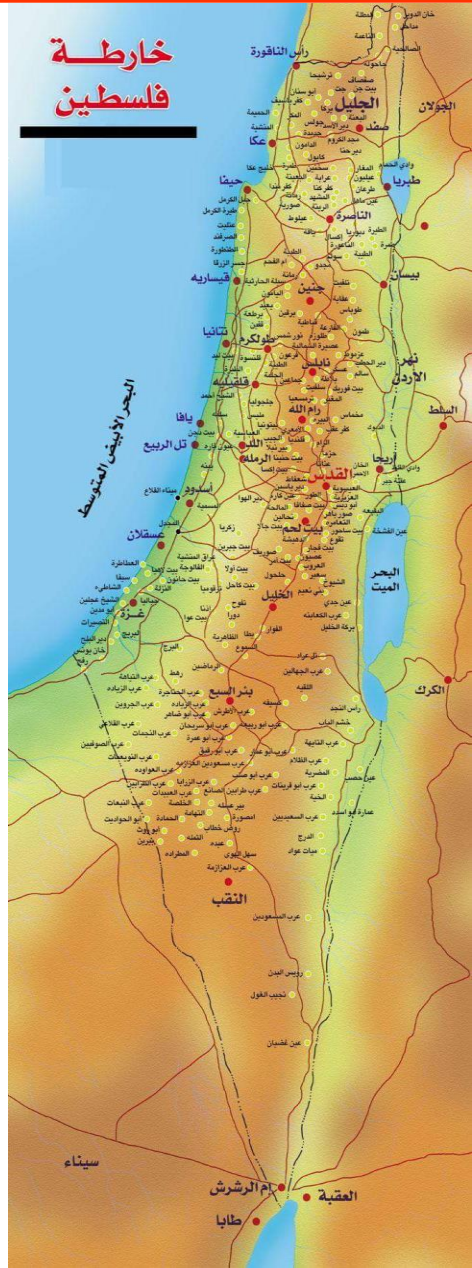
Needs/Problems

West Bank:

- low rainfall.
- declines in the Dead Sea area to less than 100 mm.
- lack of access to water-related natural resources
- Israeli occupation

Gaza Strip:

- On an average annual basis, the area receives about 300 mm of precipitation.
- lack of access to water-related natural resources.
- Cost of Water.
- high salinity of the water.
- Israeli occupation.



Goals/Objectives

The main objectives are:

- To implement a pilot for the planting of trees Palestine using the Cocoon technology.
- To replant olive and other trees on degraded Palestinian lands.
- To support the communities by creating jobs and income generating activities.
- To interest universities to conduct scientific research, for further roll-out .
- To raise awareness about environmental protection.



Procedures/Scope of Work:

- The scope of this pilot is planting 200 trees, olive and almond trees, on the West Bank and 300 olive trees in Gaza Strip.
- The 420 trees planted with the COCOON technology in West Bank and divided over two locations: Wad Al-Reem, Saeer municipality and Wad Ben Saleh, Daheriya municipality.
- The 300 (olive) trees that planted with the COCOON technology in Gaza Strip planted on the Training & Agricultural research Center of UAWC in Gaza, Khan Younes municipality.



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implemented

Planting trees using the cocoon planting Technology:

- The farmers Planted 5 donum of olive trees (120 seedling) in Wad Ben Saleh(Daheriya) using the cocoon planting Technology on 13/3/2017.
- While the other location in Wad Al-Reem (Saeer) was planted with donum of olive and almond trees (300 seedling ,100 olive, 200 almond) in using the cocoon planting Technology on 14/3/2017.

- **Fanack (as the sponsor) and LLC (as the cocoon inventor).**



implemented

- The 300 trees (olive and almond) planting with the COCOON technology in Gaza Strip divided over two locations: the Training & Agricultural research Center of UAWC in Gaza, Khan Younes municipality, and land of the farmer abd elqader Hamdouna in Biet Lahia on 14/3/2017.

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RESULTS:

Several field visits were carried out for the sites of the demonstration and observed:

- Access of water from the cocoons during the first three months after planting (15/6/2017)
- 92% from the trees planted are survival.
- Approximately 8% of the trees planted have died.



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Conclusions

- **Increase the survival rates of seedling planted comparing the traditional planted.**
- **The Cocoon technology is a low cost, water efficient, biodegradable technology that enables the sustainable and scalable plantings of trees.**
- **reducing costs and water use in comparison to traditional practices.**
- **reduce the suffering of irrigation by the water hose or traditional irrigation systems used.**

Recommendation:

Working to support the largest number of farmers who wish to cultivate their lands with fruit trees using COCOON planting technology.



GLOBAL COCOON IMPLEMENTATION

United States

Mexico

Galapagos Islands

Peru

Chile

Spain

Portugal

Italy

Greece

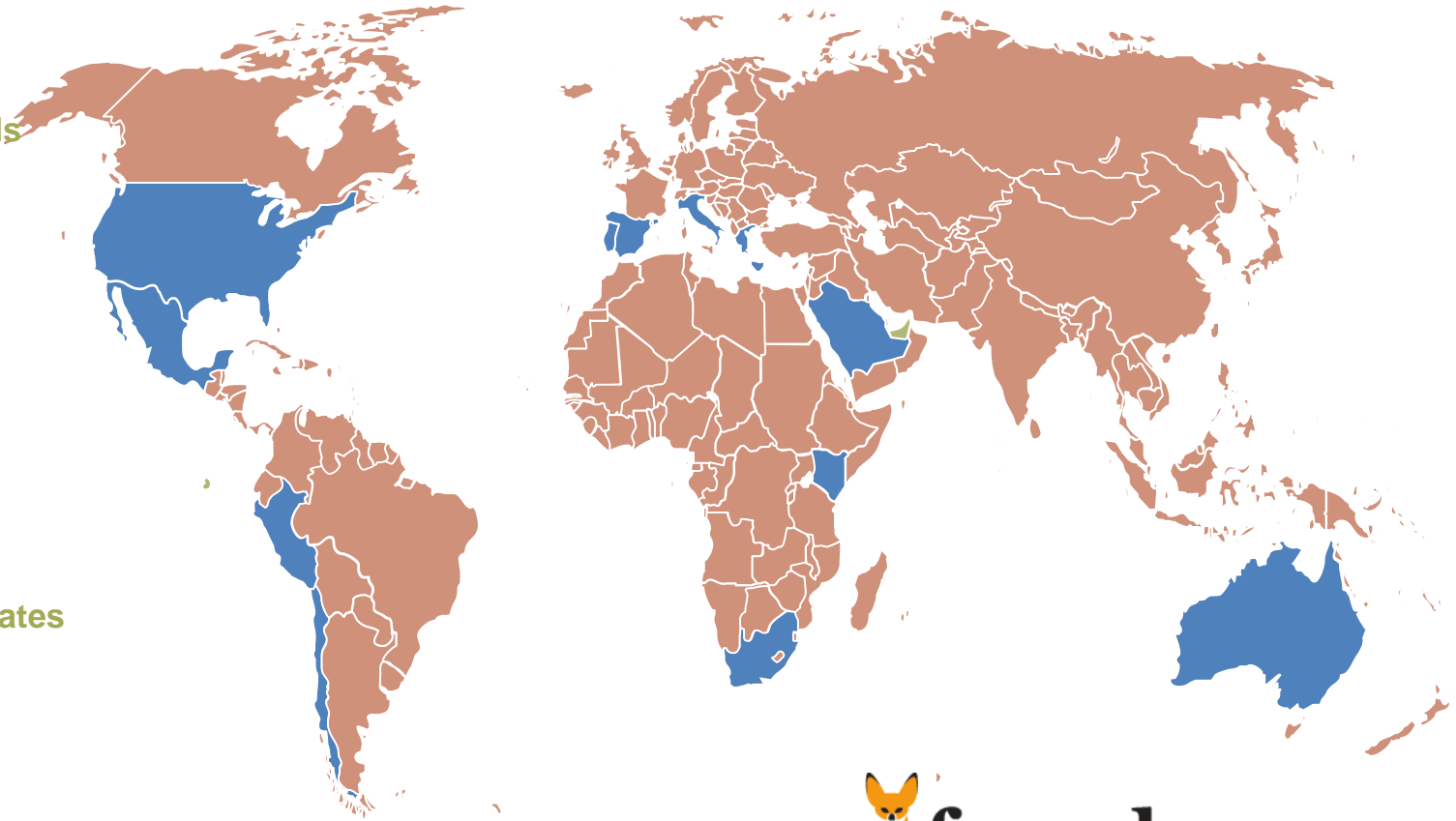
Saudi Arabia

United Arab Emirates

Kenya

South Africa

Australia



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Many Thanks

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