



The Sahara Forest Project uses deserts, saltwater, sunlight and CO₂ to produce food, water and clean energy.

The Sahara Forest Project is a new environmental solution designed to utilize what we have enough of to produce what the world needs more of. The Sahara Forest Project has set out to establish groups of interconnected economic activities in low-lying desert areas around the world. The simple core of the concept is an infrastructure for bringing saltwater inland. Through establishing this new saltwater infrastructure, The Sahara Forest Project will make electricity generation from solar power more efficient. It will at the same time operate smart energy and water efficient saltwater-cooled greenhouses for growing high-value crops in the desert and sequestering CO₂ through revegetation of desert lands.

Saltwater-cooled greenhouses

The saltwater-cooled greenhouses utilize saltwater to provide good year-round growing conditions for high-value vegetables in hot and arid areas. By using saltwater to provide evaporative cooling and humidification, the water requirements for the crops are minimized and yields maximized with a minimal carbon footprint. Results from the Sahara Forest Project pilot operations in Qatar are competitive with leading European greenhouse operations. The freshwater usage is 50% of comparable greenhouses in the Middle East and North Africa.

Solar Technologies

The Sahara Forest Project utilizes solar power technologies to provide power for electrical installations in the facility. Both Photovoltaics (PV) and Concentrated Solar Power (CSP) can be used to provide electricity and heat. Dust arresting from the surrounding vegetation and water for cleaning the solar installations ensure efficient electricity generation.

Revegetation

Desert revegetation is catalyzed by a combination of efficient watering regimes and soil reclamation techniques. The external cultivation areas host both native desert species and water-efficient food and fodder crops. Native species can be utilized as new sources of fodder and bioenergy, or for carbon sequestration and soil conditioning.

Extensions

The Sahara Forest Project works as an enabling technology facility that creates opportunities for a wide range of local businesses to operate alongside it. A few examples are salt extraction, traditional desalination, algae production, halophyte cultivation, mariculture and bioenergy.

The countries we work in: Jordan, and Tunisia

The Sahara Forest Project is currently pursuing business development opportunities in a number of arid countries. SFP is opening the first permanent facility in Jordan. In Tunisia and Australia, SFP is engaged in carrying out Feasibility Studies to map out opportunities for near-term establishment of new facilities.



The Jordan Launch Station



The Sahara Forest Project technologies have been developed through a step-by-step process of studies, data modelling, experiments, pilot operations, R&D programs and value engineering. Now the realization of a facility the size of four football fields is carried out in Aqaba, Jordan. The opening of SFP Launch Station marks the starting point for the realization of large scale SFP operations in Jordan and elsewhere.

The partners behind the Launch Station

The facility is realized with financial support from Norway and the European Union as the two largest donors. The Grieg Foundation and Yara International are other important project partners. USAID has contributed with funding for shipping and inclusion of materials and equipment from the Pilot facility in Qatar. The construction phase started 27th of October 2016. The facility will officially open 7th of September 2017. The total cost of the Launch Station is USD 3.7 million.

A catalyst for green growth

The Sahara Forest Project Launch Station will contain saltwater-cooled greenhouses that will utilize saltwater to provide excellent conditions for production of high-quality vegetables. Photovoltaic panels will provide power for the electrical installations in the facility. Outdoor growing zones will not only contribute yields from various crops but also store CO₂ from the atmosphere into vegetation of barren land. A desalination unit will provide the necessary water for the greenhouse and outdoor vegetation. The facility will further contain modern laboratory and technical facilities allowing for R&D activities.

Multiple purposes

The Sahara Forest Project Launch Station is realized to demonstrate the potential for profitably realizing sustainable growth and horticulture production. The Launch Station is established as a regional power house for innovation and green growth in the desert.

Key facts

- Expected production of 130,000 kg of vegetable crop per year.
- 10.000 liters of fresh water production per day
- Solar Power production from photovoltaic panels
- 3 hectares (equal to the size of 4 football fields)
- 2 greenhouses – a total of 1350 m² of growing area
- 3200 m² outdoor planting space
- Salt ponds for salt production

The future of the Sahara Forest Project in Jordan

The Launch Station is the first step towards the full-scale Sahara Forest Project Jordan Center of 20 hectares, that SFP is currently seeking investors to realize. This full-scale facility will produce premium quality vegetables for the domestic market, as well as for exports.

The Jordan Center will be realized through a 3-step development. Step 1: His Majesty King Abdullah II and HRH Crown Prince Haakon open the Sahara Forest Project Launch Station on September 7th, 2017. Step 2: Constructing an 8 hectares facility. In addition to outdoor vegetation areas and a solar park, it will include a 2 hectares area that will be designated to modern digital hydroponic horticulture. Step 3: Expanding the operations to the full 20 hectares facility.