CIHEAM IAM BARI

Greening the desert for food security and carbon sequestration in Egypt: The example of MARSADEV project



MARSADEV project was operational between February 2014 – March 2017. Funding was provided by the Italian Ministry of Foreign Affairs and the project was implemented by the Ministry of Agriculture of Egypt and the Desert Research Center (DRC) of Marsa Matrouh – Egypt. The CIHEAM – Mediterranean Agronomic Institute of Bari was the executing agency. The Matrouh governorate is home to about 22,000 households with a population of around 500,000 people. Climate is characterized by hot and dry summers and mild winters with a mean annual temperature maximum 25 °C and mean annual rainfall less than 140 mm. Agriculture land covers about 7 % of the whole territory, the rest is desert, drylands, rock outcrops, and abandoned degraded and eroded watersheds (wadis).

Wadi reclamation to increase cultivated area

> Land leveling, widening, soil movement and dyke construction

Heavy machinery is used to create flat areas and divide the wadi in several parcels. The width and length of parcels depends on the wadi's slope but should not be more than 80 m. Care is taken to re-use and distribute equally the fertile topsoil throughout all the newly created parcels.





Wadi Kharrouba in March 2014



Land leveling



Dykes control water flow and surface erosion

> Seedbed preparation for olives, figs, field crops and implementation of supplementary





Field agronomic and water management operations



> Slope management: semicircle terraces for erosion control and income generation





Results

- 13 ha of reclaimed land given to local Bedouin community
- Vegetation cover supports carbon sequestration
- From total water losses to water harvesting up to 50,000 m3 in 2016



Wadi Kharrouba in March 2017

Contact

Pandi Zdruli, Biagio Di Terlizzi, Ivan Virtuosi CIHEAM Mediterranean Agronomic Institute of Bari, Italy - <u>www.iamb.it</u>

Initiative 4pour1000 Montpellier (France) Juin 2017

• From massive soil erosion to remarkable reduction

