



Desert Research Center  
DRC



# EGYPTIAN DESERTS GENE BANK EDGB



# Conservation for Sustainable use is our target



**The Egyptian Deserts Gene Bank**, was established in 1996 in El Sheikh Zoweid, which is located on the North-East coast of Egypt, 35 km East of El Arish and 15 km West of the border town Rafah, it is sited in the North Sinai Desert Station for Research and Extension of the Desert Research Center, which is under the administration of the Egyptian Ministry of Agriculture and Land Reclamation. It is located 15m above sea level; at 34°6'57" E longitude and 31°14'1" N latitude. The site is surrounded by sand dunes; one of the most impressive ecological features of North Sinai. The average rainfall is 200-300 mm and the average air temperature is 15°C in winter and 25°C in summer.



**EDGB** has recently been selected by Bioversity International as a Centre of Excellence for the CWANA region, thanks to its efficient operations and state-of-the-art technology. EDGB is well equipped with advanced facilities, specialized laboratories and experimental fields. It has a knowledgeable staff with experience in communicating theoretical knowledge and providing hands-on training and mentoring. The center has a conference room, computer facilities, herbarium and several specialized laboratories with facilities for tissue culture, biotechnology, meteorology, documentation and seed processing, drying, cleaning and viability testing.



**EDGB** also includes an ex-situ conservation field gene bank covering 18 acres devoted to integrating the use of plant genetic resources into the economy of the local communities. The field collections consist primarily of wild plant materials and their wild relatives, including fruits, forages and medicinal aromatic plants collected from the Egyptian deserts.

**EDGB** has various ex-situ seed storage facilities, which are completely computerized and remotely controlled for the storage of active and base collections.

**EDGB** in cooperation with Bioversity-CWANA, has produced a menu-driven and user friendly software known as GRIS (Genetic Resources Information System) for the efficient management of data and information on the ex-situ seed and field gene bank collections.



# Lessons Learned

It was a casual conversation in 1993, with world famous biologist Prof. Vernon H. Heywood, Emeritus Professor of Botany at the University of Reading that inspired me to build a gene bank using Egyptian funds and relying on the help of local farmers. He expressed to me the belief that any national effort to preserve and use plant genetic resources should be led by national scientists, farmers and other stakeholders, and be funded domestically. His opinion -- unusual at the time, since developing countries typically sought foreign funding for such ambitious projects -- resonated deeply with me. Indeed, I thought, that a nation should not be outsourcing the task of preserving its heritage. Two years later, in 1995, I began the process of building an Egyptian Desert Gene Bank without foreign financing and in close partnership with North Sinai's farmer communities.

I chose North Sinai for two reasons. First, Sinai offers 50 % of the Egyptian flora that are unique to Sinai. Second, I knew that a local gene bank would help Sinai's poor farmers against the many challenges they face, such as desertification, soil and water salinity, and very limited access to water. However, the site -- El Sheikh Zoweid, a tiny impoverished village inhabited mostly by Bedouins -- was opposed by some who argued that staying in Cairo would offer better access to water, power and labor. But I stood my ground, arguing that a gene bank is not a museum where plants are locked away behind glass but a home for plant genetic diversity that can be used to improve the livelihood of local communities.

Building the bank in North Sinai with the help of the local community has been enormously beneficial. It was Professor Heywood who inspired me to think locally, but it was Sheikh Salman Soliman, a skinny 75-year-old Bedouin



from a native tribe called "Al Hossainat" whom we hired to guard the property, who taught me how to act locally. With his help and the support of his relatives and friends -- whom he updated daily about our activities over hot tea after evening prayers -- that we were able to capture the true biodiversity of the area. Not only did the local farmers guide us to locations where rare plants grew, but they also gave us their native names and explained their various medicinal properties and indigenous uses.

Yet, thinking locally isn't enough. That's the other lesson I learned along the way. As I was planning the project, I visited gene banks in Gatersleben, Germany; Bari, Italy; CGN, Netherlands; Fort Collins, USA, Bioversity-CWANA Regional office; and ICARDA-GRU was genuinely touched by the generous treatment I received. Thanks to top biologists at renowned centers who shared their technological know-how with me, it was possible to open a gene bank in a developing country using state-of-the-art technology, now recognized as a center of excellence. The gene bank would have never succeeded if biodiversity experts around the world hadn't opened their vaults and their minds to me.

I would like to conclude by saying that the value of the Egyptian Deserts Gene Bank is being borne and sustained by the local community.

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