National Plant Monitoring, Rehabilitation and Restoration Programme

In-situ Conservation

Thirty protected areas (15 % of whole country) representing the most ecologically significant areas in Egypt have been declared and managed by the Nature Conservation Sector staff. The following some insitu conservation activities were carried out within the network of the protected areas in Egypt.

- Medicinal Plants Conservation Project (MPCP) was acting for more than 5 years *in situ* conservation in St. Katharine Protected Area. The following *in situ* conservation was done within the framework of this project: 46 enclosures have been established to protect 37 endemic and threatened medicinal plant species of high conservation value. In general, the protection of vegetation, including the 37 target species, against grazing and other human activities resulted in improving the vegetation in terms of its total density, total cover and species richness.

- The two subspecies of *Acacia tortilis* (subsp. *tortilis* and subsp. *radiana*) are keystone trees of vital ecological and cultural importance in South Sinai. The great biological diversity of Acacia is reflected in its wide distribution and ecological amplitude, and particularly its tolerance to drought stress. A rehabilitation programme was implemented in South Sinai for Acacia. The programme constructed a two-phase strategy, which involves monitoring the trees by fencing inside enclosures and the artificial propagation of its seedlings and interventions to enhance natural regeneration. It resulted in increasing Acacia growth after protection against over-grazing and cutting threats. About 35,000 Acacia seedlings were grown during many years ago by the local inhabitants. The two subspecies have been planted also in 30 sites distributed in the southern wadis of the St. Katherine area.

Acacia Tree

- Egypt's Dragon Tree *Dracaena ombet* has a very limited range in Gebel Elba and Gebel Shindeeb (South–East Egypt). The found specimens were mostly large up to 5 meters of branched trunk height, with few unbranched specimens of 1-1.5 m high. No young specimens were found. Indigenous Ababda and Bisharian tribes eat the edible mature fruits of this tree as a diet supplementary, it has also some

medicinal and nutritional properties. Successful green house experiments have resulted in germination of *D. ombet* seedlings. Planting the seedlings in their natural habitat is under trial.

Dragon Tree

- In 1963, the Egyptian taxonomist Lotfy Boulus discovered one tree and some other small ones in Dungul Oasis (Nubian Desert), which was the first documentation for alive argon trees in Egypt. After one year, another Scientist Bahi El-Essawi, recorded the plant in El-Nekheila area (Western desert), about 100 km north of the first discovery in Dungul Oasis. After 45 years (in 2008), the main Boulus tree had died, but some of new 36 trees were surviving in one of the harshest habitats in the world. The main population of this palm in Dungul Oasis falls within a proposed protected area outlined by the NCS (EEAA). A comprehensive census of unexplored potential sites for *Medemia* is under way in Egypt. A small nursery has been established in Aswan as an *ex situ* resource (South valley University, Ecological Studies Unit). Spare seedlings have been distributed as part of a local awareness campaign. Furthermore, the plant was discovered in Allaqi Protected Area and planted *in situ*.

Argon Tree

- Twenty eight sites along the Egyptian Red Sea coast were covered by the mangrove vegetation. The most abundant species is *Avicennia marina*, then *Rhizophora mucronata* which is restricted to the southern part of the Red Sea coast near the Sudanese borders. GIS tool was used to establish a set-back strategy for mangrove varying between 500 to 1000 meters to protect it from human activities. GIS technique indicated that the total area occupied by mangrove vegetation along the Red Sea coast is over 700 ha in 2007, comparing with 525 ha in 2002. This may be related to the efforts done by the NCS to stop illegal activities targeted this threatened habitat. The *in situ* restoration programmes resulted in planting about 50,000 seedlings. Nursing places were also established in Nabq, Safaga, Wadi El-Gemal and Shalateen.

The mangrove forest

- Herdsmen were advised to graze their animals according to the carrying capacity at Omayed Biosphere Reserve (North Western Mediterranean coast of Egypt), in order to decrease the grazing pressure on the vegetation. In addition, the local inhabitants were provided with animal food supplements in case of decreased and insufficient vegetation cover. Small agricultural projects such as olive and fig plantations were assisted.

The grazing activity in Wadi El Allaqi Protected Area

Ex-situ Conservation

Egyptian flora and Plant genetic resources are currently conserved in 3 main areas:

1. Gene Banks (Egyptian National Gene Bank in Cairo, and Egyptian Desert Gene Bank in El-Sheikh Zuwayed at North Sinai), which mostly contains the agricultural related resources.
2. Protected Areas, which contain wild resources.
3. Breeding Centers, which are managed by the private sector.

Two plant species have been studied for their genetic composition and variation: *Solenostemma arghel*, *Alkanna orientalis*.

The cultivation lands in Siwa Oasis