

**Partner: Dalate County (Inner-Mongolia Autonomous Region)**

Invited by Mrs. WANG Guoxiang, Vice-Governor of Dalate County (Inner-Mongolia Autonomous Region) and one of the Heroes of the P.R.China, TC-DIALOGUE Foundation supported from 1997 off a reforestation and horticultural project in the Village of Shulinzhao Township. This located at the south bank of the Yellow River and the north fringe of the eastern part of the Kubqi Desert. Mrs. WANG Guoxiang is also the Head of the Dalate County Desert Reclamation Association. More than 85 % of the 420 km<sup>2</sup> of Shulinzhao is occupied by decertified rangeland, where people practice rain-fed farming.

Aridity, salinity and infertility of the sandy soils lead to serious desertification, still more activated by continuous wind erosion and sand movements (mobile dunes). Sand encroachment threatens the infertile soil and people are living under the poverty line. Emigration, especially of male laborers, is high. The Women's Union has an interesting program to fight against sand mobility and to reclaim desert land:

- Sand dunes are flattened with spades.
- Sandy soils are turned into crop fields and orchards.
- Fields and orchards are irrigated
- Windbreaks and protective shelterbelts are planted.

In 20 years a new oasis was formed, with tree networks and shelterbelts protecting the new farmland of 12.000 ha (only 2000 ha in 1980). The Shulinzhao Women's Union showed that participation of all villagers in the combat of desertification provided them with knowledge and know-how. The optimal basis for joining all efforts is to provide support for local people in finding solutions, based on their traditional knowledge and methods, and combining this with adequate modern technologies. In 1996, the Dalate County Desert Reclamation Association was established and Shulinzhao Township was selected for demonstration of desert reclamation and combat of desertification. With the support of the Chinese National Bureau to Combat Desertification (Academy of Forestry) a series of preferential policies was chosen:

- Introduction of new cash crops (American potato varieties, Japanese big root radish, quality grapes, Ephedra for production of medicine, etc.)
- Introduction of water saving irrigation systems (e.g. drip irrigation).
- Plastic mulching materials.
- Advanced rice cultivation techniques.
- Introduction of TerraCottem (TC) soil conditioner.

In 1997, after a visit of Dr. Van Cotthem to Dalate and Shulinzhao, TC-DIALOGUE Foundation offered one ton of TC for different reforestation and horticultural purposes.

## **Horticulture**

TC was used to grow potatoes on newly reclaimed sandy land. A sensational result was registered: yield of potato was 10 times higher than the one on non-treated soil.

### **1/ Rangeland**

TC was also applied on a larger scale at a 20 ha fodder farm on a desert steppe, owned by Mr. DU Ergui and his brother. The 20 hectares of steppe were flattened in 1996. In May 1997, Dr. Van Cotthem visited the farm and found a poorly vegetated, desert like area. In April 1998, on 15 hectares of the farm TC was mixed mechanically with the sandy soil to a depth of 20 cm. The other 5 hectares were left untreated in order to have a control area for a comparative trial. Then, air seeding of an *Astragalus* sp. was applied, both. Without any irrigation, and to the biggest surprise of the villagers, germination on the TC-treated area was excellent after the first rain (survival rate 100 %) and fodder plants were growing splendidly. Both quality and quantity of the forage products increased significantly versus those of the non-treated sands. In October 1998, 80 % of the area was covered with fodder plants to a height of 120 cm. It was shown that TC is a cost-effective modern technology, easy to combine with indigenous methods.

### **2/ Fruit tree cultivation**

In the courtyard of a local farmer (Mr. ZHAO Jingma) a number of peach trees and pear trees were planted with and without TC. Two locations were chosen to plant the trees in 3 repetitions. Distances between individual trees and lines were 3 x 4 meter. Manure was mixed with the soil to a depth of 60 cm. TC was mixed with the topsoil at planting time. Three dosages were used: 0 g of TC (control plants), 40 g of TC per tree and 60 g of TC per tree.

Survival rates were determined in April 1997. Length of branches and overall growth were measured in August 1997. Pear trees with TC grew remarkably better than the control ones: branches are longer; leaves are bigger and darker green.

To the big surprise of the farmer the peach saplings treated with TC were growing up very quickly to 1.5 m, were flowering earlier and had very big fruits in comparison with the non-treated ones.

It was confirmed in a publication ("*Shulinzhao Township, A New Model to Reclaim Desert*", edited by the CCICCD) that Chinese experts are estimating TerraCottem very highly:

*"This new soil conditioner is an advanced product with the advantage of being non-poisonous, non-harming and sound for the environment. It brings a prosperous future to the people and their sandy land in desertification affected regions".*

## **Reforestation**

TerraCottem was used for reforestation of sandy rangeland with scarce vegetation.



Shulinzhao, Dalate County (Inner Mongolia) 1999 - Vice-Governor Mrs. WANG Guoxiang and local officials at the fodder farm, inspecting seeds on the TC-treated sandy desertlike area, in the first growing season after air-seeding. Successful treatment of the wind-eroded sands



Shulinzhao 1999 - Mr. ZHAO Jingma showing TC hydrogels in the sandy soil around the roots of grapes.



Shulinzhao 1998 - Desert steppe on which polar trees are planted with TC.



Shulinzhao 1999 - Poplar trees planted with TC in desert steppe.