

# SYRIA

## EL GHAB AGRICULTURAL DEVELOPMENT

### **Location**

Middle Orontes Region

### **Client**

Ministry of Irrigation, General Directorate of the Orontes Basin (GDOB), Damascus

### **Financing**

German Financial Cooperation / KfW

### **Period**

1987 - 2003

### **Value of Services**

1.350 million US\$



### **Project Description**

The Ghab Agricultural Development Project covering an area of approx. 46,000 ha was executed between 1958 and 1967. In the beginning mainly an irrigation project it obtains its water supply from the River Orontes on the one hand and from several springs scattered around the valley on the other hand. Since the project has been in operation, there have been drainage problems. Further difficulties arose later on, like salinity problems, insufficient water supply during summer, damage to the irrigation canals, and insufficient levelling.

Construction for the rehabilitation of the Main Drainage Works began in 1986 comprising

- comprehensive enlargement/rehabilitation of the main and secondary drainage canals (115 km, about 12 million m<sup>3</sup> soil excavation, rock excavation through a large basalt sill) for the whole irrigation system,
- rehabilitation of the irrigation network for a command area of about 14,000 ha, and
- implementation of maintenance concept and of a control and monitoring system for the drainage network.

### **Scope of Services**

Phase I:

Feasibility study (Main Drain):

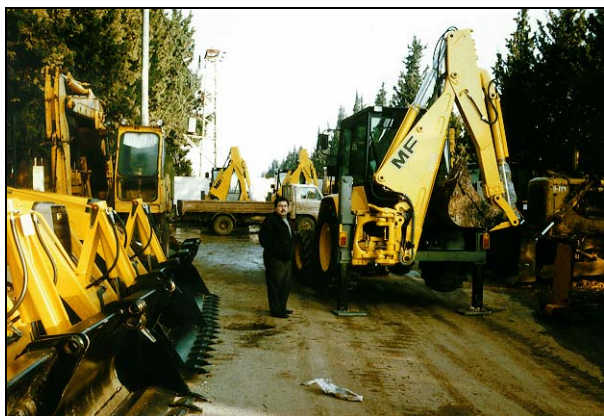
- Analysis of the present hydraulic and agricultural situation
- Evaluation of positive and negative aspects of main drain design
- Detailed hydraulic analysis of the main drainage system
- Determination of the optimum operation mode for hydraulic structures
- Economic evaluation of improvement effects on farm and project level
- Evaluation of equipment requirements for the construction of main drains
- Study of environmental impacts
- Economic and financial analyses

Feasibility study (Irrigation Schemes):

- Assessment of design for irrigation scheme and determination of optimum water supply/field drainage system
- Determination of interacting effects of the improvement of main drains, field drains and irrigation
- Determination of production increase, incremental unit costs of water, water tariffs
- Economic and financial analyses

## Project Description (cont'd)

Procurement of heavy and light equipment for maintenance of main and secondary drains (approx. 10 million US\$). Construction of a maintenance center.



## Scope of Services (cont'd)

Phase II:

Technical assistance to the GDOB:

- Quantitative and qualitative assessment of the already completed works
- Supervision of ongoing excavation works and of construction of structures (bridges, barrage, secondary outlets); monitoring/evaluation of construction/management
- Development and implementation of a comprehensive concept for the maintenance of the drainage canal system; specification of respective maintenance equipment
- Development of operation guidelines for hydraulic control structures; setting up of a hydrological monitoring system

Assistance to the GDOB in procurement:

- Preparation of tender documents and formulation of evaluation criteria
- Bid evaluation
- Inspection and acceptance of equipment
- Certification of disbursement requests