

Syria: Agricultural Development Ghab

Ex-post evaluation

OECD area of promotion	31130 - Agricultural Land Resources	
BMZ project number	1988 66 071 / 1988 70 297	
Project-executing agency	General Directorate for Irrigation of Orontes Basin (GDIOB)	
Consultant	Gitec Consult	
Year of evaluation	2002	
	Project appraisal (planned)	Ex-post evaluation (actual)
Start of implementation	Q 3 1986	Q 3 1986
Period of implementation	48 months	54 months
Investment costs	EUR 68.9 million	EUR 58.5 million
Counterpart contribution	EUR 36.7 million	EUR 28.0 million
Financing, of which Financial Cooperation (FC) funds	EUR 32.2 million	EUR 30.5 million
Other institutions/donors involved	none	none
Performance rating	2	
• Significance/relevance	3	
• Effectiveness	2	
• Efficiency	2	

Brief Description, Overall Objective and Project Purposes with Indicators

The goal of the project was to increase agricultural production in the Ghab region. The target group encompassed all farmers in the region. The most essential measures to achieve this goal were the expansion of one of the main drains and a broader breakthrough of the basalt sill, which prevented the water from draining in the northern section of the project area. The aim was to reduce flooding and water logging in the area. In addition, operation and maintenance of the drainage system were to be improved. Thus, the necessary maintenance equipment was acquired. Under the complementary measure the project-executing agency was given support with the monitoring of the hydraulic efficiency of the drainage system and with the practical introduction of a concept for systematic operation and maintenance.

The overall objective of the project was to increase the farmers' income, especially by reducing crop failures. The project purpose was to build up the capacity of the main drain system to such

an extent that the key fundamental restrictions on water management affecting agricultural activities in the project area (flooding, water logging, salinity) were either considerably reduced or eliminated. At the same time, the aim was to satisfy the preconditions for modernizing irrigation farming as planned by the Syrian government at the time of the project appraisal.

The rise in the production volume of wheat and cotton on the rehabilitated land was defined as an indicator of achievement of the overall objective; a target was never set, however. The almost total prevention of floods induced in mid-year by the Orontes River and of the related inundations over approx. 8,000 ha and also the reduction in area affected by water logging by 11,000 – 15,500 ha to 6,500 - 11,000 ha as a statistical mean were defined as indicators of achievement of the project purpose.

Project Conception / Major Deviations from the original Project Planning and their main Causes

The following construction measures were financed under the project:

- Deepening and expansion (22.4 km) and construction of new sections (24.5 km) of main drain B,
- Larger breakthrough of the basalt sill,
- Construction or expansion of two weirs and
- Construction of 10 bridges and 44 secondary drainage outlets.

Apart from the construction measures, a substantial portion of the supplies of maintenance equipment was financed. This equipment primarily comprised numerous vehicles used in the removal of deposits and water plants from the drainage system as well as lorries used to transport the excavated materials elsewhere. A workshop was built in the project area to conduct repairs. It was equipped with machines and tools.

The consulting services rendered under the project covered support for the project-executing agency with monitoring the construction work and with the payment of the services performed. In connection with the complementary measure the project-executing agency was given assistance with preparing and implementing a sustainable maintenance concept.

Key Results of the Impact Analysis and Performance Rating

Initially improving the drainage system has a direct effect on the winter crops grown via rainfed agriculture. Since most of the work to expand the drainage system was completed in 1990, not only the cultivated area but also the specific yields of the winter crops increased significantly. The area tilled in the winter rose by an average of 21% during the period 1991-2001 compared with the period 1984-2000. The specific yields of the main crops improved after the project was implemented by 33% (wheat) and 32% (sugar beets). However, these positive effects were not brought about solely by the project. Another vital influencing factor was the widespread water scarcity affecting the entire area in the 1990s, which also reduced the danger of flooding and damages caused by water logging.

The situation is quite different for the summer crops, however. Here the availability of irrigation infrastructure and water for irrigation are the determining factors. Since the expansion of the irrigation infrastructure progressed sluggishly in the 1990s and, as a result of the widespread drought during the 1990s, practically no water was channelled into the Ghab region by the

Orontes, it is not surprising that the area cultivated in the summertime has even decreased by 7% on average since the project was implemented. However, statistics indicate considerable increases in the specific yields of cotton by 49% and sugar beets by 34%. This is due at least in part to the fact that improving the drainage system makes it possible to sow seeds earlier, which is more beneficial for the crop yield.

Overall the agricultural production in the project area has increased significantly since the improved drainage system began operating. Wheat production increased from 76,000 tons p.a. prior to project implementation to 122,000 tons p.a. post-project, cotton production rose from 36,000 tons p.a. to 41,000 tons p.a. and the production of sugar beets increased from 149,000 tons p.a. to 271,000 tons p.a.

The target group comprises small farmers who generate below-average income compared with the average level for Syria but cannot be designated as poor in absolute terms. The household income of the target group improved significantly after project implementation, but this positive development was not solely the achievement of the project. Still, the project's overall objective can be considered attained.

According to statements by the project-executing agency, which are backed up by the increase in cultivated land in winter and the improvement in specific yields, no more flood damage occurred after project implementation. Accordingly, water logging is now no longer a problem in the project area. However, this cannot be proven on the basis of objective measuring data. Both results benefited from the long-lasting water scarcity. Therefore, the project purpose can also be considered achieved.

The project met the requirements for broader expansion of the irrigation system in the project area. However, this expansion has progressed rather sluggishly to date despite the fact that considerable funds were invested; when the Zeizoun Dam broke in June 2001 the situation even regressed substantially.

At the time of the project appraisal an economic rate of return of 8-10% was calculated for the project. A rough recalculation during the final evaluation revealed that the project's profitability was just under 13%. When interpreting the results of the calculations, account should be taken not only of the fact that the assumptions are vague and the precision of the data is uncertain; the calculations are also implicitly based on the assumption that all of the production increases achieved after the project was implemented were brought about by the project. Nevertheless, the calculations offer sufficient proof that the project was justifiable from an overall economic perspective.

Yet, the project has negative environmental impacts that have to be accepted since the use of fertilizers and pesticides goes hand in hand with higher agricultural production. The project had a positive effect in that it helped to avoid water logging and to reduce the risk of salinity in the Ghab region.

In view of the achievement of most of the project goals and bearable sustainability risks, the project's effectiveness is assessed as satisfactory (partial evaluation: rating 2).

The conception of the project was suitable for generating the intended results. Thus, it can be judged to be adequate. However, this is mitigated by opaque tendering and awarding procedures and indistinct project account settlement processes associated with the use of the

services of two state-owned enterprises. Achievement of the overall objective is given. The accompanying measure also had structural effect due to the introduction of a systematic routine maintenance system. Greater significance would have been possible if the irrigation system had been expanded more quickly. The project's significance is also mitigated by the fact that the regulatory framework dominating irrigated farming in Syria gives rise to further questions regarding its appropriateness. Overall we classify the project's relevance and significance as sufficient (partial evaluation: rating 3).

The project's microeconomic effects are significant, and its macroeconomic profitability is between acceptable and good. Its cost efficiency is presumably sufficient (uncertainty owing to the problems with determining Syria's counterpart contribution). This result is mitigated by the acquisition of inappropriate or technically faulty maintenance equipment (floating dredgers resp. special-purpose boats). The production efficiency is satisfactory. The efficiency of the project can be classified as satisfactory overall (partial evaluation: rating 2).

After considering the key development-policy criteria, we classify the project as having satisfactory developmental effectiveness (rating 2).

General Conclusions applicable to all Projects

None.

Legend

Developmentally successful: Ratings 1 to 3	
Rating 1	Very high or high degree of developmental effectiveness
Rating 2	Satisfactory degree of developmental effectiveness
Rating 3	Overall sufficient degree of developmental effectiveness
Developmental failures: Ratings 4 to 6	
Rating 4	Overall slightly insufficient degree of developmental effectiveness
Rating 5	Clearly insufficient degree of developmental effectiveness
Rating 6	The project is a total failure

Criteria for the Evaluation of Project Success

The evaluation of a project's "developmental effectiveness" and its classification during the final evaluation into one of the various levels of success described below in more detail concentrate on the following fundamental questions:

- Are the **project objectives** reached to a sufficient degree (aspect of project **effectiveness**)?
- Does the project generate sufficient significant developmental effects (project **relevance** and **significance** measured by the achievement of the overall development-policy objective defined beforehand and its effects in political, institutional, socio-economic and socio-cultural as well as ecological terms)?

- Are the **funds/expenses** that were and are being employed/incurred to reach the objectives **appropriate** and how can the project's microeconomic and macroeconomic impact be measured (aspect of **efficiency** of the project conception)?
- To the extent that undesired **(side) effects** occur, are these tolerable?

We do not treat **sustainability**, a key aspect to consider for project evaluation, as a separate category of evaluation but instead as a cross-cutting element of all four fundamental questions on project success. A project is sustainable if the project-executing agency and/or the target group are able to continue to use the project facilities that have been built for a period of time that is, overall, adequate in economic terms or to carry on with the project activities on their own and generate positive results after the financial, organizational and/or technical support has come to an end.