Egypt: Environmental loan facility for state-owned industrial companies

Ex-post evaluation report

OECD sector	24030 / Formal sector financial intermediaries	
BMZ project IDs	1) Fixed asset investment: 1995 66 449 (2008 sample) 2) Accompanying measure(s): 1995 70 508	
Project executing agency	1) the commercial banks involved 2) Egyptian Environmental Affairs Agency (EEAA)	
Consultant	Dorsch Consult, Munich; Chemonics, Cairo	
Year of ex post evaluation report	**2008**	
	Project appraisal (planned)	**Ex-post evaluation (actual)**
Start of implementation	1) Q II 1996 2) Q I 1996	1) Q II 1998 2) Q III 1996
Period of implementation	1) 48 months 2) 60 months	1) 124 months 2) 144 months
Investment costs	1) EUR 25.56 million 2) EUR 3.07 million	1) EUR 26.36 million 2) EUR 3.37 million
Counterpart contribution	EUR 0.00 million	EUR 0.00 million
Financing, of which FC funds	1) EUR 25.56 million 2) EUR 3.07 million	1) EUR 25.14 million 2) EUR 3.37 million
Other institutions/donors involved	--	--
Performance rating	3	
• Relevance	2	
• Effectiveness	3	
• Efficiency	3	
• Overarching developmental impact	3	
• Sustainability	2	

Brief description, overall objective and project objectives with indicators

The overall objective was to contribute to the protection of the environment. The programme objective was to help industrial companies in which the Egyptian Government holds a majority stake to reduce harmful emissions to the maximum levels permitted by law. To that end, the programme enlisted the services of Egyptian commercial banks in order to provide the companies with medium- to long-term financing for environmental protection measures.

In line with the National Environmental Strategy of the Egyptian Government, priority was given to the treatment and reduction of industrial wastewater, with a special emphasis on companies from the chemical, food processing, metalworking and pharmaceutical sectors. The finance packages for the companies included loans that were refinanced by the commercial banks, and German Financial Cooperation (FC) funds that were passed on as grants (to cover up to 50% of

the costs). The FC financial contribution to the environmental loan facility amounted to EUR 25.56 million (DEM 50 million).

In addition, an extra EUR 3.07 million (DEM 6.00 million) was provided to cover the fees of the Coordinating Consultant and other experts and to pay for project identification and feasibility studies. During the life of this project, this amount was increased by an additional EUR 0.3 million to EUR 3.37 million.

The appraisal report did not define any indicators for the overall objective. The following indicator was supposed to be used to measure to what extent the objective of the programme had been achieved: *After two years of operation, the effectiveness of the measures that were implemented by the sponsored companies should reach at least 80% of the expected target level.* In order to evaluate to what extent the intended outcome had been achieved (i.e. installation of pollution control technology which is fully operational), *the Coordinating Consultant was asked to assess whether the measures were properly implemented.*

Project design / major deviations from the original project planning and their main causes

With a view to complementing environmental framework policies, the environmental loan facility intended to help state-owned enterprises invest in specific measures to curb pollution. The programme provided medium- and long-term financing packages which the final borrowers could use to install environmental protection technology. The funds were made available through selected Egyptian commercial banks with the involvement of the Egyptian Environmental Affairs Agency EEAA. The responsibility for preparing, implementing and maintaining the measures promoted by the programme rested with the final users.

The programme proposed to finance both end-of-pipe measures (i.e. investment projects that are exclusively aimed at reducing pollution, particularly industrial wastewater treatment plants) and in-line or process modifications (i.e. integrated projects to pursue both ecological and economic aims by upgrading production processes to modern standards and substantially reducing their environmental impact, e.g. by recycling process and wastewater).

The financing packages comprised grant, loan and counterpart components. The FC funds were passed on as grants to the end users to cover varying proportions of the overall costs, depending on the expected performance of the environmental measures or the principal effects they would produce. On average, the grant component accounted for 25% of the total costs. Additional medium- to long-term financing was offered through the loan component, which the project banks provided on their own responsibility and which they had to refinance at arm's length. The redemption period varied between 3 and 5 years. The interest rate was jointly determined by the banks in line with the Egyptian base lending rate.

The consultant, whose fee was covered by the accompanying measure package, was to assist the various stakeholders (the EEAA, the commercial banks and the companies) in performing their respective duties. The consultant's planned responsibilities included identifying individual projects, overseeing feasibility studies, assessing technological, ecological and cost-related aspects of the individual projects, determining the financing structure and monitoring project management during and after implementation. In reality, however, the consultant chiefly acted as a coordinating body for the various programme stakeholders, otherwise limiting its activities to general monitoring functions. Its limited role caused a number of problems regarding the technical design of the facilities and the execution of the construction work.

12 to 24 months after commissioning, the sponsored environmental protection facilities were checked by the Coordinating Consultant and the EEAA for proper operation in order to guarantee their continuous effectiveness and sustainability. The companies were responsible for the operation and maintenance of all facilities that had been financed through the loan programme. About a third of them (8 out of 26) have, in the meantime, been privatised. During on-site visits, the ex-post evaluation team found that privatised companies were keeping their

facilities in better repair and the quality of their maintenance work was higher than that of state-owned enterprises. The ex-post evaluation team did not identify any major maintenance issues during their inspection visits.

Key results of the impact analysis and performance rating

The programme objective indicator presupposes that maximum permissible values for wastewater pollution are set forth by law. The relevant provisions are contained in the Egyptian Environmental Act of 1994. Compliance is regularly checked by the EEAA.

At the time of ex-post evaluation, the programme objective, as measured by the related indicator, had been successfully achieved. All sponsored companies were complying with the maximum permissible values for wastewater pollution set forth in the Environmental Act. Compliance was confirmed during on-site visits, and the set target of 80% was even exceeded.

However, criticism should be expressed about the absence of a financial indicator at the programme objective level to track the final borrowers' performance in repaying their loans. Comparable projects usually consider this objective attained if 80% to 85% of the loans are repaid as scheduled. In that respect, the programme was successful as all loans have, by now, been fully redeemed.

Economic gains from reducing input quantities were a positive by-product of the in-process modifications sponsored by the programme, helping the participating companies save EGP 74 million (approximately EUR 10 million) annually.

From today's point of view, it is also necessary to define an indicator to track the overall objective. So-called 'person equivalents' (PE) are a common means of comparing wastewater water pollution in different industries and quantifying changes over time. The ex-post evaluation established that, as a result of the programme measures, 14 out of 26 participating companies reduced their cumulative PE value by 96% from 6.17 million to 0.24 million. For the other companies, there was no data available to compare emission levels before and after implementation. Moreover, it is not entirely clear whether the measurements are accurate. Nevertheless, considering the overall results that were achieved (improving the wastewater quality at all 34 production sites, reducing fresh water consumption at 23 production sites, and reducing resource, final product and process water losses at 19 sites), the overall objective's level of achievement is deemed to be satisfactory.

The programme's main objective was to promote environmental protection and resource preservation. There is ample evidence of strong and positive environmental effects at the level of the individual projects, and there is no risk of any negative impact on the environment. Rather than pursuing any direct goals in poverty reduction, the programme was geared to general development policy goals. It did not have any potential to promote gender equality, and it was not intended to promote good governance or participatory approaches.

In summary, the programme's developmental effectiveness is rated as follows:

Relevance

The programme was aimed at reducing wastewater pollution caused by state-owned industrial companies. As Egypt continues to face severe environmental issues, the improvement of industrial pollution control is of tremendous importance for the country's social and economic development. Discharging untreated industrial wastewater into rivers is one of the major causes of water pollution, particularly in the Nile, which covers approximately 95% of the domestic demand for drinking water. Against this backdrop, the action chains that were used as assumptions during the project appraisal have not changed and are still valid. The funds provided to commercial banks supported the capital expenditure programmes of state-owned enterprises, thereby advancing the protection of the environment in Egypt. What is more, environmental protection measures are one of the top development priorities defined by the goals and guidelines of the German Federal Ministry for Economic Cooperation and

Development (BMZ) and of the Egyptian Government. In the field of pollution control, the Egyptian side continues to place emphasis on treating and reducing industrial effluents. The programme complemented other German FC projects and the activities of other bilateral and multilateral donors in the sector. In summary, the programme addressed an important bottleneck in the system that continues to be relevant from today's point of view (rating 2).

Effectiveness

The programme objective was to help industrial companies in which the Egyptian Government holds a majority stake to reduce harmful emissions to the maximum levels permitted by law. Therefore, the programme objective indicator is based on the legal definition of the maximum permissible values for wastewater pollution. Such a definition is set forth in the Egyptian Environmental Act of 1994. Related monitoring and sanctioning mechanisms have been implemented for the most part. Against this backdrop, the programme objective indicator is basically deemed to have reached the expected target level at the time of ex-post evaluation. Actual values by far exceeded the 80% target as all participating companies were in compliance with the maximum permissible values set forth by law. By today's standards, however, it would be necessary to define a financial indicator at the programme objective level to track the final borrowers' repayment rate. Measured by the targets defined for comparable projects (which consider timely repayment of 80% to 85% of the loans to be satisfactory) the loan programme may be regarded as successful as all loans have, by now, been fully repaid. By contrast, the significant extension of the period of implementation (from 48 to 124 months) is clearly unsatisfactory. According to the delegation, this delay was mainly due to the complexity of the implementation concept and may also be attributed to considerable technical, administrative and financial deficits on the part of the (state-owned) final borrowers. Overall, the effectiveness of the programmes is rated as satisfactory (rating 3).

Efficiency

Contrary to initial expectations, the high share of 'cleaner-production' modifications, which require lower grant contributions, made it possible to increase the total investment volume of the final user projects to EUR 80 million (up from EUR 50 million). As regards production efficiency, a distinction should be made between 'cleaner-production' and 'end-of-pipe' measures. There were 38 cleaner-production projects in which the newly installed facilities not only produced beneficial environmental effects as expected but also enhanced production efficiency and helped cut operating costs (e.g. by processing cooling water and recycling it for production purposes). As far as end-of-pipe measures are concerned, we can only asses the unit costs per cubic metre of treated wastewater. They range between EGP 1 and EGP 3, which is relatively high by Egyptian standards. On the basis of our visits and the consultant's inspection report, the quality of the installed facilities was rated as satisfactory. In one instance, severe capacity shortages caused problems in a water treatment plant the size of which had been miscalculated. In terms of allocation efficiency, it is important to note that the selection of the individual projects was also based on economic criteria. All supply and construction contracts were awarded in compliance with Egyptian tendering regulations. Therefore, we may assume that all individual projects were planned and implemented at market prices. The funds provided were allocated to the participating companies in such a way as to ensure that they would be able to achieve their individual pollution control targets. According to the banks involved, there was only one company (out of 26) that had difficulties repaying its loan as scheduled. The interest rate offered to the final borrowers was in line with the market interest rate and was based on the Egyptian base lending rate. Therefore, the loans were provided on appropriate terms and the available funds were successfully allocated. In summary, the efficiency of the programmes is rated as satisfactory (rating 3).

Overarching developmental impact

The overarching developmental impact of the environmental facility is determined by the contribution of individual measures to improving the protection of the environment and by structural effects in the domestic banking sector. Although no overall objective indicator had been defined, we found that the individual projects produced very positive environmental effects. Considering the achieved reduction in organic and chemical wastewater pollution, the programme definitely contributed to achieving the overall objective and the macroeconomic goals were also attained, even though only 14 out of 26 individual projects provided data to quantify the impact. However, the structural effects on the financial sector were negligible as the relevant schemes have not been expanded or deepened and the involved banks (apart from implementing donor-funded programmes) continue to show little interest in setting up organisational and financial structures to market environmental loan products. Formally speaking, the Egyptian Environmental Agency EEAA had not been given the role of executing agency (which was instead the responsibility of the banks involved) but it took on important executing tasks. At the time of project appraisal, the EEAA's performance in carrying out its responsibilities was considered weak, but it improved substantially during the implementation phase. In summary, the overarching developmental impact is rated as satisfactory (rating 3).

Sustainability

Sustainability hinges on proper operation and appropriate maintenance of the funded facilities by the companies. The prospects of achieving this are good for companies that have, in the meantime, been privatised. Spot checks that were carried out by the ex-post evaluation team during visits to the privatised companies showed that all facilities were operated and maintained in a sustainable manner. The companies have their own laboratories to monitor compliance with the permissible limits for wastewater pollution. Moreover, some of them have adopted emission standards of their own which are much tighter than the official ones. By contrast, sustainability continues to be at risk in state-owned companies. The EEAA has demonstrated that in the long run it should be able to perform its control and monitoring functions without any outside technical support. The involved banks are not exposed to any sustainability risks as all final borrowers - except for one - have fully repaid their loans. However, banks will not show any further interest in offering environmental loans as a finance product unless they are provided with cheap (i.e. donor-funded) refinancing resources. The sustainability of the programme is rated as good (rating 2).

In our summary evaluation of the effects and risks described above, the programme's overall developmental efficacy is rated as satisfactory (rating 3).

General conclusions and recommendations

An important element of the project design was to limit funding to companies which, due to their economic performance, were expected to operate their production and pollution control facilities in a sustainable manner and/or had started to restructure and/or partly privatise their business. We strongly recommend retaining this prerequisite for similar projects in the future. On-site visits provided clear evidence that privatised companies were keeping their facilities in better repair and that the quality of their maintenance work was higher than that of state-owned enterprises.

If wastewater pollution by the participating companies had been measured prior to implementation, it would have been possible to track the pollution reduction achieved by the projects and, hence, their contribution to achieving the overall objective. However, data was collected only for some companies, which makes it difficult to quantify the projects' environmental effectiveness. As a consequence, we strongly advise managers of similar projects or programmes to conduct such preliminary studies during the run-up phase.

Notes on the methods used to evaluate project success (project rating)

Projects are evaluated on a six-point scale, the criteria being relevance, effectiveness (outcome), "overarching developmental impact" and efficiency. The ratings are also used to arrive at a final assessment of a project's overall developmental efficacy. The scale is as follows:

1 Very good rating that clearly exceeds expectations

2 Good rating fully in line with expectations and without any significant shortcomings

3 Satisfactory rating – project falls short of expectations but the positive results dominate

4 Unsatisfactory rating – significantly below expectations, with negative results dominating despite discernible positive results

5 Clearly inadequate rating – despite some positive partial results the negative results clearly dominate

6 The project has no positive results or the situation has actually deteriorated

A rating of 1 to 3 is a positive assessment and indicates a successful project while a rating of 4 to 6 is a negative assessment and indicates a project which has no sufficiently positive results.

Sustainability is evaluated according to the following four-point scale:

Sustainability level 1 (very good sustainability)

The developmental efficacy of the project (positive to date) is very likely to continue undiminished or even increase.

Sustainability level 2 (good sustainability)

The developmental efficacy of the project (positive to date) is very likely to decline only minimally but remain positive overall. (This is what can normally be expected.)

Sustainability level 3 (satisfactory sustainability)

The developmental efficacy of the project (positive to date) is very likely to decline significantly but remain positive overall. This rating is also assigned if the sustainability of a project is considered inadequate up to the time of the ex post evaluation but is very likely to evolve positively so that the project will ultimately achieve positive developmental efficacy.

Sustainability level 4 (inadequate sustainability)

The developmental efficacy of the project is inadequate up to the time of the ex post evaluation and an improvement is very unlikely. This rating is also assigned if the sustainability that has been positively evaluated to date is very likely to deteriorate severely and no longer meet the level 3 criteria.

The overall rating on the six-point scale is compiled from a weighting of all five individual criteria as appropriate to the project in question. A rating of 1 to 3 indicates a "successful" project while a rating of 4 to 6 indicates an "unsuccessful" project. In using (with a project-specific weighting) the five key factors to form a overall rating, it should be noted that a project can generally only be considered developmentally "successful" if the achievement of the project objective ("effectiveness"), the impact on the overall objective ("overarching developmental impact") and the sustainability are considered at least "satisfactory" (rating 3).