Morocco: Industrial Depollution Fund I (FODEP I)

Ex post evaluation

OECD sector	24030 Formal sector financial intermediaries	
BMZ project IDs	1997 65 697 investment in fixed assets 1997 70 231 Personnel support	
Project-executing agency	Ministry of the Environment	
Consultant	AEW	
Year of ex post evaluation	**2006**	
	Project appraisal (planned)	**Ex-post evaluation (actual)**
Start of implementation	6/1998	2/1999
Period of implementation	5 years	6 years
Investment costs	EUR 10.5 million	EUR 12.1 million
Counterpart contribution	EUR 2.1 million	EUR 4.0 million
Financing, of which Financial Cooperation (FC) funds	EUR 8.4 million	EUR 8.1 million
Other institutions/donors involved	None	None
Performance (overall rating)	2	
• Significance / relevance (sub-rating)	2	
• Effectiveness (sub-rating)	2	
• Efficiency (sub-rating)	3	

Brief description, overall objective and project objectives with indicators

An FC contribution of EUR 8.4 million was provided through the Industrial Environmental Fund in Morocco for the purpose of financing some of the environmental protection investment in industrial enterprises. In addition, EUR 0.77 million were provided to finance an accompanying measure for the selective support of the Moroccan Ministry of the Environment (project-executing agency). The overall project objective was to contribute to depollution in the vicinity of industrial enterprises. The programme objectives were to reduce the use of resources and/or harmful emissions of industrial plants and to make good use of promotional loans.

As indicators of the success of the project, the desired environmental protection effects (compliance with the limits set when the project was approved) were to be achieved after a three-year operational period by at least 80% of the enterprises supported and the repayment rate for the loans was not to be below 95%. No indicators were defined to measure the degree to which the overall objective was achieved.

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

The project target group comprised creditworthy (state-owned and private) industrial and commercial enterprises which wanted to carry out investment measures with positive environmental effects. Initial investment or reinvestment could be financed. The focus of the Environmental Fund was on small and medium-sized enterprises producing wastewater but the intention was also to include air-polluting industrial plants.

In the period from 1998 to 2004, 18 projects with an overall investment volume of MAD 133 million (EUR 12.1 million; kEUR 670 on average) were financed. Seven of these projects deal with the food processing industry, four with cement production and two to three each for the textile, chemical and metal processing industries. Overall, 15 of the 18 projects were carried out as “end-of-pipe” projects.[1] One project is an integrated project and two are mixed.[2]

The measures dealt mainly, as planned, with wastewater treatment and the rationalisation of water consumption (10 out of 18 projects). The portion of the overall costs financed through the FODEP I project amounted to MAD 92 million. Of this sum, just under MAD 39 million was provided as a loan and approximately MAD 53 million as a grant. The remaining MAD 41 million in funds were raised by the industrial enterprises themselves.

The 18 projects were processed via six commercial banks. Two commercial banks, BMCI and BCM, each dealt with six projects. These two banks played a leading role in the implementation. To date, the full amount of the funds have been disbursed for 14 of the 18 projects. This is the equivalent of 75% of the funds committed. Of these 14 projects, eight have repaid the entire loan, 10 projects have so far been awarded the environmental conformity certificate and three further enterprises are currently being appraised with regard to the environmental conformity certificate. The remaining five projects have not yet been completed or were only completed in the past 12 months.

The credit line and the grant have been allocated in accordance with the provisions of the agreement. However, the target group actually reached was only partly as defined in the project plan. Most of the enterprises reached were larger operations which either belonged to international groups or were held by very large national holding companies. There are essentially two reasons for this. On the one hand, larger enterprises are willing to carry out environmental protection measures despite the lack of legally binding regulations. On the other hand, typical small businesses experience far greater difficulty in finding commercial banks that are willing to bear the credit risk. In terms of risk, the design of the project – the commercial banks bear the full credit risk – meant that, because of the unwillingness of the banks to serve SMEs as a customer group, mainly larger enterprises were given support in the implementation stage. Consequently, most of the subsidies (60%) were allocated to only four enterprises. We consider it appropriate for primarily larger enterprises to have been financed through FODEP in the first project phase as this acts as a model with regard to environmental investment.

A further critical point in the implementation of the project was the considerable delay between setting up the studies and project approval as well as between the start of operation and the final certification of the projects. When the projects were planned, it was assumed that no more than one month would elapse between the technical study and project approval and no more than one year between the start of operation and the conformity check. However, in the 18 projects carried out, an average of 17 months elapsed between the study and project approval and an average of 23 months (calculated on the basis of 10 projects) between the start of operation and certification.

Despite these delays, the project objective – measured in terms of the achievement indicators – was achieved in full. The ten enterprises which have been putting their environmental investments to use for more than three years meet all the critical environmental limits and are

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[1] “End-of-pipe” projects deal with avoiding pollution at the end of the production process, e.g. by treating waterwater or waste gases. The “end-of-pipe" technologies are generally connected to an existing production plant at a later stage.

[2] Integrated projects deal with new investment, with environmental technology being used from the outset.

achieving the targeted environmental effects (100%). This was confirmed by the conformity certificates awarded by FODEP. The second indicator, which relates to the repayment behaviour of the industrial enterprises, was also met. During the entire project period, there were only isolated cases of short delays in repayment; at the time of the ex post evaluation, however, the enterprises were all complying in full with their repayment obligations. The repayment rate is 100% and portfolio at risk is 0%. The enterprises have already paid back 10 of the 15 large loans in full. In accordance with the adjusted project design for the follow-on projects FODEP II and III, the return flows will be paid only as grants. We consider this appropriate.

An assessment based solely on the achievement indicators would not go far enough as the indicators are not formulated in such as way as to give enough important details of the project success. Both the length of time needed to carry out the projects and an assessment of the management of the environmental protection facilities more strictly geared to quality ("proper operation and maintenance of the environmental protection investments by the company being supported") would provide important indications of the efficiency of the FODEP promotional approach and with regard to the expected sustainability of the investment measures. The formulation of the achievement indicators for the follow-on projects FODEP II and III also points in this direction. On the basis of the project visits made as part of the ex post evaluation and statements by FODEP staff, from the present perspective it can be assumed that, in some cases, improvements can be made to ensure adequate maintenance of the environmental plants.

In particular, it would also be important to retain further results for the accompanying measure. For example, the result that FODEP has documented work flows and documented job descriptions would act as an incentive to implement not only adequate review procedures but to make the acquired expertise far more readily accessible for future staff. This has not been done, however.

On the basis of experience gathered during implementation of FODEP I, the following adjustments were made to the programme concept for the follow-on projects FODEP II and III. Large enterprises have been excluded from promotion as in Morocco these companies tend to invest in environmental protection out of their own sense of obligation (neighbourhood pressure, consumer pressure on the export markets) and with their own resources. In addition, under FODEP II and III only subsidies are granted as they represent a priority bottleneck for the implementation of what are generally unprofitable environmental investments. This adjustment to the project design was justified by the high degree of liquidity of Moroccan commercial banks and the assumed willingness to grant medium to long-term investment loans to the target group in addition to the grants. This means that the project target group was thus limited to medium-sized enterprises and larger, financially sound SMEs which already have access to the official banking sector. Given the supply gap in SME financing in the banking sector it is probably very difficult for "normal" SMEs to obtain a loan for environmental protection investment. From today's perspective we consider these adjustments to the target group (focus: medium-sized enterprises), given the shortage of FC funds, comprehensible and appropriate, particularly with regard to the relatively large positive impact on the environment that tends to be achievable at these enterprises. In addition, however, we would today link eligibility of environmental protection investment for promotion less to the size of the enterprise than to the expected positive environmental effects.

Key results of the impact analysis and performance rating

From the perspective of the enterprises, the follow-on environmental investments (15 out of 18 environmental projects financed) are basically unprofitable despite grants/subsidies as the investment costs are not offset by income. In addition, the environmental investment involves substantial operating costs, which tend to make it less attractive. The effects at the project level are consequently determined primarily by the location of the enterprise concerned. From the perspective of those enterprises which see themselves actually facing a massive protest from the local residents or the relevant municipality and which face closure if no environmental protection measures are carried out, the economic impact of the individual project is assessed very positively in terms of specialist support and the grant for investment costs. The cost of borrowing funds is reduced considerably compared with alternative loan financing without a grant. Owing to the grace years (up to three grace years) in the loan part of the environmental

financing, the investor also has a cash flow advantage compared with market financing. If the enterprise cannot raise the funds needed under the current external pressure, implementing the measure ensures that this company can continue to exist.

If, however, the enterprise is not under pressure or threatened by third parties, despite the grant it is initially subject to a considerable financial burden which, particularly in the case of follow-on investment, is increased by the operational costs for the environmental protection facilities. Follow-on investments are unprofitable for the entrepreneur even with a grant from FODEP as long as there are no strict environmental protection rules or costs for resultant negative externalities. Integrated measures can, however, be partly profitable. In any case, however, the measures carried out have the effect of securing the future of the companies as in the foreseeable future it will be necessary to take action on the basis of statutory provisions. As it is uncertain whether at a later point in time any subsidies will be available for environmental investment, the companies being supported now can be expected to be at a competitive advantage.

From a macroeconomic perspective, it is ultimately difficult to quantify the impact of the project. On the one hand, the contribution consists of the reduction in the environmental pollution caused by the industrial enterprises and the associated reduction in the risk to human health and nature. On the other hand, the project also contributes to an awareness building process which it is difficult to quantify but which is acknowledged and referred to by all the stakeholders surveyed during the ex post evaluation. The programme is important as part of a comprehensive environmental policy; this is particularly true as long as no clear environmental standards for enterprises are set. The close cooperation between the state, commercial banks and the private sector should also be given a positive assessment. Precisely because in Morocco leading enterprises are willing to be the first to carry out environmental measures, the project acts a model for other industrial enterprises. Despite the fact that the effects cannot be quantified, it can be assumed that the macroeconomic impact of the project is positive.

Improving the environmental situation was not an explicit project objective. All the plants that are now operational have already demonstrated that they comply with the planned emission figures.

More environmental protection measures are still urgently needed in Morocco. The damage caused by industrial pollution and its prevention or removal is of central importance. It became absolutely clear during the FODEP I project stage that many small and medium-sized enterprises are unable to cope technically or financially with this challenge. FODEP has played an important role in developing environmental awareness at industrial enterprises in Morocco through demonstration effects. Owing to the lack of legally binding framework conditions, it will also be an important pillar for industrial environmental protection measures.

The risks to the sustained developmental effectiveness of the project are on the level of the projects financed and of the project-executing agency, the Ministry of the Environment or FODEP. Most of the enterprises supported have since firmly established environmental protection as part of their corporate strategy and also demonstrated this through additional investment and a corresponding ISO certificate. This is particularly the case for major enterprises, which have the funds needed to manage the plants appropriately. By contrast, at the smaller enterprises it is usually pressure from the municipality or the neighbourhood which to a certain extent causes sustainable use to be made of the plants. However, the risk is always that inappropriate or only sub-optimal use will be made of the plants if it is not clear how operating and maintenance costs are to be covered. This should be considered as a high risk area. However, the risk of the FODEP expertise implemented during the project not being available in the long term once the follow-on projects FODEP II and III are over is to be seen as relevant as the structural and procedural arrangements at FODEP have only been formalised to a limited extent.

Effectiveness

The objectives in the pilot project FODEP I were to reduce the use of resources and/or harmful emissions from industrial plants and to make good use of promotional loans. As measured by the indicators, the project objectives were achieved to a sufficient extent. The ten projects which have been putting their environmental investments to use for more than three years meet all the critical environmental limits and are achieving the targeted environmental effects (100%). We assess the quality of the environmental protection investment as good. Compliance with the

environmental limits has been confirmed in each case by the conformity certificate issued by FODEP. The second indicator, which relates to the repayment behaviour of the industrial enterprises, was also met in full. During the entire project period, there were only isolated cases of short delays in repayment; at the time of the ex post evaluation, however, the enterprises were all complying in full with their repayment obligations. The repayment rate is 100% and portfolio at risk is 0%. The enterprises have already paid back 10 of the 15 large loans in full. During project implementation, the project concept for the follow-on projects FODEP II and III was amended in that the loan component was changed completely into a grant component. The return flows are also made only as grants, in line with the changed implementation concept for the follow-up projects FODEP II and III, which only provide for the issue of grants. If systematic evidence of the sustainable impact of the projects is required at project level, it is difficult to make an evaluation because project follow-up has not yet been implemented systematically at FODEP. If, at the level of the project-executing agency, an institutionally sustainable organisational structure or the drafting of a documented formalisation of the department is required, the results achieved in the accompanying measures – which were basically carried out as planned – must also be less positively assessed. Overall, despite these restrictions, we classify the effectiveness of the project as satisfactory **(sub-rating 2**).

Relevance/significance

The overall project objective was to contribute to depollution in the vicinity of industrial enterprises. The pilot project FODEP I made an important first contribution to this and brought about essential changes with regard to environmental consciousness at the industrial enterprises which far exceeds the number of financed projects. The overall objective – with 18 projects, most of which were fairly large – was satisfactorily achieved. Because they have only been in operation for a short period, however, some projects have yet to demonstrate an effective depollution impact. There are also limitations with regard to ensuring the sustainability of the impact. On the basis of the project visits made as part of the ex post evaluation and statements by FODEP staff, it can be assumed that in some cases improvements can be made to the adequate maintenance of the environmental plants. The project has had positive signal effects on the environmental consciousness of the industrial companies and has generally made a contribution to a highly relevant and urgent issue in the Moroccan economy. The fact that the development of the executing agency was not agreed as a central result of the project must be criticised. The sustainability of the impact on the level of institutionalisation of a national point of contact for environmental questions related to industry is thus at risk at least once the follow-on projects FODEP II and III are over. We classify the project's relevance and significance as satisfactory (**sub-rating 2**).

Efficiency

Considerable delays were frequently experienced in the implementation of the individual projects. Over the entire project period (1998 – 2004), the productivity and production efficiency of FODEP must be evaluated as only just sufficient. Under FODEP I mainly large enterprises were promoted. Given the pilot nature of the project, we consider this acceptable. The target group was accordingly changed for the follow-on stages FODEP II and III and large companies excluded from the promotion. However, we would today link eligibility of environmental protection investment for promotion less to the size of the enterprise than to the expected positive environmental effects. Overall, most of the FC funds used had the expected impact on the environment. We rate the allocation efficiency as sufficient. Overall, we classify the project's efficiency as adequate (**sub-rating 3**).

Taking the sub-categories of effectiveness, efficiency and significance/relevance into consideration, we judge the project's developmental efficacy to be satisfactory **(overall rating 2).**

Conclusions and recommendations

In the case of projects in which subsidies are intended to achieve specific promotional effects (e.g. environmental protection), a critical appraisal must be carried out during the project appraisal of the design of the subsidy mechanism with regard to taxation effects (are the subsidies subject to tax and are they partly neutralised?), with regard to complementary

instruments (obligation to take up partial loan financing), with regard to the eligibility of investments for promotion (possibly the exclusion of profitable integrated investment), etc.

If there is no compulsion to carry out environmental protection measures, this has a considerable negative impact on the demand for environmental protection investment and its broad impact.

The transparent institutional separation of grant components and loan components proved appropriate in the project evaluated here.

Assessment criteria

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

Criteria for the evaluation of project success

The evaluation of the "developmental efficacy" of a project and its classification during the ex-post evaluation into one of the various levels of success described in more detail below concentrate on the following fundamental questions:

- Have the **project objectives** been achieved to a sufficient degree (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 concept)?
- To the extent that undesired **(side) effects** occur, can these be tolerated?

We do not treat **sustainability**, a key aspect to consider when a project is evaluated, as a separate evaluation category, but rather as an element common to all four fundamental questions on project success. A project is sustainable if the project-executing agency and/or the target group are/is 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 independently and generate positive results after the financial, organisational and/or technical support has come to an end.