

Ex post evaluation – India

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Sector: Environmental policy and administrative management (41010)
Project: Environmental line of credit SIDBI (BMZ No. 2007 66 295)*, Accompanying measure (BMZ No. 2007 70 305)
Implementing agency: Small Industries Development Bank of India (SIDBI)



Ex post evaluation report: 2016

		Project A (Planned)	Project A (Actual)	Project B (Planned)	Project B (Actual)
Investment costs (total)	EUR million	38.50	38.50	0.20	0.25
Counterpart contribution	EUR million	0.00	0.00	0.00	0.00
Funding	EUR million	38.50	38.50	0.20	0.25**

*) Random sample 2016; **) 2012: budget increase of EUR 50.000 EUR

Summary: The project was a continuation of the SIDBI III environmental credit line evaluated in 2014. Micro, small and medium-sized enterprises (MSMEs) in India were to be encouraged to invest in environmentally friendly production processes and sustainable disposal solutions. As part of the project, investments were promoted in both integrated measures (including the use of more modern machinery, entailing less of an environmental burden) and so-called "end-of-pipe" solutions (e.g. treatment plants, disposal installations). To refinance the environmental investments the SIDBI was granted an FC development loan (reduced-interest loan) of EUR 38.5 million. The project included an accompanying measure, as part of which the SIDBI was supported in implementing the line of credit.

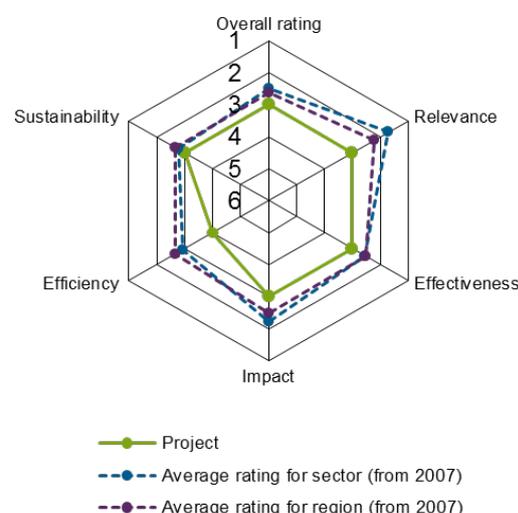
Objectives: The ultimate objective was to contribute towards reducing the environmental impacts caused by industrial pollutants and the associated risk to human health. At the same time the introduction of financial products targeting a reduction or avoidance of environmental emissions was supported. The programme objective was (i) increased investments in environmentally friendly production methods and sustainable waste disposal solutions by SMEs, ii) an increase in the contribution made by Indian MSMEs to ecologically sustainable growth, and iii) the expansion of SIDBI's range of financing options.

Target group: The target group of the project was Indian MSMEs intending to make replacement investments in green manufacturing processes and technology or adopting measures to reduce harmful emissions (e.g. disposal companies).

Overall rating: 3

Rationale: Given the high share of investments with positive environmental aspects and impacts, the project target achievement and developmental impact are considered satisfactory. While the issue is highly relevant in the Indian context, the project was designed in a sub-optimal way due to unrealistic goals (replacement investments instead of expansion investments), competition from other donor credit lines and the insufficient distinction made from an FC energy efficiency credit line at the same executing agency at the same time, which is why its relevance can only be considered just satisfactory. The approval processes were not properly integrated into existing processes at the executing agency, which means efficiency is not satisfactory. The entire project is therefore rated as marginally satisfactory overall.

Highlights: The parallel financing of an environmental and energy efficiency credit line at the same executing agency led to ambiguities in defining eligible investments.



Rating according to DAC criteria

Overall rating: 3

Relevance

Introducing an environmental line of credit for micro, small and medium-sized enterprises (MSMEs) to contribute to reductions in environmental pollution in India remains a sound approach. The MSME sector is responsible for about 70% of industrial pollution of the environment; according to the national development strategy, the primary cause of environmental damage due to MSMEs is the use of inefficient and obsolete¹ technologies. Besides insufficient knowledge of the business incentives associated with environmentally-friendly technologies, another key reason for the lack of investments lies in Indian MSMEs' limited access to appropriate financing opportunities. At the time of the project appraisal, no credit line was being offered that explicitly targeted the reduction of environmental emissions. This made sense as a starting point for the project. At the time of the project appraisal, the project fitted logically into the national development strategy. That said, it may be critically noted that at the time of the project appraisal as well as today, issues relating to climate protection (and energy efficiency in particular) have had much greater political relevance for the Indian government than environmental protection issues.

The Small Industries Development Bank of India (SIDBI), the central governmental development agency for the Indian MSME sector, functioned as a borrower and project-executing agency. In recent years, SIDBI has increasingly focused its funding profile as an environmental bank for the MSME sector. SIDBI was therefore clearly the right choice of implementing organisation.

From today's perspective, however, the incentive system was not adequately aligned with the project's objectives. The goal of the project was to give MSMEs incentives to make replacement investments in environmentally friendly production methods; however, the sub-loans were to be offered at only about 100 basis points below the market interest rate. In general, replacing or scrapping old machines at the time when a new machine is acquired is not cost-effective for individual businesses if the old machine is still operational. Given the strong growth of the MSME sector, generally poor environmental awareness, and the growing but still weak legislative enforcement of environmental standards, the credits for the ultimate borrowers would have had to be substantially subsidised in order to provide these incentives to scrap old machines and make pure replacement investments.

In addition, the environmental line of credit was not optimally placed as the Japan International Cooperation Agency (JICA) was operating a highly diversified energy efficiency credit line in parallel; its loans to SIDBI offered better conditions, its volume was larger, and its approval criteria were simpler than those of the FC line. This was known at the time of the programme appraisal, but was not taken into account in the design of the environmental line of credit, e.g. in the form of similar approval criteria or – if possible within FC guidelines – a loan subsidised at a comparable level. Furthermore, FC offered an energy efficiency line parallel to the environmental line of credit. The two lines were to be managed by the same implementation consultant, and had very similar target groups, but differed in their focus (climate vs. environmental protection). However, the executing agency itself does not distinguish between energy efficiency and environmental lines of credit, it views them as one and the same business sector. In light of this fact, and given that awareness of environmental and climate protection is still low in India, it then only makes sense to operate two similar credit lines through the same executing agency if they can be clearly distinguished from each other by their approval criteria or their target groups.

A basic and advanced training measure accompanied the project evaluated here; from today's perspective, the design of the accompanying measure made sense in terms of its dual orientation of supporting both the executing agency and the ultimate borrowers. Its volume, on the other hand, was very tight from the beginning.

In conclusion, a highly relevant problem was addressed in a way that, under the given circumstances, was less than optimal and targeted unrealistic goals (replacement investments instead of environmentally

¹ Government of India Twelfth Five Year Plan (2012-2017), Volume I & II

friendly expansion investments), so that the overall relevance can only be evaluated as marginally satisfactory.

Relevance rating: 3

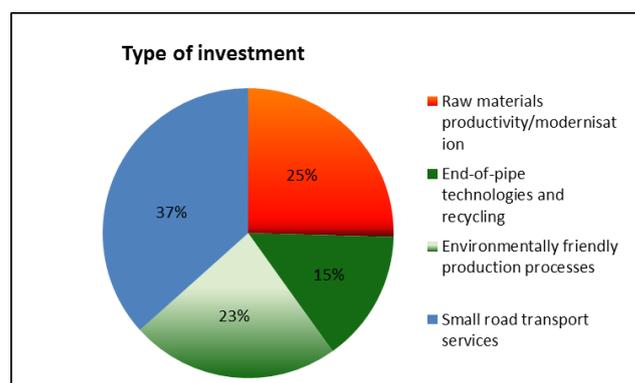
Effectiveness

The goal of the project was (i) increased investments in environmentally friendly production methods and sustainable waste disposal solutions, (ii) an increase in the contribution made by Indian MSMEs to sustainable growth, and (iii) the expansion of SIDBI's range of financing options.

With reference to Indicators 1 and 2 established at the project appraisal, the project objective was only partially achieved:

Indicator	Ex post evaluation
(1) Replacement investments of at least EUR 48 million have been made by the ultimate borrowers two years after the full disbursement of the line of credit	Not achieved (see below)
(2) SIDBI's gross NPA ratio is no higher than 2%	1.51% (achieved)

The funds for the environmental line of credit, a total of EUR 38.5 million, were completely disbursed. According to the executing agency, the requirement that the borrower bear at least 25% of the investment costs was met, so that investments of at least EUR 48 million were made. However, SIDBI could not verify whether the credits were actually used for replacement investments. Only about 15% of the financed investments (investments in waste disposal facilities and recycling) can be plausibly assumed to have been replacement investments. It was already apparent in the previous project that for Indian MSMEs, expansion investments are the norm and replacement investments are more of an exception.



A qualitative analysis of the investments reveals that a total of 38% of the funds were used to refinance investments in environmentally friendly technologies and sustainable waste disposal solutions. Another 37% of the funds went to financing changes in vehicle fuel systems, i.e. conversion from diesel to natural gas systems, and 25% of investments went to machine models that are primarily designed to increase resource productivity, and for which environmental concerns play little if any role.

Overall, we can conclude that about 75% of the funds were used for “environmental investments”. On a critical note, only certain parts of the target group (MSMEs in the production sector) were reached. 25% of investments went to MSMEs in the service sector. Indicator 2, which covers portfolio quality, was achieved without difficulty.

The objective of the accompanying measure was to support SIDBI in implementing the line of credit, and to provide the ultimate borrowers with incentives for environmentally friendly investments. Finally, a large part of the consultant's activities had to be used to develop implementation guidelines (software tool for quantifying environmental impacts, positive list), and to support loan officers in SIDBI branch offices in their evaluation of loan applications. There was too little emphasis in project execution on providing guidance to the ultimate borrowers.

Weighing the fact that the Indicator 1 objective was not met, and that the objectives of the accompanying measure were only partially achieved, against the high proportion of investments that specifically took environmental concerns into account, the effectiveness is evaluated as “satisfactory”.

Effectiveness rating: 3

Efficiency

SIDBI works without ongoing subsidies, and is among the most efficient nationwide banks. With 15 regional offices, 80 branch offices and a total of just under 1,100 employees, SIDBI achieved a balance sheet total for the 2015/2016 fiscal year of approximately EUR 8.8 billion (as of March 2016). This can be attributed to the business model (channelling of funds through partner financial institutions), the highly qualified SIDBI workforce as well as streamlined and functional organisation. In November 2009, SIDBI established a competence centre for environmental and energy efficiency (or “Energy Efficiency Cell”), which has since expanded into its own business division (the “Energy Efficiency Vertical”) with 12 employees.² Both the environmental and energy efficiency lines of credit from the FC were managed by this division.

Overall, the demand for funds from the line of credit developed sluggishly; the line of credit was not completely disbursed until December 2013, i.e. 10 months later than originally planned. Delays resulted from the overly complicated approval processes for this line of credit. The software tool introduced for the appraisal of funding eligibility was not used by SIDBI loan officers, as they were not familiar with the tool’s format, nor with the requirement to rigorously quantify environmental impacts. Interviews with the loan officers in the branch offices revealed that these employees did not feel able to use the tool without technical knowledge. In addition, the costs of hedging against exchange rate risk rose over the course of the project, so that the profit margin on SIDBI’s side ultimately turned out to be very low (significantly less than 1%). Understandably, this undermined SIDBI employees’ interest in learning complex new approval processes, especially since more highly subsidised lines from other donors were being operated in parallel. Taking inspiration from other donor processes, a positive list of technologies worthy of promotion was introduced in the course of the project, which had a positive influence on the outflow of funds and on project efficiency.

Besides the complex approval criteria, the parallel operation of the FC energy efficiency and environmental lines of credit reduced the production efficiency of the project. Due to the very similar orientation of the two FC lines, it was not possible by the end of the project to instil SIDBI employees with a solid understanding of the difference between the energy efficiency and environmental lines of credit. This led to a situation where the loan officers asked for technical assistance from the implementation consultant’s team in a very high number of cases (70 of a total of 312 loan applications). In addition, some SIDBI employees believed that the “stricter” approval criteria for the energy efficiency line also applied to the environmental line of credit.³ Finally, some of the same types of investments were financed under both the FC’s energy efficiency line of credit and its environmental line of credit.

SIDBI coordinated the accompanying measure on its own. From today’s perspective, it was poorly scheduled, since the contracts with the implementation consultants were not completed until a portion of the credits had already been disbursed. It turned out to be difficult to establish new approval processes in a credit line that was already operating, and the consultant’s team had to develop the software tool under intense time pressure. In retrospect, it was a fundamental error to intertwine the accompanying measures for the energy efficiency and environmental lines of credit with one another, since the many problems with the energy efficiency line led to the neglect of the environmental line of credit. For example, marketing events in the clusters were presented for both lines of credit together, but in the end there was a clear emphasis in the presentations on the energy efficiency line. The efficiency of the accompanying measure also suffered due to poor consultation with donors. It was difficult at times to motivate the SIDBI branch of-

² After a restructuring and merger of the different business divisions into the Credit Vertical in 2014, the Energy Efficiency Cell has been organised as an administrative department.

³ For the credits that were distributed under the energy efficiency line, an emissions target was imposed: The refinanced investments had to yield a reduction of at least 100 tonnes of CO₂ for every million Indian rupees spent. No comparable emissions target was included with the environmental line of credit.

fices to prepare marketing events, as they had often prepared similar events just a few weeks earlier for other donor partners' lines.

Efficiency rating: 4

Impact

The overall development goal was (i) to contribute to a sustainable reduction in the heavy pollution generated by MSMEs and to minimise the associated risks to health and the environment, and (ii) to introduce financial products that are appropriate for investments that target the reduction or prevention of environmental emissions.

Setting aside the numerous problems with the implementation of the line of credit, there is much evidence to suggest that about 75%⁴ of the investments supported could lead to positive environmental impacts. The investments made in waste disposal solutions and recycling measures, such as sewage treatment facilities and hazardous waste dumps, can be seen as especially positive given that appropriate sewage treatment and the recycling of industrial waste water are still unusual in India, and that MSMEs have only limited access to specialised disposal facilities. Strongly positive environmental impacts also resulted from the investments in environmentally friendly production methods: For instance, the acquisition of 16 digital printing presses by ceramics companies reduced the generation of poisonous waste; and investments in modern dyeing machines and rotary printing presses in the textile printing industry have led to reduced waste water pollution. Credits for the transition from diesel to natural gas (purchase of new vehicles and conversion of older cars) resulted in a relative reduction of air pollution, although it might be criticised that there is no guarantee that the old, polluting vehicles have been taken out of circulation. A positive point to be emphasised is the awarding of 88 unsecured loans (8% of the volume of lending for fuel changeover) to taxi drivers in Mumbai, as stricter environmental legislation means that they can at least no longer use their old diesel vehicles as intensively, i.e. as taxis. Due to the wide variety of different machine models that were financed, and the large number of loans (288 in total), it was not possible to verify whether the financed measures were properly carried out. Unfortunately, no data is available on the companies' economic development.

It is difficult to estimate whether the MSMEs would have invested in modern (and therefore more environmentally friendly) technologies even without the project. The marketing events bore little fruit: events were held in 6 clusters, but branch offices near the clusters only awarded 21 loans (out of a total of 267). It can therefore be assumed that the events had little positive influence on the ultimate borrowers' demand for environmental investments. The ultimate borrowers were also not given any guidance or technical advice in preparing their loan applications. The MSMEs' investment decision was much more a result of stricter implementation and enforcement of national environmental legislation, e.g. the imposition of upper limits on waste water output in selected clusters or the ban on diesel taxis that have been in service for more than 25 years. On a positive note, MSMEs prepared to make environmental investments were subsidised, which therefore contributed to their profitability. However, the subsidy was a relatively weak one; rather than the specified 100 basis points, the conditions for the ultimate borrowers were only about 75 basis points below the market interest rate. At the same time, it cannot be ruled out that loans would have been made available to MSMEs under more favourable conditions through other highly diversified donor lines of credit.

Objective (ii), which was specific to the financial sector, was to be considered as fulfilled if SIDBI's portfolio for environmental financing⁵ was at least twice the volume of the KfW line of credit two years after complete disbursement. This could not be achieved. SIDBI did not continue the environmental line of credit product with its own funds after the completion of the FC project. Nor did any other donor introduce a financial product at SIDBI with the specific objective of preventing environmental emissions. Encourag-

⁴ 25% of the investments went to measures, especially investments in milling machines, of which the primary effect was an increase in resource productivity. These have a positive impact on the environment to the extent that raw materials are used more efficiently and/or that the production of recyclable waste is reduced. However, these investments cannot be classified as "clean production technologies", and should rather be funded under an energy efficiency line of credit or a regular MSME line of credit.

⁵ In accordance with the project appraisal report, "environmental financing" should be understood to mean "cleaner production loans", i.e. loans for clean production technologies.

ingly, as specified in the provisions of execution, the executing agency did create a division (the “Energy Efficiency Vertical”) that is responsible for issues of environmental and energy efficiency, and which by mid-2015 had financed a total of 6,800 MSMEs with a commitment volume of over EUR 600 million. In addition, a growing number of financial institutions in India (e.g. Yes Bank, AU Financier) are becoming active in the domain of sustainable financing in a broader sense. A causal link cannot be made to the project, however, since no financial institution has introduced a stand-alone environmental line of credit product.

Impact rating: 3

Sustainability

The sustainability of the impacts at the level of individual businesses can be evaluated as satisfactory. The low loan loss ratio for the line of credit implies that most of the MSMEs that received funding were financially sustainable, which in turn allows us to assume that these MSMEs will operate these more environmentally friendly machines for a long time, and that they will recognise the business advantages of these processes by using them. On a critical note, we observe that the potential to raise awareness among MSMEs of environmental issues and the financial benefits of environmental protection, e.g. through closer consulting with MSMEs in the context of the accompanying measure, was not exploited. The original effort to reach groups of companies or entire clusters through demonstration projects could not be implemented.

It can be assumed that SIDBI will continue to be viewed by the Indian government as a key actor in the funding of the MSME sector, and will extend its niche business in the “sustainable financing” domain in the years to come. The SIDBI is in a good financial position with a solid capital base and stable profits.

Thus far, it has not been possible to sustainably anchor the environmental line of credit product either at the SIDBI or other institutions in the Indian financial sector. At present, no bank operates a stand-alone product that targets the reduction of environmental emissions. Due to the unwieldy execution of the product, it is not surprising that no attempts have yet been made to offer a similar one. At the same time, it should be noted that the interest of India’s national and commercial banks in “sustainable financing” continues to grow. The SIDBI takes a leading role here. To date, Indian banks mainly have experience in the financing of renewable energies and energy efficiency measures. Among other factors, this can be attributed to the fact that in the past, the Indian government’s top priority, and that of the international community, has been on issues of climate protection. In the last two years, there has been growing evidence that environmental protection is also gaining in importance in an Indian context. Besides the increasing health problems that the population is suffering due to air, water and ground pollution, a key trigger for this change is the Modi government’s “Make in India” strategy. Among other things, this strategy aims to increase the acceptance of Indian MSME products on the export markets, which requires restrictions on environmental emissions from production processes. In recent years, the Modi government has increased the pressure on MSMEs to comply with environmental standards. In 2015, for instance, the handling of court cases involving violations of environmental legislation was simplified, and a national classification of all Indian industries according to their degree of environmental pollution was undertaken, which simplifies the monitoring of heavily polluting industries. As part of the government’s “Zero Effect, Zero Defect” programme, rolled out in 2016, Indian MSMEs can have the quality of their products certified with regard to their environmental emissions, and receive advice on reducing negative environmental impacts. These initiatives will have positive effects on the demand for environmental credits, on the relevance of the product for business policies, and ultimately on the sustainability of the environmental line of credit.

Since the market for the financing of environmentally friendly production methods is still at its early stages, the need for ground-level work with both banks and end borrowers is as strong as ever. As already observed in the evaluation of the preceding project, we may find fault with the fact that training measures at the SIDBI as part of the accompanying measure were developed only as temporary activities, and that the bank was under no obligation to certify staff. According to the executing agency, there is still a strong need for training measures to familiarise loan officers, especially in the branch offices, with the approval criteria and the profitability of investments in environmentally friendly production methods. The accompanying measure to the following project, where the design has been adapted to take account of the experiences presented here, will make a positive contribution to increasing institutional knowledge in the domain

of environmental financing, since it is precisely these weak points that are to be addressed through the accompanying measure.

Sustainability rating: 3

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

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

Level 1	Very good result that clearly exceeds expectations
Level 2	Good result, fully in line with expectations and without any significant shortcomings
Level 3	Satisfactory result – project falls short of expectations but the positive results dominate
Level 4	Unsatisfactory result – significantly below expectations, with negative results dominating despite discernible positive results
Level 5	Clearly inadequate result – despite some positive partial results, the negative results clearly dominate
Level 6	The project has no impact or the situation has actually deteriorated

Rating levels 1-3 denote a positive assessment or successful project while rating levels 4-6 denote a negative assessment.

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 is very unlikely to improve. 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. Rating levels 1-3 of the overall rating denote a "successful" project while rating levels 4-6 denote an "unsuccessful" project. It should be noted that a project can generally be considered developmentally "successful" only if the achievement of the project objective ("effectiveness"), the impact on the overall objective ("overarching developmental impact") and the sustainability are rated at least "satisfactory" (level 3).