



1. Project Data:		Date Posted : 09/26/2003	
PROJ ID: P010463		Appraisal	Actual
Project Name: Indus Pollution Prevention	Project Costs (US\$M)	324.9	n.a
Country: India	Loan/Credit (US\$M)	168.0	80.4
Sector(s): Board: ENV - General water sanitation and flood protection sec (86%), Sub-national government administration (11%), General industry and trade sector (2%), Central government administration (1%)	Cofinancing (US\$M)		
L/C Number: C2645; L3779; L3780			
	Board Approval (FY)		95
Partners involved :	Closing Date	03/30/2002	11/30/2002

Prepared by :	Reviewed by :	Group Manager :	Group:
Robert C. Varley	Soniya Carvalho	Alain A. Barbu	OEDST

2. Project Objectives and Components

a. Objectives

The objectives of the Industrial Pollution Prevention Project (IPPP) were to promote cost-effective abatement of pollution from industrial sources:

- strengthen the facilities, equipment and skills of four State Pollution Control Boards (SPCBs) in Rajasthan, Madhya Pradesh, Chattisgarh, Karnataka, and Andhra Pradesh, to enable them to perform their mandate more effectively;
- facilitate priority private sector investments dedicated to preventing pollution from industrial sources; and
- provide technical assistance for: (a) adoption of modern tools of information, management and control of residues; (b) organization of a clean technology institutional network; and (c) establishment of an extension service on environmentally sound practices for small scale industry .

b. Components

The components were:

Institutional (US\$25.5 million, or 7.7 percent of project cost) - a program of strengthening the SPCBs.
Investment (US\$300.0 million, or 90.9 percent of project cost) - by individual firms in pollution abatement through lines of credit to Industrial Development Bank of India (IDBI) and the Industrial Credit and Investment Corporation (ICICI.) These investments would lead to cleaner methods of production by encouraging the use of clean technologies, waste minimization and resource recovery by industry, or pollution control where effective, and where these activities had a significant demonstration and replicability potential . Specific funds were earmarked for Common Effluent Treatment Plants (CETP) and Industrial Water Recycling Plants (IWRP.)

Technical Assistance Component (US\$4.5 million, or 1.4 percent of project cost):

- (i) the establishment of a "clean technology institutional network" (CTN);
- (ii) waste minimization and abatement methods for small scale industry, and the organization of waste minimization circles (WMC);
- iii) pre-investment studies for waste minimization facilities proposed to be financed under the project; and
- (iv) other training and consulting services under planning by the Ministry of Environment and Forests (MOEF).

c. Comments on Project Cost, Financing and Dates

Financing was divided between an IDA credit of US\$ 25.0 million, used primarily to support the Institutional and Technical Assistance components, and two loans, totalling US\$ 143 million, for on-lending through the IDBI (US\$93 million) and ICICI (US\$50 million). US\$1.6 million of the IDA credit, and US\$64 million of the loan to IDBI were cancelled. A further \$21.8 million was not disbursed by project completion . The project closing date was extended once, by 8 months.

3. Achievement of Relevant Objectives:

Institutional strengthening . Achievement of this objective in the last 30 months of the project, after Mid-Term Review, was highly satisfactory - management, technical procedures, analytic capacity and the use of information technology (GIS) improved significantly in a short time. The SPCBs achieved their institutional objectives with a particularly strong impact on environmental awareness in Andhra Pradesh and Karnataka . This had a demonstration effect on non-project SPCBs. The SPCBs are now redefining their roles as regulatory agencies and addressing long-standing issues of credibility and governance .

Private Sector Investment . Targeted levels of private investment were not achieved but performance was still moderately satisfactory. Only \$11.5 million was disbursed in the first 4 years of the project and 70 percent of the funding to be channelled through the IDBI was eventually cancelled . The IDBI shortfall was particularly marked in the 20 percent of the funding that was earmarked for CETP (Common Effluent Treatment Plant). The project was not successful in developing, demonstrating, or promoting the environmental and economic advantages of IWRP (Industrial Water Treatment Plant). Although fewer individual investments were undertaken than planned, they were concentrated in the 17 priority polluting sectors, produced positive environmental benefits and appear to be sustainable.

Technical Assistance . Achievement of this objective was moderately satisfactory - the planned "clean technology network" (CTN) was cancelled, although it was partially replaced by the creation and operation of a web site for "waste management circles" (WMCs) that, to some extent, met the original objective of the CTN . The component supported ten related studies and consultancies carried out by Ministry of Environment and Forestry (MOEF.)

4. Significant Outcomes/Impacts:

Institutional strengthening . The project refurbished and expanded a total of 28 fixed and one mobile laboratory in the four states. The purchase of 23 sampling vans greatly expanded capacity to carry out field monitoring . Training in relevant technical and managerial skills was provided to 486 state and 18 federal personnel. IT training was given to hundreds of staff, 204 in Karnataka alone. The project complemented the predecessor Industrial Pollution Control Project (IPCP) by funding a GIS system (Geographic Information System) for the Gujarat and Karnataka PCBs (Pollution Control Board) and Management Information Systems for Rajasthan and Madhya Pradesh . Websites were also developed for the SPCBs.

Investments . A total of 12 projects each were financed through IDBI and ICICI . Five sectors - steel/aluminium, cement, chemicals, petroleum coke and sugar - made up over 75 percent of the total industrial investments . Projects financed included cogeneration using waste heat, supplementary power plants using coal fines and waste (bagasse), wastewater treatment, and air pollution control (removal of particulates). Adoption of environmental policies by ICICI will influence other financing institutions and commercial banks in the country . ICIC developed a strong capacity to finance pollution prevention and most of the investment shortfall was accounted for by IDBI .

Technical assistance . In place of the proposed CTN the project initiated the WMC program and has established 115 WMCs covering 17 states and 41 industrial sectors. The program has attracted international attention . In addition, training was arranged for 168 professionals and awareness seminars organized for 4,500 participants. Through WMCs, more than 500 small and medium scale industries have interacted to generate ideas on waste minimization and pollution prevention. The TA component also financed studies and consulting services for MOEF in the areas of project management and procurement of laboratory and field monitoring equipment . This included a laboratory guidance manual that aimed at standardization of the quality of data generated by the SPCBs, training of SPCBs on laboratory quality systems, and a related study tour to the US (financed by USAID).

5. Significant Shortcomings (including non-compliance with safeguard policies):

- Quality at entry was unsatisfactory and design deficiencies were exacerbated by neglect early in implementation. Early supervision efforts were diverted to preparing a similar project (the Hazardous Waste Management Project) which was subsequently dropped. The IPCP was still under implementation until 1999 and lines of credit financed by other donors (ADB, KfW, USAID, and JBIC) were available, which were significantly cheaper than IPPP. When interest rates fell, IPCP lending went into decline at the same time as IPPP came on line with less attractive terms (including liability for foreign exchange risk.) There was no policy on, or coordination with other donor lending programs, and the ICR notes that "management appears to have lost confidence in the approach of extending credit to industrial firms by the time of the IPCP ICR in 1999...environmental lines of credit have been shown to rarely contribute to improved environmental outcomes ." IPPP was prepared prematurely and failed to take account of important lessons from the predecessor IPCP operation.
- The distinction between pollution "control" (IPCP) and "prevention" (IPPP) investments added little value and greatly reduced potential lending under IPPP. What was needed was a more integrated approach using both types of investment to meet applicable legal standards . A major factor in the low level of IPPP investment were the complex qualification criteria and high transaction costs . But no attempt was made to empirically establish the real impact of the investments overall and apply cost effectiveness measures .
- The Bank declined to extend the closing date after one 8-month extension. Project implementation only really got underway in the run up to the Mid-Term Review (MTR) in January 2000. However, after highly satisfactory progress was made in the next 30 months, and a request made by MOEF for a second extension, the project

was wound up. Given that many of the major shortcomings derived from the late start, it is difficult to understand why this decision was taken.

6. Ratings:	ICR	OED Review	Reason for Disagreement /Comments
Outcome:	Unsatisfactory	Moderately Satisfactory	The project achieved most of its major relevant objectives but with significant shortcomings (sections 3 and 5).
Institutional Dev.:	Substantial	Substantial	
Sustainability:	Likely	Likely	
Bank Performance:	Unsatisfactory	Unsatisfactory	However, supervision was very strong after the MTR.
Borrower Perf.:	Unsatisfactory	Unsatisfactory	
Quality of ICR:		Satisfactory	

NOTE: ICR rating values flagged with '*' don't comply with OP/BP 13.55, but are listed for completeness.

7. Lessons of Broad Applicability:

- A line of credit targeted at pollution prevention requires a lot of upfront work on the screening and appraisal of sub-projects. There is a need to ensure that the financial intermediaries (FIs) have an adequate comprehension of the technical standards that will be enforced by the Bank as a condition for approving sub-loans.
- Loans to FIs need to be designed in the context of the impact of alternative sources of finance available from other donors and parallel Bank programs. Consideration should be given to more flexible project design, perhaps not making the FI loans effective until they are specifically requested.
- Distinguishing between financing "pollution control" and "pollution prevention" investments may be of less value than an integrated approach which considers cost-effectiveness and permits both kinds of investment.
- Credit resources should be focused on priority sites or zones where the marginal benefits are high and project investments can reinforce regulatory enforcement.

8. Assessment Recommended? Yes No

Why? This was a complex project and raises broader questions about Bank environmental policies in India. An audit could investigate which shortcomings in project performance reflected the country and sector strategies being pursued, rather than the implementation and appraisal /supervision efforts.

9. Comments on Quality of ICR:

The ICR is satisfactory overall. However, one significant deficiency is that data on project costs are incomplete. The actual/latest estimate of costs included sub-borrowers' additional financing for expansion and modernization, which is a far larger amount than for Bank projects. Project costs are not presented by source of funds: Bank; Government; and Co-financier. The mandatory standard table (Annex 2: Project Financing by Component) has been omitted. Furthermore it would have been more appropriate to show Total actual project cost as "Not Available" and to footnote the \$ 1.046 billion, a figure which the ICR indicates is not comparable.