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| 1. Project Data: | | Date Posted : 08/16/2002 | |
| PROJ ID: P003580 | | Appraisal | Actual |
| Project Name: Southern Jiangsu Environmental Protection Project | Project Costs (US\$M) | 588.0 | 590.3 |
| Country: China | Loan/Credit (US\$M) | 250.0 | 241.5 |
| Sector(s): Board: ENV - General water sanitation and flood protection sec (82%), Sewerage (16%), Sub-national government administration (2%) | Cofinancing (US\$M) | | |
| L/C Number: L3582 | | | |
| | Board Approval (FY) | | 93 |
| Partners involved : | Closing Date | 06/30/2001 | 06/30/2001 |

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| Prepared by : | Reviewed by : | Group Manager : | Group: |
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2. Project Objectives and Components

a. Objectives

The objective of the project was to reduce the widening gap between economic development and environmental protection in Southern Jiangsu in an efficient and effective manner . Specifically, the project aimed at :
 a)improvements in the formulation, monitoring and enforcement of environmental policies and regulations;
 b)enhancement of industrial point source pollution control in both urban and rural areas through the introduction of cost effective, low polluting technology and processes, waste minimization practices and improved economy of waste treatment; c)improvements of municipal wastewater management through the provision of sewerage facilities and the establishment of an appropriate institutional framework and a sound cost recovery policy; d)initiation of toxic/hazardous material and waste management; and e) strengthening the environmental planning and management capabilities of the entities responsible for environmental protection in the region .

b. Components

- i) *Industrial Pollution Control Subprojects* (\$507m): line of credit to finance investments, TA and training for a) large scale urban industrial pollution control subprojects; b) small scale urban industrial pollution control subprojects; and c) pilot township and village industrial enterprise (TVIE) environmental management subprojects .
- ii) *Urban Wastewater Management* (\$81m): Construction of municipal facilities for urban wastewater management
- iii) *Toxic/Hazardous Waste Management* (\$1.8m): a) establishment of solid/hazardous waste management and registration centers; b) establishment of a hazardous material emergency response center; and c) construction of hazardous material storage and transshipment facilities .
- iv) *Institution Building* (\$0.34m): a) TA in detailed design and project management; b) training for provincial and municipal environmental protection bureaus (EPB), municipal sewerage companies, hazardous material storage company and financial agent for industrial pollution control subprojects; and c) provision of specialized monitoring and training equipment for local EPBs .

c. Comments on Project Cost, Financing and Dates

Actual project costs were \$590.34 million versus \$588 million at appraisal. Actual IBRD costs were \$241.5 million against \$250 million planned at SAR, while government spending amounted to \$ 348.84 million against the \$338 million when appraised. The project closed as scheduled on 06/30/2001.

3. Achievement of Relevant Objectives:

Project objectives were only partially achieved, as summarized below :

a) *Improved formulation, monitoring and enforcement of environmental policies and regulations* : modestly achieved. Borrower did not update the environmental strategy and action plans for Jiangsu nor its environmental improvement monitoring indicators in a timely manner . Borrower was also not fully committed to the "added foreign costs" of the institutional building aspects of the project . Due to the East Asian Crisis and the unfavorable onlending

arrangements, only the wastewater treatment companies made use of the TA provided by the project . The capacity of EPBs, the key environmental actors was not strengthened . Likewise, the quality of supervision of the project's Industrial point source pollution control component was less than desired as China Investment Bank (CIB) and the municipal project offices (which took over loan administration from CIB) did not receive the required skills upgrading .

b) *Enhancement of industrial point source pollution control* : substantially achieved . 65 industrial subprojects, ranging from pilot TVIE investments to large scale pollution control, benefited considerably by adopting waste minimization practices and cost effective, clean technologies & processes . Four pulp and paper mills (largest single source polluters) were closed or relocated by the municipal authorities, contributing to highly positive environmental improvements to Southern Jiangsu and the Grand Canal . However difficult market conditions precipitated by the East Asian Crisis caused financial constraints in the subproject enterprises and led to lower than anticipated ERR for these investments (yet none below 13 %) and implementation delays .

c) *Improvements of municipal wastewater management* : substantially achieved . Three sewerage facilities were constructed as planned with a total treatment capacity of 340,000 tons/day and 106 km of sewer lines were laid . The objectives within the water quality master plans for all 3 cities were met, and an estimated 40,000 tons/year of COD will be reduced . As has been the experience with other enterprises in China, full operational and financial autonomy were not achieved . Modest increases in tariffs were sufficient to cover operating costs but not debt servicing . The financial viability of these facilities have nonetheless been guaranteed by their respective municipalities .

d) *Initiation of toxic/hazardous material and waste management* .not achieved under the project . A hazardous waste registration center was established with the use of non -project funds by the provincial government . The construction of the hazardous material storage and transshipment center was cancelled when Borrower (with Bank agreement) decided that such facilities were best developed and operated by the private sector .

e) *Strengthening environmental planning and management capabilities* : modestly achieved . See a) above . Nonetheless, the awareness, knowledge and commitment to environmental management by the municipal governments have been strengthened considerably . Their resolve and commitment were demonstrated by their : i) "rescuing" of those industrial subproject enterprises which suffered financial difficulties, ii) closure of the pulp and paper mills, and iii) support for the long term sustainability of the wastewater companies .

4. Significant Outcomes/Impacts:

- Significantly positive environmental benefits realized with respect to improvements in water and air quality in the four municipalities and the Grand Canal through the project's physical achievements
- Considerable "behavioral change" by, and increased productivity and efficiency of, the 65 industrial subprojects most of which are able to sustain their investments even during the difficult market times .
- Strongly committed municipal governments to environmental protection .

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

- The project was large and complex project but was not matched by a coherent and effective project management structure (especially for the industrial pollution control component) .
- The objective of initiating toxic/hazardous material and waste management was not achieved .
- Many of project's policy and institutional objectives were not implemented, including the necessary skills upgrading of key counterparts .
- Overall project oversight by Bank was unsatisfactory . For a project with implementation problems, only one mission per year was fielded versus two per year planned for at appraisal .
- Borrower's (provincial government) lack of commitment to the institutional aspects of the project further compromised the project outcome .
- Project did not establish the necessary monitoring systems to properly quantify the expected health and economic benefits from the project as a whole .

| 6. Ratings : | ICR | OED Review | Reason for Disagreement /Comments |
|-----------------------------|----------------|---------------------------|--|
| Outcome : | Unsatisfactory | Moderately Unsatisfactory | OED's rating is based on the fact that two of the major objectives were substantially achieved, two others were modestly achieved, and the last one was not achieved . Under OED's 6 point rating scale, a moderately unsatisfactory rating is appropriate . |
| Institutional Dev .: | Negligible | Modest | Considerable institutional development was achieved by the industrial enterprises, the wastewater management companies and the municipal |

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| | | | government. |
| Sustainability : | Likely | Likely | |
| Bank Performance : | Unsatisfactory | Unsatisfactory | |
| 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:

- For large investment projects involving a line of credit, the managerial, technical and financial capability of the administering agency need to be carefully assessed prior to project implementation . If capacity is in doubt, a smaller pilot would be more desirable to set up the required organizational and procedural systems
- For industrial subprojects, realistic market assessments using independent experts should be prepared for new products or expansion of production . Sensitivity analyses should be prepared to assess the impact of price changes on the financial viability of the enterprise
- When project objectives include air quality and health improvement in a population, measures should be included in project design to accurately quantify and monitor such improvements . Baseline studies and regular follow-ups are required with the appropriate institutional set-up and equipment.

8. Assessment Recommended? Yes No

9. Comments on Quality of ICR:

Quality of ICR is very high. Comprehensive and analytical. Frankly discusses project shortcomings .