

**Document of  
The World Bank**

**Report No.: 39298**

**PROJECT PERFORMANCE ASSESSMENT REPORT**

**CHINA**

**TIANJIN URBAN DEVELOPMENT AND ENVIRONMENT PROJECT (CR.2387)**

**ZHEJIANG MULTICITIES DEVELOPMENT PROJECT (CR.2475)**

**SHANGHAI ENVIRONMENT PROJECT (LN.3711)**

**March 29, 2007**

*Sector, Thematic and Global Evaluations  
Independent Evaluation Group*

**Currency Equivalents** (annual averages)*Currency Unit = Chinese Renimbi (Rmb.)*

Year	US\$	Rmb.	Year	US\$	Rmb.
1992	1.00	5.45	1999	1.00	8.28
1993	1.00	5.76	2000	1.00	8.28
1994	1.00	8.62	2001	1.00	8.28
1995	1.00	8.35	2002	1.00	8.28
1996	1.00	8.31	2003	1.00	8.28
1997	1.00	8.29	2004	1.00	8.28
1998	1.00	8.28	2005	1.00	8.19

**Abbreviations and Acronyms**

BOD	Biochemical oxygen demand
CAS	Country Assistance Strategy
CIDA	Canadian International Development Agency
EPB	Environmental Protection Bureau
ERR	Economic rate of return
GDP	Gross domestic product
GOC	Government of China
ICB	International competitive bidding
ICR	Implementation completion report
IEG	Independent Evaluation Group
IEGWB	Independent Evaluation Group (World Bank)
M&E	Monitoring and Evaluation
MOF	Ministry of Finance
NDRC	National Development and Reform Commission
OED	Operations Evaluation Department
PAD	Project appraisal document
PMO	Project management office
PPAR	Project performance assessment report
SAR	Staff appraisal report
SDC	Songjiang Drainage Company
SEPA	State Environmental Protection Agency
UNESCO	United Nations Educational, Scientific and Cultural Organization

**Fiscal Year**

Government: January 1 – December 31

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**IEGWB Mission: Enhancing development effectiveness through excellence and independence in evaluation.**

### **About this Report**

The Independent Evaluation Group assesses the programs and activities of the World Bank for two purposes: first, to ensure the integrity of the Bank's self-evaluation process and to verify that the Bank's work is producing the expected results, and second, to help develop improved directions, policies, and procedures through the dissemination of lessons drawn from experience. As part of this work, IEGWB annually assesses about 25 percent of the Bank's lending operations through field work. In selecting operations for assessment, preference is given to those that are innovative, large, or complex; those that are relevant to upcoming studies or country evaluations; those for which Executive Directors or Bank management have requested assessments; and those that are likely to generate important lessons.

To prepare a Project Performance Assessment Report (PPAR), IEGWB staff examine project files and other documents, interview operational staff, visit the borrowing country to discuss the operation with the government, and other in-country stakeholders, and interview Bank staff and other donor agency staff both at headquarters and in local offices as appropriate.

Each PPAR is subject to internal IEGWB peer review, Panel review, and management approval. Once cleared internally, the PPAR is commented on by the responsible Bank department. IEGWB incorporates the comments as relevant. The completed PPAR is then sent to the borrower for review; the borrowers' comments are attached to the document that is sent to the Bank's Board of Executive Directors. After an assessment report has been sent to the Board, it is disclosed to the public.

### **About the IEGWB Rating System**

IEGWB's use of multiple evaluation methods offers both rigor and a necessary level of flexibility to adapt to lending instrument, project design, or sectoral approach. IEGWB evaluators all apply the same basic method to arrive at their project ratings. Following is the definition and rating scale used for each evaluation criterion (additional information is available on the IEGWB website: <http://worldbank.org/ieg>).

**Outcome:** The extent to which the operation's major relevant objectives were achieved, or are expected to be achieved, efficiently. The rating has three dimensions: relevance, efficacy, and efficiency. *Relevance* includes relevance of objectives and relevance of design. Relevance of objectives is the extent to which the project's objectives are consistent with the country's current development priorities and with current Bank country and sectoral assistance strategies and corporate goals (expressed in Poverty Reduction Strategy Papers, Country Assistance Strategies, Sector Strategy Papers, Operational Policies). Relevance of design is the extent to which the project's design is consistent with the stated objectives. *Efficacy* is the extent to which the project's objectives were achieved, or are expected to be achieved, taking into account their relative importance. *Efficiency* is the extent to which the project achieved, or is expected to achieve, a return higher than the opportunity cost of capital and benefits at least cost compared to alternatives. The efficiency dimension generally is not applied to adjustment operations. *Possible ratings for Outcome:* Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.

**Risk to Development Outcome:** The risk, at the time of evaluation, that development outcomes (or expected outcomes) will not be maintained (or realized). *Possible ratings for Risk to Development Outcome:* High Significant, Moderate, Negligible to Low, Not Evaluable.

**Bank Performance:** The extent to which services provided by the Bank ensured quality at entry of the operation and supported effective implementation through appropriate supervision (including ensuring adequate transition arrangements for regular operation of supported activities after loan/credit closing, toward the achievement of development outcomes. The rating has two dimensions: quality at entry and quality of supervision. *Possible ratings for Bank Performance:* Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.

**Borrower Performance:** The extent to which the borrower (including the government and implementing agency or agencies) ensured quality of preparation and implementation, and complied with covenants and agreements, toward the achievement of development outcomes. The rating has two dimensions: government performance and implementing agency(ies) performance. *Possible ratings for Borrower Performance:* Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.



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This report was prepared by Roy Gilbert, who assessed the project in May-June 2006. Romaine Pereira provided administrative support.

## CHINA: TIANJIN URBAN DEVELOPMENT AND ENVIRONMENT PROJECT (CR.2387)

### Principal Ratings

	<i>ICR*</i>	<i>ICR Review*</i>	<i>PPAR</i>
Outcome	Highly Satisfactory	Moderately Satisfactory	Satisfactory
Institutional Development Impact**	High	Substantial	-
Risk to Development Outcome	-	-	Moderate
Sustainability***	Highly Likely	Likely	-
Bank Performance	Satisfactory	Unsatisfactory	Satisfactory
Borrower Performance	Highly Satisfactory	Satisfactory	Highly Satisfactory

### Key Staff Responsible

<i>Project</i>	<i>Task Manager /Leader</i>	<i>Division Chief/ Sector Director</i>	<i>Country Director</i>
Appraisal	Songsu Choi	Zafer Ecevit	Shahid Burki
Completion	Songsu Choi	Keshav Varma	Yukon Huang

## CHINA: ZHEJIANG MULTICITIES DEVELOPMENT PROJECT (CR.2475)

### Principal Ratings

	<i>ICR*</i>	<i>ICR Review*</i>	<i>PPAR</i>
Outcome	Satisfactory	Satisfactory	Satisfactory
Institutional Development Impact**	Substantial	Substantial	-
Risk to Development Outcome	-	-	Moderate
Sustainability***	Highly Likely	Likely	-
Bank Performance	Satisfactory	Satisfactory	Moderately Satisfactory
Borrower Performance	Satisfactory	Satisfactory	Satisfactory

### Key Staff Responsible

<i>Project</i>	<i>Task Manager/ Leader</i>	<i>Division Chief/ Sector Director</i>	<i>Country Director</i>
Appraisal	Herbert Boehm	Zafer Ecevit	Shahid Burki
Completion	Wiebe Moes	Keshav Varma	Yukon Huang

## CHINA: SHANGHAI ENVIRONMENT PROJECT (LN.3711)

### Principal Ratings

	<i>ICR*</i>	<i>ICR Review*</i>	<i>PPAR</i>
Outcome	Satisfactory	Satisfactory	Satisfactory
Institutional Development Impact	High	Substantial	-
Risk to Development Outcome	-	-	Significant
Sustainability	Highly Likely	Likely	-
Bank Performance	Satisfactory	Satisfactory	Satisfactory
Borrower Performance	Satisfactory	Satisfactory	Satisfactory

### Key Staff Responsible

<i>Project</i>	<i>Task Manager / Leader</i>	<i>Division Chief/ Sector Director</i>	<i>Country Director</i>
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\* The Implementation Completion Report (ICR) is a self-evaluation by the responsible Bank department. The ICR Review is an intermediate IEGWB product that seeks to independently verify the findings of the ICR.

\*\*As of July 1, 2006, Institutional Development Impact is assessed as part of the Outcome rating.

\*\*\*As of July 1, 2006, Sustainability has been replaced by Risk to Development Outcome. As the scales are different, the ratings are not directly comparable.



## Preface

This is a Project Performance Assessment Report (PPAR) for the following three urban development projects in China:

- **China: Tianjin Urban Development and Environment Project** (Cr.2387-CHA), for which the World Bank approved a credit in an amount of US\$109.4 million equivalent on June 17, 1992. The credit was closed on December 31, 2000, two years later than planned, when US\$3.8 million equivalent was cancelled.
- **China: Zhejiang Multicities Development Project** (Cr.2475-CHA), for which the World Bank approved a credit in an amount of US\$118.3 million equivalent on March 25, 1993. The credit was closed on May 31, 2003 four years later than planned, when it had been fully disbursed. This was after a Board approved amendment in January 2002 extending the closing date and creating a new component for emergency snow disaster recovery in Xinjiang Province, against which US\$3.6 million equivalent remaining of the credit was disbursed.
- **China: Shanghai Environment Project** (Ln.3711-CHA), for which a loan of US\$160 million equivalent was approved on August 3, 1994. The loan was closed on December 31, 2002, two years-and-a-half later than planned, when US\$4.1 million equivalent was cancelled.

The report is based on a review of project documents, including Implementation Completion Reports, Staff Appraisal Reports, Memoranda to the President, legal documents and project files, and on discussions held with Bank staff involved in the projects. An IEG mission visited China in May-June 2006 to review project results and met with some 75 persons including national officials and experts, and local officials and project staff. The IEG mission made field visits to more than 15 project sites—housing schemes, urban street widening, water treatment plants, solid waste landfills, drainage works, and urban renewal areas—in six cities. These visits gave the mission the opportunity to engage directly with final beneficiaries of the projects under review. IEG gratefully acknowledges the courtesies and attention freely given by these interlocutors, as well as the excellent planning and logistical support received from the Ministry of Finance, local authorities and the Bank's own country office in Beijing.

Following standard IEG procedures, copies of the draft PPAR were sent to government officials and agencies for their review and comments. The comments received have been taken into account in the text and are attached as Annex B.



## Summary

This is a Project Performance Assessment Report (PPAR) of three urban development projects in China, approved between 1992 and 1994: (i) Tianjin Urban Development and Environment Project (Cr2387); (ii) Zhejiang Multicities Development Project (Cr2475); and (iii) Shanghai Environment Project (Ln3711). The evaluation is IEG's first of the results of completed urban operations that witnessed the extraordinary urban transformation of that country.

The scale of urbanization in China is without precedent in history. Presently some 483 million live in cities, 96 of which have more than one million inhabitants. But with just 40 percent of the population urban, just half the share found in advanced economies, China's rush to urbanize is likely to continue. Expanding cities are engines of economic growth, but infrastructure shortages mean that they have an urban environment stressed by water and air pollution—readily evident to visitors and a reason for these projects. In the 11<sup>th</sup> Five Year Plan (2005-2010) cities are important for the country's development. Government officials in China are keen to draw upon the Bank's experience in rising to the challenges of urbanization through operations such as these.

The Tianjin Project (Cr2387) aimed to help the megacity of that name to strengthen local urban planning and management and improve the urban environment—very relevant objectives. The design was quite simple, relying upon local government to implement priority physical investments in transport and solid waste in particular. Widening the inner ring road resettled 5,345 households into improved housing. For northern China an innovative sanitary landfill was completed, as well as improved wastewater collection and treatment. But lack of demand by enterprises stalled the project's industrial pollution control fund. Despite weak Monitoring and Evaluation (M&E), there is evidence that the project did achieve its objectives.

The Zhejiang Project (Cr2387) focused upon specific improvements to four provincial cities, Hangzhou the capital, Ningbo, Wenzhou and Shaoxing. Specific components—water treatment plants, urban renewal and land development—were married to particular city objectives. Local authorities felt that the design should have included waste-water treatment too. Still, water treatment plants did increase much needed supply. Land development in Shaoxing provided extra space for the city's expansion and project urban renewal helped transform Ningbo into a model for urban planning and environmental management. A similar anti-pollution fund to Tianjin's failed for lack of demand by enterprises and weak enforcement of environmental regulations. M&E was weak without performance indicators or baseline data. Still, there were important achievements in each sub-sector covered.

The Shanghai Project (Ln3711) had a simple and yet highly relevant objective of improving the poor quality of drinking water of China's commercial megacity. For this, the design was correctly built around the promises and challenges of Shanghai's Huangpu River, the city's only source of drinking water and, yet, an environmental hazard. The project built a new large scale water intake for the whole city at Da Qiao, 30 kms up-river from the old one where water had become too polluted to continue using. Beginning operation in 1998, the new plant produced better water quality for the city, even improving its notorious bad taste. But continuing pollution of the Huangpu River water

will require yet another investment—a new water intake is now planned from the less polluted Yangtze River. However, project investment in the Upper Huangpu catchment, notably components of wastewater and solid waste treatment, and restricting toxic chemical use in agriculture, contributed to slowing the deterioration of the river. This can be gauged from project M&E of water quality that was done, but not of sources of pollution that was not. Although high ERRs are likely with so many beneficiaries, no explicit economic analysis was made of these large investments. This meant lost opportunities to learn about their efficiency, useful life and potential for cost recovery.

The overall outcome of the Tianjin Project (Cr2387) is rated **satisfactory**, since objectives were achieved, with only minor shortcomings. While rapid urbanization may challenge project gains, the risk to the development outcome is rated **moderate**. Bank performance was strong and is rated **satisfactory**, Borrower performance, driven by strong ownership and openness to learning, is rated **highly satisfactory**.

The overall outcome of the Zhejiang Project (Cr2475) is rated **satisfactory**; city improvements in Shaoxing and Ningbo were offset by weaker gains in policy on environmental protection. With local ownership balancing the challenges of rapid urban transformation, the risk to the development outcome is rated **moderate**. Bank performance is rated **moderately satisfactory**—stronger during implementation than design. Borrower performance is rated **satisfactory**, with minor shortcomings of inter-agency liaison.

The overall outcome of the Shanghai Project (Ln3711) is rated as **satisfactory**, achieving its objectives with only minor shortcomings. Given the ongoing environmental stress of the Huangpu River and the danger of accidental contamination of the water supply, the risk to the development outcome is rated **significant**. Bank performance is rated **satisfactory**, especially thanks to a strong project design. Borrower performance is rated **satisfactory**, for the careful implementation of the project according to plan.

Experience with these projects highlights the following lessons:

- Some involuntary resettlement is inevitable with rapid urban transformation, and it can be managed in compliance with the Bank's own safeguards provided there is an explicit legal and institutional framework for it as in China's cities. Rising property prices, making it less affordable in a market economy, are likely to curtail it.
- To demonstrate efficiency and optimal choice there should be rigorous evaluation of costs and benefits of major urban infrastructure and environmental protection investments in China. ERR and FRRs can also help identify the timing of replacements, options for cost recovery and opportunities for private sector participation.
- China's benefit from Bank urban development assistance goes beyond the financial resources it brings. More important is conveying trusted knowledge and worldwide project experience through on-the-job learning about what local governments can do to provide more services for the poor and improve the urban environment.

Vinod Thomas  
Director-General  
Evaluation

# 1. Background and Context

1.1 China's current urban development is on a scale unprecedented in history—and so are the challenges of the urban environment addressed by the urban projects reviewed here. Today, nearly 40 percent of China's population of 1.3 billion live in cities. That means 483 million people inhabit what is by far the largest urban system the world has ever known. Before its pro-market reforms began in 1978, China had succeeded in industrializing without urbanizing—keeping its urban population down to *just* 125 million, with tight controls upon rural to urban migration. The *hukou* permit needed to live in cities “had erected a Great Wall between China's urban and rural areas” (Friedmann 2005 pp. 60-61). With reforms loosening controls somewhat, they led to a “floating population” of migrants (without *hukou*) who now account for 20-25 percent of the inhabitants of cities (Yuh 1999 p. 224). Today, China has 96 cities with more than one million inhabitants each, including the megacities of Shanghai (12.7 million) and Beijing (10.8 million). Still with only half the level of urbanization of advanced industrial and service economies, China's rush to urbanize will, no doubt, continue.

1.2 Large scale urban growth and transformation offers both solutions and challenges to China's economic development. As solutions, booming cities on the eastern seaboard function as engines of economic growth and creators of higher productivity employment. By 2002, 61 percent of national GDP was generated in cities (Yeh 2005). As problems, expanding cities quickly run up against shortages of infrastructure and housing, and air and water pollution. In 340 cities that monitor the urban environment, China's State Environmental Protection Agency (SEPA) found that 75 percent of urban residents breathe unclean air and 75 percent of surface water flowing through cities is too polluted to use as drinking water (Bergsten 2006 p. 54). By trying to improve infrastructure and the environment of the chosen cities, the three urban projects reviewed here—among 31 approved by the Bank in China since 1985—were, in fact, trying to help China's economic development too.

1.3 China's latest 11<sup>th</sup> Five Year Plan (2005-2010), with balanced urban and rural development as a cornerstone, makes cities key economic players. Obviously, local authorities themselves are enthusiastic about the economic development of their own city. By setting a national standard for urban development, China's City Planning Act of 1989 required all cities to prepare Master Plans and Detailed Area Plans to protect the urban environment in particular. Rather than simply being instruments of socialist ideology as they had in the past, such plans became explicit tools for enhancing the “economic efficiency” and “technical feasibility” of cities (Yeh 1999 p. 191). China now has formalized urban planning involving some 60,000 professional planners, particularly in the eastern cities where the Bank projects were implemented (Friedmann 2005 p. 111).

1.4 The results of these efforts are readily evident to visitors to China's cities today. The lack of informal settlements typically found in developing country cities bears witness to tight urban land use controls. Also quickly apparent is the extraordinary degree of decentralization of budgetary and urban policy responsibilities to local authorities. The poor environmental conditions of major cities are very evident too, despite the plethora of

local Environmental Protection Bureaux (EPB). The main players in urban development and environmental management in China are municipal, prefecture, district and county administrations—the main movers of the Bank supported projects, too.

## 2. Tianjin Urban Development and Environment Project (Cr.2387)

2.1 Perhaps the world’s least known megacity with 9.3 million inhabitants, Tianjin is nevertheless the principal port and industrial center of northern China. Just 120 kms from Beijing, there is no similar case in the world of such propinquity between two megacities. Although in the shadow of the nearby capital, Tianjin has its own distinct urban history from its relatively recent foundation in 1404, to foreign occupation as a “treaty port” in the nineteenth century, until hosting modern urban transformation typical of today’s dynamic cities in China. Beyond its special city-state status as a municipality, the central government made Tianjin “an experimental zone for comprehensive reform” in June 2006—on a par with Shanghai and Shenzhen. An early result of this is that Airbus’ first assembly plant outside Europe will be located in Tianjin’s Binhai port new area.

### OBJECTIVES

#### Box 1. Summary of Project Objectives and Components

<b>Tianjin Urban Development and Environment Project (Cr.2387)</b>	
<b>Objectives</b>	<b>Components (with costs in US million)</b>
<p>To assist Tianjin in the planning and management of infrastructure and the environment, specifically through improving: (i) project identification, planning and evaluation; (ii) budgeting and financial management; (iii) monitoring and evaluation of urban development, environment and its own operations; and (iv) resource mobilization and allocation for pollution control.</p> <p>To support priority physical investments to improve environmental sanitation, urban transport and industrial pollution control in Tianjin. (These investments will supplement and increase the efficiency of the existing assets and help remedy the deficiencies that reflect weaknesses in the current planning and management systems.)</p> <p><b>Final cost:</b> US\$228.9 m (17 % above appraisal)  <b>Actual financing:</b> 44% IDA; 56% Govt.</p>	<p>Planning and management—incl: infrastructure investments; financial planning; monitoring project implementation and urban development; through financing TA and training (appraisal cost US\$8.6m./actual cost US\$9.5m.).</p> <p>Environmental sanitation—incl: extending/improving sewage collection and drainage (appraisal cost US\$25.7m./actual cost US\$20.8m.).</p> <p>Solid waste management—incl: waste collection and cleaning vehicles, maintenance equipment, and disposal (appraisal cost US\$12.4m./actual cost US\$17.5m.).</p> <p>Industrial pollution control—incl: a Fund to finance small scale investments for waste reduction (appraisal cost US\$39.0m./actual costs US\$15.4m.).</p> <p>Urban transport—incl: Tianjin Inner Ring Road; bus maintenance depots and traffic management and urban transport policy (appraisal cost US\$33.3m./actual cost US\$89.3m.).</p> <p>Resettlement—of 19,000 persons (compared with appraisal estimate of 13,500) to make way for project implementation and redevelopment of near-slum areas (appraisal cost US\$34.7m./actual cost US\$76.5m.).</p>

2.2 Project objectives (Box 1) modestly sought to strengthen existing urban planning and environmental management in Tianjin through improving local capacity at all stages of the project cycle, and supporting priority investments in the city. With Tianjin’s continuing infrastructure and environmental challenges, these objectives remain as relevant today as they were when formulated in the early 1990s. China’s 11<sup>th</sup> Five Year Plan, for instance, calls for “sound” urbanization and environmental protection, goals supported by the project. Under its “Pillars” 2 and 3 the 2006 CAS supports managing environmental challenges through the “balanced” urbanization, such as that pursued by this project. Project objectives were modest in seeking to adapt existing local practices to

evolving market conditions. The second objective of supporting priority investments was perhaps too modest. It aimed to achieve little more than simply implement the project itself. The objective statement would have been more powerful had it explicitly declared the better urban environment expected *as a result of* implementing the project. This operation was thus a cautious first step of Bank urban assistance to Tianjin—not unlike similar early Bank urban sector assistance in other countries. Overall, the relevance of the objectives is rated *Substantial*.

## DESIGN AND IMPLEMENTATION

2.3 Project components (Box 1) comprised major investments to improve urban services in urban roads, drainage, wastewater and solid waste collection and treatment—geared toward mitigation water and air pollution. Unusually for a Bank supported operation, the design of this one made resettlement of people displaced by the improvements into an explicit project component. Nearly all other components were well-trying elements of successful Bank urban projects elsewhere. They included basic sanitation, drainage and urban transport infrastructure—the right ones to achieve this operation’s goals. The environmental focus was upon water and solid waste. At the design stage, city authorities ruled out tackling air pollution, lest the project become too complex. Thus, a fairly straightforward design was little changed during implementation. It enjoyed strong support by the local authority, notably in the person of the Vice-Mayor of the Municipality. A 53 percent increase in city counterpart funding (even in appreciating US dollar terms) shows the depth of Tianjin’s ownership of this project. Overall, the relevance of the design is rated *Substantial*.

2.4 Project start-up was slow as Tianjin found the effectiveness conditions, particularly the preparation of draft bidding documents, very tough to meet. But the local authorities’ lack of experience was quickly overcome during implementation. The project was soon on track again, with major components except the industrial pollution control fund completed on time.

2.5 By completion, 5.6 km of high capacity urban streets were built and widened (some up to 40 meters) to improve access. Although this was 60 percent more than the 3.5 km planned at appraisal, actual costs were 168 percent higher than appraisal estimates—a possible efficiency loss. The final cost of US\$89.3 million was met through increased local counterpart funding and the reallocation of funds not spent on industrial pollution control. The result was an enlarged Weiguodao interchange component of the Inner Ring Road., that won China’s prestigious Luban prize awarded by the Ministry of Construction for projects of advanced design, completion ahead of schedule and under budget with minimum adverse environmental impacts. Completion ERRs for these components were in the 23-25 percent range, similar to appraisal values<sup>1</sup>.

2.6 Among the project’s traffic management measures, a synchronized traffic light system, procured using international competitive bidding (ICB) for the first time in

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1. The Region indicated that these ERRs take into account the relevant resettlement costs and benefits as is appropriate.

Tianjin, was functional during the IEG visit. So too was the project's traffic control center of 70 city intersections, but it was short of the 90 planned at appraisal, despite final costs being 16 percent higher than appraisal estimates. This component's complex technology and procurement through international competitive bidding did contribute to project delays. On the other hand, the project's limited support for public transport did not go far. A planned bus maintenance depot was not built, owing to a local management failure. The 56.6 kms of project street lane markings made five years ago are difficult to discern today, undermining the efficient use of the new broad street pavement. Nevertheless, local police told IEG that average traffic speeds have increased 20 percent throughout the city over the life of the project. That would be a notable achievement with the tripling of the vehicle fleet since 1991 to more than one million today.

2.7 For solid waste treatment, the project's Shuangkou sanitary landfill, located some 30 kms from downtown, was an important technical achievement. It was the first of its kind in northern China. Leachate is treated on-site, so no polluted effluent leaves it. Although very well managed, the landfill still operates well below full capacity, notwithstanding the 191 modern garbage collection trucks acquired under the project. Why necessary transfer stations were not built is not clear, although it helps explain a US\$5 million actual cost saving under this component. Tianjin developed another treatment plant that lessened the short-term demand for the Shuangkou landfill—making it potentially a less efficient solution, even if technically well conceived.<sup>2</sup>

2.8 On the other hand, the coverage of wastewater collection and treatment in Tianjin did expand from 20.1 percent of the population in 1992 to 58.9 percent in 2004, thanks to extended sewerage lines provide by the project. Industrial wastewater treatment coverage rose from 57.6 percent to 100 percent over the same period. In addition, project drainage works helped prevent flooding that periodically damaged the city in the past. Today, flash flooding after a major storm is typically cleared within a few hours—instead of 1-2 days it took previously. The IEG mission saw for itself the better performance as it made its way to the city airport during a major rain storm at the end of the visit to Tianjin.

2.9 Least progress was made with the project's Industrial Pollution Control Fund that aimed to provide 5 year loans of up to US\$3 million at commercial rates (IBRD plus 1.5 percent) to enterprises for them to install pollution control equipment. Instead of the US\$39 million funding expected, only US\$15.4 million were disbursed. IEG was told that the more prosperous (and credit worthy) enterprises already used such equipment and poorer ones who did not could not afford it. Thus, there was little demand for these loans. Demand was further undermined by the availability of alternative grant funding from domestic sources. The IEG mission did visit one of the few participating enterprises that had used a loan to finance equipment to recycle newsprint and built an on-site treatment plant for industrial waste. All was working during the site inspection.

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2. In its comments on the PPAR, the Borrower agrees that the Shuangkou plant is currently operating at below design capacity but notes that this will lead to a longer operational life of the facility (details Annex 2). While IEG agrees that this can be the result, the discounted present value of benefits far into the future are likely to be far smaller than the benefits foregone in earlier years.

2.10 Finally, project technical assistance helped improve Tianjin's urban planning and management substantially, helping the city embark upon its 2005-2020 Master Plan and Indicative Budget for 2005-2020. Data handling at many levels in Tianjin has improved. Computerization is now standard for all local accounting. Widely used computer models for traffic assignment and planning helped forge a higher local priority for public transport. A well established project management office (PMO) has now become an established think-tank on urban planning and environmental improvement, intensively focused upon implementing the follow-on Second Tianjin Urban Development Project (Ln4695). There are currently plans to fully absorb the PMO into the mainstream of established local government. Small wonder, then, that a high level delegation came from Seoul, Republic of Korea, to glean more about Tianjin's improved management.

### **OPERATIONS AND MAINTENANCE**

2.11 All project components inspected by the IEG mission were in full operation. There were no apparent maintenance issues with the Inner Ring Road or resettlement housing, which were well constructed. Facilities requiring intense maintenance, such as the solid waste landfill and city traffic management, were well maintained too, judging by the effective operations observed. Coordinated traffic lights were functioning as planned, although street markings have not been maintained adequately. But street cleaning in the central area of the city ensured that storm drainage did function well when needed, as the IEG mission observed during a very heavy rainstorm. These results clearly demonstrate that local authorities and utilities had adequate financial resources to operate and maintain the assets endowed by the project. While IEG did not conduct a detailed review of city finances in this regard, local officials verbally confirmed the sound financial position of their agencies.

### **MONITORING AND EVALUATION**

2.12 The project Staff Appraisal Report (SAR) listed 40 monitoring indicators, but these were to help the (necessary) oversight of project implementation only. There were none to measure progress toward achieving the objective of improved local infrastructure and environmental management, for instance. A stronger M&E design would have included baselines, targets and indicators to monitor improvements by Tianjin local authorities in project planning, financial management, M&E itself, and resource mobilization for pollution control—all declared aims of the project. In hindsight, a more explicit project objective statement of the results the project's physical investments would achieve—improved urban efficiency through lowering costs, say—might have yielded a rich set of outcome indicators. During discussions on project evaluation in Tianjin, the IEG mission found PMO staff now familiar with this approach and sensitive to the needs to apply M&E more rigorously in the future. Experience thus far, however, points to a *Modest* rating for the quality of this project's M&E.

### **FOCUS ON A KEY ISSUE: INVOLUNTARY RESETTLEMENT**

2.13 Commendably, the project was open about the need to resettle large numbers of

families displaced by the project's physical improvements. IEG visited substandard housing without basic sanitation still existing in areas of Tianjin. The mission found residents keen to be resettled from the evidently poor conditions.<sup>3</sup> Project urban road developments in such areas led to rehousing 5,345 households at a cost of US\$76.5 million, against an appraisal plan of moving 3,851 households at a cost of US\$34.7 million, a 60 percent increase in unit costs per household over an eight year period. More costly replacement housing units are consistent with the significant and unanticipated increases in real estate prices in Tianjin during the project's implementation period. Rising costs are likely to constrain future resettlement programs. In the recent past, Tianjin used to do much more resettlement. According to the SAR (p.86), 100,000 households were resettled between 1986 and 1989.

2.14 To understand the project's process of resettlement and its compliance with the Bank's safeguard policy on involuntary resettlement (OP 4.12), the IEG mission spent a morning with the Hebei District Resettlement Office in Tianjin. IEG found that comprehensive surveys of affected neighborhoods and social worker interviews of affected residents screened households entitled to resettlement. District Office files show that all households were fully informed in good time of the impending demolition, as required by Bank safeguards. The files also held copies of the vouchers awarded, to be exchanged for new dwellings about 2.5 times larger than the old one some 5-6 kms away. There were records of complaints by residents, to which they should be entitled under Bank policy. Some families claimed to constitute more than one household and hence entitled to more than one new dwelling. IEG saw examples of such complaints settled in favor of the residents. The project intended to offer a selection of apartments to exchange the vouchers with. In practice, however, the choice was more limited than envisioned under Bank policy.

2.15 On the Jinzhonghedajie and Weikun interchanges sites 5-6 kms from the center of Tianjin, the IEG mission met freely with several people resettled there by the project. IEG selected some eight individuals from different age group and sex from among those walking about the neighborhood. Since local officials were not present, the conversations were quite open. All those interviewed confirmed that their new housing was better than the old. A few residents contemptuously described their old dwelling as a "hovel". They were glad to be rid of it. One man explained that his extended family of eight had previously lived in a 15 m<sup>2</sup> unit without running water. Now they lived in two 42m<sup>2</sup> apartments. Most of these were in six-floor walk up buildings. Of the two, Weikun had become the more dynamic community, where residents said that they could access most of the services they needed easily on foot. Although slightly closer to the city center, Jinzhonghedajie was less established. But IEG found no one dissatisfied with the project's housing solution for them, indicating that it did not constitute one of the six

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3. In its comments on the PPAR, the Borrower cites the widespread adoption of cash/voucher compensation for resettlement in Tianjin as a long lasting achievement of the project (details Annex 2). IEG notes that its continuing success will depend upon the amount of compensation being sufficient to: (i) recognize the market value of the properties demolished and (ii) enable displaced families acquire a replacement dwelling—not just receive a lump sum payment, that may or may not be enough to pay for increasingly costly replacements.

main causes of unrest and protests in China's urban areas cited in the literature (Bergsten 2006 p. 41). From information gleaned by the IEG mission, the specific case of urban resettlement reviewed was carried out in accordance with Bank safeguard policy.

## SUMMARY OF OVERALL RESULTS

2.16 The project was successful in helping Tianjin implement priority urban infrastructure and environmental improvements, as intended. One of the investments, the Shuangkou sanitary landfill introduced a best practice technical solution, although not used to full capacity. Project street widening, interchange improvements, drainage works and traffic management helped keep the city's traffic moving, But existing road space could be used more efficiently and more attention given to public transport. Major urban renewal led to the inevitable resettlement of families displaced by housing demolition. From the one case it examined in detail, IEG saw that resettlement was handled successfully and in compliance with the Bank's safeguard policy. Thanks to the project, Tianjin local authorities honed their skills and knowledge of project planning, implementation and, evaluation too. They will need to harness these to deal with the ongoing challenges of the urban environment posed by this dynamic megacity.

## PERFORMANCE RATINGS

**Table 1. Outcome ratings, by objective**

Objective	Relevance	Efficacy	Efficiency	Outcome
Assist Tianjin in planning & managing infrastructure and the environment.	Substantial	Substantial	Substantial	Satisfactory
Support priority physical investments	Substantial	Substantial	Substantial	Satisfactory
<b>Overall Outcome Rating</b>	Substantial	Substantial	Modest	<b>Satisfactory</b>

2.17 The **overall outcome** of the project is rated as *Satisfactory*<sup>4</sup>, since it achieved its objectives with minor shortcomings, such as limited progress with urban transport (bus maintenance) and the pollution control fund. On balance, **efficacy** is rated *Substantial*. **Efficiency** in achieving the objectives is also rated *Substantial* on balance: although some unit costs were higher than planned, re-calculated ERRs are still in the satisfactory range, including those for the transport investments. Since strong local ownership and performance will attenuate some of the challenges that ongoing rapid urbanization poses, the **risk to development outcome** is rated *moderate*. **Bank performance** was strong in project preparation and continued so through to supervision, making the overall rating *Satisfactory*. **Borrower performance**, driven by strong ownership and financial commitment by the Tianjin Municipal Government, as well as an openness to learning about the Bank's way of doing business by implementing agencies, is rated *Highly*

4. According to IEG/OPCS harmonized rating system, *Satisfactory* is the appropriate rating for a project that achieved its objectives with minor shortcomings. Thus the Borrower's proposed rating of *Highly Satisfactory* (Annex 2) could only be used by IEG when there are no shortcomings; not the case here, as this PPAR reports.

*Satisfactory*: there were no significant shortcomings.

### 3. Zhejiang Multicities Development Project (Cr.2475)

#### Box 2. Summary of Project Objectives and Components

<b>Zhejiang Multicities Development Project (Cr.2475)</b>	
<b>Objectives</b>	<b>Components (with costs in US million)</b>
<p>To improve the provision of urban services, in particular water supply and land development, and establish the appropriate institutional framework needed to enhance the efficiency of the municipalities in the provision of these services.</p> <p>To assist in the development of long-term environmental policies, strategies and programs in order to reduce environmental pollution.</p> <p>To introduce new methods in the design and implementation of land development schemes at the city level that will result in improved land use and transport efficiency, as well as cost recovery from beneficiaries.</p> <p>To improve public transport and traffic management in Hangzhou.</p> <p>To upgrade overcrowded and poorly serviced areas in the city center of Ningbo, including the provision of sewage interceptors, wastewater treatment, road improvement and substantial upgrading of living conditions. [*not in DCA]</p> <p>To improve the institutional strength of the municipal authorities overseeing urban service delivery and pollution abatement and to enhance management and the financial performance of the utilities and enterprises directly responsible for the provision of these services. [*not in DCA]</p> <p><b>Final cost:</b> US\$250.7 m (9 % above appraisal)  <b>Actual financing:</b> 47% IDA; 53% Govt.</p>	<p>Water supply, Hangzhou: new intake, treatment plant, transmission lines, booster pumping station and extension of distribution network (appraisal cost US\$42.7m./actual cost US\$51.5m.)</p> <p>Water supply, Ningbo: new intake, transmission lines, booster pumping stations, supply to chemical plant and distribution network improvement (appraisal cost US\$33.7m./actual cost US\$35.7m.).</p> <p>Water supply, Wenzhou: pumping station, pipelines and tunnels, boosting station and distribution network improvement (appraisal cost US\$23.6m./actual cost US\$27.3m.)</p> <p>Land development in Shaoxing: development of 207ha. of former agricultural land through construction of roads, bridges drainage, water and sanitation systems, public lighting and electricity as well as resettlement of displaced people (appraisal cost US\$36.7m/actual cost US\$42.0m.)</p> <p>Urban environmental management and protection: provincial level study of liquid and solid waste management, feasibility studies for city investments in environmental protection, urban planning data management and technical assistance (appraisal cost US\$12.1/actual cost US\$2.4m.)</p> <p>Traffic management in Hangzhou: traffic database development, design traffic patterns, and analyze reporting systems (appraisal cost US\$0.5m./actual cost unknown)</p> <p>Basic urban services upgrading in Ningbo: in four locations, installing basic infrastructure, preserving cultural/historic structures and resettling 6,000 people within 5 km radius (appraisal cost US\$30.6m./actual cost US\$89.2m.)</p> <p>Zhejiang environmental fund: to finance control measures for small and medium-sized industrial enterprises (appraisal cost US\$4.7m/actual cost US\$2.6m.)</p> <p><small>[A Board approved amendment to the DCA in January 2002 extended the project closing date and added an emergency Snow Disaster Recovery component for Xianjiang province to rebuild housing and livestock sheds destroyed by snowstorms and landslides in that province. This component, rated with a satisfactory result by a separate ICR, is not covered by the present PPAR.]</small></p>

3.1 With 46 million inhabitants, Zhejiang Province on China's eastern seaboard just south of Shanghai is one of China's most prosperous. Before reform, it was renowned for the pursuit of private business there. By the 1980s, the ratio of private:public capital in the southern Zhejiang city of Wenzhou was 80:20; the reverse for the rest of China (Friedmann 2005 p.46). The four project cities, the capital Hangzhou (pop. 2.0 million), Ningbo (pop. 1.2 million), Wenzhou (pop. 1.4 million) and Shaoxing (pop. 0.4 million) are important historical cities, Hangzhou particularly so. Around 1000 AD, it became the largest city the world had seen since ancient Rome. During the Twelfth century visit of Marco Polo, the one million population the city of Hangzhou was the busiest port and trading center in the world (Reader 2004 p. 70). In present times, a recent Bank study found Hangzhou and Shaoxing to be among China's top six "golden cities" (out of 120) for investment climate performance—with Ningbo a close runner-up (World Bank 2006).

## OBJECTIVES

3.2 Each of the project's six project objectives (Box 2) highlighted a particular improvement matched to an individual project component. The resulting design was thus built around a series of loosely connected goals, without a composite urban development strategy or urban environment vision for the province as a whole. IEG learned that, during appraisal, city authorities did not want such a strategic objective, preferring partial and more incremental responses to specific urban challenges for the larger cities. Nevertheless, the individual objectives remain relevant to current priorities of sound and balanced urban development of the 11<sup>th</sup> Five Year Plan, and also to the 2006 CAS, albeit with less focus upon poverty reduction and ending social exclusion than given in that document. Overall, the relevance of the objectives is still rated *Substantial*.

## DESIGN AND IMPLEMENTATION

3.3 Project components (Box 2) were local priority investments in basic urban infrastructure in Zhejiang's largest cities. Project preparation was very protracted, taking nearly ten years from the first ideas on urban assistance in a 1987 Bank study entitled *Zhejiang: Challenges of Rapid Urbanization* to start-up. Hand-in-hand with each project objective, the components focused directly upon water supply, solid waste, traffic improvements and urban development and renewal, making the relevance of the design *High*.

3.4 For what the project design may have lacked in strategy, it gained in consistency and continuity. Components first identified in 1987 remained with the project until its completion in 2003. Two others that became among the more successful, Shaoxing's land development and Ningbo's urban renewal, were added at the last minute. They were received coolly by some Bank staff not keen too about including the cultural heritage dimension introduced later. Local authorities themselves had a major reservation about the project design. They felt the project should have included waste water treatment, to avoid environmental damage from increasing water production, rather than leaving it for a follow on project (Ln4724), as happened. IEG found no concrete evidence, however, of a worsening urban environment because of the two-phase approach.

3.5 Major water treatment plants, accounting for nearly half the final project costs were implemented as planned in Hangzhou, Ningbo and Wenzhou. In Hangzhou, the project's Jiu Xi intake and treatment plant by the Qiantang River was in full operation when visited by IEG. By itself, it served 1.1 million people as planned, accounting for more than one quarter of the much needed extra water supply to the city. Meeting a greater demand than expected, elevated the ERR at completion to 24 percent, significantly higher the 16 percent ERR at appraisal. This was in spite of an actual cost overrun of 21 percent, to US\$51.5 million. The plant also helped Hangzhou's water supply coverage increase from 92.9 percent of the population in 1993 to 99.1 percent in 2005. A clever technical design with back-up tanks allows the plant to continue production even during exceptional salt water tides that occasionally affect the river. The good quality of the water was demonstrated by the IEG mission and its hosts drinking the water directly from the plant with no ill effects. Part of the technical success came from the ICB procurement of the works that had brought technological advances through the

first automated filtration and coagulations processes in China. Replication of these results throughout China is unlikely, however, given continuing local resistance to turn key contracting and the transfer of ownership of technology to private operators that it entails.

3.6 A component of land (i.e. real estate) development of 10.4 km<sup>2</sup> of former agricultural land adjacent to the downtown increased the central area of the industrial city of Shaoxing by 50 percent. By taking pressure off the old downtown, it helped preserve Shaoxing's picturesque historic center and its network of ancient canals. The project introduced infrastructure, housing, factories and warehouses, as well as public service centers. Physically, the site is nearly fully occupied today, hosting 756 enterprises that employ 23,604 people. Some unskilled workers the IEG mission met had previously been farm hands on the same land. With the higher earnings they now had, they were pleased with the urban transition. Villagers living nearby in old rustic housing told IEG that they too would like to be relocated to the new site if given a new apartment there. The SAR estimated that land sales with prices reflecting additional industrial, commercial and housing activity would lead to an ERR of 25 percent. Notwithstanding a cost overrun of 14 percent, the ERR was revised upwards to 28 percent by the ICR. Whether the benefit streams behind these estimates truly reflect the opportunity cost of not making the investment must be in doubt, however. Much of the economic activity in the zone today was transferred from elsewhere in Shaoxing and therefore does not represent net value added to the economy. How much is not precisely known. In hindsight, a more rigorous cost-benefit analysis would have yielded a better understanding of how efficiently this component performed, from benefits achieved and the costs necessary to incur those benefits. In China's incipient real estate market, such an analysis can help establish efficiency standards of land use densities, for instance, to guide quasi-commercial state sector investments like this one. In the medium term, rigorous cost-benefit analysis can also help show the government when private sector involvement would make more sense.

3.7 The largest single project investment was in Ningbo's so-called "upgrading" component. By completion, US\$89 million had been spent on it, nearly three times the appraisal estimate of US\$30.6 million. The overrun resulted from the redevelopment of eight central streets instead of the four planned and from higher than expected unit costs to resettle each family, as already observed in Tianjin (para. 2.13). The component involved the demolition of large areas of poor housing and resettling the displaced people to make way for better access, housing and services, "Urban Renewal" would be a more accurate taxonomy, than upgrading that, in Bank urban projects, usually describes the introduction of services and infrastructure into poor areas in situ. But, with large areas of poor housing without basic sanitation and barely accessible, central Ningbo was in need of some urban *renewal*. The project's was the largest renewal operation in Ningbo's history. 12.6 kms of streets were either built or widened and improved basic sanitation, power, gas and telecommunications infrastructure laid in. This required the demolition of 174,000 m<sup>2</sup> of housing, and the resettlement of 5,910 people—only 20 percent more than the appraisal estimates despite twice as much project work. This result is consistent with the principle of Bank safeguard policy to minimize involuntary resettlement was minimized. Although, rising unit costs rather than principle was the incentive to keep resettlement down. As in Tianjin, individuals rehoused by the project confirmed to IEG that their new dwelling was superior to their old one. The overall result has helped

transform Ningbo into a more attractive urban center than most of the booming cities on China's east coast. Thanks in part to the project, China now has a model city for urban planning and environmental management.

3.8 Ningbo's upgrading was accompanied by careful attention to the preservation of historic and cultural relics. Although 1,400 years old, Ningbo, like many other ancient Chinese cities care little for its heritage. Despite their age, most cities in China look very modern today, many having lost much during the destructive period of the Cultural Revolution, for instance. Ningbo therefore welcomed project support through contact with UNESCO and cultural heritage experts in Italy. In Ningbo itself, this effort resulted in the preservation of a Ninth Century pagoda in one of the city's main thoroughfares. At the provincial level, some 55 other towns and cities have been declared historic sites, including the well maintained Cicheng a small tourist town near Ningbo.

3.9 It was not clear exactly what the Hangzhou traffic management component of studies and data collection intended to achieve. The related objective statement about traffic improvement was generic. The appraisal did not establish baseline data or performance indicators. Nevertheless, according to the local team in the city, project technical assistance helped Hangzhou improve its traffic management. With parallel support by Canadian CIDA, consultants helped adapt a Spanish computer traffic assignment model provide solutions for transport planning and daily traffic management in the city. It convinced local authorities to give greater importance to public transport—through priority bus lanes, for instance. But, for security reasons, IEG was unable to see the computer traffic model in operation. Final costs of this component were not reported. Circumstances have not been propitious for evidence demonstrating the success of this component.

3.10 Zhejiang's Environmental Fund fared even worse than the similarly designed Tianjin Industrial Pollution Control Fund and difficulties in implementing it contributed to the delays in project completion. As in Tianjin, the number of loans to be awarded was not clear. But only US\$2.6 million of the US\$4.6 million expected at appraisal was actually disbursed. At the outset therefore, Zhejiang's fund was designed to be only 12 percent the size of Tianjin's. While the lack demand by enterprises for funding had similar causes as in Tianjin's (para. 2.9), the evidently low priority for Zhejiang authorities and weak enforcement of environmental standards and regulations perceived by enterprises doomed the component. Implementation was poorly managed too. Applications approved by the Zhejiang EPB had later to be rejected by the Bank who judged "approved" borrowers not credit worthy. The few awarded led to repayment problems, and the provincial authorities turned over responsibility for the Fund to the Zhejiang Finance Bureau. Local officials told IEG that the project's "polluter pays principle" was too radical for some agencies to take on board. There was therefore little ownership and progress in developing long-term environmental policies was slow. Only one fifth of the project's intended expenditure on the urban environmental management and protection component was made. There are three possible reasons for this. First, according to local officials, the Bank relied erroneously during implementation upon executing agencies without a policy mandate, such as district construction bureau, to bring about policy changes. Second, the weak institutional capacity of Zhejiang's EPB

itself, who's realized capacity to implement policies was far behind its potential capacity measured by its financial resources and staffing (Li 2005 p.15). Third, perverse incentives in China generally for EPBs to continue to extract payments (informal or explicit fines) from transgressors rather than close down or fix polluting enterprises may have hit Zhejiang too (para. 4.5). The IEG mission could not explore questions such as these further with the Zhejiang EPB, as the city authorities were unable to schedule a meeting with this agency in Hangzhou.<sup>5</sup>

## **OPERATIONS AND MAINTENANCE**

3.11 From its field inspections, the IEG mission could confirm the good quality finish of completed works. Thus far, no failure was evident that could be attributed to lack of maintenance. Most of the project's investments were in hard infrastructure, where maintenance issues, if they appear, would be in later years. Ongoing operations and maintenance (O&M) in the prosperous city of Hangzhou seemed evident, from the effective functioning of the water plant and from the traffic that still keeps moving throughout the city. The Shaoxing land development in particular also appears to have contributed to strengthening local authority finances, as is to be expected from the sale and subsequent taxing of valuable real estate. At this writing, the overall O&M challenges arising from the project are being adequately met.

## **MONITORING AND EVALUATION**

3.12 The appraisal did not include M&E to oversee progress toward achieving the project's six objectives. Instead of outcome indicators and their baseline values—key features of a good M&E design—the SAR's "M&E" mentioned the delivery of implementation progress reports as a key performance indicator, and the provincial government's ICR, too—which was prepared but not cited by the Bank ICR.<sup>6</sup> While there were indicators of targeted sales under the Shaoxing Land Development component and of the financial performance of the participating water companies, there were none for progress with environmental policies, land and transport efficiency, cost recovery, or institutional strengthening of key local agencies—all declared goals under four of the project objectives. As is evident from the limited outcome data in the ICR and from IEG discussions in the field, M&E was not systematically pursued during implementation. Although IEG assembled evidence showing that much was achieved through this project,

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5. While recognizing the shortcomings with the results of the Zhejiang Environmental Fund, the Borrower in its comments on the PPAR notes that this Fund was only a small experimental component. According to the Borrower, substantial progress has since been made under the subsequent Zhejiang Urban Environment Project (Ln4724). IEG agrees with the Borrower comment (Annex 2) that an IEG meeting with the Zhejiang provincial EPB, which IEG requested, would have helped enhance the reliability and completeness of information on this topic..

6. In comments on the PPAR, the Borrower noted informed that the Zhejiang Urban Development Project Office did indeed prepare an ICR in December 1999 and submitted it to the Bank. Although included in the (Bank) ICR's Annex 7 List of Supporting Documents, the (Bank) ICR does not cite or refer to the content or findings of the (Borrower) ICR, thereby losing the Borrower's perspective upon the self evaluation of this project.

a much stronger case for a successful outcome could have been made with an objectives-based M&E. From its poor design, the lack of follow up during implementation and the sparse results that can be used for evaluation and learning, the quality of this project's M&E is rated *Negligible*.

#### **FOCUS ON A KEY ISSUE: URBAN EXPANSION AND RENEWAL – ROLE OF THE STATE**

3.13 Through urban renewal in Ningbo and land development in Shaoxing, the project directly helped modernize these cities. Prior to reform in China, urban development was closely controlled by the state. Urban sprawl typical of cities with weak planning controls in market economies was largely absent from China's cities until 1980. For that reason the small city of Shaoxing's historical downtown was right next to open rice fields. The same was true even for the Pudong district of a major city like Shanghai. Urban form is still far from being market driven in China. The real estate market, still with uncertainties over property rights and finance remains only incipient. Direct public sector involvement in urban development, as in Shaoxing, is understandable and likely to continue until at least the parameters of urban land markets become clearer. As mentioned earlier, more rigorous economic analysis can not only provide parameters for efficient state programs, but also pointers to when the private sector could be more involved.

3.14 Ningbo, too, relied upon a public sector operation to redevelop dilapidated housing and overcome poor access to central areas. In this case, a private sector approach would have been inadvisable. Even in a strictly market economy, issues of eminent domain would have required public sector oversight of an operation of this kind. Prior to the Bank project, the local public authorities already had experience with urban renewal. The Bank was able to provide additional advice about traffic management, resettlement and the preservation of cultural artifacts. The result has been to give the center of Ningbo a modern look and functional center with easy access by private car and public transport. Today, Ningbo is well regarded by urban planners in China and elsewhere as being a model city in China for urban planning and environmental management. Ways could be found to share this experience with other cities in the country. Finally, it is noteworthy that, through the project, the Bank was present and an active partner as Ningbo's local authorities successfully improved their city.

#### **SUMMARY OF OVERALL RESULTS**

3.15 Through new water supply plants in particular, the project succeeded in improving urban services in the project cities. There was little progress toward developing long-term environmental policies and programs—a weak project result. On the other hand, the project successfully innovated through introducing a new approach to land development, although an even better understanding of its results would have come from a more thorough economic analysis of what was done. Although not systematically reported, there is evidence that the project helped improve public transport and traffic management in Hangzhou. Land development strengthened Shaoxing's urban economy, even if we do not know by how much. Through its large scale urban renewal in Ningbo, the project helped transform the city into one of China's best planned, by remaking and

modernizing the central city, while successfully resettling those families displaced from sub-standard housing that was demolished. Local authorities at the city level especially saw their urban planning and management capacity significantly enhanced through implementing the project. These improvements no doubt contributed to the successful placement of Hangzhou, Shaoxing and Ningbo among cities with the best investment climate in China (World Bank 2006). A remaining challenge is broader dissemination of how these good results obtained.

## PERFORMANCE RATINGS

**Table 2. Outcome ratings, by objective**

Objective	Relevance	Efficacy	Efficiency	Outcome
Improve the provision of urban services.	High	High	Substantial	Highly Satisfactory
Assist in the development of long-term environmental policies.	High	Negligible	Negligible	Unsatisfactory
Introduce new methods in the design and implementation of land development schemes at the city level.	Substantial	Substantial	Not evaluable	Satisfactory
Improve public transport and traffic management in Hangzhou.	Modest	Modest	Substantial	Moderately Satisfactory
Upgrade overcrowded and poorly serviced areas in the city center of Ningbo.	Substantial	High	Not evaluable	Satisfactory
Improve the institutional strength of the municipal authorities.	Substantial	Substantial	Modest	Satisfactory
<b>Overall Rating</b>	<b>Substantial</b>	<b>Substantial</b>	<b>Substantial</b>	<b>Satisfactory</b>

3.16 The **overall outcome** of the project is rated as *Satisfactory* with the best project results from improving urban services offset by little progress on the environmental policy front. Highest with regard to urban services and urban renewal in Ningbo, the overall **efficacy** of the project is rated as *substantial*, since it achieved most of its objectives with minor shortcomings on the institutional and policy side. Overall, **efficiency** is rated *substantial*, evidenced by the very high ERRs of some project investments (e.g. water) on the one hand, but the lack of ERRs for some others (e.g. Ningbo urban renewal). Given city authorities' determination to rise to the challenges of continuing urbanization the **risk to the development outcome** is rated *moderate*. **Bank performance** had shortcomings during preparation due to a design that lacked a strategic vision, but strengthened somewhat during good supervision of physical works, but with less than due attention to urban environmental policy, leading to an overall rating of *moderately satisfactory*. **Borrower performance**, driven to complete investments as quickly as possible, is rated *satisfactory* overall, despite the sometimes weak engagement between city-level implementing agencies and provincial-level supervisory departments.

## 4. Shanghai Environment Project (Ln.3711)

4.1 Shanghai is China's largest and most prosperous city, but a relatively new one, dating from the building of city walls in 1553. Thanks to its strategic location between

Beijing and Hong Kong near the mouth of the Yangtze River, and to government support, the city economy has boomed. Annual GDP growth has been in double digits every year since 1992. By 2005, Shanghai's GDP was US\$110 billion, larger than national GDPs of Pakistan or the Philippines, but only half Hong Kong's. Shanghai is bisected by the Huangpu River, an intensely navigated commercial waterway, source of the city's drinking water, vector of pollution and potential flood hazard to the low lying downtown. A challenging urban environment that the urban economy has so far resisted.

## OBJECTIVES

### Box 3. Summary of Project Objectives and Components

<b>Shanghai Environment Project (Ln.3711)</b>	
<b>Objectives</b>	<b>Components (with costs in US million)</b>
<p>To assist in improving the quality of potable water and controlling pollution in Shanghai, so as to provide a sustainable environmental setting for the long-term economic and social development of Shanghai while providing a competitive framework for industrial growth.</p> <p>To provide safe drinking water.</p> <p>To identify and control sources of pollution.</p> <p>To expand water quality monitoring.</p> <p>To improve municipal solid waste and night soil management.</p> <p>To support training, feasibility studies, and future investment project preparation.</p> <p><b>Final cost:</b> US\$560.7 m (23 % above appraisal)  <b>Actual financing:</b> 28% IBRD; 72% Govt.</p>	<p>Drinking water quality protection--inc: relocating Shanghai's raw water intake up-river through constructing a major water supply system (appraisal cost US\$226.8m./actual cost US\$263.6m.)</p> <p>Upper Huangpu catchment pollution control--inc: constructing wastewater conveyance systems in Wujing and Minhang neighborhoods (appraisal cost US\$47.7m./actual cost US\$225.2m.)</p> <p>Songjiang waste water pollution control--inc: expanding the domestic and industrial wastewater collection and treatment facilities in Songjiang (appraisal cost US\$29.1m./actual cost US\$32.0m.)</p> <p>Pollution sources and water quality monitoring--inc: constructing water quality monitoring labs at the Huangpu river intake (appraisal cost US\$3.9m./actual cost US\$4.1m.)</p> <p>Municipal solid waste and nightsoil management--inc: developing appropriate solid waste and nightsoil management strategies and investment in physical plant (appraisal cost US\$32.8m./actual cost US\$25.0m.)</p> <p>Institutional strengthening through technical assistance and training--inc: program to strengthen institutional capacities for environmental protection management and monitoring in Shanghai (appraisal cost US\$10.8m./actual cost US\$10.8)</p>

4.2 The project's five project objectives (Box 3) clustered around a crucial topic of assuring the good quality of Shanghai's urban water supply. The easily understood and clearly formulated objectives remain very high on the agenda of ongoing efforts to prevent urban environmental crises in China's rapidly growing cities, including Shanghai itself. Both the 11<sup>th</sup> Five Year Plan (2005-2010) and the 2006 CAS call for better management of environmental challenges in urban areas—notably air, water and solid waste. This project's objective statement eloquently linked environmental improvement with long-term economic and social development in Shanghai. For these reasons, the relevance of the objectives is rated *High*.

## DESIGN AND IMPLEMENTATION

4.3 Project components (Box 3) were an assembly of actions needed to improve the water supply and mitigate pollution threats to it. Appropriately, they included a new large scale water production plant and wastewater and solid waste collection and treatment, especially in the water catchment of Shanghai. For this the project design was correctly built upon the promises and challenges of Shanghai's environmentally stressed Huangpu

River, at one and the same time a lifeline to the city and a potential threat to public health. A sustainable urban environment for Shanghai can only be achieved through careful environmental management of this river. Increasingly convinced of this during implementation, the Shanghai Municipality spent five times as much as planned on pollution control in the Upper Huangpu catchment, investing in two new wastewater treatment plants upstream from Shanghai. Improved solid waste treatment in the same area also reduced effluent discharge into the river. The project design included the right components and allocated responsibilities appropriately to achieve the objectives. Thus, the relevance of the design is rated *High*.

4.4 The project spent US\$264 million, half the total, on a single water intake and treatment plant to serve 80 percent of Shanghai's population. Actual costs overruns were just 16 percent and the component was finished on time in 1998. Drawing water from the Huangpu River, it was located at Da Qiao some 30 kms upstream from the Linjiang intake, built in 1987, where river water had become too polluted to continue using. The notorious poor taste of Shanghai's water from that source, although not a health hazard in itself, was a daily reminder to residents and visitors of something amiss. With the new Da Qiao in operation, the polluted Linjiang intake was closed. There has been an improvement in drinking water quality (and taste) although Huangpu River water at Da Qiao barely meets China's minimum Class III standard for untreated drinking water sources. It is most unlikely that Shanghai's water will ever be drinkable directly from the domestic faucet. Furthermore, the risk of an environmental accident at Da Qiao's unprotected water intake on a very busy stretch of river is high. In 2003, there was a serious oil spill from a shipping accident, luckily a few kilometers below the intake. In response to these risks, local authorities are preparing an alternative intake from the less polluted Yangste River, an option briefly considered at appraisal but rejected for reasons that are not clear. What is clear, however, is the potentially short 10-12 year useful life of major plants such as these in environmentally volatiles conditions. Even so, the returns to such investments are likely to be high given the large scale of their benefits for nearly ten million people. But ERR estimates were not made at appraisal or completion. Showing unambiguously if the Da Qiao investment was worthwhile and an optimum solution, such an estimate could guide the timing of their possible early retirement, if that became necessary.

4.5 Other environmental improvements were successfully implemented by the project. In the city of Shanghai itself, the systematic but unsanitary collection and disposal of nightsoil (human excrement) has been discontinued, thanks to increasing sewerage connections, according to local officials. In the upper Huangpu River basin, the project financed waste water and solid waste treatment plants, that IEG saw in operation during site visits in the industrial Songjiang district especially. These included a profitable commercial incineration plant for industrial waste. Meantime, local authorities reported that 33 highly polluting industrial plants identified by the project, including a large paper mill, had been closed down. Among farmers in this area, local environmental awareness through campaigns financed by the project produced impressive results. The IEG mission met several farmers working their fields. They all understood why they should not use chemical fertilizers and insecticides that could pollute the river, and complied with the regulations restricting their sale and use. But environmental problems and challenges remain. Cost recovery from waste discharge is still practically non-

existent, except in the industrial sector. As a result, agencies like the Songjiang Drainage Company (SDC) continue to run a very high current deficit. Perverse incentives mean that China's EPBs prosper through fines they levy on polluters. Without polluters they would face severe financial distress.

4.6 At a cost of US\$4.1 million, near appraisal estimates, the project established a water quality monitoring station next to the Da Qiao intake. Although seemingly equipped with boats and vehicles, the station was not operational during IEG's unexpected visit there. Most facilities, including the monitoring laboratory itself were closed and few employees were present at a facility that reportedly had 40 of its staff trained through the project. The inaction at the station probably had no effect upon the operation of the nearby water Da Qiao intake, though. The intake had its own fully equipped water quality monitoring capability—making the adjacent monitoring station an unnecessary duplication. It belonged to a different department of government, however.

4.7 Project implementation was an important learning experience for local officials unfamiliar with Bank procurement and reporting requirements. Although several told IEG that they initially found Bank procurement procedures slow and cumbersome, they did recognize outcomes of low cost and good technical solutions, sometimes with technological innovation. ICB especially was seen as a useful tool to bring local firms up to international standards of competition. Accounting, too, often proved a challenge, but the Shanghai Municipal Audit Bureau quickly learned to monitor and apply the standards required under a Bank financed operation. Project funding by the Bank was needed and timely, when most central government support to Shanghai and local funding was going to developing the new showcase district of Pudong.

#### **OPERATIONS AND MAINTENANCE**

4.8 The continuing functioning today of project assets, such as water production and waste treatment plants, that would cease operations if not properly maintained, points to good results on the operations and maintenance (O&M) fronts. All plants inspected by IEG were fully operational. Water quality monitoring continues (para. 4.9). There are concerns about the costs of O&M placing an increasing burden upon the agencies responsible. The financial distress of the Songjiang Drainage Company is the first evidence of this to come to light.

#### **MONITORING AND EVALUATION**

4.9 Water quality M&E was a key element of project design and was followed up during implementation, albeit with the duplication already mentioned. Nevertheless, M&E worked well enough to provide evidence of the achievement of the project objective of improved drinking water quality in Shanghai. On the other hand, M&E of control over sources of pollution and increasing solid waste collection and treatment received far less attention. Performance indicators in the project referring to percentage improvements without absolute values or baseline data were of little use. As a consequence, project M&E cannot tell us if environmental threats in the Upper Huangpu

catchment are less than before the project. The quality of the project's M&E is therefore rated *Modest*.

#### **FOCUS ON A KEY ISSUE – ECONOMICS OF MANAGING URBAN ENVIRONMENTAL CRISES**

4.10 An economic analysis of the costs and benefits is necessary to evaluate the efficiency of a major investment such the project's Da Qiao water intake plant for Shanghai. No ERR was estimated either at appraisal or completion. At appraisal, the Bank felt that it would be too costly to do, despite questions raised by internal reviewers about the absence of cost benefit analysis. At completion, the ICR noted that getting the necessary data would be very difficult and time consuming. Yet, estimating ERRs and FRRs for such investments where both costs and benefits are well known, used to be mainstay for Bank work in this sector. Among the reasons for doing it: (i) potential large scale environmental crises beckon carefully chosen investments to mitigate them efficiently; (ii) economic cost-benefit analysis can help local authorities choose the optimal solution among several solutions available—in this case relying upon the Huangpu River and or the Yangste; (iii) rigorous ERR estimates can help local authorities better understand when benefit flows have “paid off” an investment, making it economic to move on to another solution; (iv) a rigorous estimate of costs and benefits firmly grounded in effective demand can provide pointers to the feasibility and timing of cost recovery of the investments proposed; (v) the analysis of financial costs and benefits can, moreover, point to when private sector participation can become feasible. By not estimating the ERR, the Bank missed an opportunity to help local authorities in China prioritize infrastructure investments through developing a better understanding of the opportunity costs of their decisions. Bank assistance with this is part of helping China better understand the workings of the market economy. Without it, there were two losses: one through missed learning itself and another through possible loss of efficiency of the interventions. Perhaps IEG missions themselves should be better prepared to undertake the necessary data collection to estimate ERRs, making good this shortcoming.

#### **SUMMARY OF OVERALL RESULTS**

4.11 Despite the environmental challenges posed by the Huangpu River, the project successfully improved the quality of drinking water for some 10 million people. Business and the economic and social development of Shanghai have continued apace, although we do not have convincing evidence that the frantic pace of Shanghai's development would have been slower without the project. After all, the Shanghai urban economy had already recorded impressive rates of growth before 1998 when the water quality was bad. Still, there can be no doubt that drinking water is now safer. Thanks to the project, more attention is given to identifying and controlling sources of pollution and improving waste treatment in the Upper Huangpu catchment especially. Overall, the project did contribute to a significant improvement to the urban environment of Shanghai.

## PERFORMANCE RATINGS

**Table 3. Outcome ratings, by objective**

Objective	Relevance	Efficacy	Efficiency	Outcome
Assist in improving quality of potable water and controlling pollution in Shanghai.	High	High	Substantial	Satisfactory
Provide safe drinking water.	High	High	Substantial	Satisfactory
Identify/control sources of pollution.	High	Modest	Substantial	Satisfactory
Expand water quality monitoring.	Substantial	Modest	Negligible	Unsatisfactory
Improve municipal solid waste and night soil management.	High	Substantial	Substantial	Satisfactory
Support training, feasibility studies, and future investment project preparation.	Substantial	Modest	Modest	Moderately Satisfactory
<b>Overall Rating</b>	<b>High</b>	<b>Substantial</b>	<b>Substantial</b>	<b>Satisfactory</b>

4.12 The overall outcome of the project is rated as *Satisfactory*. The project achieved its intended outcomes, although efficiency in so doing was rarely made explicit. The best results were in improving water quality and solid waste treatment. **Efficacy** is rated *Substantial* because the highly relevant objectives were achieved, especially in relation to these two aspects, with only minor shortcomings. **Efficiency** is rated *Substantial* too, because of obviously large benefits for some ten million residents of Shanghai at an investment cost of only US\$26 per capita—notwithstanding the absence of an ERR estimate. The **risk to the development outcome** is rated *significant*, given the increasing environmental stress upon the Huangpu River, especially the risk of accidental contamination at the location of the Da Qiao water intake. **Bank performance** is rated *Satisfactory*, with particularly good quality at entry on the back of a good design, as well as careful supervision during implementation. **Borrower performance** too, is rated *Satisfactory*, with the strong backing and financial support of the Shanghai Municipal authorities and thanks to the successful implementation of the project according to plan by the executing agencies.

## 5. Broader Findings of this Evaluation

### WHY BANK ASSISTANCE TO CITIES IN CHINA?

5.1 The experiences of the three projects reviewed here came from a strong partnership between the Bank and local authorities in some of China's most important cities. With the scale of the developmental and environmental challenges felt by these project cities and throughout China's mega-urban system, why does China seek out the relatively small urban assistance from the Bank? Although the Bank's US\$600 million annual urban lending program to China is one of its largest, it represents only a tiny fraction of mostly domestically financed investment in urban infrastructure in China. A

local newspaper reported, for instance, an increase of local spending on environmental protection to US\$3.9 billion a year in Shanghai alone (China Daily June 6, 2006). Financial resources from the Bank are clearly not what China is primarily after. What is it, then? IEG asked this of its interlocutors about this throughout the mission.

5.2 Most answers highlighted how the Bank's worldwide experience and deep knowledge of urban development was best shared through on-the-job learning, requiring some physical investment. Local officials said that stand-alone technical assistance was not as effective as holding the attention. In all the cities visited, IEG found openness among local officials to considering foreign ideas alongside home-grown approaches and alternatives. They thought the Bank's experience with the public sector at the local government level to be particularly important. After all, local authorities handle 70 percent of public expenditure in China that in itself still accounts for 41 percent of GDP. How local authorities should deal with the private sector was of special interest to local officials in China. In discussions with the IEG mission, it stimulated curiosity about the Bank's experience of the public/private interface in urban infrastructure in rapidly urbanizing countries elsewhere, such as in Latin America, for instance. More generally, working with the Bank exposes city authorities in China to basic tools applicable to working in their evolving market economy. These include procurement, accounting, and project supervision that can help produce the most efficient results while combating corruption and conflicts of interest. While local city officials do not accept Bank solutions and procedures without question and even resist some, their willingness to learn and adapt them is a very promising context for ongoing and fruitful collaboration.

### **MANAGING URBAN ENVIRONMENTAL CRISES IN CHINA'S CITIES**

5.3 The breakneck speed and huge scale of urbanization in China may continue to exacerbate pressure upon the urban environment of cities. China's urban system, still with only 40 percent of the population living in cities, has considerable scope for further expansion and development. The urbanization experience in China is no different in its fundamentals—industrialization, GDP expansion, rural-urban migration—from the urbanization experienced by other developing and developed economies where 80 percent of people already live in cities. Even presently accommodating only 40 percent of the population the capacity of urban services, infrastructure and urban environment is overloaded. Urban dwellers without proper basic sanitation face public health risks and contribute to the pollution of water courses already polluted by industrial effluent, shipping and runoff by chemicals used in agriculture. An expanding vehicle fleet, congested on slowly growing street space, contributes to severe air pollution, as do smokestack and dust producing industries.

5.4 China's urban inhabitants seem to be reaping unwanted bounties of speedy economic growth. China's experience of this is not so different from that of other rapidly urbanizing countries throughout history, where urbanization has outpaced the delivery of services. Thus a deteriorating urban environment went hand in hand with the apogee of ancient imperial Rome, the 19<sup>th</sup> century industrial revolution in northern England and the spectacular 20<sup>th</sup> century development of megacities, such as Mexico City.

5.5 Just as the urban environmental problems can be inevitable, solutions appear probable, even if always trying to catch up. Cities can be forced to seek water and energy supplies over ever greater distances, as Los Angeles was, for instance. Wastewater collection and treatment can handle—albeit at high cost—some of growing needs for basic sanitation. Eventually, as cities in developed countries show, it is possible to provide basic urban services to nearly all citizens. The use of cleaner fuels for both heating and transportation can restore air quality, as the remarkable achievements in London attest, after the use of coal was banned in the city. Solutions can, and surely will be found for present environmental crises in China’s cities. They need to be efficient ones, though, with rigorous analyses of their cost and benefits.

### **RESETTLEMENT: INEVITABLE IN CHINA’S URBAN TRANSFORMATION**

5.6 As China urbanizes, thousands of people relocate into and within urban areas. In most cases, such relocation will be voluntary in the search for new and better economic opportunities offered by booming cities. In fewer cases relocation will be involuntary in the sense that families to be displaced would have preferred to remain where they are. But, they can be persuaded to resettle elsewhere if compensation is adequate, as IEG saw from the projects reviewed. The Tianjin project experience is a particularly good example of how involuntary resettlement can be managed within a city, and benefit low income families. In China, the initiative for resettlement lies in the hands of local government. Tianjin’s experience shows how that initiative could be creative and yet fit into a well-defined national legal framework.

5.7 This comes mainly from State Council Orders and Ministry of Construction Guidelines of the late 1990s and early 2000s. State Council Order #305 of 2001, for instance, called “Urban Housing and Relocation Management Regulations” differentiates resettlement involving farmers of rural land on the one hand and urban dwellers on the other. For urban areas, Order #305 requires that local government ensures that housing demolition and removal accords with the city plan. Under this Order, “Work units”—as enterprises and developers are called in China—have to apply to local government for a demolition/removal permit, granted if there is a compensation and resettlement agreement with families to be displaced. Compensation can be in the form of cash payments, vouchers (as in Tianjin) or an exchange of property rights. Since actual amounts are determined—by location, built area and “market price”—by the local authorities, they can vary significantly from city to city. MOC guidelines require local authorities to publish property prices in their cities, a difficult and possible misleading guide in an incipient real estate market. Furthermore, there is no definition of market value in the law (Chan 2003 p. 146). As required by Bank safeguards, affected families in China can challenge the compensation offered by filing suit in a people’s court, but demolition continues while the case is heard. Illegal structures to be demolished do not entitle their occupants to compensation. For resettlement from rural areas, the main difference is that compensation estimated as 6-10 times the value of the agricultural production of the expropriated area over the previous three years (Chan 2003 p. 141). Estimated in this way, however, compensation rarely exceeds a fraction of the potential market value of rural land to be urbanized. Hence, this is where most conflicts and

complaints arise.

5.8 Despite the practical difficulties, IEG did observe cases of resettlement working well within these projects. Such experiences should encourage Bank staff working in China and elsewhere to be pragmatic and more optimistic that urban development operations can meet Bank involuntary settlement safeguard requirements. But in China itself will just compensation continue to be affordable to local authorities in the face of soaring real estate prices in the larger cities especially? Already, there have been a number of reports of protest and unrest in Nanjing and other cities over inadequate compensation (Chan 2003 p. 146; Bergen 2006 p. 41; BBC TV June 21, 2006). Full market real estate values will have to be factored into assessments of compensation, especially as displaced people are increasingly aware of the increasing value of their own property, particularly in prime locations. Perhaps the rising cost of resettlement will itself be an incentive for local authorities to minimize displacement. Thus, a consolidating urban real estate market in China might do more to curtail resettlement than any law or regulation can.

## **6. Lessons Learned from the Projects**

6.1 Some involuntary resettlement is inevitable with rapid urban transformation, and it can be managed in compliance with the Bank's own safeguards provided there is an explicit legal and institutional framework for it as in China's cities. Rising property prices, making it less affordable in a market economy, are likely to curtail it.

6.2 To demonstrate efficiency and optimal choice there should be rigorous evaluation of costs and benefits of major urban infrastructure and environmental protection investments in China. ERR and FRRs can also help identify the timing of replacements, options for cost recovery and opportunities for private sector participation.

6.3 China's benefit from Bank urban development assistance goes beyond the financial resources it brings. More important is conveying trusted knowledge and worldwide project experience through on-the-job learning about what local governments can do to provide more services for the poor and improve the urban environment.

## Annex A. Basic Data Sheet

### TIANJIN URBAN DEVELOPMENT AND ENVIRONMENT PROJECT (CREDIT 2387-CHA)

#### Key Project Data (amounts in US\$ million)

	<b>Appraisal estimate</b>	<b>Actual or current estimate</b>	<b>Actual as % of appraisal estimate</b>
Total project cost	195.0	228.9	117.4
Loan amount	100.0	99.8	99.8
Cofinancing	-	-	
Total cancellation	-	3.8	

#### Project Dates

	<b>Original</b>	<b>Actual</b>
Board approval	-	06/17/1992
Signing	-	07/02/1992
Effectiveness	-	11/06/1992
Closing date	12/31/1998	12/31/2000

#### Staff Inputs (staff weeks)

	<b>Actual/Latest Estimate</b>	
	<b>N° Staff weeks</b>	<b>US\$(000)</b>
Identification/Preparation	134.2	388.1
Appraisal/Negotiation	50.4	177.9
Supervision	145.4	654.7
ICR	6.8	28.3
Total	335.4	1,244.5

## Mission Data

	<i>Date</i>	<i>No. of persons</i>	<i>Specializations represented</i>	<i>Performance rating Impl. Prog. Dev. Objectives</i>	
Identification / Preparation	June 1989	4	1 Economist, 1 Urban Planner, 1 Sanitary/Municipal Engineer; 1 Public Health Specialist		
	August 1989	6	1 Economist, 1 Urban Planner, 1 Sanitary/Municipal Engineer, 1 Public Health Specialist, 1 Transportation Planner, 1 Financial Analyst		
	March 1990	6	1 Economist, 1 Urban Planner, 1 Environmental Engineer, 1 Financial Analyst, 1 Transportation Planner, 1 Sanitary/Municipal Engineer		
	Sept. 1990	3	1 Economist, 1 Financial Analyst, 1 Environmental Engineer, 1 Sanitary/Municipal Engineer		
Appraisal/ Negotiations	May 1991	10	1 Economist, 1 Urban Planner, 1 Environmental Engineer, 1 Financial Analyst, 1 Operations Officer, 1 Transportation Planner, 1 Sanitary Engineer, 1 Procurement Specialist, 1 Public Health Specialist, 1 Environmental Engineer		
	May 1992	?	1 Economist, 1 Counsel, 1 Disbursement Officer		
Supervision	Nov. 1992	4	1 Sanitary/Municipal Engineer, 1 Economist, 1 Environmental Engineer	S	S
	June 1993	2	1 Sanitary/Municipal Engineer, 1 Economist	S	HS
	May 1994	2	1 Sanitary/Municipal Engineer, 1 Transportation Planner, 1 Economist	S	HS
	Oct. 1994	3	1 Sanitary /Municipal Engineer, 1 Financial Analyst, 1 Economist	HS	S
	May 1995	4	1 Sanitary/Municipal Engineer, 1 Financial Analyst, 1 Transportation Planner, 1 Economist, 1 Resettlement Specialist	HS	S
	Nov. 11, 1995	3	1 Financial Analyst, 1 Transportation Planner, 1 Economist, 1 Resettlement Specialist	HS	S
	May 1996	5	1 Sanitary/Municipal Engineer, 1 Financial Analyst, 1 Chemical Engineer, 1 Transportation Planner, 1 Economist	HS	S
	Oct. 1996	5	1 Sanitary/Municipal Engineer, 1 Economist, 1 Financial Analyst, 1 Resettlement Specialist, 1 Environmental Engineer	S	HS
	Nov. 1997	4	1 Sanitary/Municipal Engineer, 1 Economist, 1 Financial Analyst, 1 Resettlement Specialist, 1 Environmental Engineer	S	HS
	Nov. 1997	4	1 Sanitary/Municipal Engineer, 1 Economist, 1 Financial Analyst, 1 Environmental Engineer	S	HS
	June 1998	6	1 Sanitary/Municipal Engineer, 1 Economist, 1 Chemical Engineer, 1 Financial Analyst, 1 Environmental Engineer, 1 Resettlement Specialist	S	HS
	Nov. 1998	4	1 Sanitary/Municipal Engineer, 1 Economist, 1 Financial Analyst, 1 Sanitary/Municipal Engineer	S	HS
	May 1999	6	1 Sanitary/Municipal Engineer, 1 Economist, 1 Financial Analyst, 1 Chemical Engineer, 1 Resettlement Specialist, 1 Transportation Planner	S	HS
May 2000	1	1 Economist	S	HS	
Nov. 2000	4	1 Economist, 1 Financial Analyst, 1 Transportation Planner, 1 Environmental Engineer			
ICR	May 2001	2	1 Economist, 1 Financial Analyst	S	HS

## ZHEJIANG MULTICITIES DEVELOPMENT PROJECT (CREDIT 2475-CHA)

### Key Project Data (amounts in US\$ million)

	<b>Appraisal estimate</b>	<b>Actual or current estimate</b>	<b>Actual as % of appraisal estimate</b>
Total project cost	231.0	250.7	109
Loan amount	118.3	118.3	100
Cofinancing	-	-	
Cancellation	-	-	

### Project Dates

	<b>Original</b>	<b>Actual</b>
Board approval	-	03/25/1993
Signing	-	05/18/1993
Effectiveness	-	10/20/1993
Closing date	06/13/1999	05/31/2003

### Staff Inputs (staff weeks)

	<b>Actual/Latest Estimate</b>	
	<b>N° Staff weeks</b>	<b>US\$(000)</b>
Identification/Preparation	292.8	634.0
Appraisal/Negotiations	90.0	181.8
Supervision	160.0	527.9
ICR	4.0	26.0
Total	546.8	1,369.7

Dollar costs prior to FY00 were increased by 15% to bring them into line with the direct costing method started in FY00.

## Mission Data

	<i>Date</i>	<i>No. of persons</i>	<i>Specializations represented</i>	<i>Performance rating</i>	
				<i>Imple.</i>	<i>Progr. Dev. Objectives</i>
Identification / Preparation	Sept. 1987	6	1 Economist, 1 Engineer, 1 Urban Economist, 2 Urban Development Specialist, 1 Urban Economist		
	October 1989	6	1 Economist, 1 Water Supply Engineer, 1 Land Development Specialist, 1 Sanitary Engineer, 1 Environmental Specialist, 1 Financial Analyst.		
	November 1990	6	1 Financial Analyst, 1 Water Supply Engineer, 1 Traffic Engineer, 1 Land Development Specialist, 1 Sanitary Engineer, 1 Procurement Specialist		
	April 1991	4	1 Financial Analyst, 1 Environmental Specialist, 1 Marine Ecology, 1 Marine Engineering		
	Pre-appraisal: September 1991	6	1 Financial Analyst, 1 Institutional Specialist, 1 Traffic Engineer, 1 Urban Planner/Land Development Specialist, 1 Sanitary Engineer, 1 Procurement Specialist		
Appraisal/ Negotiation	March 1992	8	2 Financial Analysts, 2 Engineers, 1 Environmental Engineer, 1 Urban Development Specialist, 1 Technical Advisor, 1 Staff Assistant.		
Supervisions	April 1994	5	1 Financial Analyst, 1 Environmental Engineer, 2 Sanitary Engineers, 1 Technical Advisor	HS	HS
	October 1994	5	1 Architect, 1 Environmental Engineer, 1 Sanitary Engineer, 1 Financial Analyst, 1 Technical Advisor	S	HS
	May 1995	2	1 Sanitary Engineer, 1 Technical Advisor	S	S
	March 1996	4	1 Sanitary Engineer, 1 Financial Analyst, 1 Disbursement Officer, 1 Technical Advisor	S	S
	March 1997	3	1 Financial Analyst, 1 Municipal Engineer, 1 Technical Advisor	U	U
	September 1997	3	1 Municipal Engineer, 1 Technical Advisor, 1 Utility Finance expert	S	S
	June 1998	2	1 Municipal Engineer, 1 Technical Advisor	S	S
	December 1998	3	1 Municipal Engineer, 1 Institutional expert, 1 Financial Specialist	S	S
	July 1999	2	1 Municipal Engineer, 1 Technical Advisor	S	S
	October 1999	4	1 Municipal Engineer, 1 Financial Analyst, 1 Institutional Expert, 1 Translator	S	S
	October 2000	2	1 Municipal Engineer, 1 Technical Advisor	S	S
ICR	June 2001	4	1 Municipal Engineer, 1 Economist, 1 Technical Advisor, 1 Translator	S	S

## SHANGHAI ENVIRONMENT PROJECT (LOAN 3711-CHA)

### Key Project Data (amounts in US\$ million)

	<b>Appraisal estimate</b>	<b>Actual or current estimate</b>	<b>Actual as % of appraisal estimate</b>
Total project cost	456.6	560.7	123
Loan amount	160.0	156.9	98.0
Cofinancing	-	-	
Total cancellation	-	4.1	

### Project Dates

	<b>Original</b>	<b>Actual</b>
Board approval	-	08/03/1994
Signing	-	06/02/1994
Effectiveness	-	03/10/1994
Closing date	06/30/2000	12/31/2002

### Staff Inputs (staff weeks)

	<b>Actual/Latest Estimate</b>	
	<b>N° Staff weeks</b>	<b>US\$(000)</b>
Identification/Preparation	137.5	440.4
Appraisal/Negotiation	51.1	184.3
Supervision	126.9	609.0
ICR	6.0	25.0
Total	320.5	1,258.7

Costs incurred in FY99 and before were increased by 15% to take into account pre-SAP accounting principles.

## Mission Data

	Date	No. of persons	Specializations represented	Performance rating	
				Impl. Prog.	Dev. Objectives
Identification / Preparation	January 1992	12	Task Manager, 2 Sanitary Engineers, 1 GIS Specialist, 1 Financial Analyst, 1 Environmental Engineer, 1 Operations Assistant, 1 Solid Waste Specialist, 1 Chemical Engineer, 1 Economist, 1 Institutional Specialist, 1 Operations Officer		
Appraisal /Negotiation	Jun/July 1993	12	2 Sanitary Engineers, 1 GIS Specialist, 1 Environmental Engineer, 1 Financial Analyst, 1 Operations Assistant, 1 Solid Waste Specialist, 1 Chemical Engineer, 1 Economist, 1 Institutional Specialist, 1 Operations Officer, 1 Institutional Resettlement Officer		
	January 1994	7	2 Sanitary Engineers, 1 Counsel, 1 Disbursement Officer, 1 Economist, 1 Financial Analyst, 1 Institutional Specialist		
Supervision	July 19, 1994	4	Task Manager, 1 Financial Analyst, 1 Sanitary Engineer, 1 Institutional Resettlement Officer	S	
	Feb. 20, 1995	4	Task Manager, 1 Financial Analyst, 1 Sanitary Engineer, 1 Institutional Resettlement Officer	S	
	Feb. 10, 1996	5	Task Manager, 1 GIS (Cons), 1 Finance (Cons), 1 Engineer (Cons), 1 Solid Waste/Env. (Cons)	S	S
	July 10, 1996	4	Task Manager, 1 GIS(Cons), 1 Finance (Cons), 1 Engineer (Cons)	S	S
	May 15, 1997	6	Task Manager, 1 Finance (Cons), 1 Engineer (Cons), 1 Env. Monitoring (Cons), 1 GIS (Cons), 1 Institutional (Cons)	S	S
	Feb. 22, 1998	5	1 Task Manager/Engineer, 1 Finance, 1 Institutional Specialist, 1 Environment, 1 Procurement	S	S
	Apr. 5, 2000	6	1 Prin. Municipal Eng., 1 Urban Economist, 1 Financial Spec., 1 Urban Consultant, 1 Urban Specialist, 1 Financial Analyst	S	S
	July 20, 2000	2	1 Urban Specialist, 1 Financial Analyst	S	HS
	Dec. 7. 2001	4	Task Team Leader, 1 Financial/Economic, 1 Municipal Engineer, 1 Institutional Specialist	S	HS
	Mar 14, 2002	5	Task Team Leader, 1 Financial Specialist, 1 Institutional Specialist, 1 Municipal Engineer, 1 Financial Inst.	S	S
	Sept. 2002	8	Task Team Leader, 1 Financial Analyst, 1 Municipal Engineer, 1 Inst. Specialist, 1 Urban Specialist, 1 Social Devel., 1 Procurement, 1 Disbursement	S	S
ICR	01/2003	6	Task Team Leader, 1 Financial Analyst, 2 Municipal Engineers, 1 Institutional Specialist, 1 Urban Environment	HS	S

# Annex B. Borrower Comments

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To: 陈欣

From: 王辰

2006

中华人民共和国财政部  
Ministry of Finance, People's Republic of China

February 8, 2007

Mr. Alain Barbu  
Manager  
Sector, Thematic and Global Evaluation Division  
Independent Evaluation Group  
The World Bank

**Subject: China- Tianjin Urban Development & Environment Project  
(CR.2387)**

**Zhejiang Multi-Cities Development Project (CR.2475)**

**Shanghai Environment Project (LN.3711)**

**Draft Project Performance Assessment Report**

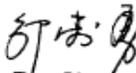
Dear Mr. Barbu:

This refers to the letter of January 11, 2007, from you to Mr. Zhu Guangyao, requesting the comments on the report for above-captioned projects.

After consulting with the parties concerned, I would like to request revising the report according to comments attached.

I look forward to your favorable response at your earliest convenience.

Sincerely yours,



Zou Ciyong  
Director  
Comprehensive Division  
International Department  
Ministry of Finance

San Li He St., Xichengou, Beijing 100820, People's Republic of China  
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## COMMENTS ON

PROJECT PERFORMANCE ASSESSMENT REPORT, CHINA, (CR.2387)

BY TIANJIN PMO

January 25, 2007

This is refer to The Project Performance Assessment Report (PPAR) dated on January 11, 2007, summarizing the experiences and lessons of the previous loan project. Based on following explanation, we would like to request to revise the principal ratings of project outcome in PPAR to high satisfactory:

1. Resettlement.

1.1 Higher unit cost than appraised. The early 1990s experienced the start of the zooming up of building material price in Tianjin, which was unpredictable at appraisal.

1.2 Pioneer in voucher compensation. WB project made a great contribution to the development of city resettlement method/procedure in Tianjin. WB then provided a whole set of project resettlement procedures, characterized with public exposure and voucher compensation, offering more choices to the relocated, together with training of government staff, which was then quite new, and left strong influence on Tianjin resettlement policy and approach development. Cash compensation in

resettlement is now standard practice in Tianjin.

## 2. Public transportation.

Through both vehicle procurement and Urban Public Transportation Development Study, especially the latter in conjunction, WB helped Tianjin to realize:

2.1 Prioritization of public transit priority is the solution in Tianjin urban transportation development;

2.2 Public transit commercialization is necessary. The next few years saw a fast development of Tianjin public transit, with bus route renting, joint venture and investment from outside, some of which are through bidding.

## 3. Landfill site.

3.1 It is well accepted that both in facility and management Shuangkou Landfill site has kept being the first rate in China. And its treatment unit cost is low. A CDM project, a gas collection and utilization to lessen air pollution project is proceeding well in preparation. With other solid waste disposal facility completed in Tianjin, the current treatment amount is smaller than designed capacity, enabling Shuangkou to have a longer operation life, which saves a lot when land price is rising fast. Part of the equipment and staff are transferred to work at another landfill site to lessen cost.

## 3.2 Industrial Pollution Control Fund.

The Fund started well, strictly following WB project procedure. But soon there came the drastic change of reform of state owned factories and industrial structure adjustment, together with closing or out-moving of old polluting factories, while the newly established factories are better aware of their environment obligations and have necessary equipment at the very beginning. To the Fund it means bad debts and less potential clients. The Fund then turned to legal actions and tried to find clients even in rural areas, while with limited success. Such a sudden change is unpredictable even for most of the local.

Finally, there are a few special contributions from WB project to Tianjin development we would like to emphasize:

1. Voucher compensation in resettlement.

Cash compensation, offering more free choice, is now standardized in Tianjin, almost no exception. But the in early 1990s the relocated could move only to housing assigned by government, no other choice. The WB project's voucher compensation, though attractive with its comparatively free choices, is totally new. It took great efforts, such as staff training, explanation, and persuading, for people to accept that the method was well considered and reasonable, in terms of its formula and voucher amount calculation method. That is the very first step toward cash compensation. The effect was a success: new method was carried out, relocated residents were satisfied and works started on time. But what is

more important is the long and profound influence on the concept and methodology in Tianjin large-scale resettlement to come.

2. Bus operation commercialization.

It is a similar case as the voucher compensation: easily taken for granted today, but totally innovated, initiative then; Unbelievably difficult to start, but strong influence in development afterward.

3. Secondary riverbed solution.

This contribution didn't reflect in the report, but Tianjin should not forget. Tianjin once proposed a sub-project of polluted and drainage problem producing by urban river for WB financing, to cover it with a road. After consultation with Tianjin engineers, WB experts strongly advised Tianjin to consider keep the river and rehabilitate it. The road solution might bury the problem but make them more difficult to solve; the whole Tianjin secondary rivers must be systematically planned before the works of the small segment river. Later on, Tianjin rehabilitated the whole secondary river system, made it a pride of Tianjin, but did not propose it for WB funding.

**Comments****On****Project Performance Assessment Report****Zhejiang Multicities Development Project (Cr. 2475)**

This is refer to The Draft Project Performance Assessment Report dated on January 11, 2007. Our comments, which have incorporating those of the project implementing agencies, are below:

First, regarding "the provincial government's ICR was not prepared!" mentioned in 3.12, p 12 of the report:

In fact, in December 1999, Zhejiang Urban Development Project Office prepared the ICR and submitted to the Bank. After that, the Bank dispatched an expert to Zhejiang for inspection and prepared an ICR of the Bank's own. Therefore, it is of our opinion that Zhejiang prepared the ICR as the Bank required.

Second, regarding the assessment on the environment fund mentioned in 3.10, p. 11 and the view point of "There was little progress toward developing long-term environmental policies and programs—a weak project result" mentioned in 3.15, p 13:

Firstly, the IEG mission did not discuss the issues further with the Zhejiang EPB. Therefore, the information included in the report may lack reliability and completeness.

Secondly, Zhejiang Environment Fund was a very small component of ZMUDP, whose objective was to provide small- and medium-sized enterprises with funds during 3-5 years for pollution control. However, the Fund was designed simply to revolve continually, but both were not carefully taken into account the market risks the enterprises faced, which might even lead to lose their abilities to repay, and the remedy measures. Thus the Fund was unable to revolve continually. Nevertheless, the Fund still brought obvious environmental and economic benefits, which were consistent with the project environment policies and ideas of the Bank.

Thirdly, the designed operation mode of the Fund was a try and exploration only. Though the Fund was unable to operate continually under ZMUDP, the environmental policies and ideas for ZMUDP and issues the project encountered drew the attention of the provincial government. In 2004, the provincial government put forward the strategic goal of turning Zhejiang into an ecologically good province. In the province, a large number of major projects and model constructions, which are in conformity to the requirements of recycling economy and eco-environmental protection have been or are being constructed by different ways of support, such as direct investments, subsidies or discount interests through setting up a special fund for development of recycling economy and a special fund for environmental infrastructure

construction. The governmental investments have played a role of leading the social investments.

Furthermore, the follow-up environment project to supplement ZMUDP agreed between the Bank and Zhejiang Government during the project preparation for ZMUDP, another Zhejiang Urban Environment Project, was implemented ahead schedule. Since the beginning of the 21<sup>st</sup> century, Zhejiang's economy has been developed rapidly and its urbanization progressing quickly. The project preparation could not catch up with the urgent need of Zhejiang to implement an urban environment project because there was a gap between the project preparation cycle requirement by the Bank and the actual development progress of Zhejiang. Therefore, Zhejiang Government utilized 11.2 billion yen of Japanese loan to complete three wastewater treatment plants in Hangzhou, Jiaxing and Shaoxing cities, each with a capacity of 300 000 m<sup>3</sup>/d. In addition, the Zhejiang Urban Environment Project, which became effective in November 2004, continues using the World Bank loan to construct WWTPs in Ningbo and a landfill in Hangzhou. All of these have embodied the achievements made by Zhejiang in the progresses of the long-term environment policies and programs. It can be seen at present that substantial efficacies have been achieved of the

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long-term environment policies and programs prepared under ZMUDP,  
which has a far-reaching significance.

The above comments are for your information.

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