

**ASIAN DEVELOPMENT BANK
Independent Evaluation Department**

SECTOR ASSISTANCE PROGRAM EVALUATION

ON

**URBAN SERVICES AND WATER SUPPLY AND SANITATION
SECTOR IN VIET NAM**

In this electronic file, the report is followed by Management's response, and the Board of Directors' Development Effectiveness Committee (DEC) Chair's summary of a discussion of the report by DEC.



Evaluation Study

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CURRENCY EQUIVALENTS

(as of 31 July 2009)

Currency Unit – dong (D)

		At Appraisal (31 October 1996)	At Independent Evaluation (31 July 2009)
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\$1.00	=	D11,000	D17,814

ABBREVIATIONS

ADB	–	Asian Development Bank
ADTA	–	advisory technical assistance
BME	–	benefit monitoring and evaluation
BOT	–	build-operate-transfer
CAPE	–	country assistance program evaluation
CPMU	–	central project management unit
CSP	–	country strategy and program
DMA	–	district management area
HCMC	–	Ho Chi Minh City
ICB	–	international competitive bidding
IED	–	Independent Evaluation Department
IEM	–	Independent Evaluation Mission
IFI	–	international financial institution
JBIC	–	Japan Bank for International Cooperation
m ³	–	cubic meter
MOC	–	Ministry of Construction
NGO	–	nongovernment organization
NRW	–	nonrevenue water
O&M	–	operation and maintenance
ODA	–	official development assistance
PCR	–	project completion report
PMU	–	project management unit
PPC	–	provincial people's committee
PPP	–	public-private partnership
PPTA	–	project preparatory technical assistance
PRC	–	People's Republic of China
RRP	–	report and recommendation of the President
SAPE	–	sector assistance program evaluation
SEDP	–	socioeconomic development plan
SERD	–	Southeast Asia Department
TA	–	technical assistance
URENCO	–	urban environmental company
VWU	–	Viet Nam Women's Union
WSC	–	water supply company
WSDC	–	water supply and drainage company
WSS	–	water supply and sanitation

NOTES

- (i) The fiscal year (FY) of the Government and its agencies ends on 31 December.
- (ii) In this report, "\$" refers to US dollars.

Key Words

vietnamese urban development evaluation, viet nam water supply project evaluation, viet nam provincial towns water supply and sanitation, vietnamese public health, millennium development goals, adb, evaluation, asian development bank, public hygiene, public environmental education program

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CONTENTS

	Page
EXECUTIVE SUMMARY	i
I. INTRODUCTION	1
A. Objectives and Scope of the Sector Assistance Program Evaluation	1
B. Methodology and Approach	1
II. DEVELOPMENT CONTEXT AND GOVERNMENT PRIORITIES	2
A. Historical Overview of Reform and Development of Government Strategy	3
B. Policy Framework	5
C. Institutional Framework	5
D. Key Sector Development Issues and Challenges	6
III. THE ASIAN DEVELOPMENT BANK'S SECTOR STRATEGY	7
A. Evolution of ADB's Country Strategies and Assistance Program	7
B. ADB's Urban Services and Water Supply and Sanitation Assistance Program in Viet Nam	8
C. ADB's Focus vis-à-vis That of Other Donors	9
D. Lessons from the 2002 Country Assistance Program Evaluation: Key Findings	9
E. Major ADB Factors Affecting Implementation	10
IV. ASSESSMENT OF STRATEGIC PERFORMANCE (TOP-DOWN ASSESSMENT)	10
A. Strategic Assessment	10
B. Value Added	11
C. ADB Performance	12
V. ASSESSMENT OF PROGRAM PERFORMANCE (BOTTOM-UP ASSESSMENT)	15
A. Relevance	15
B. Effectiveness	16
C. Efficiency	17
D. Sustainability	21
E. Impact	22
VI. OVERALL RATING OF ADB'S SECTOR ASSISTANCE PROGRAM	24
A. Top-Down Rating	24
B. Urban Services and Water Supply and Sanitation Sector Program	24
C. Overall Assessment	24

The guidelines formally adopted by the Independent Evaluation Department (IED) on avoiding conflict of interest in its independent evaluations were observed in the preparation of this report. The Director, IED1, recused himself from the review and approval of this report because of his previous involvement in the country operation of Viet Nam. Walter Stottmann, Vu Hoang Lan, and José Edgardo A. Gomez, Jr., were the consultants. To the knowledge of the management of IED, there were no conflicts of interest of the persons preparing, reviewing, or approving this report.

VII.	CONCLUSIONS, ISSUES, LESSONS, AND RECOMMENDATIONS	25
A.	Conclusions	25
B.	Issues	27
C.	Lessons	28
D.	Recommendations	29

APPENDIXES

1.	ADB Assistance to Viet Nam in the Urban Services and Water Supply and Sanitation Sectors, 1993-2008	31
2.	Development, Water Supply and Sanitation, and Poverty Strategies of the Government of Viet Nam, 1997–2008	32
3.	Donor Partnerships and Coordination in Viet Nam	34
4.	Positioning ADB's Strategies for the Water Supply and Sanitation Sector in Viet Nam	40
5.	Implementation Delays	43
6.	Reducing Nonrevenue Water in Viet Nam	56
7.	Tariff Setting and Selected Utilities in Viet Nam	64
8.	Loan Covenants and Compliance, and Risks and Remedies	67
9.	Waterborne Diseases in Five Project Towns	69
10.	Partnering with the Private Sector in the Provision of Municipal Water Supply and Wastewater Services in Viet Nam	70
11.	Case Study on HCMC Environmental Improvement Project (Loan 1702-VIE)	80

Attachments:	Management Response DEC Chair Summary
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EXECUTIVE SUMMARY

The main objective of this sector assistance program evaluation (SAPE) of urban services and water supply and sanitation (WSS) in Viet Nam is to contribute to the country assistance program evaluation (CAPE) of 2009. This SAPE mainly covers 1999–2008, the period since the 1999 CAPE, but it also includes some ongoing projects from the previous period whose impact was not adequately assessed in the 1999 CAPE. Aside from discussions with key ministries in Ha Noi, the Independent Evaluation Mission (IEM) made field visits in October–November 2008 and had focus group discussions with a wide range of stakeholders in seven towns that had received Asian Development Bank (ADB) loan assistance. At least one town from each of the seven loan projects that were processed during the period was visited.

Viet Nam is the 12th-most-populous country in the world, with a population of 83.2 million in 2006. There is about 25% of this total (30% in 2008, estimated) residing in the urban areas. Despite relatively low urbanization, the annual population growth of 3.3% implies that the urban areas are likely to add 12 million more people by the end of the decade. Viet Nam's transformation from a largely agricultural to an increasingly industrial economy has turned the country, once one of Asia's poorest, into one of its fastest growing. Poverty has been drastically reduced, from 58.1% in 1993 to 16% in 2006. But areas of high population density have also been created, and there is environmental deterioration in the cities and increased demand for infrastructure services, including WSS. In the 1990s, before the Asian financial crisis of 1997, the economy was growing about 8% yearly on average. Growth dipped after the crisis, before picking up in the 2000s. The annual average growth of 7.5% between 1999 and 2006 was Asia's second fastest after that of the People's Republic of China. With the current global crisis, the economy is expected to grow 4.5% in 2009 and 6.5% in 2010, according to ADB's *Asian Development Outlook 2009*.

Government Priorities

By the turn of the century, when Viet Nam had begun to show signs of recovery from the Asian financial crisis, there was an urgent need for the next generation of reforms, which would mean changes in administrative structures for effective development management. The Socioeconomic Development Plan 2001–2005 recognized the role of market-oriented economic institutions with the state economy continuing to take the lead. The Socioeconomic Development Plan 2006–2010 includes policy initiatives to propel Viet Nam out of the low-income group into middle-income country status, move it more strongly into the market economy, accelerate international economic integration, improve the quality of human resources for national industrialization and modernization, realize equity and gender equality, and develop a social security system.

On 21 May 2002, the Prime Minister approved the Comprehensive Poverty Reduction and Growth Strategy, providing the framework for aid coordination. A major breakthrough for the decentralization of development assistance came in 2006 when the Prime Minister's Office issued Decree 131, Regulation on Management and Utilization of Official Development Assistance. The decree gave legal power to "project owners"—in ADB projects, line agencies like provincial people's committees (PPCs)—to initiate requests for ODA projects and subprojects, make investment decisions, and select contractors. After a proposed project is approved by the Prime Minister's Office, it is prepared, the feasibility study is endorsed, and the project can then be implemented by the project owner.

The Government announced several key sector policies, decrees, and guidelines for urban development and WSS around 1997–1998, some resulting from discussions with ADB during project preparation. The National Orientation Plan for Water Supply to 2010 (issued in 1998) set overall goals of 80% urban network coverage and 80–100 liters of water supply per capita per day. Nonrevenue water (NRW) in new urban areas was to be reduced by 30%, and water supply companies (WSCs) were to be independent public utilities fully supported by water supply charges covering both operation and maintenance (O&M) and capital investment.

ADB's Strategy and Program for Urban Services and Water Supply

ADB's strategy in Viet Nam has evolved into a more socially inclusive, sustainable rural development and urban rehabilitation framework. Since 1999, ADB has concentrated on the Government's priority sectors where ADB has competitive advantage and where the private sector, nongovernment organizations, or cofinancing partners can share the load. The Government and ADB have cooperated, for instance, on policy delivery and implementation reform to counter inefficiencies, incompetence, and corruption; develop infrastructure in major cities; promote rural (agricultural) sustainability; and manage natural resources. An explicit shift in emphasis to the poorer Central Region by 2001 saw the North Central Coast and the Central Highlands receiving at least one third of ADB assistance.

ADB has provided Viet Nam's urban services and WSS sectors with both lending and nonlending assistance since 1993. Seven loans totaling \$427 million and five technical assistance (TA) projects amounting to \$3 million have been approved. Two of the TA projects were for loan project preparation, while the rest were for capacity building, including tariff policy and master plan preparation and institutional strengthening, for Ho Chi Minh City (HCMC).

ADB's Assistance to the Urban Services and WSS Sector

Starting with the HCMC Water Supply and Sanitation Project in 1993, and the following TA projects in 1998 (national water tariff setting), 1999 (strengthening of the HCMC WSS), and 2000 (WSS master plan preparation for HCMC), ADB development assistance has answered the Government's need to rehabilitate, and later expand, WSS systems. In February 2003, the Independent Evaluation Department rated the three advisory technical assistance (ADTA) "satisfactory," citing the effectiveness of the water tariff system implemented, and the sustainability of the WSS management and environmental health training provided—the latter with the participation of the Viet Nam Women's Union.

The geographic shift in WSS interventions from the major cities of HCMC and Ha Noi to provincial capital cities and eventually the Central Region in 2000–2001 came with a clear recognition of decentralized administrative responsibility over local water resources. In the most recent loan projects (1880 [Third Provincial Towns Water Supply and Sanitation Project], 2034 [Central Region Urban Environmental Improvement Project], and 2272 [Central Region Small and Medium Towns Development Project]), the PPCs, rather than just the Ministry of Construction, were direct participants. Loan 1880 covers the other major urban areas whose rehabilitation and expansion were government priorities a decade ago. By 2012, ADB will have completed the first generation of water supply projects in key provincial cities across the country. Drainage, solid waste management, and urban environmental improvement in major towns, among other aspects of urban development, are increasingly drawing more of its attention. ADB is also starting to provide more-specific WSS support on a larger scale (to

Da Nang, Hai Phong, HCMC, and Hue), which would be the new centerpiece of ADB assistance to the sector.

Assessment of Strategic Performance (Top–Down Assessment)

Strategic Assessment. ADB's urban development and WSS strategic positioning is rated "substantial." The country strategies and programs have been generally aligned with the Government's national development priorities. ADB has dealt with the selected towns in stages. HCMC was the target of the first loan in 1993. As the period of gestation and preparation before the loan was processed was not long enough, ADB also approved three ADTA projects almost at the same time as the loan. Aside from giving timely policy and capacity building support, these three projects provided a solid basis for ADB's succeeding exchange on policy issues with the Government, which had to do with introducing tariffs based on full cost recovery and financial management for sustainability. Loan 1361 (Provincial Towns Water Supply and Sanitation Project) was the first loan intended for provincial capitals, and it established typical patterns and standards for ADB's later WSS operations (loans) in provincial towns. The two other assistance projects for the Central Region that came in much later can be counted overall as extensions of ADB's approach of supplying water to 32 of the 64 provincial capitals. Unlike other donors (particularly the World Bank), ADB has consistently supported small to medium-sized provincial capitals, even those where the piped-water network was a limited one from the colonial period, found only in the central districts.

Value Added: Contribution to Development. ADB's urban development and WSS sector value addition is rated "modest." The direct impact on health, particularly on reducing waterborne diseases, cannot be accurately confirmed through data, as the Government diligently keeps track of the incidence of diseases only by province and not by town. On the other hand, as ADB started updating and strengthening its safeguard policy in the mid-1990s, and as decentralization set in, both the central government ministries and the implementing provincial governments came to learn and adopt the concept of environment protection and resettlement issues, which were quite new to the country. At the start of its assistance, ADB placed proper emphasis on building the technical and financial management capacity of the central Government, setting the stage for the introduction of modern water supply management tools and technical standards. Although ADB assumed that the capacity building would trickle down from the central Government to the PPCs and the WSCs through succeeding projects, the tariff increases and rigorous NRW reductions that were projected did not happen. While ADTA may have helped technically determine the appropriate tariff levels, political will to implement them would have had to be present as well. There were simply too many project towns for ADB staff (at headquarters and in the resident mission) to monitor implementation progress. Moreover, the benefit monitoring and evaluation (BME) system was not institutionalized in the WSCs.

Alignment of Strategies, Project Rationales, and Objectives. In general, the quality of the feasibility studies has been satisfactory, but in the future feasibility studies should go beyond mere technical definition of the project. The consultants should prepare final designs and bid documents for at least the first year of the project. They should also draw up in-depth institutional reforms (e.g., which department has decision-making authority, which key staff positions need to be strengthened, how the required skills are to be developed), financial objectives (e.g., key financial indicators, tariff increase and revenue generation plans, debt repayment targets), and project components derived from a comprehensive, longer-term development plan.

Financial Viability and Tariffs. The improved financial viability of WSCs through tariff increases and efficiency gains is a laudable objective of ADB projects in the sector. Each project covenant on tariff increase intended to make the WSCs financially independent and sustainable. However, although some improvements have come about, few if any WSCs have reached the financial targets set in the loan agreements. In a strict sense, most covenants on financial issues, particularly on tariff increases and financial ratios (e.g. debt-service ratio) were not met in almost all the loans. Financial internal rate of returns (FIRRs) determined by Project Completion Reports (PCR) and Project Performance Evaluation Reports (PPER) met standard target figures, because WSCs generated revenues from other non-core activities, where stronger WSCs engaged in construction businesses (e.g. urban roads) or in real-estate ventures; and in most cases, under the provision guaranteed in a Government circular, PPCs extended subsidies to WSCs on tariff revenue shortfalls. Chances of achieving the targets in the future are slim, given the current tariff policies of the national Government and the PPCs. When they set these difficult targets, the project officers did not anticipate the deep-seated resistance of the PPCs to tariff increases. The financial projections presented in reports and recommendations of the President (RRPs) were optimistic in their assumptions about tariff increases. Loan covenants have to be thoroughly negotiated and fully understood, and followed-up to be actually met. Covenants cannot make up for lack of demonstrated up-front commitment during project preparation. More rigorous policy dialogues are needed not only during processing but throughout implementation, with regular contact through the resident mission. Using inter-donor forum in the sector on the tariff will also be effective. ADB must be persistent in persuading the Government, the PPCs, and the WSCs to raise tariffs and achieve a sound cost recovery base.

Institutional Strengthening and Capacity Building. To help the WSCs modernize their management and financial systems each project provided for capacity building—with mixed results. Except for the very first project, capacity building has been mostly confined to 1 week of training. Some companies have profited more than others, and some have retained very little. To be more effective, institutional development assistance should be more broad based. Instead of concentrating on a few systems, it should help the company as a whole to obtain a better vision for its future, and to develop corporate development plans, with continuous TA support. Insufficient resources and the limited focus of the TA projects have made such broad-based assistance difficult.

Portfolio Management. Portfolio management has had rather poor results. Significant delays have affected all projects, holding up the completion of almost all subcomponents. All projects in the urban WSS program took about 8.5 years to complete, about 3.5 years longer than projected in the RRP. These delays were due to the low capacity and inexperience of the central project management unit (CPMU) and the slow, multilayered process of review and approval, from the writing of terms of reference, invitation of proposals from the short-listed consultants, evaluation of proposals, and awarding of bids, to contract negotiation and signing. Such delays would be understandable in a first or second project, but are difficult to justify in the most recent projects (Loan 2034 Central Region Urban Environmental Improvement Project and Loan 2272 Central Region Small and Medium Towns Development Project), where the time for contracting the consultants in fact increased. All the project documents draw attention to the delay in hiring consultants as a key challenge, yet there has been no improvement. The RRP timelines are unrealistic in the light of experience. Future projects should be based on realistic, conservative time projections that reflect past experience. All these aspects considered, ADB's performance rating is "modest."

Assessment of Program Performance (Bottom-Up Assessment)

Relevance. The sector projects are rated “relevant.” ADB’s sector strategy is aligned with the Government’s, and ADB assistance has filled a significant niche role in improving the water supply networks in the provincial capitals and widening their coverage. Lack of safe water and poor sanitation affects the quality of life of the population and poses a threat to public health. Without adequate drainage infrastructure, populated areas are prone to flooding, and water resources to widespread pollution. Improving WSS is an important part of the Government’s development strategy to improve the life and health of the people and to curb water pollution. All seven projects so far derived their rationale directly from the Government’s and ADB’s sector strategies. Except for the two HCMC projects, the projects tackled WSS deficiencies in 32 small and medium-size towns throughout the country. Some of these towns were among the poorest and most unprepared to deal with the WSS challenge. The projects also took on the broader objective of promoting balanced regional growth and making the smaller towns more attractive to reduce migration to the large cities. As ADB’s engagement in the sector deepened in the later stages of the water supply projects in the provincial towns, it would have benefited from a more realistic time frame, and more proactive dialogue on financial management aspects.

Effectiveness. The sector projects are rated “effective.” Except for Loan 1702 (HCMC Environmental Improvement Project), which was canceled for nonperformance (see Appendix 11), the completed projects generally achieved the projected outputs, albeit with long delays. Project investments have resulted in greatly improved service coverage and quality. Overall, about 1 million more people now receive safe piped water supply 24 hours a day. Water production has been increased to service 500,000 more. Drainage components were in only three completed loans, totaling some \$15 million. The benefits or beneficiaries cannot be assessed, for lack of data, but it is safe to say that the investments led to more connections to the drainage network, resulting to less flooding in the beneficiary areas. The socioeconomic survey conducted during the performance evaluation for Loan 1514 showed that the median monthly tariff in the seven project towns was about D40,000. Household consumers in focus group discussions declared themselves willing to pay up to D50,000 if the quality of water improves. Moreover, funding for household sanitation (improved toilet facilities with septic tanks) under revolving funds appears to have been quite effective.

Efficiency. The sector projects are rated “less efficient.” The excessive NRW at the WSCs is a huge drain on productivity and efficiency. Technical loss (leakage) is the main cause of NRW, but commercial loss (fraudulent connections and inaccurate meter reading) is still not negligible (see Box 2 in para. 56). Reducing NRW will save considerable funds. All of the projects included TA for NRW reduction and covenants mandating such reductions. The IEM noted marginal improvements in NRW between 2004 and 2007 in the towns visited, but, given the degree of investment and support these towns have received through ADB projects, the present NRW of around 30% is still high. None of the towns visited had a dedicated staff or a plan for sustained NRW reduction. The TA, while having some success in the short run, did not create enough management commitment to keep up the NRW reduction work. The only exception appears to be Thu Dau Mot, where the WSC has taken the initiative to continue the NRW effort. By 2008, NRW had gone down to 15% in about half of the town and efforts were being made to reduce it further in the other half. NRW reduction needs appropriate long-term funding and, above all, firm management commitment. The rigorous technical approach of network zoning is much desired.

Sustainability. The sector projects are rated “likely to be sustainable.” The WSC staff have enough technical knowledge and expertise to take charge of water supply engineering. A primary objective of every project was to make the utilities more financially viable by raising tariffs. Project completion report assessments and IEM observations showed initial progress by the WSCs in meeting these covenants. In all of the projects, financial viability improved. WSCs were authorized to retain depreciation; some WSCs implemented block tariffs. The WSCs did not comply with targeted financial ratios. Some were able to generate resources for investments. All WSCs met at least O&M costs, although many were below what was necessary. Overall, however, they did not meet the financial targets and the tariffs in all WSCs are still far from full cost recovery. Over the past 3 years, the financial position of the WSCs has deteriorated significantly, as PPCs have consistently turned down their tariff increase proposals while subsidizing WSCs as required under decentralization. All projects received technical assistance to improve utility management, administration, and operations. Project management units (PMUs), WSCs and urban environmental companies, and the Viet Nam Women's Union underwent capacity building, in varying degrees of intensity, and had focused training in the O&M of facilities and NRW reduction. A total of \$8.6 million was allocated for that purpose. Computer hardware and software, as well as training, were provided to strengthen management information, financial management and accounting, and commercial systems. Perhaps more could have been achieved under the ADB loans if the capacity building had taken a broader view of institutional development. TA 1999, for example, helped the HCMC WSC identify its training needs and institutionalize training, but HCMC is quite unlike other provincial towns in size, scale, and capacity. An attempt could have been made instead to impart more widely relevant knowledge and understanding of modern utility management practices to promote culture change.

Sector Impact and Outcomes of ADB Assistance

Overall, the IEM found “substantial” improvements in Viet Nam’s urban and WSS sector resulting from ADB’s diligent support for more than 30 provincial towns, especially in water supply. Roughly 80% of the people living in and around the town centers now have constant water supply. ADB has also helped install septic tanks and improve drainage, strengthen public environmental education programs, and build procurement capacity (bid preparation and evaluation). Although the impact on public health is not obvious, as the Government does not systematically collect data on the incidence of waterborne diseases, in some cities, serious diarrhea caused by contaminated water have become less common. However, it is worth noting that a 2009 IED impact evaluation study on Rural Water Supply and Sanitation in Punjab, Pakistan concluded that if there was no detailed baseline survey, the attribution of water supply improvement to public health improvement would be difficult to establish and expensive to prove. Perhaps, in the context of provincial towns, rather than “health,” “gender impact” (on lessening drudgery and improving girls' education) can be more emphasized for future projects. If the operations would like to target public health as project impact, then ADB should engage with the Government on much more thorough and regular project monitoring initiatives. In addition, across many ADB developing member countries including Viet Nam, ADB water supply projects have to be integrated with proper sanitation and solid waste management (SWM), to effectively mitigate unwanted negative impact of stagnant used water on public health. Sanitation and SWM should be more fully built into future projects (it was only in Loan 2034, and the cancelled Loan 1702 that had some sanitation component prominently). Capacity building for project implementation, including financial management (accounting), has not achieved the results envisaged during project appraisal: provincial WSCs still need constant technical and financial guidance and support from the central Government and external partners.

ADB Results and Performance Rating

Overall, the IEM rated ADB's assistance to Viet Nam's urban and WSS sector "successful on the low side." ADB's urban sector strategy has been "partly successful," according to a top-down assessment: strategic positioning has been "substantial," and value addition and ADB performance have been "modest." Following a bottom-up assessment, the IEM pronounced ADB's urban and WSS sector program "successful," taking into consideration standard evaluation criteria (relevance, effectiveness, efficiency, sustainability, and impact). The Independent Evaluation Department, in another bottom-up assessment for an earlier TA performance audit report, had also rated the TA projects "successful"—a rating with which this SAPE concurs.

Issues

Simplifying the Procurement of Equipment and Civil Works. Cumbersome procurement procedures caused considerable delays in all projects, especially those that required international competitive bidding. In the longer term, international financial institutions should wage intensive dialogue with the Government to simplify review and decision making and support the Government to adopt international standards.

Dealing with Cost Overruns and Inflation. Unexpected inflation in Viet Nam is leading to cost overruns and hence to cutbacks in project scope, outputs, and outcomes. To forestall these effects in the future, the SAPE proposes the Government to provide swift additional funding or for ADB to embed more realistic price and physical contingencies based on past project records and performance, and not simply rely on macroeconomic forecast data not specific to the water supply sector.

Emphasizing the Benefits of Monitoring and Evaluation. The PPCs did comply with the benefit monitoring and evaluation obligations during project implementation but, along with the WSCs and the CPMU, considered them too cumbersome and unnecessary and later abandoned them. Institutional development programs must stress the need for good monitoring and evaluation in modern utility management and build support for it.

Lessons

Reducing Delays in Implementation. All the projects in the WSS program experienced major delays, with severe consequences: on average they took about 8.5 years to complete, about 3.5 years longer than estimated at appraisal. ADB should explore the possibility of reducing project start-up time by seeing to it that the implementation consultants are hired, the feasibility studies (especially for the first year) are reviewed, and any revisions in project scope and initial design are made during project preparation rather than during implementation.

Improving Consultant Quality. Overall, the rather-mixed assessment of the consultants' performance suggests a need for improvement. Future projects should (i) combine the superior technical capacity of international consultants with the local experience of clearly qualified national consultants; (ii) be sufficiently well funded to attract high-quality consultants and allow them enough time to do a good job; and (iii) promote a professional and efficient relationship between consultants and local counterparts.

Preparing Better-Thought-Out Covenants. ADB should set more-judicious, achievable targets in covenants, ensure their full acceptance by the contracting parties, and be prepared to

invoke remedies in case of significant noncompliance. Project lessons from the past should be applied diligently.

Strengthening Risk Analysis. The risk analyses in the RRP's were weak and did not take a realistic view of critical project issues. Implementation delays were rarely mentioned and remedies were unconvincing.

Recommendations

Suggested Follow-Up Actions

Issue	Responsibility	Time Frame
1. Take Appropriate Measures to Shorten the Final Design Process by strengthening feasibility studies, adopting realistic contingency plans, and increasing supervision (para. 94).	Southeast Asia Department	2010
2. Develop Sector Indicators (jointly with government) for the Institutional Reform and Financial Performance of Water Supply Companies and Urban Environment Companies by undertaking better business planning, clarifying responsibilities and establishing separate accounting systems (para. 95).	Southeast Asia Department	2011
3. Enhance Borrower Commitment to Tariff Adjustments Needed for Financial Viability by establishing initial actions as per agreed business plans (para. 96).	Southeast Asia Department	2011
4. Facilitate the integration of wastewater (sewer) treatment in future project design to supplement substantial investments in the water supply (para. 83).	Southeast Asia Department	2011

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I. INTRODUCTION

A. Objectives and Scope of the Sector Assistance Program Evaluation

1. This sector assistance program evaluation (SAPE) of urban services and water supply and sanitation (WSS) in Viet Nam is intended for the country assistance program evaluation (CAPE) planned for 2009.¹ It covers mainly the period 1999–2008 after the 1999 CAPE, but also includes some ongoing projects from the previous period whose impact was not adequately assessed in the 1999 CAPE. Since 1999, two Asian Development Bank (ADB) country strategies and programs (CSPs), 1999–2001 and 2002–2006, have been implemented fully, and CSP 2007–2010 is now being carried out.² This SAPE, while dealing mainly with the WSS sector, covers other projects integrated with the drainage and solid waste subsectors but excludes urban transport (e.g., the national road network), housing, and urban renewal.

2. The study was timed to provide sector-specific feedback for the design of the next phase of the country partnership strategy for Viet Nam, planned for 2010. Right after the resumption of operations in October 1993, ADB's emphasis in the infrastructure area was on agriculture and irrigation (water resources management). But as the country's economy grew, so did WSS assistance. In the early 1990s, many donors helped large cities with war-damaged water supply networks. ADB's first such loan was to Ho Chi Minh City (HCMC) in 1993 (Appendix 1). Later, some donors (including ADB) agreed with the Government that they should direct their attention to provincial capital towns to support more equitable livelihood improvement throughout the country. ADB provided a series of loans for provincial capitals under the agreement. This assistance ended in 2000 after its third phase. Then in 2003 and 2006, ADB processed two loans for small and medium-sized towns in the Central Region. The latest CSP (2007–2010) gives a clear boost to the next growth centers like Thanh Hoa (class II secondary cities) under the Water Financing Program 2006–2010, an ADB-wide initiative. This SAPE assesses whether the evolution in focus is aligned with the overall development initiatives of the Government, and whether ADB's operations and assistance have been successful.

B. Methodology and Approach

3. This SAPE report was prepared according to the ADB guidelines for CAPE.³ It combines a top-down assessment of ADB strategy, value added, and performance with a bottom-up assessment of ADB support for operations. Chapter II presents and reviews the development context for the urban services and WSS sector, together with a description of the Government's strategies, and ADB's strategies and implementation. Chapter III gives a top-down assessment of ADB's strategic positioning, overall contribution to development results, and performance as a development partner. The bottom-up sector assessment in Chapter IV examines the relevance, effectiveness, efficiency, sustainability, and impact of assistance to the WSS sector. This performance assessment sheds light on the factors that determine performance, viewed in the context of challenges and opportunities. After the overall assessment in Chapter V, lessons and operational recommendations are presented in Chapter VI.

¹ The first CAPE was completed in 1999, and covered the period from 1993 (when ADB resumed operations in the country) to 1998.

² Other ADB program documents include the country assistance programs (CAPs) for 1999–2001, 2000–2002, and 2001–2003, and the CSP updates for 2002–2004, 2003–2005, and 2006–2008.

³ ADB. 2006. *Guidelines for the Preparation of Country Assistance Program Evaluation Reports*. Manila. Available: www.adb.org/Documents/Guidelines/Country-Assistance-Program/guide-preparation-0206.pdf.

4. This SAPE assesses ADB's contribution to outcomes through a combination of perception assessments, data analyses, and literature reviews involving desk studies at ADB headquarters and field visits. Information was collected through the following:

- (i) Review of the literature and secondary data;
- (ii) Statistical analyses of government-issued statistics, in ADB CSPs, and reports from other donors;
- (iii) Field visits to the sites of some completed project (at least one project town from each of the seven projects processed during the SAPE period);
- (iv) Review of policy-oriented advisory technical assistance (ADTA) and capacity building support; and
- (v) Client feedback and an assessment of the effectiveness of the Viet Nam Resident Mission (particularly for projects delegated to the mission) in meeting its organizational objectives, as well as a review of the quality of strategy and program design documents, the level of staff and consultant resources allocated to project and program preparation and implementation, the timeliness of review and approval of disbursement requests, flexibility and resourcefulness in addressing implementation problems, and quality of the policy dialogue.

II. DEVELOPMENT CONTEXT AND GOVERNMENT PRIORITIES

5. **Accelerated Growth.** Viet Nam's socioeconomic development has been impressive. In the 1990s, before the Asian financial crisis of 1997, Viet Nam's economy grew at an average of about 8% yearly. While growth dipped right after the Asian financial crisis, it picked up in the 2000s and grew at an annual average of 7.5% between 1999 and 2006, the second-fastest rate of growth in Asia after that of the People's Republic of China. Viet Nam is the 12th-most-populous country in the world, of about 83.2 million in population in 2006, with 25% of this total residing in the urban areas.⁴ Despite relatively low urbanization, the annual population growth of 3.3% implies that the urban areas are likely to add 12 million more people by the end of the decade. Viet Nam's transformation from a predominantly agricultural to an increasingly industrial economy has turned the country, once one of Asia's poorest, into one of its fastest growing. Poverty has been drastically reduced, from 58.1% in 1993 to 24.1% in 2004. Sustained economic growth in the past 10 years, averaging 7.3% yearly, has created jobs and significantly decreased the number of poor people. But areas of high population density have also been created, and there is environmental deterioration in the cities and increased demand for infrastructure services including WSS.

6. **Regional Disparity.** Despite its recent rapid growth of 7.5% yearly, Viet Nam remains a poor country with low per capita income (per capita gross domestic product was estimated to have grown from \$360 in 1998 to \$7,230 in 2006) and poverty is still relatively high.⁵ Poverty is particularly pronounced in the Northwest Region and in the North Central Coast. Notably, there is a significant disparity between urban and rural incomes, with rural incomes falling to almost half of city-dwellers' income.

⁴ The 600 urban centers in Viet Nam are divided into six classes. There are 4 centrally governed cities, 61 provincial towns, and 537 other urban townships. The ongoing ADB CSP midterm review estimates that the urban population made up 30% of the total in 2008, and should reach 50% by 2020 (versus the Government's estimate of 45%).

⁵ From a nationwide standard of D250,000 per capita per month (2005), for 2006–2010 the Ministry of Labor, War Invalids, and Social Affairs has set the poverty line at D200,000 for rural residents and D260,000 for urban residents. The overall poverty rate is now estimated at 24%. The Central Region, one of the poorest, accounts for 38% of the total poor.

A. Historical Overview of Reform and Development of Government Strategy

7. Viet Nam's long-term development goals in the late 1990s (Appendix 2) were to industrialize and modernize the economy through a structural shift from agriculture to industry and services, and to gradually reduce the gap in development between the country and other countries in the region. Its economic target was to double the 1990 per capita GDP and to reduce poverty incidence by one half by 2000.⁶

8. By the turn of the century, Viet Nam had begun to show signs of recovery, and its leaders were increasingly aware of corruption and its impact on efficient development. There arose an urgent need for the next generation of reforms, which would require changes in administrative structures for effective development management. The threat to social and political stability posed by increasing income disparities between the rural and urban areas was cause for concern. The Comprehensive Poverty Reduction and Growth Strategy, approved by the Prime Minister on 21 May 2002, provided the framework for aid coordination in support of poverty reduction. A major breakthrough for the decentralization of development assistance came in 2006 when the Prime Minister's Office issued Decree 131, Regulation on Management and Utilization of Official Development Assistance (ODA).⁷ The decree gave legal power to the project owners in ADB projects—line agencies such as provincial people's committees (PPCs)—to take the initiative in requesting ODA projects and subprojects, making investment decisions, and selecting contractors. In the new environment that has been created for externally funded projects, the central ministries in Ha Noi no longer have full authority from the capital to implement projects. The project owner (a province or state-owned enterprise) can seek initial approval of project scope and funding, including the proposed financing plan, by the Prime Minister, with comments from central ministries. After the project is approved, it is prepared, the feasibility study is endorsed, and the project can then be implemented by the owner.

9. **Sector Orientation: Target Setting.** The Government has issued key policies, decrees, and guidelines for the water supply sector and relevant fields in the recent decade, some resulting from discussions with ADB during project preparation and implementation. The most important of these was the National Orientation Plan for Water Supply to 2020, a policy document issued on 18 March 1998 in compliance with a covenant for an ADB project, Second Provincial Towns Water Supply and Sanitation (Loan 1514).⁸ The plan set the tone for the development of urban water supply systems for national industrialization and modernization, and for investment planning for the sector. It laid down overall goals of 80% urban network coverage and 80–100 liters of water supply per capita per day by the end of the plan period. Among its other stipulations, nonrevenue water (NRW) in new urban areas was to be reduced by 30% by 2000, the central government subsidy was to be scrapped and cost recovery principles were to be introduced, and water supply companies (WSCs) were to be independent public utilities, fully supported by water supply charges, to cover both operation and maintenance (O&M) and capital investment. By 2020, all urban areas were to have suitable water drainage systems and wastewater treatment facilities, and dangerous wastewater was to be treated adequately. Another decree that had impact on the sector was Instruction 59 of 1996, which allowed WSCs to use operating revenues for O&M of their treatment facilities, assuring the WSCs of financial viability.

⁶ ADB. 1999. *Viet Nam Country Assistance Plan 1999–2001*. Manila.

⁷ The power to approve procurement was decentralized in two steps: (i) Decree 88/1999/CP of 1 September 1999 regulated bidding, and (ii) Decree 14/2000/CP of 5 May 2000 had provisions to facilitate decentralization. Both decrees took effect on 26 May 2000 with the issuance by the Ministry of Planning and Investment of Circular 04/2000TT providing guidance on the implementation of the regulations.

⁸ Details of loans and technical assistance projects can be found in Appendix 1. They are not footnoted to in the text.

10. The current regional development strategy of the Government, as reflected in the Socioeconomic Development Plan 2001–2010 (SEDP) and the 2001–2005 Action Plan, is to invest and develop infrastructure in six key economic zones. Part III-B of the SEDP recognizes and discusses the hierarchy of urban settlements in Viet Nam, and identifies the major cities as centers of rapid industrialization and modernization. Lowland rural regions have been designated for the development of diverse ecological agriculture, and the extensive application of scientific and technological advances. The Central Region contains two of the six key economic zones. The policies for the Northern Central Coast area, the Central Coast area, and the central key economic zone (key economic zone 3) encourage the development of the Dung Quat–Chu Lai economic zone, other coastal industrial zones, and tourism in the Hue–Da Nang–Hoi An–Nha Trang corridor.

11. **Water Supply Coverage.** Over the past 15 years, water supply coverage has improved quite substantially. Water supply coverage varies greatly with the size of the community. It is much higher in the large cities (HCMC, Ha Noi, Hue, Da Nang), where coverage is around 90%. In medium-sized cities, household coverage of around 60% has been achieved with ADB support, and there is very low household coverage in small towns. Only about one third of small district towns have some form of piped supply, and it typically serves only a small portion of the population in the town center. People without access to piped water use other sources, usually shallow wells that do not meet quality standards. Some need to buy water at high cost.

12. **Quality of Water Supply Service.** The quality of service also depends on the area served. The largest cities and most medium-sized ones have mostly continuous service, but residents in smaller towns may receive water only a few hours a day. Conventional water treatment facilities (clarification, filtration, and disinfection) exist in the majority of the Vietnamese cities and towns, but many of these plants, even those built recently, do not produce water with acceptable standards because of poor design and construction, and inadequate O&M. About 50% of the 66 WSCs that took part in the World Bank's 2004 benchmarking study⁹ claimed they did not have proper laboratory equipment to perform water quality tests. Some urban centers have no treatment facilities; raw water is pumped directly into the distribution network, with suspended solids, iron, or other contaminants. Intermittent supply compromises water quality through the inflow of unclean water during periods of very low pressure. Except for HCMC and Ha Noi, water in the urban area fails to meet the standards of the World Health Organization or the Government's guidelines. The challenge in water supply is not only to expand coverage but also to improve the safety of the water supplied.

13. **Sanitation.** Sanitation coverage tripled from 10% in 1993 to 31% in 2008. Like water supply coverage, sanitation coverage varies widely. In urban areas, it has reached an average of 76%, where combined stormwater drainage and sewer systems remove wastewater from households. Regulations require the treatment of all waste from households and businesses in septic tanks to provide some protection against environmental pollution. While such systems are an appropriate first phase solution of wastewater treatment, their effectiveness is severely reduced by the fact that (i) many users are not connected to the systems, and (ii) many septic tanks are not properly maintained. At present, the combined stormwater and wastewater is not treated. The discharge of raw industrial waste is a major problem in many locations, as pretreatment requirements are sometimes not properly enforced. Water from the combined drainage and sewer systems is discharged untreated into watercourses. As a result, watercourses, especially in the bigger cities and downstream, are severely polluted.

⁹ Viet Nam Water and Sanitation Association. 2004. *Benchmarking Report*. Ha Noi, December.

14. In the last decade, more than \$1 billion has been invested in urban WSS projects in Viet Nam, with 80% of this from ODA (see Appendix 3, Table A3.2). These projects have typically been carried out by the provincial WSCs. WSS coverage and quality have significantly improved, but seemed not enough to meet the development targets for the sector by 2010. While there are no conclusive estimates of the financial resources needed, investments will have to increase dramatically to meet the targets. Investment estimates in the order of \$6–\$8 billion for urban WSS, most of this amount for sanitation, seem plausible. This means that about \$600 million must be invested each year between now and 2020, roughly four times the annual investment in the last 10 years.¹⁰ This amount of resources can be mobilized only if the WSS agencies greatly improve their efficiency and cost recovery.

B. Policy Framework

15. The National Orientation Plan for Water Supply to 2020 has transformed sector policies and institutional arrangements for the development of the Vietnamese WSS sector. Besides the plan, many other decisions and circulars issued by the Government have reinforced and further refined sector policies. The most recent and relevant are:

- (i) Joint Ministry of Finance and Ministry of Construction (MOC) circular of 2004 stipulating a common tariff framework for the sector based on the principle of full cost recovery and a reasonable profit;
- (ii) Decree 88/2007 on urban and industrial park drainage, promoting cost recovery for basic O&M;
- (iii) Decree 117/2007 on clean water production, supply, and consumption, in support of full cost recovery; and
- (iv) Decree 59/2007 on solid waste management, in support of full cost recovery.

C. Institutional Framework

16. The National Orientation Plan and later government decisions have set in motion a fundamental process of change from centralized sector management to a system in which the national Government retains responsibility for policy making, sector monitoring, and facilitation, and local governments assume asset ownership and responsibility for providing WSS services. Decentralization has fundamentally changed the way the sector is managed.

17. **National Agencies.** The key line ministries for the WSS sector are the Ministry of Agriculture and Rural Development and MOC for the rural and urban segments. Since decentralization, the role of MOC has been reoriented substantially from exerting central control to setting policies, monitoring and overseeing operations, and facilitating sector development. MOC may still be an intermediary and coordinator of multicity ODA projects, but PPCs have taken over responsibility for project implementation and have tried out their new role in the ADB-funded Third Provincial Towns Water Supply and Sanitation Project (Loan 1880).

18. **Urban Water Supply.** Decentralization has not only passed on to PPCs the responsibility for providing WSS services but has also required them to create legally distinct

¹⁰ Estimates vary. According to the World Bank, the Government has invested more than \$1 billion in urban WSS projects over the last decade and will need to invest about \$8 billion more over the next 10 years (Staykova, Camellia, and Bill Kingdom. 2006. *Water Supply and Sanitation Strategy*. Washington, DC: The World Bank). ADB, on the other hand, estimates \$600 million in annual investment needs until 2020, or four times the annual investment in the last 10 years (ADB. 2006. *Project Preparatory Technical Assistance Report on the Water Sector Review Project in Viet Nam*. Manila).

state-owned WSCs to operate and maintain the water systems and exercise commercial functions. While deemed independent, these companies still have severely restricted autonomy.

19. **Urban Sanitation.** The institutional architecture of the sanitation sector is much more diverse and less evolved than that of the water sector. PPCs are now also responsible for providing sewerage and drainage services. In the larger towns, several institutional setups are in place, including (i) combined water supply and drainage companies (WSDCs); (ii) PPC departments providing sanitation and other urban management services such as solid waste management, street pavement maintenance, park and public garden maintenance, streetlight maintenance, road construction, and funeral services; and (iii) urban environmental companies (URENCOs), which operate as independent state-owned enterprises and provide drainage and sanitation and in many cases other urban services. Besides the 10% environmental fee collected by WSCs, local government budget contributions fund the sanitation companies' O&M and investments. The companies are in every respect closely controlled by the local governments (municipalities).

D. Key Sector Development Issues and Challenges

20. **Need for Increased WSC Autonomy.** The PPCs set water supply tariffs that mostly cover the O&M costs of the WSCs but not their full costs of capital, and has them approved by the provincial people's assembly. Government approval is also still needed for other key management and operating decisions such as overall production, capital investment and maintenance expenses, staff salaries and benefits, and senior management appointments. The PPCs likewise plan and carry out investments. This PPC dominance stifles the development of water utilities as independent, self-sustaining businesses operating on technical, business-oriented principles, free from undue political interference.

21. **Service Aggregation for Economies of Scale.** Most cities and towns are trying to deal with their urban water and sanitation problems on their own. Aggregating services across a few administrative jurisdictions or functions could generate benefits from economies of scale, more professional management, and better access to finance.¹¹ To achieve service aggregation, cities and towns could (i) create water and wastewater utilities with regional infrastructure in metropolitan areas, (ii) establish multicity water concessions where a single utility serves several towns with separate infrastructure, or (iii) consolidate water and wastewater activities in one utility.

22. **Financial Viability and Tariff.** All suggestions made regarding institutional reform and strengthening will depend on the creation of a dependable financial base that allows WSCs and URENCOs to become financially viable. PPC tariff policy at present does not provide that base. The PPCs routinely turn down the tariff increase proposals of the WSCs, prompted more by political considerations than by the financial needs of the WSCs. The refusal to increase tariffs is difficult to justify. With poverty incidence (29%) now only half of what it was in 1993, especially in the urban areas, tariff affordability and willingness to pay does not seem to be a genuine issue in Viet Nam. Affordability surveys agree, and the fact that WSCs have no problems collecting water

¹¹ The merger of the WSC and the URENCO was a covenant (no. 7) of ADB Loan 1514 (see details of this Project in Appendix 1) that the Government could not comply with, as the two institutions belong to different levels of government—the WSC under the PPC, and the URENCO under the municipality. But, as confirmed during the SAPE workshop in November 2009, some WSCs in smaller towns have absorbed URENCO responsibilities to increase their operating efficiency. There is no official guidance in the matter from MOC, which has said that it would oppose such a merger in larger cities, because both operations are already too large in scale to start with.

bills bear this out.¹² In the provincial capital towns that the Independent Evaluation Mission (IEM) visited during the project performance evaluation for the Second Provincial Towns WSS Project, the median monthly payment was in the range of D30,000–D40,000, around 5% of household income. As in many other developing countries, the very low water supply tariffs in Viet Nam—D2,000–D3,000 per cubic meter (m³), in the urban areas—show an unwillingness to charge and are not a function of affordability, as the PPCs claimed it to be. At the moment, the legal framework guarantees that if the tariff revenue is low, the PPCs must make up for the shortfall from the provincial budget. Water being among the essential livelihood goods, the prospect of full cost recovery tariffs provokes strong resistance. Tariffs have, therefore, stayed very low compared with those for other utility goods.

23. **Central Government Cap on Tariffs.** In its efforts to curb high inflation, the cap on water tariffs imposed by the Government on 17 April 2008 has made it ever more difficult for the WSCs to sustain their business and has slowed the progression of tariffs toward full cost recovery. The Prime Minister, in March 2008, categorically disallowed any increase in water tariffs before the end of June, and in the circular (03/BTC-QLG) of 30 June 2008, prohibited any increase the rest of the year. Increases that had been approved by PPCs and communicated to consumers had to be shelved. The midterm water tariff increase programs will have to go through full adjustment in the coming years when the cap is lifted.

III. THE ASIAN DEVELOPMENT BANK'S SECTOR STRATEGY

A. Evolution of ADB's Country Strategies and Assistance Program

24. Since 1999, ADB has concentrated on the Government's priority sectors where ADB has competitive advantage; where the private sector, nongovernment organizations (NGOs), or cofinancing partners can share the load; and where a balance can be struck between economic growth, social equity, and the environmental soundness of projects (Appendix 4). The Government and ADB worked together, for instance, on the reform of the implementation process to counter inefficiencies, incompetence, and corruption, and promote infrastructure development in major cities, rural (agricultural) sustainability, and natural resource management.¹³ The Government has shown its commitment to guiding the country's rapid growth (at least 7% yearly) more efficiently, and it has reorganized and streamlined ODA processes to facilitate development assistance. Aside from the WSS sector, ADB has continued to support agriculture as a key contributor to growth, particularly through irrigation and flood control systems. By 2002, there was a clear move toward enhancing agro-industrial development in addition to productivity. In regard to infrastructure and transport, the improvement of the road network has been continuous, although as early as 2000, support for cross-border highways has been increasingly emphasized.

25. Another major pillar of ADB's CSP has been an increasing spatial focus, beginning with the 1995 Tripartite Growth Triangle formed by three clusters: in the north (Ha Noi, Hai Phong, Quang Ninh), in the center (Quang Nam, Da Nang, Quang Ngai), and in the south (HCMC, Bien Hoa, and Vung Tau), under the original concept of building links between primary urban

¹² The World Bank (footnote 10) places collection rates at more than 95%, and collection periods at less than 30 days, typically.

¹³ Particularly in the early years after resuming its operations in Viet Nam in 1993, ADB undertook a series of training and special missions with the Government, including sessions in project implementation, management tools, and general procurement processes at ADB headquarters in Manila for the government officials.

centers, secondary provincial centers, and tertiary settlements in the hinterlands. By 2001, there was an explicit shift to the poorer Central Region.¹⁴

26. CSP 2007–2010 emphasizes (i) a results-based approach linked more directly to the SEDP; (ii) the creation of an enabling environment for pro-poor private sector investment; (iii) more substantive private sector operations and better links between public and private sector operations; and (iv) the integration of regional cooperation concerns (especially the Greater Mekong Subregion Program). Stakeholders (the private sector, international and national NGOs, and other bilateral and multilateral development partners) participated more widely in its preparation. The strategy places a premium on private sector development and improved public administration as complementary to development, in addition to gender development and regional cooperation mentioned above.

B. ADB's Urban Services and Water Supply and Sanitation Assistance Program in Viet Nam

27. Starting with the HCMC WSS Project in 1993, as well as TA projects 1998 (National Water Tariff), 1999 (Strengthening of HCMC WSS), and 2000 (HCMC WSS Master Plan Preparation), ADB's development assistance has answered the Government's need to rehabilitate (and later expand) WSS systems. The Independent Evaluation Department (IED) gave the TA projects in particular a satisfactory rating.¹⁵ This was concurred in this SAPE after its bottom-up assessment, citing the effectiveness with which the new water tariff system was introduced, how the planned increase was implemented,¹⁶ and the continuous training in WSS management and environmental health provided, with the active participation of the Viet Nam Women's Union (VWU).

28. Geographically, a shift in WSS interventions from the major cities of HCMC and Ha Noi to secondary growth centers paralleled the new emphasis on the Central Region between 2000 and 2001. This was also followed by a clear recognition of decentralized administrative responsibility over water resources. The most recent loans, Third Provincial Towns WSS Project (Loan 1880), Central Region Urban Environmental Improvement Project (Loan 2034), and the Central Region Small and Medium Towns Development Project (Loan 2272) dealt directly with the PPCs, rather than just MOC. The remaining WSS project, Third Provincial Towns WSS, which covers the rest of the major urban areas that Government prioritized a decade ago for rehabilitation and expansion, is proceeding without any major setbacks. ADB will have concluded its major WSS interventions by 2012, and is in fact moving toward other urban development areas such as drainage, solid waste management, and the environmental improvement of major provincial capitals and towns. In addition, environmental management concerns will have to be incorporated more decisively into WSS and urban development

¹⁴ In the report and recommendation of the President on Loan 2272 (Central Region Small and Medium Towns Development Project), the Summary Poverty Reduction and Social Strategy (Appendix 10) mentioned the highland towns (e.g., Gia Nghia) with a high percentage of ethnic minority groups such as the Ma and the Edde.

¹⁵ ADB. 2003. *Technical Assistance Performance Audit Report on Selected ADTAs for Institutional Development and Capacity Building in the Water Supply and Sanitation Sector in the Lao People's Democratic Republic and the Socialist Republic of Viet Nam*. Manila.

¹⁶ ADB TA 1998 defined a methodology for setting water tariffs and applied it in four representative cities: Ha Noi, HCMC, Nha Trang, and Thanh Hoa. This methodology was the basis for two interministerial circulars on water tariffs issued in April 1997 and June 1999. While responsibility for setting tariffs belongs to the PPCs, the TA performance audit report (footnote 15) noted the slow adoption and updating of tariffs and the limited adoption of the tariff-setting methodology after the study.

projects, as the degradation of watersheds and other natural resources due to population pressures has already been mentioned in ADB strategy documents as a source of risk.¹⁷

C. ADB's Focus vis-à-vis That of Other Donors

29. **Selectivity and Sector Focus.** In 1994 and 2006, the country received an estimated \$36 billion in pledged aid.¹⁸ Among the major donors (Appendix 3) are five development banks—ADB, Agence Française de Développement (AFD), Japan Bank for International Cooperation (JBIC), Kreditanstalt für Wiederaufbau (KfW), and the World Bank. These five banks account for almost 80% of Viet Nam's ODA and are working together to improve portfolio performance and strengthen ODA management.¹⁹ From 1998 to December 2006, the five banks disbursed around \$8.8 billion, with JBIC and the World Bank accounting for \$6.7 billion (76%). The sectors with the largest share of committed financing are transport (37%), energy (21%), and social infrastructure (20%) including WSS. Other multilateral institutions, as well as the United Nations and other bilateral agencies (from France, Germany, Japan, and other countries), are also supporting activities in various sector and thematic areas. However, unlike other donors which have confined their assistance to key cities, ADB has always supported small to medium-sized provincial capitals, even those in the central districts where the piped-water network still dated from the colonial period.

D. Lessons from the 2002 Country Assistance Program Evaluation: Key Findings

30. ADB is one of Viet Nam's major development partners in WSS. It has provided around \$430 million in assistance to the sector (slightly less than 50% of the total assistance to Viet Nam) since 1993. The first CAPE in December 1999 (Appendix 4) assessed the implementation performance of three loans under the operation satisfactory,²⁰ while noting substantial delays, with many earlier reminders ignored. Delays in contract signing or in loan effectiveness were often the result of bureaucratic procedures and the consensus process within government. There were inherent difficulties in staffing the provincial project management units (PMUs) with qualified people, as central government staff were offered no incentives to relocate, while local staff often lacked project management capability. Frequent changes in staff—the Government's as well as ADB's—compounded the problem. One project had four project officers in quick succession until the Government requested ADB to put a stop to the staff changes. Coordination constraints were also noted. According to the CAPE report: "ADB appeared to underestimate consistently the impact of coordination constraints with project activities that crossed established departmental and provincial boundaries of responsibility, and this led to implementation delays." The delays were aggravated by the adoption of different policies by the provinces, particularly in the case of resettlement compensation. Moreover, although sanitation is a government priority, no capital investment has been made outside the major cities. Urban infrastructure development is generally unsustainable and shows very low efficiency, lack of performance, and low staff capacity. The key recommendations involved (i) additional funding

¹⁷ ADB is starting to provide more-specific WSS support on a larger scale (to Da Nang, Hai Phong, HCMC, and Hue), which would be the centerpiece of ADB assistance to the sector. More urban WSS projects are proposed in 2009, and are covered by the midterm review of the CSP. ADB is considering financing two more PPTAs for urban sanitation projects in 2009–2010 and is discussing with the Government the possibility of implementing a multitranche financing facility instead of continuing standalone projects for the urban WSS sector.

¹⁸ Inter-Ministerial Task Force. 2007. *Fifth Joint Portfolio Performance Review*. Ha Noi.

¹⁹ The joint portfolio and program reviews on portfolio management were initiated with JBIC and the World Bank in 1999, and were extended to the Five Banks Initiative in 2003.

²⁰ At the time of the previous CAPE (1999), Loan 1702 (HCMC Environmental Improvement Project) had just been approved (October 1999) and was categorized not under "WSS" but under "multisector." The loan project was, therefore, not included in the sector analysis.

for capital investments and O&M, (ii) an integrated framework for the sector (urban and rural), (iii) institutional and policy reforms, (iv) cost recovery tariffs, (v) solid waste management, (vi) technical and managerial capacity development, (vii) private sector participation, and (viii) increased community awareness and participation. A second CAPE is planned for 2009.

E. Major ADB Factors Affecting Implementation

31. **Limited Resources for Technical Assistance.** The managerial, financial, and operational performance of WSS service providers—WSCs, WSDCs, and URENCOs—varies widely. Driven by changes in the Government's sector policy and directives, and supported by international aid, some forward-looking PPC leaders and utility managers have made substantial progress in running and managing their companies, e.g., Hai Phong. But many other providers, especially those in smaller towns, continue to perform poorly because of lack of capacity and opportunity. A TA performance audit report in 2003 compared early capacity building TA for Viet Nam and the Lao People's Democratic Republic (footnote 15). The audit report mentioned that the Institutional Strengthening of HCMC WSC Project (TA 1999) had helped the HCMC WSC develop training programs, institutionalize training, implement management information systems, and computerize billing and other procedures. With the adoption of the medium-term plan prepared under the HCMC Water Supply Master Plan (TA 2000), the WSC also benefited from a more rational approach to the planning of future system expansion. Since these two ADTA projects, there have been two other ADTA projects (including TA 1998), involving planning and environmental management but none related to policy reforms (para. 32). And because these three ADTA projects were confined to HCMC, they had little effect on other towns with generally less capacity and resources than the four major towns (HCMC, Ha Noi, Da Nang, and Hai Phong). ADB chose to provide project preparatory TA and loans to these other cities and towns to enable them to (i) install a proper billing and collection system, (ii) plan their future investment needs (engineering and planning), and (iii) manage WSC finances.

IV. ASSESSMENT OF STRATEGIC PERFORMANCE (TOP-DOWN ASSESSMENT)

A. Strategic Assessment

32. ADB's urban development and WSS strategic positioning is rated "substantial." The CSPs have been generally aligned with the Government's national development priorities. ADB has dealt with the provincial towns in stages: HCMC was the target of the first loan, after ADB resumed operations in the country in 1993. As the period of gestation and preparation before the loan was processed was not long enough, ADB also approved three ADTA projects almost at the same time as the loan approval: (i) a national water tariff policy study, (ii) the institutional strengthening of the HCMC WSC, and (iii) master plan preparation for HCMC water supply. As expected, most of the TA resources were focused on HCMC, but the tariff-setting methods recommended under TA 1998, for example, also applied to Ha Noi, Nha Trang, and Thanh Hoa. The three TA projects extended timely policy and capacity building support, and provided a solid basis for ADB's succeeding exchange on policy issues with the Government, which had to do with introducing tariffs based on full recovery and financial management for sustainability. The two other ADTA projects that were later approved for the provincial towns involved (i) capacity building for WSS planning and management, and (ii) community environmental health improvements. Therefore, it is right to say that there was much emphasis on technical and financial capacity building at the start, but very limited institutional and policy reform assistance specific to the provincial towns after that.

33. The Provincial Towns WSS Project (Loan 1361) was the first loan intended for provincial capitals, and it established typical patterns and standards for ADB's later WSS operations (loans) in provincial towns. The two other assistance projects for the Central Region that followed much later can be counted overall as extensions of ADB's approach of supplying water to 32 of the 64 provincial capitals. ADB, unlike other donors (particularly the World Bank), has given consistent support to small to medium-sized provincial capitals, some of which had limited piped networks from the colonial period and only in the central districts. The country has enjoyed substantial support from various donors including bilateral agencies, many of which negotiated support for the towns with the planning ministry, but in the matter of water sector policy and reform, harmonized activity across the donor community has been limited.

34. ADB support has been strategic in (i) maintaining geographic balance; (ii) taking the lead in rehabilitating old pipes and extending the water supply network; (iii) filling the gap in assistance to provincial towns where other donors were not so strong; and (iv) sequencing many loans, however limited, in the continuing policy discussion. ODA will go on being a major engine for the growth and development of WSS in Viet Nam. In the past, ODA was concessionary and gave the sector a boost in rehabilitating and expanding services throughout the country. It was also instrumental in helping the Government to redefine sector policies and build capacity. Most ODA resources, however, were given without much support for sector reform, particularly regarding utility autonomy, efficiency, and financial viability.

B. Value Added

35. **Contribution to Development.** ADB's urban development and WSS sector value addition is rated "modest." With ADB projects' input, almost half of the country's provincial capitals, and more than 70% of the population in the surrounding areas, now have regular water supply, and standards of living have improved. In the project areas, piped water is always available; before the projects it was available only 2–3 hours a day (Box 1). The direct impact on health, particularly on the reduction of waterborne diseases cannot be accurately confirmed through data, as the Government diligently keeps track of the incidence of disease only by province and not by town. On the other hand, as ADB started updating and strengthening its safeguard policy in the mid-1990s, and as decentralization set in, both the central government ministries and the implementing provincial governments came to learn and adopt the concept of environment protection and resettlement issues,²¹ which were quite new to the country.

²¹ In the early projects, resettlement compensation varied, but the Government has regularly updated the stipulated land values so the rates can now be considered market based.

Box 1: ADB Water Supply Improvement in Dong Hoi

Before the project, water was available only 2–3 hours a day, 4 days a week, even for households with water connections. Potable water had to be drawn from the surface water of Bau Tro Lake, a rainwater reservoir. Women had to fetch water for cooking and cleaning from wells and streams. Bau and Trou lake was dredged and cleaned during the project, and maximum pump capacity (9,000 cubic meters [m³]) has been fully attained. A water treatment plant with a capacity of 19,000 m³ was built and is functioning well. The existing source is also being used for irrigation, particularly during the dry season. Water is constantly available. At the time of the Independent Evaluation Mission in May 2008, the entire city (five wards) had piped water, and 60% of the communes (two) were connected. Overall, piped connections covered 67% of households (versus 25% before the project) and institutions. Per capita water supply had increased to 120 liters a day (from 25 liters a day before the project). During the focus group and beneficiary interviews, local residents said they appreciated the constant water flow, and voiced relief at no longer having to get water from possibly contaminated sources.

Source: Sector assessment program evaluation team.

36. **Reporting, Financial Management, and Monitoring and Evaluation.** Reporting and financial management requirements were also introduced to the government agencies. The benefit monitoring and evaluation (BME) requirements were well conceived, but were deemed too cumbersome and inappropriate by the implementing agencies and ultimately rejected. The failure of the project agencies to take ownership of BME shows that, despite capacity building for project implementation, WSC managers do not yet understand and are not prepared to adopt modern business-oriented utility management principles. Procurement procedures followed in international competitive bidding (ICB) were also introduced, with the help of ADB, yet the PPCs still need constant guidance and support from the central government in ICB tendering. Technical capacity in many implementing agencies is still low, and the significant turnover of staff in the provinces does not help. Therefore, ADB's overall sector value addition is rated "modest."

C. ADB Performance

1. Project Formulation and Administration

37. **Alignment of Strategies, Project Rationales, and Objectives.** ADB's urban development and WSS program performance is rated "modest." The appraisal reports in general were well prepared and well focused, with comprehensive descriptions and analyses of project issues, objectives, project formulation, and implementation arrangements. ADB and government strategies were well aligned with project objectives, which were to rehabilitate and expand WSS systems. They rightly provided for sector reform, institutional and financial development, and community sanitation and hygiene education.

38. **Quality at Entry.** In general, the quality of feasibility studies was satisfactory, with some reservations. In the future, feasibility studies should go beyond mere technical definition of the project. The consultants should prepare final designs and bidding documents for at least the first year of the project. They should also draw up in-depth institutional reforms, development and financial objectives, and project components derived from a comprehensive, longer-term corporate development plan prepared together with implementing agencies and decision makers. Such a plan would define objectives, detailed action plans, TA requirements, and funding needs for (i) achieving the institutional restructuring and autonomy of utilities; (ii) reinforcing the WSCs, URENCOs, and PPCs as institutions and building their capacity; (iii) increasing tariffs, with automatic adjustments for inflation; (iv) improving technical efficiency

and reducing NRW in the network; and (v) strengthening project implementation capacity. All of this information, if made ready at the preparation stage before appraisal rather than during project implementation, would greatly improve understanding and formulation of project objectives and covenants. More resources would be required for project preparation, but the quality-at-entry of ADB projects would increase the likelihood of more-realistic project objectives and better-defined assistance.

39. **Risk Analysis and Lessons Learned.** Appendix 5 includes a summary of the risk analyses presented in the reports and recommendations of the President (RRPs). Most, if not all, risks were cited. Issues regarding institutional reform, financial performance and tariffs, and lack of capacity and institution building were mentioned, but not with the urgency and frankness that they deserved. Implementation delays, a major problem in each project, were never explicitly mentioned. Remedies presented were unconvincing, did not address the real underlying causes of the problems, and did not lead to any decisive and successful corrective action during implementation. The lessons presented in the RRP and project completion reports (PCRs) did mention most issues, but not with sufficient urgency, and were not heeded.

2. Coordination with Other Aid Agencies

40. The effectiveness of ODA over the past 10 years needs to be assessed and supplemented by proposals for changing the role and use of ODA in the future. Government resources and ODA funds should be distributed on the basis of an assessment of the cost of service provision, and the wealth of recipients. Currently, relatively wealthy urban areas receive 84% of ODA funds, whereas the rural areas, where 75% of the population lives, enjoy only 13%. This issue will be particularly important, given the likely graduation of Viet Nam over the coming 10 years. Wealthier cities should be weaned from concessional aid, while poverty reduction projects may remain eligible for better loan terms.

41. The international development community will continue and increase its assistance to the sector in the foreseeable future, according to the latest strategy papers of different donors. But as the economy grows and moves into the middle-income category of countries, less money will be available in concessional terms. Revenue-earning WSCs in the larger cities face the specter of borrowing on market terms. Counterpart contributions will have to increase, but so will debt repayment obligations. Other financially less able sector segments, such as rural water and sanitation, and investments in poverty- and environment-related activities will continue to attract soft loans. Clearly, the way the Government and the sector receive ODA will change. For 15 years, ADB has taken the lead in water supply improvement for provincial towns, but for the next generation of assistance, it should be more selective in its targets.

3. Capacity Building and Technical Support

42. **Financial Viability and Tariffs.** Improving the financial viability of WSCs through tariff increases and efficiency gains was another laudable objective of all ADB sector projects. Each project contained covenants on tariff increases that would trigger financial independence and sustainability. Although some improvements can be attributed to these requirements, few if any companies did reach the financial targets set in the loan agreements, and it is unlikely that they will do so in the future, given the current tariff policies of the national Government and the PPCs. In setting these ambitious targets, the project officers did not anticipate the deep-seated resistance of the PPCs to tariff increases. Financial projections presented in RRP were well prepared but were based on overly optimistic expectations regarding tariff increases. More

rigorous policy dialogues are needed not only during processing but throughout implementation, with regular contact through the resident mission.

43. **Institutional Strengthening and Capacity Building.** Each project came with a TA to help project companies modernize their management and financial systems and build capacity. The result of these efforts is mixed. Some companies profited more than others, and some retained very little. To be more effective, institutional development assistance should have been more broad based, not just concentrating on a few systems but helping the company as a whole to obtain a better vision of its future, and develop corporate development plans into which a wider, continuous TA program could have contributed. Insufficient resources and the limited focus of the TA programs made it impossible to follow this path.²²

44. **Lack of Commitment to Sustain NRW Reduction Effort.** Reducing leaks and commercial losses was a key objective of all water supply projects. While the HCMC project did not meet its NRW targets, all the towns under Loans 1361, 1514, and 1880, except Thu Dau Mot, have sustained the effort. NRW is still unacceptably high, around 25%–30%, in most WSCs. Overall, the NRW TA led to initial improvements but fell short in drawing commitment from WSC managers to sustain NRW reduction. The NRW reduction program in all projects was poorly conceived: it was neither comprehensive nor sustained, and did not combine leak control with network management. International experience shows that NRW reduction efforts cannot be sustained through mere training, pipe and meter replacement, and the acquisition of sophisticated leak detection equipment. For example, World Bank projects, in spite of TA and the covenants built into all WSS projects, have been unsuccessful among all regions in tackling NRW reduction effectively and in a sustainable manner.

4. Portfolio Management

45. **Institutional Capacity.** ADB's early efforts—lending and nonlending—were generally sensitive and responsive to the Government's needs, fostering ownership and gradually taking a niche role in WSS in the provincial capitals. But projects were considerably delayed, as central and provincial government staff were obliged to learn ADB's various reporting requirements in English. Many of the documents could have been translated into the local language, and more day-to-day assistance with international project management practices could have been given. After TA 2376, which was approved in 1999, there have been no more ADB projects in Viet Nam, although many of the local governments, which have assumed responsibility for project implementation under decentralization, clearly lack the capacity for it.

46. Portfolio management is considered weak. All the projects suffered from significant delays affecting almost all subcomponents and towns. The reasons for these delays were several: lack of capacity and inexperience on the part of the central project management unit (CPMU) and the slow, multi-layered process of review and approval, from the writing of terms of reference, invitation of proposals from the short-listed consultants, evaluation of proposals, and awarding of bids, to contract negotiation and signing. Such delays would be understandable in a first or second project, but are difficult to justify in the most recent projects (Loans 2034 and 2272), where the time for contracting the consultants increased. All the project documents draw attention to the delay in hiring consultants as a key challenge, yet there has been no improvement. As experienced, RRP timelines are unrealistic.

²² According to the Southeast Asia Department (SERD), the possibility of financing TA and institutional strengthening from the Asian Development Fund is being discussed with the Government.

47. **Differences between Vietnamese Procurement Procedures and ADB Procurement Guidelines.** Those differences, especially in ICB, led to misunderstandings and extra work to comply with both sets of regulations. For example, because price quotations had to fit government price norms, some bidders were disqualified, contrary to ADB guidelines. Also, the absence of price adjustment clauses in Vietnamese regulations has caused problems recently with the onset of hyperinflation. Allowing bidding based on unit prices made it possible to reduce the contracts to fit the budget and eventually resolve the problems.

48. **More Realistic ADB Estimates of Implementation Time.** On average, all projects in the urban WSS program took about 8.5 years to complete, about 3.5 years longer than projected in the RRP. These delays must be reduced in future projects. All of the measures suggested above to speed up implementation should be considered. But even under improved conditions, experience tells us that the projects will take longer to complete than assumed at appraisal. Multicity WSS projects in a difficult environment like Viet Nam's cannot be completed in 5 years.²³ Hiring consultants, from the preparation of terms of reference through mobilization, takes at least a year, even in countries with more capacity and friendlier procurement procedures than Viet Nam's. Bidding will take time and will be fraught with unexpected obstacles. In summary, future projects should be based on realistic, conservative time projections that reflect past experience.

V. ASSESSMENT OF PROGRAM PERFORMANCE (BOTTOM-UP ASSESSMENT)

A. Relevance

1. Development and Sector Strategy of the Government and ADB

49. The sector projects are rated "relevant." ADB sector strategy is aligned with the Government's sector development strategy, and has played a significant niche role in improving the water supply network in the provincial capitals and expanding their coverage. Lack of safe water and poor sanitation affects the quality of life of the people and poses a threat to public health. Inadequate drainage²⁴ leads to flooding in populated areas and widespread pollution of water resources. Improving WSS is an important element of the development strategy of the Government to improve the life and health of its people and curb water pollution.²⁵ However, measures for building institutional capacity and generating ownership for tariff increases were not adequately taken into account in the design of later projects.

2. Rationale and Project Objectives

50. The projects also promoted balanced regional growth, increasing the attractiveness of smaller towns to bring down migration to the large cities and reduce poverty and vulnerability. In this context, all projects pursued five basic objectives: (i) improve water or drainage and

²³ World Bank experience with many similar projects in all regions demonstrates that they are seldom completed in less than 7 years. The World Bank management, therefore, requires the implementation period for such projects to be at least equal to the average implementation time for similar completed projects.

²⁴ Vietnamese cities have combined sewer systems that carry both surface water runoff and domestic and industrial wastewater.

²⁵ Chapter VI (Orientation of Investment Plan) of the SEDP 2005–2010 enjoins the Government to "...develop and modernize infrastructure systems in urban areas, improve the water supply systems and provide sufficient clean water for cities and industrial parks. Continue to upgrade and build water supply systems in rural areas, especially the Mekong delta and mountainous areas. Basically improve the drainage systems, sewage treatment and solid waste treatment in special urban areas, level 1 and level 2 cities, industrial zones and a number of urban centers, trade villages and residential areas which are being heavily polluted."

sanitation facilities by rehabilitating existing infrastructure and building new infrastructure; (ii) improve service efficiency by, among other things, reducing NRW; (iii) strengthen the capabilities of project management agencies and service providers, WSCs, and URENCOs, through policy reform and capacity building; (iv) raise the revenue base of providers by increasing tariffs and improving financial management to turn the providers into financially viable, service-oriented enterprises; and (v) assist communities in improving sanitation and hygiene through environmental and sanitation health education, and help low-income households acquire house connections and better sanitation facilities (toilets, septic tanks).

B. Effectiveness

1. Water Supply

51. The sector projects are rated “effective,” since they achieved their main objective, except for the Loan 1702: HCMC Environmental Improvement Project (Appendix 5), which was canceled for nonperformance, projected outputs and outcomes were generally achieved with minor justified deviations, albeit with long delays. Project investments have resulted in highly improved service coverage and quality. Overall, about 1 million people now receive safe piped water supply 24 hours a day. In addition, water production capacity has been increased for some 500,000 people who are not yet connected.

2. Drainage

52. Drainage components were in only three of the completed loans, totaling some \$15 million. The benefits nor beneficiaries cannot be assessed, for lack of data, but it is safe to say that the investments led to more connections to the drainage network, resulting to less flooding in the beneficiary areas. The PCR for the HCMC WSS Project (Loan 1273) reports that property values increased 3.5–5 times after the rehabilitation of the Rach Bung Binh Canal, and 10–15 times after the construction of a service road associated with a raw-water transmission line. With domestic inflation rising unexpectedly in 2006 and continuing large delays in implementation, project costs for Loans 2034 and 2272, which are centered largely on investments in drainage and sanitation, have escalated way above the appraisal estimates. As a result, the project scope for Loan 2034 needed to be scaled back by 40%, causing major reductions in outputs and outcomes. Most likely, Loan 2272, for which the bids for project implementation assistance have recently been opened after 2 years’ delay will suffer a similar fate, and outcomes will be less than expected compared to at appraisal. Earlier projects, including the first and second phases of the Provincial Towns Project, have reached the general target of installing the specified number of septic tanks and length of drainage in the central part of the towns.

3. Hygiene Education and Sanitation Improvements

53. Funding for personal sanitation facilities (improved toilet facilities with septic tanks) under revolving funds appears to be quite successful. No beneficiary data for towns under Loan 1361 are available, but IEM interviews in Phan Tiet, Pleiku, and Thanh Hoa indicate that several hundred toilets were funded. The number seemed small compared with potential demand. Under Loan 1514, the effort was more successful: 14,700 toilets (2,000 per town) were funded. Reportedly, the revolving funds under Loans 1361 and 1514 have been discontinued, as the initial target has been achieved, according to PPC officials. Again, Thu Dau Mot, a beneficiary under Loan 1880, did very well. Some 3,500 households in the town have reportedly received improved sanitation facilities through a \$100,000 revolving fund. They plan sustain the present arrangements until the project target of 4,500 facilities is achieved, and then continue

the revolving fund after an assessment, adjustment of costs, and repayment conditions. Compared to water supply component, the scale was much smaller, but in general, the sanitation component (septic tanks and advocacy activities) at least enhanced awareness of health and environmental issues, as confirmed during the IEM focus group discussions, and provided sanitary facilities (septic tanks) to a substantial number of poor households.

C. Efficiency

54. **NRW and WSC Efficiency.** The sector projects are rated “less efficient.” Excessive NRW at the WSCs is a large drain on productivity and efficiency. Reducing NRW would save large amounts of financial resources (Appendix 6) and is therefore a prime objective of all water supply projects. All of them include TA for NRW reduction and covenants mandating such reduction (Table 1). In the first project in HCMC, NRW reduction was presented as the key objective. Network leaks were to be reduced by about 10%, thereby saving some 110,000 m³ a day and significantly increasing the water supply. Fifty-five kilometers of old pipes were replaced, 100,000 new meters were installed, leak detection equipment was acquired, and training was provided. However, NRW remained essentially the same and, in fact, has risen to 43% as the increase in water production has also increased pressure and leaks. Recognizing the persistence of this problem, the Saigon Water Company recently initiated, with World Bank and ADB support, a new large-scale leak reduction effort, which will employ more properly focused strategies of detecting and controlling leaks in the context of improving network operations. The World Bank is pilot-testing a performance-based management contract for NRW reduction in a large zone in HCMC, and is preparing an NRW reduction project in Ha Noi. NRW reduction is also a key objective of an ADB project under preparation.

55. WSCs under Loans 1361 and 1514 had remarkable achievements through training and investments in pipe and meter replacement, bulk meter installation, and proactive leak detection and repair, using equipment financed under the loans. The data, however, must be interpreted with care. Regarding Loan 1361, the PCR states that “NRW could not be estimated correctly because measurements of water production and consumption were either unreliable or had not been carried out.” In Loans 1514 and 1880, the NRW data at start-up is not reliable because of production and consumption metering problems, and errors in the initial calculation of NRW.

Table 1: NRW Targets and Accomplishments (%)

Loan	NRW Covenant	Initial Level	Achievements Cited in PCR	2004	2007
1273: HCMC WS	<30	41	41	40	43
1361: Provincial Towns					
All projects	<35	60–70	<35		
Thanh Hoa	48	48		33	29
Phan Tiet	31	31		28	27
Pleiku	43	43		36	33
1514: Second Prov. Towns					
All projects	<30	40–50	21–30		
Quy Nhon	31	31		31	29
1880: Third Prov. Towns					
All projects	Based on	32–54	Not yet		
Thu Dau Mot	Cost/Benefit analysis	36	completed	27	15

HCMC = Ho Chi Minh City, NRW = nonrevenue water, PCR = project completion report, prov. = provincial, WS = water supply.

Source: Sector assistance program evaluation team.

56. A comparison of 2004 and 2007 NRW in the towns visited by the IEM shows little progress. The NRW of around 30% in these towns is still high, given the degree investment and support they have received through ADB projects. None of the towns visited had a dedicated staff or a plan for sustained NRW reduction. The TA, while having some success in the short run, did not create enough management commitment to keep up the NRW reduction work.²⁶ The only exception appears to be Thu Dau Mot, where the WSC has taken the initiative to continue the NRW effort. By 2008, NRW had gone down to 15% in about half of the town and efforts were being made to reduce it further in the other half (see Box 2 and Appendix 6). International experience and advances over the last decade demonstrate that, to succeed, NRW programs require a comprehensive approach, based on flow and pressure measurements in hydraulically isolated network zones, combined with a program to improve network operations. Such a program needs appropriate long-term funding and, above all, sustained management commitment. The NRW reports of the CPMU hampered the NRW TA effort by placing too much emphasis on the purchase of sophisticated, and unnecessary, leak detection equipment. Excessive NRW continues to be a large obstacle to better efficiency and constitutes a significant drain on the finances of the great majority of water supply utilities in Viet Nam. Fortunately, the Thu Dau Mot example illustrates that, with the right approach and expert support, considerable NRW reduction is possible, and would lead to significant financial savings.

Box 2: Thu Dau Mot Reduces Nonrevenue Water to 15%

Thu Dau Mot received technical assistance (TA) under Loan 1880 to help it deal with nonrevenue water (NRW). The TA effort supported training, the organization of an NRW reduction team, work in a pilot zone, the improvement of bulk metering, and pipe and valve repairs. As a result, NRW was reduced moderately, from about 36% to 27%. For lack of resources under the loan, the TA was discontinued, leaving the Thu Dau Mot utility to carry on the effort by itself.

Unlike other utility managers under the project, the Thu Dau Mot manager understood the harmful effects of excessive NRW. He decided to hire the NRW consultant who had provided assistance under the Asian Development Bank loan, and gave him a free hand and support^a in creating and managing a comprehensive network operations improvement and NRW reduction program. The utility manager wanted to make Thu Dau Mot Viet Nam's success story in NRW reduction. Phase 1 of the program, covering about half of the town, has been completed; by 2008, it had reduced NRW in that part of town to 15%. The nine zones have so far saved about 40,000 cubic meters of water per month, equivalent to monthly savings of D120 million (\$7,500). A second phase will follow in the other half of the town.

NRW was reduced in Thu Dau Mot because a committed NRW unit was created, trained, and received sustained support, and because a technical approach involving network zoning, pressure and flow measurements (to better understand NRW magnitude and causes), network optimization in each zone (to balance and reduce pressure), and aggressive leak detection and repair was applied. At the same time, much effort was spent reducing commercial losses by identifying and eliminating fraudulent connections and improving meter reading. The approach adopted by the NRW consultant is international best practice (see Appendix 6 on NRW and the international practice).

^a For the first phase of the NRW reduction program, the NRW expert carried out periodic 2- to 3-week missions over a 2-year period, under two 3-month contracts. Similar contracts are expected for the second phase.
Source: Sector assessment program evaluation team.

²⁶ According to SERD, ADB regional TA 6396 has recently extended further capacity building assistance to Bing Duong WSCs (but not to Thu Dau Mot). Under a twinning arrangement with Phnom Penh Water Supply Agency in Cambodia, WSC staff will visit Cambodia to see how the water supply agency is dealing with the problem of NRW. Change management activities specific to NRW reduction have also been initiated. IED thinks it is still too early to see the real effect of these latest efforts.

57. **Low Tariffs and Financial Viability.** A primary objective of every project was to make the utilities more financially viable by raising tariffs (Appendix 7). This was clearly in line with the Government's policy of full cost recovery for WSCs. PCR assessments and IEM observations showed initial progress by the WSCs in meeting these covenants. In all of the projects, financial viability improved. WSCs were authorized to retain depreciation; some implemented block tariffs. The WSCs did not comply with financial ratios but planned to do so. Some were able to generate resources for investments. All WSCs met at least O&M costs, although many did so below what was necessary. Overall, however, they did not meet the financial targets and the tariffs in all WSCs are still far from full cost recovery. To quote a passage from the RRP for Loan 1880 (para. 27): "Tariff levels for virtually all WSCs are not sufficient for long-term financial operations. WSCs are generally under-funded for adequate O&M, have no provision for debt service, make no allowance for income generation other than depreciation. They also engage in construction activities to supplement revenues from water sales."

Table 2: Average and Domestic Water Tariffs in Six WSCs Visited by the IEM
(D)

WSC	2004	2005	2006	2007	2008
Thanh Hoa					
Average	2,541	4,175	4,175	4,175	4,175
Domestic	2,100–3,000	3,100–4,400	3,100–4,400	3,100–4,400	3,100–4,400
Quy Nhon					
Average	2,081	3,161	3,161	3,979	3,979
Domestic	1,700	2,700	2,700	3,400	3,400
Pleiku					
Average	2,615	2,615	3,400	3,400	3,400
Domestic	2,300	2,300	3,000	3,000	3,000
Phan Thiet					
Average	2,874	3,608	3,692	4,069	4,069
Domestic	2,000–3,500	2,900–4,000	2,900–4,000	3,500–4,500	3,500–4,500
Thu Dau Mot					
Average	3,525	3,675	3,675	4,050	4,050
Domestic	2,700	3,000	3,000	3,300	3,300
HCMC					
Average	3,518	4,529	4,574	4,580	4,580
Domestic	2,700–8,000	2,700–8,000	2,700–8,000	2,700–8,000	2,700–8,000

HCMC = Ho Chi Minh City, IEM = independent evaluation mission, WSC = water supply company.
Source: Collected during IEM 2008.

58. Over the past 3 years, the financial position of the WSCs has deteriorated significantly, as PPCs have consistently turned down their tariff increase proposals. Table 2 shows that none of the companies visited by the IEM have had tariff adjustments since 2006; some have gone even longer without tariff adjustments. In an inflationary environment with steep cost increases, the financial performance continues to deteriorate alarmingly. Some WSC managers interviewed by the mission expressed concern that they are running out of funds to maintain their systems properly. The decision of the Government to cap water tariffs (para. 23) until at least the end of 2008 certainly sent the wrong signal for future sector development.

59. The prospects for tariff increases are not encouraging. All PPCs visited by the IEM were adamant in stating that under present conditions, they were not willing to increase tariffs since "people are too poor to pay higher tariffs." PPCs count on more grant funding for continuing expansion, but do not see tariff increases as a politically acceptable way to raise the financial capacity of their WSCs. The PPCs' attitudes are clearly misguided. The poor segment of the

population is protected by a low-cost lifeline supply of 10 m³ a month. Where block tariffs are in place, tariffs for higher consumption brackets are only slightly higher than that for the first 10 m³ a month. The better-off can clearly pay, and, if properly informed, would be willing to pay more.²⁷ Like in many other countries in the world, the issue in Viet Nam is not low affordability or unwillingness to pay, but unwillingness to charge. Socioeconomic surveys indicate that affordability is not a problem in Viet Nam. For example, such surveys during the project performance evaluation for Loan 1514 show that the ratio of monthly water bills to total household income ranges from 0.3% to 2.2%, which is very low compared with the international standard of 3%–5%.

60. As a negative consequence of insufficient tariff revenues, water utilities look to their other businesses to subsidize their water operations. For example, the project performance evaluation report for Loan 1514 states that for the Tuyen Quang WSDC in 2007, construction and well-drilling activities accounted for about 48% of total income, while the revenues from water sales contributed only 34%. WSC managers visited by the IEM told the mission that building their non-water activities was a priority for the future. This practice brings with it the risk that management focus will shift to building the other businesses and not their main activity—providing water supply services. Even worse, it brings the risk that such businesses will fail and will need to be bailed out by already-diminished water supply revenues. Reportedly, this is already happening, as costs, stoked by inflation, are catching up with construction activities. Continuing this strategy is a very dangerous development threatening the sustainability of the water supply sector, but WSC managers and PPCs consider it an essential element in the financing of water supply operations and will be very reluctant to consider stopping these activities.

61. **Lengthy, Multi-Layer Review and Approval.** For loans before Loan 1880, all decisions of the national procurement committee had to be approved unanimously by all its members. The project directors of all provincial PMUs had to be present in Ha Noi for that purpose, even if they had no part in the bid to be approved. In addition, documents for large ICB bids had to be approved by the Prime Minister's Office. Starting with Loan 1880, one layer of approval, the central CPMU and national procurement committee, has been removed and responsibility for procurement now rests with PPCs. This has reduced review and approval requirements, but PPCs, feeling uncomfortable in their new role at first, continued to seek central advice before deciding on potentially controversial issues. Although they have become more comfortable in their decision making over time, procurement approval is still agonizingly slow.

62. **Misprocurement and Multiple Bidding.** Poor packaging of bids not in tune with market realities adds occasionally to the submission of unresponsive bids by unqualified bidders, which in some cases has resulted in the cancellation of bidding and the multiple rebidding of ICB contracts. A contract (number CW2B) under Loan 1514 was one of the most extreme cases of multiple bidding.²⁸

63. **Protracted Start-Up.** The best way to cut project start-up time would be to move the hiring of implementation consultants and the preparation of designs and bidding documents, or at least a part of those activities, from project implementation to project preparation. A range of

²⁷ The socioeconomic survey conducted during the project performance evaluation for Loan 1514 showed that the median monthly tariff in the seven project towns was around D40,000, and in the focus group discussion heard that household consumers would be willing to pay up to D50,000 if the quality of water were to improve.

²⁸ This was an ICB contract for the design and construction of water treatment facilities. Bids were invited three times, as no responsive bid was received the first time and negotiations with the sole responsive bidder failed in the second bidding. After bids were separated into four packages to attract local contractors, the bidding was ultimately successful, 3 years after the first bid was invited.

options may be considered. The most efficient and time-saving one would be to piggyback implementation consulting onto the feasibility study and thus do away with bidding for it. Work on the final designs and the bidding documents could start after the feasibility study is accepted, and bidding for equipment and works contracts could start right after the loan takes effect. If piggybacking is not acceptable, another option, though less effective, would be to prepare the terms of reference, bidding documents, and possibly a short list of consultants by loan effectiveness. The World Bank's present approach of requiring the final designs and bidding documents for first-year investments to be completed before appraisal has shortened the start-up time in many projects.

64. **Poor Contractor Performance.** Among hundreds of equipment and civil works contracts, the great majority were executed satisfactorily, according to the IEM assessment of procurement records. But some contractors obviously did not perform well. There were complaints about late deliveries, poor equipment and materials, and poor and delayed construction. Procurement officials can avoid these problems by (i) making bidding documents clear and unambiguous; (ii) insisting on high quality and experience, and weeding out unqualified manufacturers and contractors early; (iii) accepting bid prices as presented and doing away with the need to comply with "norm" prices; (iv) allowing price escalation in periods of inflation; and (v) shortening bid evaluation, award, and contracting time to avoid renegotiating contracts because of inflation.

D. Sustainability

65. **Capacity Building for WSCs and URENCOs.** The sector projects are rated "likely to be sustainable." WSC staff have enough knowledge and technical expertise to take charge of water supply engineering. In all projects, capacity building was provided to PMUs, WSCs and URENCOs, and VWU. A total of \$8.6 million was allocated for that purpose. All projects received TA to improve utility management, administration, and operations. Capacity building in various degrees of intensity, as well as focused training in the O&M of facilities and NRW reduction, was included. Training and computer hardware and software were provided to strengthen management information, financial management and accounting, and commercial systems.

66. The TA greatly helped to modernize the WSCs and URENCOs by supporting their move from manual to computerized financial and commercial systems, but did not attain the ultimate goal of creating modern, businesslike entities. The IEM noted that none of the WSCs and URENCOs visited had any comprehensive vision or plans for their longer-term development. Modern business planning was not understood to be essential to the development of the company. Utility management still tends to be overly hierarchical, dampening personal initiative and entrepreneurship. Old-style thinking is still pervasive, and many PPCs and utility managers seem to be unaware of the value of modern utility management practices with emphasis on business planning, accountability, transparency, and personal initiative.

67. Perhaps more could have been achieved under the ADB loans if the capacity building had taken a broader view of institutional development. Besides providing assistance in isolated areas of administration, it could have attempted to impart more widely relevant knowledge and a better understanding of modern utility management practices to promote culture change. In future projects, comprehensive institutional strengthening and capacity building objectives should be defined within the context of a longer-term corporate development plan that assesses and presents specific yet integrated plans for all important aspects of utility management: institutional reform and autonomy, management philosophy, human resources, administrative systems, commercial programs, public participation, operations, investments, financial viability,

and tariffs. TA for this purpose must be sustained throughout project implementation and funded adequately. The corporate development plan approach developed by the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ [German Agency for Technical Cooperation])/KfW, under the \$100 million Six City Waste Water Project, may be a model to follow.²⁹

68. **Compliance with Loan Covenants.** Appendix 8 presents a summary of loan covenants and the status of compliance with those covenants. Implementing agencies generally complied well with covenants that required actions fully under their control. Reports were generally prepared and submitted on time. Safeguard requirements were met, albeit with delays at times. Covenants that involved politically sensitive issues outside of the control of implementing agencies (institutional reform and utility autonomy, and financial performance and tariffs) were not fully complied with. Although national government decrees would have enforced compliance, PPCs were unprepared to embrace WSC and URENCO autonomy or to increase and maintain tariffs sufficient to meet financial viability covenants. Even today, according to the IEM interviews, very few PPCs in Viet Nam are ready to act on these highly sensitive political issues.

69. Borrowers and ADB project officers share responsibility for noncompliance with covenants. PPCs could have done more, but ADB objectives raised unrealistic expectations. The required merger of WSCs and URENCOs by 31 December 1998, for one, was clearly impossible, given the dynamics at the time. Likewise, a better understanding of the realities regarding tariffs would have led to the conclusion that full cost recovery was too ambitious a goal. The poor results in institutional development and NRW reduction were partly due to the inefficient approaches defined in the terms of reference and the lack of resources to support these objectives. Setting realistic objectives and covenants for politically sensitive issues requires full understanding and genuine commitment on the part of decision makers. Covenants cannot make up for lack of demonstrated up-front commitment during project preparation.

E. Impact

70. **Poverty Reduction.** Improving the living standards and health by reducing waterborne diseases (Appendix 9) of poor people was an objective of all projects. While there are no reliable statistics on the number of poor people reached, low-income households noticeably benefited from much of the project investments. Except for the HCMC projects, all loans served small to medium-sized cities, whose populations tend to be poorer than the populations of the larger cities. The water supply improvements helped the poor, by saving time spent fetching water, and improving their quality of life. Before the projects, water services were mostly enjoyed by the better-off segment of the population. Likewise, the drainage improvements reduced flooding in lower-lying areas, where the poor generally live.

71. **House Connection Fees.** House connection fees and practices vary among the utilities visited by the IEM (Table 3). In Thu Dau Mot, customers contribute a small portion of the cost by providing materials (sand and cement) and labor; in the other towns, house connection fees range from D1,400,000 (\$85) to D3,400,000 (\$214). Some utilities provide financing assistance at very concessionary terms (typically repaid over 12–18 months at 0%–3%); while others do not. The VWU supports the connection fee from the revolving fund. The HCMC utility (Saigon Water Company) has charged no connection fees since August 2007, when Decree 117 on the treatment, supply, and consumption of clean water took effect. An MOC circular in 2008 (01/2008/TT-BXD) abolished the fee for regular connections and made the cost part of the

²⁹ Further information is available at <http://www.wastewater-vietnam.org/>.

investment budget reflected in the tariff. Other WSCs are hesitant to implement the circular for fear that their costs will increase.

Table 3: Household Water Connection Fees in Six Towns Visited by the IEM
(2007 Prices)

Item	Thanh Hoa	Quy Nhon	Pleiku	Phan Thiet	Thu Dau Mot	Ho Chi Minh City ^a
in Dong	800–900	700–800	500–800	1,600–1,800	850	1,200
in US\$	(50–55)	(43–50)	(30–50)	(100–110)	(52)	(75)

IEM = Independent Evaluation Mission.

^a Before August 2007, since then the connection fee has been abolished.

Source: Asian Development Bank Independent Evaluation Mission 2008.

72. The IEM observed (in Thanh Hoa and elsewhere) that households that could be connected chose not to do so and continue to use shallow wells. This was true of as many as 40% of households in one low-income area. Similarly, there was reluctance to connect to a new drainage pipe. Low-income households cannot afford the connection fee nor see the need for one. The decision to extend the water and drainage networks to unserved areas should be made contingent on household commitment to connect. To encourage low-income people to do so, WSCs should conduct education campaigns and make credit for the connection available under affordable terms. For example, the World Bank in its projects requires 60% of the people to make an up-front commitment by signing the connection contract before a line is constructed. ADB projects imposed no such condition.

73. The IEM feels that some utilities could do much more to extend their networks and to encourage households to connect. Some WSCs claim, with some reason, that they do not have the resources to increase production and extend their networks; others offer the spurious argument that they lose money by extending coverage because the tariffs do not cover production and distribution costs. Extending service to as many people as possible should be the highest priority for any utility. Some utilities may need to review their policies and practices in this regard.

74. **Environmental Impact.** The project investments have had no adverse effects on the environment. On the other hand, their positive impact on the environment, though small, is significant. For example, the construction of holding lagoons for backwash water from water treatment has prevented water pollution. The installation of septic tanks has reduced environmental pollution from domestic wastewater. Most important, however, may be the awareness created among the PPCs, WSCs, and URENCOs of the need to manage wastewater better by emphasizing septic tank maintenance or enforcing industrial treatment regulations.

75. **Gender.** The projects helped ease the burden on women. A water house connection frees them from water-fetching chores and allows them to spend more time on productive activities. The sanitation projects executed by the VWU centered on women as household leaders and the main agents for improvements in sanitation. The development strategy pursued by the VWU views women as the primary clients and explicitly uses them as motivators and volunteers to promote better sanitation.

76. **Participation.** There was little participation in the selection and design of infrastructure investments. Given the communist legacy of central command and control, outside stakeholders or NGOs have no official voice in WSC and PPC decisions. Politically sensitive decisions like tariff increases must be vetted by the Communist Party's provincial executive committee. In some

towns, people were asked if they were willing to be connected and to pay for the connection before distribution pipes were laid. The sanitation components executed by the VWU were truly grassroots efforts inherent in their strategy. The impact of the sector projects is rated “substantial.”

VI. OVERALL RATING OF ADB'S SECTOR ASSISTANCE PROGRAM

A. Top-Down Rating

77. **Urban Services and WSS Sector Strategy.** Overall, the performance of the urban development and WSS strategy is rated “partly successful” from the standpoint of sector positioning, value addition to development results, and ADB performance (Table 4).

Table 4: Urban Strategy: Top-Down Rating

Item	Score (0–8)	Rating
Strategic Positioning	6	Substantial
Value Addition to Development Results	4	Modest
Asian Development Bank Performance	4	Modest
Total Score	14	Partly Successful^a

^a Countrywide performance, from a top-down perspective, is assessed as “highly successful” if the total score is at least 20, “successful” if the total score is between 16 and 19, “partly successful” if it is between 11 and 15, and “unsuccessful” if the total score is 10 or less.

Source: Sector assistance program evaluation team.

B. Urban Services and WSS Sector Program

78. Overall, the performance of the urban development and WSS strategy is rated “successful” (Table 5).

Table 5: Urban Program: Bottom-Up Rating

Item	Aggregate Amount	Weight (%)	Relevance (0–3)	Effectiveness (0–6)	Efficiency (0–3)	Sustainability (0–6)	Impact (0–6)	Overall
Loans		90	2	4	1	4	4	15.0
TA		10	3	6	3	3	6	21.0
Overall								15.6

TA = technical assistance.

Note: The rating on the technical assistance projects follows those in the technical assistance completion report.

Source: Sector assistance program evaluation team.

C. Overall Assessment

79. The overall performance of the urban development and WSS sector, combining the strategy and program assessments, is rated “successful” on the low side. The overall assessment is summarized in Table 6.

Table 6: Overall Rating

Item	Score	Rating
Urban Services and WSS Strategy	14.0	Partly Successful
Urban Services and WSS Sector Program	15.6	Successful ^a
Total Score	30.0^b	Successful^c

SAPE = sector assistance program evaluation, WSS = water supply and sanitation.

^a Aggregate sector performance is assessed as “highly successful” if the overall score is equal to or greater than 20, “successful” if it is greater than 15 but less than 20, “partly successful” if it is greater than 10 but less than or equal to 15, and “unsuccessful” if the overall score is 10 or less.

^b The overall score of 29.6 was rounded off.

^c An overall sector program (SAPE) rating is accorded to the bottom-up and top-down assessments as follows: “highly successful” if the total score is equal to or greater than 40, “successful” if it is between 30 and 39, “partly successful” if it is between 20 and 29, and “unsuccessful” if the total score is 19 or less.

Source: Asian Development Bank. 2006. *Guidelines for the Preparation of Country Assistance Program Evaluation Reports*. Manila.

VII. CONCLUSIONS, ISSUES, LESSONS, AND RECOMMENDATIONS

A. Conclusions

1. The Challenge Ahead

80. Over the past 15 years, the development of the WSS sector in Viet Nam has improved rapidly. Coverage and safety of the supply has significantly improved. The Government has adopted progressive sector development policies (Appendix 10) based on utility autonomy and cost recovery. With external support, the performance of WSS institutions has greatly improved, although much remains to be done to turn them into modern, business-oriented institutions that are well managed, efficiently run, and financially viable. The Government has set ambitious sector development targets for 2020. Meeting these targets will require the mobilization of enormous resources in the order of \$600 million annually, roughly four times the annual investment in the last 10 years. The funds are expected to come from the following: (i) continued ODA, (ii) local and national government contributions, (iii) local credit markets, (iv) the private sector, and most importantly (v) funds generated internally by WSCs and URENCOs in support of ODA.

2. The Imperative of Mobilizing Resources by Increasing Internal Generation from Utilities

81. To raise the enormous funds needed, WSCs and URENCOs must undertake the reforms necessary to become better managed and technically more efficient institutions. They must guide their financial performance so they can indeed meet full cost recovery targets, including debt service for ODA loans. According to regional TA 6325:³⁰ “the continued sourcing of funds through ODA under the auspices of the Ministry of Finance with strict adherence to loan covenants on institutional and financial reforms would be the way forward for Viet Nam and represents one of the cheapest forms of financing for the water and sanitation utility companies.” Future ODA assistance must be the means of persuading PPCs and WSCs and URENCOs to position themselves to assume future ODA loans. This means meeting the goals that have eluded them so far in previous ADB projects:

³⁰ ADB. 2006. *Proposed Technical Assistance for promoting Effective Water Management Policies and Practices – Phase 5, Financed by the Cooperation Fund for the Water Sector*. Manila.

- (i) Creating fully corporatized, independent, and business-oriented utilities by adjusting the utility and PPC relationship and strengthening the capacity of these companies to improve their management and make operations more efficient.
- (ii) Preparing WSC corporate development plans that define targets for improvements in service provision, management and administration, operating efficiency, and financial performance; identify investment priorities based on an integrated view of capital and O&M expenditures for production and distribution; and have at their core financial projections that show the revenue the WSCs must generate to achieve targets, which in turn will define the tariffs they charge.
- (iii) Dealing with other critical factors that are influencing ADB operations: (a) the limited availability of concessional resources through the Asian Development Fund, and (b) Viet Nam's graduation to a Group B1 country, providing it with access to a limited amount of loans from ADB's ordinary capital resources for revenue-generating projects.
- (iv) Ensuring their financial viability and cost recovery according to Decree 59/2007/ND-CP on solid waste management and Decree 117/2007/ND-CP, which requires WSCs to achieve full cost recovery and sanitation companies to recover basic costs.

3. Future ADB Strategy and Projects in the WSS Sector

82. In response to the Government's request, ADB has agreed to step up assistance to the WSS sector in concert with government objectives and strategies and in coordination with other development partners. Table 7 presents ADB's indicative project pipeline. The proposed project strategy—single-city WSS projects in Viet Nam's larger cities—is well conceived and aligned with ADB's comparative advantage in the sector. With this large exposure in the sector, ADB has the opportunity and the obligation to ensure that projects in this next generation meet the long-sought policy reform, institutional development, and financial targets. ADB policy and strategy of the past 15 years, based on covenants that are weak or unenforced sector development objectives, should not be continued. Future ADB projects must make funding contingent on the commitment of PPCs, WSCs, and URENCOs to institutional reform, management and operating efficiency, and cost recovery.

83. The present institutional setup and financial base of URENCOs need fundamental change to prepare them for the future when planning for, constructing, and operating and maintaining more advanced sanitation infrastructure (separate sewerage, pumping stations, wastewater treatment), which will require substantially more capacity and financial resources than are required today. For example, JBIC's decision to fund not only the building but also the initial operation of HCMC wastewater treatment may be a necessary temporary solution that cannot be sustained in the long run. Across ADB developing member countries including Viet Nam, ADB water supply projects have to integrate proper sanitation and solid waste management (SWM), to effectively mitigate unwanted negative impact of stagnant used water on public health. Compared to water supply investment, the level of improvement in the waste water (sewer) is significantly low, which needs to be incorporated much more in future project designs.

84. To avoid the implementation problems experienced in previous projects, serious attention should be given to the lessons and recommendations outlined in the previous section, specifically with regard to avoiding excessive delays in project implementation, streamlining procurement, easing disbursement procedures, and simplifying project execution, among others. In addition to developing and implementing its pipeline, ADB should continue its policy

dialogue with the Government and, together with other donors, contribute to analytical work that is much needed by the country at this stage of WSS development:

- (i) Helping to implement the equitization process, to ensure that it is efficient and that it improves utility performance;
- (ii) Promoting and assisting in providing opportunities for private sector participation in a proper way as a means of providing capacity and investment resources, while avoiding the pitfalls of projects;
- (iii) Continuing work on tariffs and regulation;
- (iv) Promoting effective NRW reduction approaches;
- (v) Helping to define cost-effective sanitation strategies;
- (vi) Continuing to disseminate good sector practice in any way possible;
- (vii) Continuing to work on improving project implementation and, together with other development partners in the ODA Interministerial Task Force, to analyze and develop financing facilities under terms appropriate for long-term infrastructure investments; and
- (viii) Planning for the improvement of local credit facilities to mobilize domestic resources including municipal bonds.³¹

Table 7: ADB's Indicative Project Pipeline in the WSS Sector

Project	Objective	Loan Amount	
		(\$ million)	RRP Year
Thanh Hoa	Urban	72	2009
Hue	WS	40	2009
Da Nang	WS	50	2011
Ho Chi Minh City	WS	125	2010
Hai Phong	WS	27	2009
Can Tho	WS	TBD	2011
Vinh	WS	TBD	2011
Ha Noi	WS	TBD	2011
My Tho	WSS	90	2011

RRP = report and recommendation of the President, TBD = to be discussed,

WS = water supply, WSS = water supply and sanitation.

Source: Sector assistance program evaluation team.

B. Issues

85. Streamlining Procurement of Equipment and Civil Works (para. 48). Despite improvements, Vietnamese procurement procedures are still very cumbersome, especially in larger contracts involving ICB, and cause large delays in project implementation.³² In the longer term, the international financial institution community should continue intensive dialogue with the Government to streamline review and decision making and support the Government to adopt international standards.

³¹ In this context, the ongoing ADB TA 6325 is initiating discussions with the Ministry of Finance on possible innovative, alternative lending models, and with private banks and investment houses on the possibility of cofinancing interest with ADB and of private sector participation in the funding of investments.

³² Some progress has been made in local tendering. As a result of a series of dialogues with ADB, the Government adopted ADB's national competitive bidding guidelines for ADB projects. The fifth joint portfolio performance review by the ODA Inter-Ministerial Task Force (made up of the six major ODA banks [the Export-Import Bank of Korea later joined in 2008]) in May 2007 stated (in para. 83): "Although decentralization is encouraged in regulations, many projects require higher approval authority for total cost estimates, bid plans and results of bid evaluation resulting in long procurement periods...compounded by unclear guidelines and the lack of standard formats and documents to support bidding process as well as non-adherence to service standards for processing procurement."

86. **Dealing with Cost Increases due to Hyperinflation.** Rapid inflation and a 75% increase in the construction price index (Table 8) between mid-2006 and 2008 led to large cost increases and large reductions in scope for the two most recent loans (Loans 2034 and 2272). At the time of appraisal, the inflation could not have been foreseen. To prepare for unexpected inflation, the following suggestions may be considered:

- (i) As far as possible, anticipate inflation and apply conservative price contingencies.
- (ii) Reduce to the extent possible the time between the RRP and the start of procurement. The present 4-year time span is too long.
- (iii) Adjust bid pricing rules by encouraging unit cost pricing and allow for price adjustments.
- (iv) Request the Government to cover cost increases for inflation, at least in part.
- (v) Request ADB to cover the gap in resources by providing supplemental loans or reallocating unused funds from other projects.

**Table 8: Construction Price Index for Water and Drainage Systems
in Various Parts of Viet Nam**
(Year 2000 = 100)

Area	2001	2002	2003	2004	2005	2006	2007	Mid-2008
Ha Noi Area, Northern Viet Nam	103	109	122	142	154	164	193	278
Da Nang Area, Central Viet Nam	105	111	129	147	160	174	212	291
Ho Chi Minh City Area, South Viet Nam	108	119	129	148	159	168	195	275

Source: Ministry of Construction, Document 1781/BXD-VP of 28 August 2008 on the construction price index

87. **Monitoring Evaluation Benefits.** The PPCs did comply with BME obligations during project implementation but, along with the WSCs and the CPMU, considered them too cumbersome and unnecessary and later abandoned them. Institutional development programs must stress the need for good monitoring and evaluation in modern utility management and build support for it.

C. Lessons

88. **Reducing Delays in Implementation (para. 48).** All the projects in the WSS program experienced major delays in all aspects of project implementation, with severe consequences: each project took about 8.5 years to complete, about 3.5 years longer than estimated at appraisal. Para. 48 makes specific recommendations to shorten procurement and strengthen the capacity and skills of PMUs through intensive, sustained TA, and (on the part of ADB staff) to prepare more realistic implementation schedules. Most importantly, however, ADB should explore the possibility of reducing project start-up time by seeing to it that implementation consultants are hired, the feasibility studies (especially for the first year) are reviewed, and any revisions in project scope and initial design are made during project preparation rather than during implementation.

89. **Reducing the Time for Revising and Finalizing Designs and Bidding Documents.** On average, the actual time between the hiring of implementation consultants and the start of bidding was about 2 years, instead of the projected 1 year. These delays were due to many factors including, most importantly: (i) the review, revision, and approval of changes in project

scope, especially in the two most recent projects, where major reductions in scope were necessitated by large cost escalations due to inflation; and (ii) lengthy review and approval of final designs and bid documents, and long-drawn-out bidding processes.

90. **Improving Consultant Quality.** Overall, the rather mixed assessment of the performance of consultants suggests a need for improvement. Future projects should (i) combine the superior technical capacity of international consultants with the local experience of clearly qualified local consultants, (ii) be sufficiently well funded to attract high-quality consultants and allow them enough time to do a good job, and (iii) promote a professional and efficient relationship between consultants and local counterparts.

91. **Preparing More Judicious Covenants (para. 68).** ADB should set more judicious, achievable targets in covenants, ensure their full acceptance by the contracting parties, and be prepared to invoke remedies in case of significant noncompliance.

92. **Identifying and Applying Lessons.** The same lessons can be derived from all loans regarding the main issues—implementation delays, unenforced development objectives, low capacity, unrealistic objectives and targets—yet these problems persist. Project lessons should be applied with care.

93. **Strengthening Risk Analysis.** The risk analyses in the RRP were weak and did not take a realistic view of critical project issues. Implementation delays were rarely mentioned. Remedies were unconvincing.

D. Recommendations

94. **Take Appropriate Measures to Shorten the Final Design Process by Strengthening Feasibility Studies, Adopting Realistic Contingency Plans, and Increasing Supervision.** Once the implementation consultants have been hired, several steps can be taken to shorten the time for project revisions and preparation of final designs and bid documents, including (i) ensuring the high quality of feasibility studies to minimize the need for adjustments by selecting good consultants who not only bring technical excellence but are also thoroughly familiar with local regulations and procedures regarding technical design and procurement; (ii) employing realistic physical and price contingencies to produce realistic cost estimates, thus reducing the need for revisions in project scope; (iii) ensuring that the consultants follow a critical path aimed at producing first bid packages in the shortest time possible;³³ and (iv) on the part of ADB, providing intensive supervision and proactive intervention to resolve technical issues quickly, and reviewing and approving project output.

95. **Develop Sector Indicators (Jointly with Government) for the Institutional Reform and Financial Performance of Water Supply Companies and Urban Environment Companies by Undertaking Better Business Planning, Clarifying Responsibilities, and Establishing Separate Accounting Systems.** Objectives and covenants regarding institutional reform, financial viability, institution building, and NRW were not fully met, because of overambitious expectations at the RRP stage, among other reasons. The following options may help in formulating more realistic targets and more appropriate TA programs:

³³ SERD responded by adopting the following guidelines for new projects. ADB will (i) recruit the implementation consultant or provide this as part of the project preparatory TA or provide the services of a staff consultant to assist with the selection; and (ii) build additional procurement capacity in the executing agency through more workshops and training.

- (i) Employ comprehensive corporate and business planning as a tool for communicating and agreeing on objectives, specific targets, and a detailed implementation plan for institutional reform, capacity building, efficiency improvement (NRW, network and plant operations), and financial performance (tariffs).
- (ii) Develop and agree with decision makers (PPCs) on plans and targets before appraisal and consider initial action before loan appraisal or effectiveness (tariff increases) to obtain the commitment of decision makers.
- (iii) Change the relationship between PPCs and WSCs. Separating policy making from operation by creating autonomous water utilities is among the greatest sector development challenges. Government directives encourage the creation of more autonomous WSCs, but PPCs have not been willing to move on this issue. As a first step toward full corporatization, equitization, or private management and operation, WSCs and PPCs could define their respective responsibilities and obligations in a performance contract. Based on an in-depth assessment of a WSC's current situation, a performance contract would clarify the roles of the partners with PPCs as policy maker and overseer, and WSCs as operators.
- (iv) Change present performance and prepare for the future. The present institutional structure and financial base of URENCOs need to be fundamentally changed. Like WSCs, URENCOs need more management autonomy and a secure financial base to improve their performance. To that end, it is essential that the government directive concerning charging for drainage and sanitation services be implemented by PPCs. This may be accomplished gradually over time. As a first step, separate accounting should be introduced for each service to better understand the costs and revenues associated with each service. As a next step, PPCs may consider separating present URENCO activities into revenue-earning (drainage and sanitation, solid waste) and nonrevenue-earning companies. Merging the drainage and sanitation business with WSCs may be a good option to create synergies and limit cost.

96. Enhance Borrower Commitment to Tariff Adjustments Needed for Financial Viability by establishing Initial Actions as per Agreed Business Plans. Past experience strongly indicates that borrower commitment to these objectives must be cemented during project preparation before appraisal to avoid repeating past failures. Project objectives and targets must be based on comprehensive business plans with clear targets for institutional reform, capacity building, and tariff adjustments that the PPCs fully understand and accept. To test the commitment of PPCs, loan appraisal or effectiveness may be made contingent on irreversible initial actions stated in the agreed business plan. Failure to do all these would only continue "business as usual," i.e., promises and little action, and derail any chance to meet the Government's sector development goals.

ADB ASSISTANCE TO VIET NAM IN THE URBAN SERVICES AND WATER SUPPLY AND SANITATION SECTORS, 1993–2008

Project No.	Project Name	Subsector	Amount Approved \$ million (% disbursed)	Date Approved	Date Closed	
A. Loans						
1	1273	HCMC WSS ^a	WSS ^g	65.00 (93.8)	29-Nov-93	17-Feb-04
2	1361	Provincial Towns WSS ^a	WSS	66.00 (100)	17-Aug-95	1-Dec-04
3	1514	Second Provincial Towns WSS ^a	WSS	69.00 (100)	27-Feb-97	29-Mar-06
4	1702	HCMC Environmental Improvement ^b	Multisector	70.00 (7.25)	7-Oct-99	31-Jan-08
5	1880	Third Provincial Towns WSS ^c	WSS	60.00	13-Dec-01	30-Jun-10
			Sanitation			
6	2034	Central Region Urban Environmental Improvement ^d	Integrated	44.00	8-Dec-03	31-Dec-09
7	2272	Central Region Small and Medium Towns Development ^d	Integrated	53.22	17-Nov-06	30-Jun-12
B. ADTA						
8	1998	National Water Tariff Policy Study ^e	WSS	0.60	29-Nov-93	1-May-96
9	1999	Institutional Strengthening of HCMC Water Supply Company ^e	WSS	0.60	29-Nov-93	1-Jan-99
10	2000	HCMC Water Supply Master Plan ^e	WSS	0.60	29-Nov-93	1-Apr-96
11	2375	Capacity Building for Provincial WSS Planning and Management ^e	WSS	0.70	17-Aug-95	1-Aug-99
12	2376	Community Environmental Health Improvements for the Provincial Towns ^f	WSS	0.50	17-Aug-95	26-Apr-99
C. PPTA						
13	2146	Second Provincial Towns WSS	WSS	0.55	1-Sep-94	1-Apr-98
14	2790	HCMC Environmental Improvement	Integrated	0.60	7-May-97	1-Jun-99
15	3323	Third Provincial Towns WSS ^d	WSS	1.00	3-Dec-99	27-Mar-04
16	4485	Preparing the Central Region Small and Medium Towns Development ^d	Integrated	0.95	15-Dec-04	29-Feb-08
17	4485	Preparing the Central Region Small and Medium Towns Development (Supplementary)	Integrated	0.12	19-Jul-07	29-Feb-08

ADB = Asian Development Bank, ADTA = advisory technical assistance, HCMC = Ho Chi Minh City, PPTA = project preparatory technical assistance, WSS = water supply and sanitation.

^a Performance rating at completion is “successful.”

^b The Performance Completion Report which has been recently circulated (1 July 2008) rated this Project “unsuccessful.”

^c Implementation progress rating is “highly satisfactory.”

^d Implementation progress rating is “satisfactory.”

^e Performance rating at completion and at evaluation is “successful.”

^f Performance rating at completion is “successful,” and at evaluation is “highly successful.”

^g Water supply and sanitation category.

Source: ADB Viet Nam sector assistance program evaluation (SAPE) team.

**DEVELOPMENT, WATER SUPPLY AND SANITATION, AND POVERTY STRATEGIES OF THE GOVERNMENT OF VIET NAM,
1997–2008**

Parameter	SEDP 1996–2000 or Earlier^a	SEDP 2001–2005	CPRGS 1993	SEDP 2006–2010
1. Overall Goal or Core Strategies	Overall concern with socioeconomic stabilization, macroeconomic stability, and starting reforms—“the speedy, efficient and sustainable economic development, together with the settlement for the social urgent matters, the guarantee of the national defense and security, the improvement of living standard for people, the increase of investment with internal resources, the making of solid precondition for a further development at the beginning of the next century.”	“Sustainable economic growth shall be maintained at high rate; transformation of economic and labor structure shall be enhanced towards industrialization and modernization. The main targets are job creation, poverty alleviation and elimination of social evils. Socioeconomic infrastructure shall be strengthened continuously, setting up an important fundamental of socialism oriented market economy. The preservation of political stability, social safety and discipline, independence, sovereign and national security as well as territorial integrity shall be maintained.”	The CPRGS uses the overall goals of SEDP 2001–2005 as a springboard for further development concerns.	To bring Viet Nam out of underdevelopment; improve appreciably the people’s material, cultural, and spiritual life; and lay the foundations for a modern, industrialized country by 2020. A multi-sectoral economy with many ownership forms shall be developed, the monetary system improved, education (especially in S&T and culture) strengthened, and administrative reforms accelerated.
2. Means for Moving Forward	Modernize the economy through a planned structural shift from agriculture to industry, with emphasis on activities that would provide competitive advantage.	Further develop infrastructure, including roads, airports, and waterways; develop and improve human resources; promote sociocultural development; develop territory by making use of its comparative advantage (discussed below).	Build large-scale infrastructure for growth and poverty reduction.	Develop communication systems, water conservation, and electricity.
3. Geographic Priorities	No specific geographical emphasis noted in supporting literature.	In the midland and north mountainous area, develop forest industry and small-scale hydraulics; in the Red River Delta, use human resources in industries that require skill, and modernize transport and communications; in the North and Central Coastal area, build oil refineries, grow high-value trees, and develop training and education; in the Central Highlands, develop	No specific geographic emphasis is cited; hence, adoption of the SEDP 2001–2005 priorities is assumed.	In general, develop urban regions as administrative, economic, and cultural centers; rural lowland regions as agricultural centers for rice and fruits; midland and mountain regions for long-term crops, pasturing, and forest resources; and offshore and island regions for maritime use and marine product extraction.

Parameter	SEDP 1996–2000 or Earlier ^a	SEDP 2001–2005	CPRGS 1993	SEDP 2006–2010
		regional roads and expand commerce to remote areas; in the southern and southeast region, support industry and reforestation of hills, industrial trees and sociocultural activities; and in the Cuu Long (Mekong) River Delta, improve infrastructure and support food processing.		
4. Specific Sectoral or Detailed Poverty Reduction Focus	No specific data available.	Develop specific industries and agricultural products, develop infrastructure, and develop human resources by improving quality of life.	Create policies and measures to develop major sectors and industries to create income generation opportunities for the poor; narrow the gap between different regions, and realize gender equality and the advancement of women; and develop social safety nets for the poor and victims of disasters.	Hasten the establishment of a rational agricultural production system; selectively build a number of heavy industries (e.g., petroleum, metallurgy) and high-tech industries (infotech); develop the energy sector and telecoms, along with highway infrastructure; develop commerce and expand it to the rural areas.
5. Specific WSS Focus	No specific data available.	Infrastructure development: double water supply capabilities for industry and urban areas; aim at providing pure water to 80% of urban residents and 60% of rural residents; reduce flooding in the rainy season and ensure water supply in cities; increasingly dispose of solid and liquid waste in the cities, industrial centers, hospitals, etc.	For large-scale infrastructure: make plans for clean water supply for each area; double supply capacity for urban and industrial centers; reach the target of 90% of urban dwellers having access to clean water by 2010; reduce non-revenue water from the current 39.4% to 30% by 2010; complete water supply networks for major and heavily populated cities; raise the capacity of existing water stations and build new ones where needed to reach the target capacity of 5–5.5 million cubic meters per day by 2010.	No specific WSS focus is mentioned, though water conservation is emphasized, along with the development of infrastructure to boost economic growth (which will need water).

ADB = Asian Development Bank, CPRGS = Comprehensive Poverty Reduction and Growth Strategy, CSP = country strategy and program, S&T = science and technology, SEDP = socioeconomic development plan, WSS = water supply and sanitation.

^a Limited data: extracted from ADB CSPs.

Source: ADB Viet Nam sector assistance program evaluation (SAPE) team.

DONOR PARTNERSHIPS AND COORDINATION IN VIET NAM

1. There is global consensus that external assistance should continuously improve to be more effective in uplifting the welfare of disadvantaged groups, particularly the poor. Development partners have engaged in various modalities, specifically partnerships, to attain this goal. In this context, development agencies and developing countries share a collective responsibility to achieve better results in using external development assistance. Viet Nam is one of the major recipients of official development assistance (ODA). The country is one of the front-runners in implementing donor coordination measures, as evidenced by the success of several partnerships¹ that have played a key part in building a shared and common understanding among the Government, donors, nongovernment organizations, and other key development partners.

2. **Development Partners and Sector Focus.** For the period 1994–2006, the country received an estimated \$36 billion in pledged aid.² Among the major donors are five development banks, namely, Asian Development Bank (ADB), Agence Française de Développement (AFD), Japan Bank for International Cooperation (JBIC), Kreditanstalt für Wiederaufbau (KfW), and the World Bank. These five banks account for almost 80% of Viet Nam's ODA and are working together to improve portfolio performance and strengthen ODA management.³ Table A4.1 shows the sectoral distribution of the five banks' portfolio as of December 2006. From 1998 to December 2006, the five banks disbursed around \$8.8 billion, with JBIC and the World Bank accounting for \$6.7 billion (76%). The sectors with the largest share of committed financing are transport (37%), energy (21%), and social infrastructure (20%) including water supply and sanitation (Figure A3.1).

**Table A3.1: Sector Distribution of Five Banks' Project Portfolio
Excluding Program Lending as of December 2006**
(\$ million)

Sector	ADB		JBIC		World Bank		AFD		KfW		Sectoral Subtotal	
	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount
Agriculture and Rural Development	24	537.4	6	383.9	23	35.0	27	55.2	16	0.9	15.4	1,992.4
Social Infrastructure	23	516.9	9	525.9	33	1,188.0	17	98.8	44	217.4	19.7	2,547.0
Transport/ Communication /Storage	12	274.2	61	3,676.5	16	567.0	25	41.8	21	03.7	36.8	4,763.2
Banking/Finance/Industry	11	249.3	1	55.9	6	225.0	21	120.2	8	41.4	5.3	691.8
Energy	22	480.0	24	1,427.7	22	804.0	9	49.7	0	0.0	21.3	2,761.4
Others	6	142.4	0	0.0	0	0.0	0	0.0	11	56.3	1.5	198.7
Total	100	2,200.2	100	6,069.9	100	3,619.0	100	565.7	100	499.7	100.0	12,954.5

ADB = Asian Development Bank, AFD = Agence Française de Développement, JBIC = Japan Bank for International Cooperation.

Source: Inter-Ministerial Task Force. 2007. *Fifth Joint Portfolio Performance Review*. Ha Noi.

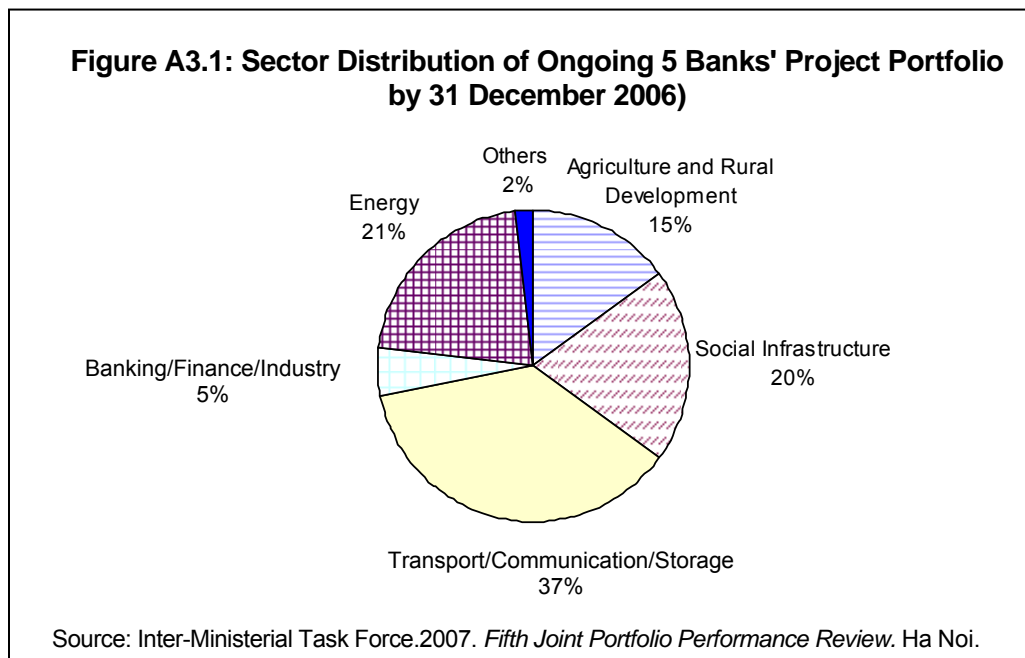
3. Other multilateral institutions, the European Union, the United Nations organizations: the Food and Agriculture Organization (FAO); the International Fund for Agricultural Development

¹ Notable partnerships in Viet Nam include the Poverty Working Group (PWG), which was formed in 1999 and assists the country in poverty reduction. The Viet Nam Development Report 2004 on Poverty was prepared in partnership with the large donor community, both contributing human and financial resources. Several donors, including ADB, funded participatory poverty assessments of the seven regions of Viet Nam in 2003, to provide a basis for the report.

² Inter-Ministerial Task Force. 2007. *Fifth Joint Portfolio Performance Review*. Ha Noi.

³ The joint portfolio and program reviews were initiated with JBIC and the World Bank in 1999. This was extended to the Five Banks Initiative in 2003.

IFAD); the United Nations Development Programme (UNDP); the United Nations Educational, Scientific and Cultural Organization (UNESCO); the United Nations Children's Fund (UNICEF); United Nations Industrial Development Organization (UNIDO); World Wide Fund (WWF), and other bilateral agencies (from Australia, Belgium, Canada, Denmark, Finland, France, Germany, Japan, the Republic of Korea, the Netherlands, Sweden, Switzerland, the United Kingdom, and the United States, are also supporting activities in various sector and thematic areas (Table A3.2).



4. **Coordination and Partnerships.** The Government and the development partners meet twice a year to review progress and issues concerning the use of ODA. These meetings, including partnership group meetings on 22 key themes and sectors, facilitate donor coordination while at the same time ensuring consistency among government priorities and policies. Partnerships vary from groups that are exploring a common ground to those that have a jointly owned vision. At any stage, a strong and visible role of the Government is crucial to developing effective partnerships.

5. **Role and Participation of ADB.** ADB plays a key role in several working groups and is active in promoting a country harmonization policy in Viet Nam. ADB leads a number of thematic working groups of the Partnership Group on Aid Effectiveness (PGAE),⁴ and those for environmental and social impact assessment (EIA and SIA).⁵ ADB also supports joint program reviews, and analytical and sector work that includes, among others, public expenditure review, gender assessment, and financial accountability. ADB has participated as well in selected

⁴ PGAE is a formalized forum that coordinates, discusses, and monitors aid effectiveness in Viet Nam. The High Level Forums on Aid Effectiveness, the Paris Declaration of 2003, and the Ha Noi Core Statement provided the final impetus for the formalization of the PGAE as the coordinating body responsible for following up on Viet Nam's Paris commitments.

⁵ ADB. 2007. *Special Evaluation Study on ADB's Approaches in Partnering and Harmonization in the Context of the Paris Declaration on Aid Effectiveness*. Ha Noi.

common operational arrangements which were mostly initiated under the Six Banks Initiative.⁶ These include (i) joint support for the strengthening of government systems for ODA and public investment management; (ii) the strengthening of government procurement management including harmonized competitive bidding; (iii) the strengthening of public accounting and audit; (iv) common procedures for EIA, SIA, and safeguards; and (v) the harmonization of project preparation standards, project monitoring, and reporting. Since 2003, ADB has participated in the World Bank-led Poverty Reduction Strategy Credit (PRSC) process.⁷

6. Assistance to the Urban Water Supply and Sanitation Sector. ADB is one of the major development partners in Viet Nam's external assistance in WSS. It has provided around \$430 million (slightly less than 50% of the total external assistance in the sector) to Viet Nam since 1993. ADB's Independent Evaluation Department (IED) conducted a CAPE in December 1999 (Appendix 3). At that time, the implementation performance of three loans under the operation was deemed satisfactory,⁸ though substantial delays were noted. The CAPE report observed that the delays in contract signing or in loan effectiveness were often the result of bureaucratic procedures and the consensus process within government. There were inherent difficulties in staffing the provincial project management units with qualified people, as central government staff were not offered any incentives to relocate while local staff often lacked project management capability. Frequent changes in staff—the Government's as well as ADB's—compounded the problem. One project had four project officers in quick succession until the Government requested ADB to put a stop to the staff changes. Coordination constraints were also pointed out. According to the CAPE report, "ADB appeared to underestimate consistently the impact of coordination constraints with project activities that crossed established departmental and provincial boundaries of responsibility, leading to implementation delays." The delays were aggravated by the adoption of different policies by the provinces, particularly in the case of resettlement compensation. Moreover, although sanitation is a government priority, no capital investment has been made outside the major cities. Urban infrastructure development is generally unsustainable and shows very low efficiency, lack of performance, and low staff capacity. The current sector needs are (i) additional funding for capital investments and operation and maintenance, (ii) integrated framework for the sector (urban and rural), (iii) institutional and policy reforms, (iv) cost recovery tariffs, (v) solid waste management, (vi) technical and managerial capacity development, (vii) private sector participation where the conditions and the environment are conducive to it, and (viii) increased community awareness and participation.

⁶ See footnote 32 under paragraph 85 in the main text.

⁷ Approved in July 2005, the Fourth Poverty Reduction Strategy Credit (PRSC 4) supports the country's broad-based reform program, including completing the transition to a market economy, ensuring social inclusion and strengthening governance.

⁸ At the time of the 1999 CAPE, Loan 1702 (Ho Chi Minh City Environmental Improvement Project) had just been approved (October 1999) and was categorized not under "water supply and sanitation" but under "multisector." The loan project was therefore not included in the sector analysis.

Table A3.2: External Assistance to the Urban Sector, 1993–2008 (Loans)

Project	Source	Year	Amount (\$ million)
Loans from ADB			
1237-VIE: HCMC WSS Rehabilitation		1995	65.00
1361-VIE: Provincial Towns WSS		1995	66.00
1514-VIE: Second Provincial Towns WSS		1998	69.00
1702-VIE: HCMC Environmental Improvement		2000	70.00
1880-VIE: Third Provincial Towns WSS		2002	60.00
2034-VIE: Central Region Urban Environmental Improvement		2003	44.00
2272-VIE: Central Region Small and Medium Towns Development		2006	53.22
Subtotal			427.22
Loans from Other Sources			
Water and Sanitation	UNICEF	1996	33.50
Ha Noi Drainage - Phase 1	Japan	1996	148.00
Vinh Drainage and Sanitation Rehabilitation	Germany	1996	7.14
Dong Hoi Urban Infrastructure Development - Phase 1	Swiss	1996	0.30
Vietnam–Canada Environment Project - Phase 1	Canada	1996	6.70
Hai Phong WSS - Phase 3	Finland	1997	7.75
Ha Long City Drainage and Water Supply	Denmark	1997	12.84
Buon Ma Thuot WSS	Denmark	1997	15.40
Northern Thang Long - Van Tri Urban Infrastructure Development	Japan	—	—
Nam Dinh Urban Infrastructure Development - Phase 1	Swiss	1997	2.20
Hue City Urban Infrastructure Development - Phase 1	Swiss	1997	2.20
Viet Tri Waste Treatment	Germany	1997	2.70
Wastewater Treatment at Viet Thang Textile Company	Netherlands	1997	1.56
Ha Tinh WSS	Denmark	1998	1.14
Thai Nguyen Drainage and Wastewater Treatment	France	1998	15.96
Hue City Drainage and Wastewater Treatment	Belgium	1998	8.70
Go Cong Waste Treatment System	Australia	1998	0.11
Nam Dinh Waste Treatment	France	1998	3.38
Tan Hoa Lo Gom Canal Rehabilitation	Belgium	1998	4.34
Viet Tri Drainage and Sanitation	Germany	1999	1.83
Vung Tau Wastewater Collection, Treatment, and Drainage	France	1999	17.27
HCMC Environmental Improvement	Norway	1999	1.80
Hai Phong WSS - Phase 4	Finland	2000	4.75
Nam Dinh Urban Infrastructure Development - Phase 2	Swiss	2000	1.60
Dong Hoi Urban Infrastructure Development - Phase 2	Swiss	2000	0.84
Vietnam–Canada Environment Project - Phase 2	Canada	2000	7.90
Go Cat Landfill Rehabilitation	Netherlands	2000	10.60
Five Provinces Rural WSS	Australia	2001	12.69
Water and Sanitation	UNICEF	2001	18.00
Viet Tri Industrial and Urban Development	Denmark	2001	2.19
HCMC Sanitation (Nhieu Loc - Thi Nghe)	World Bank	2001	166.34
Three Cities Sanitation - Hai Phong, Ha Long and Da Nang	World Bank	2001	99.24
Hai Phong Solid Waste Management and Treatment	Korea	2001	19.61
Hoi An Wastewater and Solid Waste Treatment and Sanitation	France	2001	8.00
Cau Dien Composting Plant	Spain	2001	4.00
West Lake Water Quality Improvement - Ha Noi	Austria	2001	28.78
Three Provincial Towns WSS: Bac Lieu, Kien Giang and	Australia	2002	25.00
Dong Thap Third Provincial Towns WSS	France	2002	11.24
HCMC Drainage and Wastewater Treatment	Japan	2002	71.30
Ha Noi Solid Waste Management Equipment	Japan	2002	7.47
HCMC Water Improvement Project (II)	Japan	2003	10.00 ^a
Drainage and Waste Treatment in Vinh	Germany	2003	14.28

Project	Source	Year	Amount (\$ million)
Southern Viet Nam Water Supply (II)	Japan	2004	3.30 ^a
Hai Phong City Environmental Improvement	Japan	2005	1.50 ^a
Second Ha Noi Drainage	Japan	2006	3.00 ^a
Second HCMC Environmental Improvement (I)	Japan	2006	1.50 ^a
Southern Bing Duong Province Water Environment	Japan	2007	7.80 ^a

— = not available, ADB = Asian Development Bank, HCMC = Ho Chi Minh City, WSS = water supply and sanitation.

^a Billion Yen.

Source: Asian Development Bank Viet Nam sector assistance program evaluation team.

Table A3.3: External Assistance to the Urban Sector (Other Technical Assistance)

Project	Source	Year	Amount (\$'000)
Provincial Towns WSS Project (6 towns) - Project Preparation	Australia	1994	600
Da Nang WSS (WB Project TA)	Australia	1995	7,640
Ha Noi Urban Development Masterplan (Expansion Phase)	Australia	1995	330
Ha Noi Urban Drainage Masterplan	Australia	1995	1,800
Environmental Assessment for Investment Decision Making	UNDP	1995	1,200
National Urban Sewerage and Drainage Strategies	Finland	1995	330
Ha Noi Water Supply Studies, Drainage and Sanitation &	Finland	1995	7,400
Quaig Ninh Water Supply Studies, Drainage & Sanitation &	Denmark	1995	3,500
Community Environmental Health Improvements	Denmark	1995	500
Industrial Pollution Reduction in HCMC	Sweden	1995	313
HCMC Urban Management	UNDP	1996	990
Capacity Building for Ha Noi Urban Management	UNDP	1996	1,120
Viet Nam - Canada Economic and Environmental Management	Canada	1996	1,460
Flooded Areas Preservation and Management Program	Netherlands	1996	160
Viet Tri Industrial Pollution Reduction	UNDP	1996	850
Industrial Pollution Reduction - Dong Nai	UNDP	1996	920
Buon Ma Thuot WSS FS	Denmark	1996	800
Study on Sewerage and Drainage System in HCMC	Japan	1996	500
National Rural WSS Strategy	Denmark	1996	2,500
Industrial Pollution Reduction - HCMC	UNIDO	1997	240
HCMC Drainage System FS (Nhieu Loc - Thi Nghe)	World Bank	1998	1,000
Environmental Management - HCMC	UNDP	1998	1,680
Sanitation and Medical Waste Management	WHO	1998	440
Detailed Design Assistance for HCMC Drainage Project	World Bank	2000	610
Solid Waste Economic Program	Canada	2000	6,630
Thai Nguyen Environmental Management	Denmark	2000	1,600
Capacity Building for Environmental Management of the MPI	Denmark	2000	890
Waste Management in District 10 and Medical Waste	Netherlands	2000	1,520
Urban Infrastructure Improvement Project	World Bank	2001	840
Nghe An Solid Waste Management Improvement	Denmark	2001	2,100
Industrial Pollution Reduction - Phase 3 - HCMC	UNIDO	2001	200
Project Orientation Assistance-Third Provincial Towns WSS	Norway	2002	1,150
Subtotal			51,813

ADB = Asian Development Bank, FS = feasibility study, HCMC = Ho Chi Minh City, MPI = Ministry of Planning and Investment, PP = project preparatory, TA = technical assistance, UNDP = United Nations Development Programme, UNICEF = United Nations Children's Fund, UNIDO = United Nations International Development Organization, WHO = World Health Organization, WSS = water supply and sanitation.

Note: List of projects includes water supply and sanitation projects but does not include projects that involve water supply only.

Source: Asian Development Bank Viet Nam sector assistance program evaluation team.

Table A3.4: Technical Assistance by ADB, 1993–2001

TA No.	Project	Type	Date Approved	Amount (\$'000)
1998	National Water Tariff Policy Study	A&O	1993	600
1999	Inst. Strengthening of HCMC Water Supply Company	A&O	1993	600
2000	HCMC Water Supply Masterplan	A&O	1993	600
2040	HCMC Environmental Improvement Planning	A&O	1993	600
2146	Second Provincial Towns WSS	PP	1994	550
2148	Urban Sector Strategy Study	A&O	1994	300
2128	Strengthening Environmental Planning and Environmental Impact Assessment Capabilities	A&O	1994	600
2375	Capacity Building for Provincial Towns WSS Planning & Management	A&O	1995	700
2704	Poisonous Waste Management	A&O	1996	600
2790	HCMC Environmental Improvement	PP	1997	600
3323	Third Provincial Towns WSS	PP	1999	1,000
3487	Low Income Housing and Secondary Towns Urban Development Assessment	A&O	2000	500
3809	Central Region Urban Development Project	PP	2001	1,000
	Subtotal			8,250

A&O = advisory and operational, ADB = Asian Development Bank, HCMC = Ho Chi Minh City, PP = project preparatory, TA = technical assistance, WSS = water supply and sanitation.

Note: List of projects includes water supply and sanitation projects but does not include projects that involve water supply only.

Source: Asian Development Bank Viet Nam sector assistance program evaluation team.

POSITIONING ADB'S STRATEGIES FOR THE WATER SUPPLY AND SANITATION SECTOR IN VIET NAM

Criteria for Positioning and Coherence	Country Operational Strategy, 1995	CAP 1999–2001	CAP 2001–2003	CSP 2002–2004	CSP 2004–2006 (update)	CSP 2006–2008 (update)	CSP 2007–2010
Government Absorptive Capacity and Ownership (relevant parts of national strategy)	Increased investment in infrastructure is also fundamental to Viet Nam's development strategy. Immediate priority projects are estimated at about \$8 billion for economic infrastructure (especially for transport, power, telecommunications, water supply and sanitation) and \$2 billion for social infrastructure (especially health and education).	The Government has put high priority on the rehabilitation and expansion of water supply and sanitation systems. ADB approved a loan for the rehabilitation of part of HCMC's water and sanitation systems.	This CAP (and the 2000–2002 CAP) do not discuss in detail any shifts in government policy; hence, the same direction is assumed.	The Government's preliminary development targets include the provision of essential infrastructure to the especially disadvantaged poor (goal 9); and the improvement of long-term access to safe water from 52% in 2000 to 68% by 2010 (target 2).	Given Viet Nam's recent (2002) reorganization, the Government continues to be committed to strong public administrative reforms. This bodes well for official development assistance projects.	There is no new item here, though positive progress on the part of the Government has been noted, in terms of policy reforms.	Among the aims stated in the Government's Socioeconomic Development Plan (SEDP) 2006–2010 are to accelerate and sustain economic growth and development; to significantly improve people's material, cultural, and spiritual life; to create the foundations to boost industry and modernization; and to enhance Viet Nam's status in the region and in the world.
FOCUS AND SELECTIVITY, SYNERGY							
1. Issues and challenges addressed	The poor are also disadvantaged in access to safe water sources and sanitation. Less than 1% of the poorest quintile have access to piped water; almost none have access to sanitary toilets. Only 30%–40% of urban households have septic tanks, while at least 20% rely on latrines.	Major urban areas now face serious water quality and public health problems caused by the discharge of untreated human and industrial waste, and unmanaged disposal of solid waste. O&M is inefficient and nonrevenue water averages 50 % in urban centers. The tariff structure is	The urban population has been growing, straining the capacity to provide adequate water supply and sanitation, and dispose of solid, industrial, and hazardous waste. The Government has placed emphasis on the provision of water supply and sanitation services	Urban poverty is a growing concern of the Government. This is often tied to in-migration from rural areas, where poverty is worse.	The same urban poverty issues resulting from in-migration from poorer rural areas, as well as environmental degradation, shall be addressed.	There is no significant change here.	Although the country is faced with the same development pressures as in the past, this CSP recognizes the faster pace of transformation, especially economic activity led by the private sector. Rapid and unplanned urbanization is putting pressure on people and

Criteria for Positioning and Coherence	Country Operational Strategy, 1995	CAP 1999–2001	CAP 2001–2003	CSP 2002–2004	CSP 2004–2006 (update)	CSP 2006–2008 (update)	CSP 2007– 2010
		inadequate. Estimates show that only 16% of the urban population is served by sewerage systems.	to provincial towns, nearly all of which are covered, with external assistance from a number of sources.				resources.
2. Sector Focus	Improvements in water and drainage will be pursued, while ongoing irrigation projects will be continued to improve water management.	Improvements will be made to address the problems of low production, poor water quality, and low (only 50%) access.	ADB operations in the early part of the program period will focus on the remaining provincial towns and on a few district towns on a pilot basis, to assist the Government in achieving its goal of complete coverage at this level of urban settlements.	Attempts have been made in some sectors to promote sector-wide approaches. The general assessment is that, while coordinated approaches should be promoted, the situation is not ripe in Viet Nam for sector-wide approaches.	Improvements in infrastructure, plus complementary capacity building, will be done. The rest is consistent with previous strategies.	There is no significant change here.	The CSP will focus on infrastructure investments in small and medium-sized towns in the Central Region and along economic corridors of the Greater Mekong Subregion, decentralized urban governance and capacity building, urban management reforms, improved cost recovery from urban services, and environmental improvements.
4. Coherence of Issues, Focus, and Instruments	As a unifying concept, this document uses the concept of linkages, which refer to a strong geographic dimension. Viet Nam's development strategy identifies 3 growth areas: one in the north (Ha Noi, Hai Phong, and the southern part of Quang	The focus remains largely consistent with the Government's goal of rehabilitating water systems. There is clearly some focus on HCMC, as well as rural water supply that complements ADB's majority investment in agricultural projects.	Targeting will be achieved by concentrating up to one third of ADB operations on the Central Region, with special emphasis on the North Central Coast and the Central Highlands, which are among the poorest subregions in Viet Nam.	There is clear thematic, sectoral, and geographic focus in this case. In the urban sector, ADB will reorient its operations toward provincial and district towns in the Central Region, while the World Bank takes the larger urban sites.	There is no departure from previous strategies.	There is no departure from previous strategies.	The CSP differs from the previous strategy as it is a results-based approach that is more directly linked to the SEDP, has an increased focus on creating an enabling environment for pro-poor private sector investment, has more substantive private sector operations,

Criteria for Positioning and Coherence	Country Operational Strategy, 1995	CAP 1999–2001	CAP 2001–2003	CSP 2002–2004	CSP 2004–2006 (update)	CSP 2006–2008 (update)	CSP 2007–2010
	Ninh); one in the center, including the coastal zone (Quang Nam, Da Nang and Quang Ngai), and one in the south (Ho Chi Minh City, Bien Hoa, and Vung Tau)—with the south historically receiving the bulk of foreign direct investment.						and more closely integrates regional cooperation and integration considerations.
Risk assessment and monitoring mechanisms to achieve the sector strategy's envisaged results	There was no sector-specific discussion of risk assessment and monitoring mechanisms.	There was no sector-specific discussion of risk assessment and monitoring mechanisms.	There was no sector specific discussion of risk assessment and monitoring mechanisms.	Lower economic growth rates, induced by external circumstances or by slippage in implementing structural reforms, would not be enough to achieve the desired poverty reduction. Other risks that ADB anticipates include prolonged external difficulties that may slow exports, unmet regional needs, cultural attitudes toward certain groups, and limited government implementation capacity.	There was no sector-specific discussion of risk, but because the document follows the preceding paradigms, it is assumed that the risk assessment is similar or equal.	Sources of risk include centralized and lengthy decision making, delays in consultant recruitment, delays in the approval of procurement plans by executing agencies, insufficient number of experienced staff in project management units, weak contracting industry still dominated by state-owned enterprises, and delayed application of social safeguards.	There was no sector-specific discussion of risk, except for risk arising from poor or non-implementation, if processes are not participatory enough. Risk has also been associated with private sector development.

ADB = Asian Development Bank, CAP = country assistance program, CSP = country strategy and program, HCMC = Ho Chi Minh City, SEDP = socioeconomic development plan.

Source: ADB Viet Nam sector assistance program evaluation (SAPE) team.

IMPLEMENTATION DELAYS

1. Each of the projects in the water supply and sanitation (WSS) program experienced major delays in all aspects of project implementation. From appraisal to the completion of works, the average time was 102 months (8.5 years), compared with a projected time of 62 months (about 5 years). The average delay was about 3.5 years. Loan 1273 experienced the long delay of 45 months (3.75 years). The shortest delay was 35 months (about 3 years), for Loan 1361. Judging from the progress to date, Loan 1880 will be completed with shorter-than-average delays. Loans 2034 and 2272 are expected to experience delays close to the average because of a very slow start-up.

2. To better understand the cause and nature of the delays, Table A5.1 breaks them down into their main components:

- (i) **From the approval of the report and recommendation of the President (RRP) to loan effectiveness.** The average time was 6 months, ranging from a high of 15 months for Loan 1273 to a low of 4 months for Loan 1361. The 29-month delay for Loan 1273 was caused by procedural delays on the part of the Government, which were understandable since this was the first project in the cohort. The 17-month delay for loan was due to delays in the sixth replenishment of the Asian Development Fund.
- (ii) **From RRP approval to hiring of consultants.** It took an average time of 22 months for project implementation consultants to be hired for the six-project cohort in the WSS program, compared with a projected average of about 4 months stated in the RRP implementation schedule. The largest delay of 19 months was experienced with Loan 1273, a delay that was partly due to the 9-month delay from RRP approval to effectiveness. Loan 1514 had the shortest delay of 9 months. These delays were due to inexperience and overly bureaucratic and cautious procedures on the part of the Government in all phases of the process: formulating bid documents; evaluating bid documents (an extremely cumbersome procedure, as all local Provincial People's Committees (PPCs) and the project management unit (PMU) must agree); and a long-drawn-out negotiation and approval process. Such delays would be understandable in a first or second project, because of the unfamiliarity of the project executing agencies (the PMU at the Ministry of Construction [MOC] and the local Provincial People's Committee with international bidding procedures), but are difficult to justify in the most recent projects, where the time for contracting the consultants in fact increased. All the project completion reports draw attention to the delay in hiring consultants as a key challenge, yet there has been no improvement. Every RRP promises to improve the procedures, work harder, and provide more training, but to no avail. The RRP timelines for the hiring of consultants (1–7 months) are consistently unrealistic in view of these experiences.
- (iii) **From hiring of consultants to start of first civil works contract.** This time frame consolidates several major tasks: review of feasibility studies, preparation of final designs and bid documents, and the bidding process itself. As in the hiring of consultants, there are major discrepancies between projected and actual durations (Table A5.1). On average, the actual time between the contracting of consultants and the start of civil works contracts was around 36 months, three times the 12 months projected at appraisal. It ranged from a high of about 48 months for Loan 1514 to a low of about 30 months for Loan 1273. The reasons for these delays are many. It is not possible to break them down further into their components, as bids were initiated while consultant recruitment was still ongoing. But the following qualitative analysis may illustrate the challenges that were faced and the reasons for the delays occurred. First, the review and revisions in the project scope in the feasibility study and the subsequent

approvals took an inordinate amount of time, especially in projects where cost inflation required major reductions in project scope (Loan 2034). The approval of final designs and bidding documents was a long process, as the PMUs found it difficult to reconcile the consultants' proposals with local standards and technical practices. At the same time, consultants under-performed because of insufficient knowledge of local practices, insufficient capacity, and poor management. The bidding itself could be a long-drawn-out procedure, especially with respect to international competitive bidding.¹ At times, there had to be several rebids. Bid evaluation and contract award was again a cumbersome process; it was difficult to get all reviewers and decision makers to agree. But similar to the hiring of consultants, large delays in this phase of project implementation persist throughout the ADB program. The most recent loan, which has recently begun construction, may be the start of a more positive trend, but it is still delayed by 12 months. Again, lessons from previous projects do not seem to have been internalized by ADB project processing staff. The projected time frame at appraisal is significantly below the actual times in all projects.

- (iv) **From appraisal to start of civil works.** On average, it took 56 months (4.6 years) to move from appraisal to the start of civil works, about 38 months (3.2 years) longer than projected at appraisal. For the four projects (Loans 1273, 1361, 1514, and 2034) in the cohort, this time span was around 50 months. This time span is of special importance for project cost escalations. This may not have much impact at times of low inflation, but the underestimation of time and low price contingencies have severely affected the scope and outcome of Loan 2043, leading to an increased in costs and a 60% reduction in project scope and outcome. A similar development can be expected for Loan 2272.²
- (v) **From start of civil works to project completion.** Time of completion is averaged about 46 months, with minor variations. Generally, construction met actual and projected timetable.

¹ Loan 1514. ADB is starting to provide more-specific WSS support on a larger scale (to Da Nang, Hai Phong, HCMC, and Hue), which would be the centerpiece of ADB assistance to the sector. More urban WSS projects are proposed in 2009, and are covered by the midterm review of the CSP. ADB is considering financing two more PPTAs for urban sanitation projects in 2009–2010 and is discussing with the Government the possibility of implementing a multitranchise financing facility (MFF) instead of continuing standalone projects for the urban WSS sector.

² The Project Director of Loan 2272 responded as Government official response as follows: The actual scope of work implemented under this Project is considered about 20–25% less than the original scope of work estimated in 2003 Feasibility Study. The main reasons are as follows: (i) delays in the project preparation and implementation processes, (ii) changes required by the local authorities, and (iii) changes in the master plans of the project towns. Unexpectedly high inflation in Viet Nam, which has led to consideration in reducing the approved scope of work to meet the available budget allocated for this Project. This process took a long time as various re-approvals were required.

Table A5.1: Duration and Delays for Key Project Milestones
(months)

Loan	From RRP to Hiring of Consultants			From Hiring of Consultants to Completion of Designs			From Completion Designs to Initiation of First Civil Works			From Initiation of First Civil Works to Construction Implementation			Total Time to Completion From RRP			From Hiring Consultants to First Civil Works			From Appraisal to Initiation of Civil Works			From Appraisal to Effectiveness
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	
1273	3	29	26	11	27	16	0	3	3	48	48	0	62	107	45	11	30	19	14	59	45	15
1361	5	18	13	18	20	2	0	12	12	36	44	8	59	94	35	18	32	14	23	50	27	4
1514	1	10	9	3	24	7	4	24	21	50	42		58	100	42	7	48	42	8	58	51	9
1880						21																
2034	7	25	18	13	24		7	8	1	40	48	8	67	105	38	20	32	12	27	57	30	
2272	5	27	22	12		11	5			26			49			17						
Total	21	109	88	45	95	59	11	47	37	174	182	8	246	406	160	46	142	182	72	224	153	
Average	4	22	18	11	24	11	3	12	9	40	46	2	59	102	40	15	36	46	18	56	38	

A = projected at appraisal, B = actual; *actual projected*, C = delays.

Source: Asian Development Bank Viet Nam sector assistance program evaluation team.

3. In summary, the following general conclusions can be drawn:
- (i) On average, all projects under the cohort took about 8.5 years, about 3.5 years longer than appraisal.
 - (ii) The time it took to hire the implementation consultants was about 24 months, causing a delay of about 13 months compared with the appraisal estimate.
 - (iii) The time from the hiring of consultants to the initiation of civil works took about 36 months and contributed a delay of 24 months.
 - (iv) The actual construction period coincided with the projected.
 - (v) There was no significant reduction in delays from earlier to later projects.
 - (vi) ADB project processors consistently and severely underestimated project implementation time.
4. The consequences of underestimating the implementation time are as follows. Delays
- (i) reduce benefits as they are obtained later than anticipated (this is reflected in lower economic returns);
 - (ii) hold up the disbursement of ADB funds;
 - (iii) create problems for the budgeting of counterpart funds; and most importantly
 - (iv) lead to increased costs which, in turn, reduce project outputs and outcomes (in Loan 2034 delays and low price contingences, which did not anticipate inflationary increases, required a major project restructuring and a 60% reduction in the scope of all project components).

A. How to Reduce Delays

5. Delays affect not only ADB projects, but the projects of other donors as well. Reducing delays was a key topic in the fifth Joint Portfolio Performance Review (JPPR V) in May 2007.¹ Some of the key conclusions with respect to the acceleration of project start-up and implementation were as follows.

1. Decrease the Time for Project Start-Up

6. Under present procedures followed by ADB and the Government, project consultants can be hired only after a loan has been declared effective. Although advance action is practiced, provided that the Vice-President allows it, this can only go up to the short listing, and no actual work can begin. This requirement leads to major delays and disruptions. There are various alternatives:

- (i) **An obvious, but radical, measure** would be to prepare feasibility studies and project implementation in quick succession before the loan becomes effective. The procurement package could be bid as a whole, but separated into two parts: feasibility study and design. The design package would be negotiated with the feasibility study consultant within pre-established parameters, provided the consultant performed satisfactorily in the preparation of the feasibility study. The challenge for this alternative is to find the resources to fund the consultants before the loan becomes effective. At the World Bank, there are some other measures, including finding bilateral-donor project preparation grants, from an advance to the loan (Project Preparation Facility) or any combination thereof. This alternative would require major changes in the Government's procedures and business processes.

¹ ODA Inter-Ministerial Task Force. 2007. *Fifth Portfolio Review*. Hai Phong. May.

- (ii) **A less-radical measure** would be to include the design of the highest-priority and immediate investment components and the preparation of terms of reference and bidding in the scope of the feasibility study. This would reduce the extra amount of resources that must be made available before loan effectiveness, as the project implementation consultants would be funded by the loan. Although much less radical than the alternative above, it would require basic changes in present procedures and practices.
- (iii) **The least radical measure** would be to start the process of hiring consultants immediately after acceptance of the feasibility study or after appraisal. Limited funding would be needed to write terms of reference and manage procurement. The Government would, however, have to agree to this approach, which would be against prevailing practice.

7. Such measures should be started immediately after appraisal.

8. In summary, the delays in project start-up in past projects have had serious negative consequences and under no circumstances should be repeated in future projects. In preparing the next project, ADB and Vietnamese counterparts should carefully review the options available and negotiate a way to reduce project start-up time.

2. Streamline Procurement Procedures

9. Despite some improvements, Vietnamese procurement procedures remain exceedingly cumbersome and out of tune with international practice. Some issues that need to be addressed are:

- (i) Excessive multiple revision and review requirements. In WSS projects, the project executing agency should be fully empowered to make all procurement decisions.
- (ii) Restrictions on consulting rates. These should be revised to enable the payment of market rates for qualified international consultants.
- (iii) Cost restrictions on bids. These present cost restrictions should be revised.

10. Over time, ADB's and Viet Nam's procurement regulations will harmonize. ODA providers together will need to continue their dialogue with the Government. In the meantime, ADB should try to secure an exemption for its projects in the loan agreement from the more pernicious procedures.

11. Learning from past experience, ADB officers should see to it that bid packages are put together optimally with clear recognition of existing reality. Any problems should be recognized early and addressed with urgency and flexibility.

3. Build More Capacity

12. Viet Nam is only 20 years removed from a communist system of central control, which operated under principles very different from those in market economies. While a growing number of people throughout the country and in the WSS sector have a better understanding of business under market conditions, a large number of professionals are still unfamiliar with the new ways of managing water companies and conduct modern procurement and business management practices. The experiences with the implementation of ADB WSS projects clearly reflect that. In future projects, more attention needs to be given to providing project executing agencies with concentrated assistance in all relevant areas. This assistance needs to come in as early as possible in the project cycle and continue throughout the implementation period.

4. Streamline Project Execution

13. As a principle, the project executing agency, preferably the corporatized water supply company, should be made responsible for all project management activities, including procurement. Under the present legal situation and the lack of capacity of smaller companies, PPCs may have to continue to manage the project, but should take sole responsibility for its implementation, including procurement, without the involvement of national agencies.

14. For multi-city projects, there will be a continuing need for an intermediary agency to manage activities. Its role would transcend that of national project executing agencies, and would include hiring and managing implementation consultants. This role could stay with MOC, as long as it is clear that the ministry will serve as facilitator entrusted with managing the consultants without any controlling role regarding the project agencies. In this context, the execution arrangements similar to those under the most recent loans will have to continue.

5. Make ADB Projections More Realistic

15. All of the above ideas will require time to become reality. In the meantime, projects will have to be prepared with many of the disabling restrictions still in place. The challenge for the next generation of projects is to do whatever can be negotiated to lessen the impact of a restrictive environment. It is, however, imperative not to ignore the reality of project implementation in Viet Nam. ADB project teams need to learn from previous projects and understand and acknowledge that past implementation schedules cannot be met even under the best of circumstances. Multi-city WSS projects in a difficult environment like Viet Nam's cannot be completed in 5 years even under much better conditions. Hiring consultants, from the preparation of terms of reference through mobilization, takes at least a year in countries with more capacity and more friendly procedures than Viet Nam's. Bidding takes much time and is fraught with unexpected obstacles, especially in countries with strict rules and review and approval processes. In summary, future projects should be based on realistic, conservative time projections, even if inappropriate internal guidelines must be challenged for that purpose.

6. Find a Hedge against Inflation

16. As described earlier, unexpected inflation in Viet Nam has created havoc for projects that have begun execution. To avoid these effects in the future, the following need to be considered:

- (i) Have a realistic implementation plan. A delay of 3 years to the time of bidding of civil works at an inflation rate of 30% more than doubles the cost of local inputs, but this can be somewhat ameliorated by the appreciation of international currencies.
- (ii) Introduce appropriate physical and price contingencies. The low price contingencies of 2.4% for Loan 2034 and 9% for Loan 2272, combined with unrealistic implementation schedules, have eroded the value of the loan amount, increased counterpart funding requirements, and reduced project output and outcome significantly.

17. For the affected existing projects (2034 and 2272) and to prepare for a more volatile future, ADB loans should include a hedge against unexpected inflation to keep these loans viable. This could be done with supplemental loans or by having the Government provide extra resources in response to exceptional inflation events.

Table A5.2: Key Project Implementation Dates

Loan	Base cost date ^a	RRP Appr.	Effectivity	Civil work contract award	Completion of Designs	Award of first Civil work Contract	Completion of Civil work	Closing date
1273								
Planned				Jan 94	Dec 94	Dec 94	Dec 98	Jun 99
Actual	Aug 93	Nov 93	Apr 95	Apr 96	Jul 98	Oct 98	Oct 02	May 03
Difference								
Planned				3/3 ^b	11/14	0/14	48/62	6
Actual				29/29	27/56	3/59	48/107	
Gap				26	16	(-3)	45	
1361								
Planned				Jan 96	Jun 97	Jun 97	Jun 00	Dec 00
Actual	Feb 95	Aug 95	Dec 95	Feb 97	Oct 98	Oct 99	Jun 03	Dec 04
Time Difference								
Planned				5/5	18/23	0/23	36/59	6/65
Actual				18/18	20/38	12/50	44/94	18/112
Delays				13 ^a	2	12	8/35	12/47
1514								
Planned				Mar 97 ^a	Jun 97	Oct 97 ^a	Dec 01	Jun 02
Actual	Aug 96	Feb 97	Nov 97 ^a	Dec 97	Dec 99 ^a	Dec 01	Jun 05 ^a	Mar 06
Time Difference								
Planned				1/1	3/4	4/8	50/58	6/64
Actual				10/10	24/34	24/58	42/100	9/109
Delays				9	21	20	(-8/42)	54
1702								
Planned								
Actual		Oct 99						
1880								
Planned				Jun 02	Sep 03	Dec 03	Dec 07	Jun 08
actual		Nov 01						
2034								
Planned				Jun 04	Jul 05	Feb 06	Jun 09	Dec 09
Actual	Jun 03	Nov 03		Dec 05	Dec 07	Jul 08	Jun 12	Dec 13
Difference								
Planned				7/7	13/20	7/27	40/67	6/73
Actual				25/25	24/49	8/57	48/105	
Delay				18	11	1	8/38	
2272								
Planned				Mar 07	Mar 08	Oct 08	Dec 10	Dec 12
Actual	Jun 06	Oct 06		Jan 09		6/10	Jun 14	Dec 12
Difference								
Planned				5	12	5	26	24
Actual				27				
Delay				22				

^a Time of original cost estimates.

^b Entries in this format (x/y) denotes x = number of planned months, and y = actual number of months.

Source: Asian Development Bank sector assistance program evaluation team.

B. Factors Affecting Implementation

18. This review of ADB's ongoing and completed WSS and urban development projects in Viet Nam indicates that both typical and atypical factors affect implementation delays. The usual factors appear to be related to the normal course of operations, and include time for correspondence between stakeholders. On the other hand, there may be occasional obstacles unanticipated in implementation as well. Two cases are presented below. The first is a loan deemed to have been completed successfully; it shows that even then, some 6–8 months of delay should be expected. The second loan demonstrates how escalating delay and a breakdown in communication may lead to a compounding of failed deliverables.

19. In the first case, the first source of delay comes during the preparatory phase, particularly in documentation (e.g., signing of subsidiary loan agreements) and hiring of adequately skilled consultants. Although Project Management Units and draft plans for resettlement are quickly produced, follow-through implementation may be slow or lacking. Then as implementation proceeds, it is not uncommon to have failed bids for subsequent phases of the project, especially if there is a lack of qualified or willing contractors who could bid for the construction or rehabilitation of a given WSS facility. Delays in this case ranged from 1 month to 27 months.

20. In the second instance, the correspondence and performance reports for the project did not show any extraordinary incidents until delays began by the end of the first year of the loan, and were gradually prolonged. There were apparently delays in the submission of feasibility studies and some reluctance on the government side to push through, though the underlying reasons are not evident from the documentation alone. This was accompanied by a request by Vietnamese counterparts to change the location of one of the proposed WSS rehabilitation projects, which was not studied rationally beforehand. At the same time, there was some indication of price escalation that had taken place during the early stages of implementation.

21. It should be noted that, aside from government delays, the actual correspondence and interaction between ADB and national agencies probably played a factor in building (or weakening) interpersonal relations that could have been a source of friction or passive resistance, especially if exchange of correspondence had become emotionally charged. The eventual rapid turnover of officers handling this Ho Chi Minh City project appears to indicate some attempt to salvage the account. Delays in this case ranged from 6 months to over 1 year.

22. On the whole, therefore, delays for these cases studies may be traced to (i) extended preparations due to lack of capable or willing implementers, (ii) changes in scope and pricing of infrastructure works not adequately anticipated, and (iii) non-action or reluctance to move on the part of the Government, for reasons that can only become clear through field investigation.

C. Case Studies: Loans 1273 and 1702

1. Loan 1273: Ho Chi Minh City Water Supply and Sanitation Project

23. **Review Results.** This project was successfully completed after three extensions, and some delays that were attributed to government procedures as well as various minor setbacks due to noncompliance with ADB regulations, or the time spent in correspondence between bidders and, later, contractors. It is notable that in the early stages, at least 3–4 months of project time was taken up by

communications that had to do with the clarification of policies and the correction of project management action.

Project Component	Reasons for Delay	Indicated Time Lag, If Any	Comments
Preparatory Phase	Project has been delayed by (i) procedural delays on the part of the Government in approving the Loan Agreement, (ii) delays in concluding the subsidiary loan agreement between national and local entities, and (iii) delays in the recruitment of consultants. The loan closing date was moved to 30 June 2001. (Historical PPR)	27 months	Typical, even in other loans.
Findings of Special Review Mission	16 May 1997, to ADB: Resettlement plan for raw-water transmission main delayed by differences in land and property loss compensation among local authorities, plus time consumed in translation of correspondence.	1–2 months	
Contract C/96/ICB/1	2 July 1997, from ADB: Potential bidder wanted ISO standards, not just American, Australian, and New Zealand standards, to be included. Addressed on 8 July 1997, in letter to ADB.	3–4 days	
Minutes of Procurement Committee Meeting A97/ICB/1	5 December 1997: SOGREA bid found nonresponsive. Mitsui Construction Ltd. (2nd placer) named as eligible.	1 month	
C/96/ICB/1–Package D (water meters)	15 January 1998, from ADB: Domestic bidder claims cost lower by 20%, but actually 10%. Some water meters failed the minimum flow test.	1–2 days	
Contract A97/ICB/1	12 March 1998, from CD VRM to ADB: Government pushing for award not sanctioned by procurement committee. 16 March 1998 letter from HCMC People's Committee explains: Government awards to SOGREA over differences of opinion about appropriateness of tenderers' bids and large differences in bid price between first and second bidders.		
Contract A97/ICB/1	23 March 1998, to the Chair of people's committee, from PMU consultant: Government must reverse its decision. ADB will not fund the contract with SOGREA otherwise. Later to await decision by the Prime Minister of Viet Nam. Government eventually relented on 26 June 1998.	3 months	
Contract C/96/ICB/1	12 May 1998, to ADB, with rather charged, personal tone: Regarding		

Project Component	Reasons for Delay	Indicated Time Lag, If Any	Comments
	rumors of partiality in bidding.		
Contract A/97/ICB/1 (rehabilitation of treated water reservoirs at Thu Duc treatment plant, specifically the raw-water transmission pipeline component)	Lack of interest of contractors: 4 qualified, 2 declined. Noted in memo of 12 August 1998 from one ADB officer to another. A follow-up fax dated 15 August from Dao Trong Tho (DTT), PM, to ADB shows breakup of contract into two portions.	1 month at least	
Contract A/97/ICB/4 (rehabilitation of 4 reservoirs, related to above)	16 September 1998, from ADB to DTT: Stating that project is in danger of delay.		
Same as above	22 September 1998, from ADB to DTT: Price estimates have gone up from \$2.5 million to \$7.8 million, and new prequalification needed.	13 months at most	
Contract A/97/ICB/1	11 November 1998, from ADB to file: Explains lawyer's reservations about subcontracts (poorly written piping contracts between Price Waters of UK, Mitsui, and Saigon Water Company). Slow progress follows.	78 weeks	
Contract A/97/ICB/4-A (rehabilitation of reservoir #3)	20 August 1999, from DTT to ADB: Apologizing for delay in implementation caused by review and evaluation of bid results.		
Same as above	24 August 1999, from ADB to DTT: Miscommunication in bid documents (bid-bond date validity wrongly stated as 20 June, instead of 20 July). Need to resubmit and correct. Delay.		
Contract A/97/ICB/4-B (rehabilitation of treated-water reservoirs)	22 June 2000, from ADB to DTT: Delay in evaluation of 3 February 2000 bids, due to incomplete reports by bidders; consultants not complying.	6 months	
Contract A/97/ICB/4-A (issuance of takeover certificate)	5 June 2001 from DTT to Consultants SPW: Notes number of project works that were unfinished, including unsatisfactory coating, unavailability of health certificate, residue not yet washed off.		
Contract A/97/ICB/4-B	Coating system representation issue, in letter of 12 October 2000 from ADB to DTT: Standards for coating material set and clarified.		As of 31 December 2000 historical PPR, 36 months' delay already incurred, because of slow contractor payments.
Contract A/97/ICB/2 and 4-A and 4-B	2 February 2002, to ADB: Department of Public Works says ADB will no		

Project Component	Reasons for Delay	Indicated Time Lag, If Any	Comments
	longer pay after October 2002. Has scope implications for a company.		
Same as above	5 February 2002, from ADB: Reminder of loan closing date.		
A/97/ICB/1	2 July 2002, to ADB from Mitsui Construction: Reporting wrongful actions of employer (HCMC WSC/PMU), and delays in pipe and valve release.	At least 1 month	By June 2002, historical PPR indicates already 90% progress but 42 months' delay because of slow contractor payments, and contractors' claim for additional works.
Closure			By December 2003, the project had been completed, but some wrap-up delay by PMU in paying consultants was noted. The project was closed by 2004, after some delay (total: 48 months) in refund of imprest account by borrower.

ADB = Asian Development Bank, DTT = Dao Trong Tho, HCMC = Ho Chi Minh City, PMU = project management unit, PPR = project performance report, SPW = supplementary project work, SOGREAH = Societe Grenobleise d'Etudes et d'Application Hydrauliques, WSC = water supply company.

2. Loan 1702: Ho Chi Minh City Urban Environmental Project

24. **Review Results.** Although it got off to a normal start, this project eventually failed for a number of reasons, compounding the delays that had already built up within the first 2 years of implementation. Apparently, the PMU and other relevant counterparts in government became caught up in the preparatory documentation, including the delayed submission of a feasibility study, and an adequate resettlement plan. Later, some changes in the handling of the account within ADB may also have contributed to time spent on remedial management and the eventual abortive closure of the loan.

Project Component	Reasons for Delay	Indicated Time Lag, if any	Comments
Preparatory	BTOR 4 February 2000, from ADB to AWD: Slight delay in loan effectiveness due to pending setup of project steering committee and SLAs, though by		

Project Component	Reasons for Delay	Indicated Time Lag, if any	Comments
	31 December 1999, a PMU with director had already been established.		
Preparatory/Initial Setup Activities	Effectivity on 29 June 2000. BTOR of 27 July 2000 notes beginnings of delay, particularly in recruitment of consultants. By 30 January 2001, the F/S has not yet been prepared, and PMU's failure to stick to timetables has been noted.	At least 6 months	
Preparatory/Initial Setup Activities	PPR 31 December 2001: Little progress has been made to date. Fielding of consultants is now 18 months behind appraisal schedule. Recruitment of consultants is largely dependent on the approval of the HCMCPC of all the feasibility study (FS) reports. Submission of the resettlement implementation plan is now behind schedule.	14 months	Most of the EA's activities for the first 2 years involved internal document preparation (May 2003 memo from operations to VP, in general file).
Preparatory/Initial Setup Activities	31 March 2002 PPR: Notes the delay, traced to slow consultant recruitment and change in the landfill site (from Dong Thanh to Cu Chi). Same problem diagnosis till the end of the year.	24 months	
Preparatory/Initial Setup Activities	April 2003 PPR: Notes Cu Chi landfill site already prepared, but delays in other components still continuing. By midyear, project has fallen back 30 months. Merger of HOWADICO and CITENCO also affected handling of solid waste portion, as hinted in BTOR of 15 April 2003 from ADB to MKSS director.		
Implementation, Early Stages	By September 2003, the delay has been clearly noted, with 14% completion against elapsed loan period of 58%. Consultants for the waste collection, transportation, and crematorium component still need to be hired. By October 31, PPRs cease to describe problems, but delay continues.		Summary initial environmental examination completed September 2003, to be used for proposed landfill site.
Implementation, Slow Remedial Actions	By 31 March 2004, historical PPR: Another ADB officer takes over as project specialist, noting slow implementation. 31 July historical PPR: Notes that resettlement action plans do not comply with ADB standards.		
Implementation, Slow Remedial Actions	By 31 October 2004: Yet another ADB officer has taken over as principal project specialist and continues to cite delay. Last PPR for January 2005 notes that technical design for new landfill is still pending government approval.		

Project Component	Reasons for Delay	Indicated Time Lag, if any	Comments
Abortion and Closure	By 30 September 2008: Further, another new officer has taken over as principal project specialist and notes that ADB will not extend the loan. Delays continue.		

AWD = Agriculture West Department, BTOR = back-to-office report, CITENCO = City Environmental Company, EA = executing agency, HCMCPC = Ho Chi Minh City People's Committee, HOWADICO = Ho Chi Minh City Waste Disposal Company, PMU = project management unit, PPR = project performance report, MKSS = Mekong Region Social Sector Division, SLA = Subsidiary Loan Agreement.

REDUCING NONREVENUE WATER IN VIET NAM

A. Putting the Nonrevenue Water Challenge into Perspective¹

1. A major challenge facing water utilities around the world, especially in developing countries, is the high level of water losses either through physical losses (leakage) or commercial losses (customer meter under-registration and theft of water in various forms). This difference between the amount of water put into the distribution system and the amount of water billed to consumers is known as nonrevenue water (NRW). In a recent World Bank publication, an attempt was made to quantify the worldwide water loss problem and the resulting figures were shocking. The global annual volume of NRW was (conservatively) estimated to be in the order of 50 billion cubic meters (m³)—and the total cost to water utilities caused by higher production cost and lost revenues was estimated at \$15 billion per year.

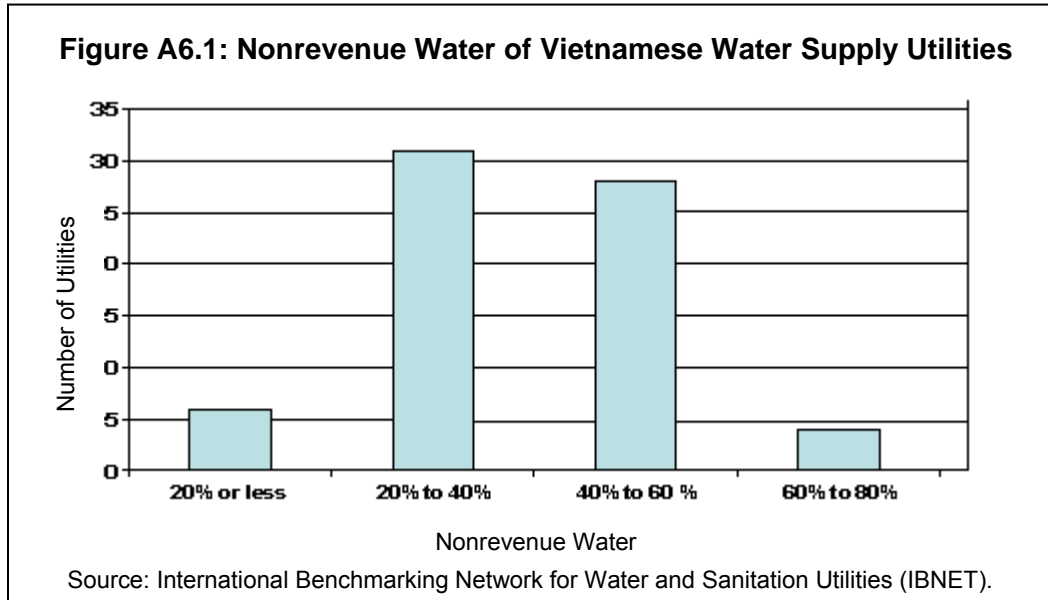
2. Two thirds of the volume of water lost is lost in developing countries, where every drop of water and every cent of revenue is desperately needed to satisfy the ever-increasing demand. Every day, water utilities in low- and middle-income countries (LAMIC) lose 60 million m³ of water through leaky pipes and deliver 40 million cubic meters to customers but are not invoiced because of factors like pilferage, employee corruption, and poor customer metering. These challenges seriously affect the financial viability of water utilities through lost revenues, wasted water resources, and increased operational cost, thus reducing their capacity to fund necessary expansions of service, especially to supply the urban poor. To put this in perspective, the value of water lost every year in LAMIC water utilities through commercial losses—water actually delivered but not invoiced—is estimated to be more than \$4 billion. This is nearly 50% of the total yearly investment in potable water infrastructure in the developing world.

3. Reducing NRW in developing countries to just half the current level would deliver the following benefits: Every year 11 billion m³ of treated water would be available to service customers; 130 million people more could gain access to water supply. Water utilities would gain access to an additional \$4 billion in self-generated cash flow. Fairness among users would be promoted by acting against illegal connections and those who engage in corrupt meter-reading practices. Consumers would have improved service from more efficient and sustainable utilities. New business opportunities would be created for NRW reduction activities, with thousands of jobs created to support labor-intensive leak reduction.

1. Nonrevenue Water in Viet Nam

4. While having improved greatly in many aspects in the management and operation of Viet Nam's water supply utilities, NRW continues to compromise the efficiency, and with it the financial viability, of the country's water supply utilities. In spite of many recent efforts to reduce NRW, many utilities in Viet Nam continue to suffer from high NRW, as shown in Figure A6.1. Half of the utilities have NRW levels in excess of 40%. Given that Viet Nam utilities have excellent commercial operations, it is safe to assume that more than 80% NRW is leakage. This leakage diverts precious water from reaching customers, increases operating costs, and makes investments in capacity augmentation larger. Reducing NRW becomes a source of new water and more financial resources. In many places, reduction of excessive losses is very likely the next-cheapest water source. A World Bank Study indicates that if all utilities in Viet Nam were to reduce NRW to 20% or less, as much as 60% of all investments in additional water production could be avoided. Clearly, reducing NRW at Vietnamese utilities must be of the highest priority.

¹ This appendix is based largely on information contained in Liemberger, Roland (NRW expert). 2008. *The Challenge of Managing Nonrevenue Water in Low and Middle Income Countries*. International Water Association: London.



2. Lack of Awareness and Knowledge: A Major Reason for Inaction

5. Not understanding the magnitude, sources, and cost of NRW is one of the main reasons for insufficient NRW reduction efforts around the world and in Viet Nam. Only by quantifying NRW and its components, calculating appropriate performance indicators, and turning volumes of lost water into monetary values can the NRW situation be properly understood and required action taken. And even if NRW reduction is put on the agenda of a water utility, it does not automatically mean that the efforts will be successful. The benefits of NRW reduction are obvious, but decades of work on the subject by multilateral and bilateral financing and aid agencies have not delivered much improvement in the sector in the developing world. The reasons are many, but the underestimation of the complexity of NRW management and the underestimation of potential benefits are the two main reasons. As long as utility owners are not sufficiently aware of the full benefits of NRW reduction and therefore do not oblige water supply company managers, not much will happen. On the other hand, as long as WSC managers are not sufficiently informed about the level, causes, and cost of NRW and the improvement potential, they will not be able to convince their owners to provide funding for NRW management activities and investments. And as long as neither the owners nor the WSC managers are fully aware of the issues and in support of comprehensive NRW management, it will be difficult to motivate utility staff. The conclusion is that awareness raising among the municipalities in combination with basic information on NRW management for key decision makers and WSC managers is a precondition for the introduction of change.

3. New Efforts Are Under Way

6. Learning from past failures, the World Bank,² the Asian Development Bank (ADB), and other development agencies have stepped up their efforts to plan and implement more-appropriate and more-effective NRW reduction efforts. The World Bank Institute and ADB

² Since the start of its lending in water supply, the World Bank has included NRW reduction objectives and loan covenants in almost all of its water supply projects throughout the developing world. NRW components were based on training through technical assistance (TA) and the purchase of equipment. The great majority of these projects did not succeed in reducing NRW, as the technical focus of NRW programs was not appropriate and there was insufficient effort to generate sustained commitment from utility owners and managers.

have made dissemination of best practice in reducing NRW a priority objective. These efforts are grounded in the growing realization that losses are indeed an important impediment to better services and better utility performance. Thanks in part to the efforts of the International Water Association³ and others, new tools, methodologies, and understandings have been developed that promise more success. New methods allow more accurate quantification of physical and commercial losses. New, more effective technical approaches to managing leakage and improve pressure management have been developed. These new approaches have already led to many success stories throughout the world (see Box A6.1). Most recent examples include Ho Chi Minh City, Viet Nam, where the World Bank is supporting a performance-based NRW reduction contract in one part of the city, while the ADB will support NRW reduction in the other part. Another success story, most relevant to medium-sized towns in Viet Nam is that of Thu Dau Mot, where the initiative of the WSC manager has already led to an NRW reduction to 15% in one half of the town (Box A6.2). The Thu Dau Mot success story demonstrates that the understanding and commitment by WSC management and good advice are key elements of success.

Box A6.1: Recent Success Stories in NRW Reduction

- **São Paulo (Brazil):** Large-scale meter replacement under a performance contract. The total volume of metered consumption increased by some 45 million cubic meters (m³) over the contract's 3-year duration; revenues increased by BRL172 million (\$72 million). Of this, BRL42 million was paid to the contractors with a net benefit to Companhia De Saneamento (SABESP) three times as high, at BRL130 million (\$54 million).
- **England and Wales:** Total leakage in England and Wales has fallen, from 5.1 million m³ per day in 1994/95 to some 3.2 million m³ in 2000/01—a reduction of 37%. The amount of water saved (nearly 2 million m³/day) is enough to supply the daily needs of more than 12 million people.
- **Bangkok (Thailand):** Performance-based NRW reduction contracts have been quite successful. The Metropolitan Water Authority has 14 branch offices that are responsible for about 100,000 customers each. Leakage reduction in three of these branches was outsourced to the private sector for a 4-year period (2000–2004). NRW (in reality physical losses only) was reduced by 165,000 m³/day, at a total cost of \$56.2 million. This is equivalent to \$340 per m³ per day saved.
- **Selangor (Malaysia):** Performance-based NRW reduction contract. The contractor had the obligation to reduce NRW by a fixed amount in a given time, against a fixed lump-sum payment. The target for Phase 1 was to reduce NRW by 18,540 m³ per day within 18 months. Phase 2 (9 years) of the Selangor NRW reduction contract has the target of reducing NRW by 198,900 m³ per day. Phase 1 serves as an example of a cost-effective NRW reduction program (\$215 per m³/day).
- **Senegal:** Impressive NRW reduction within the framework of a long-term contract between the Government and the private sector.

³ Over the last decade, the International Water Association has brought together many of the world's leading experts on NRW to formulate and disseminate new ideas on improving distribution network efficiency and NRW reduction.

Box A6.2: Thu Dau Mot, Viet Nam, Reduces NRW to 15%

Thu Dau Mot received technical assistance (TA) under Loan 1880 to help it deal with non-revenue water (NRW). The TA effort supported training, the organization of an NRW reduction team, work in a pilot zone, the improvement of bulk metering, and pipe and valve repairs. As a result, NRW was reduced moderately, from about 36% to 27%. For lack of resources under the loan, the TA was discontinued, leaving the Thu Dau Mot utility to carry on the effort by itself.

Unlike other utility managers under the project, the Thu Dau Mot manager understood the harmful effects of excessive NRW. He decided to hire the NRW consultant who had provided assistance under the ADB loan, and gave him a free hand and support in creating and managing a comprehensive network operations improvement and NRW reduction program. The utility manager wanted to make Thu Dau Mot Viet Nam's success story in NRW reduction. Phase 1 of the program, covering about half of the town, has been completed; by 2008, it had reduced NRW in that part of town to 15%. The nine zones have so far saved about 40,000 cubic meters of water per month, equivalent to monthly savings of D120 million (\$7,500). A second phase will follow in the other half of the town.

NRW was reduced in Thu Dau Mot because a committed NRW unit was created, trained, and received sustained support, and because a technical approach involving network zoning, pressure and flow measurements (to better understand NRW magnitude and causes), network optimization in each zone (to balance and reduce pressure), and aggressive leak detection and repair was applied. At the same time, much effort was spent reducing commercial losses by identifying and eliminating fraudulent connections and improving meter reading. The approach adopted by the NRW consultant is international best practice.

Source: Asian Development Bank sector assistance program evaluation team.

B. Some Basic Principles regarding NRW Reduction

1. The Institutional Dimension: Getting the Organizational Setup and Incentives Right

7. NRW management should be the centerpiece of good utility management. But often the reality is different: often a few technicians with insufficient resources form the "leak detection unit" and this unit is placed all the way down somewhere under the technical or operations department. Such a unit will obviously not have a strong voice in the organization. In many cases, the best solution is to create the position of an NRW manager reporting directly to the WSC manager, who needs to be aware that NRW management is a full-time job and needs sufficient staff, offices, facilities, equipment, means of transport, and operations budgets.

8. There has to be an incentive for the utility as a whole. Experience suggests that the right incentives can be put in place in a public utility to promote autonomy, accountability, and market and customer orientation. The second level would be to provide incentives to the WSC manager and his management team. The third level, the most difficult and most important, is to provide sufficient incentives for the staff that actually have to carry out the NRW reduction activities. The success of NRW reduction efforts depends largely on the efforts of the lowest-paid staff in the field. A well-designed staff incentive scheme seems to be a precondition for success, taking into account the low salaries, particularly among young field staff, in the majority of water utilities in the developing world.

2. The Technical Dimension: Leakage

9. A few principles must be fully understood when planning and implementing NRW reduction programs.

a. Know the Water System and NRW

10. **Calculate the Water Balance.** Properly understanding the baseline situation is a critical first step in moving toward an effective reduction program. It is noteworthy that despite the fact that many utilities in the developing world have implemented NRW reduction programs with donor funding, it is rare that a comprehensive water balance was actually developed and calculated. It is no wonder, therefore, that the end results often fail to match expectations. Establishing the International Water Association water balance (in accordance with the best-practice manual *Performance Indicators for Water Supply Services*) and calculating appropriate performance indicators should always be the first step. Often the most basic information is initially not available (like system input volume, average pressure, supply time, length of mains, and number of service connections). Working on the water balance and calculating performance indicators will reveal such deficiencies and bring them to the attention of the management, which can then take corrective action.

11. **Monitor Flow, Pressure, and Supply Time.** “What you don’t measure you can’t manage,” and still many water utilities do not record pressures in the distribution network, do not measure supply time in case of intermittent supply, and sometimes do not even measure the system input. For obvious reasons, a water utility should have accurate water production data. But the importance of pressure and supply time information is not to be underestimated. The level of leakage depends on the level of pressure (10% more pressure means approximately 10% more leakage)—and of course on the supply hours per day (whether a burst pipe leaks 12 or 24 hours makes a difference).

12. **Map the System.** Unfortunately, too often water utilities have poor records of their underground assets and do not take any action to improve the situation. Updated maps are a precondition for physical loss reduction and also for the fight against illegal connections. Updating of maps is, of course, only a first step toward the establishment of a geographic information system.

b. Understand the Basic Principles regarding Leakage

13. **Big Bursts and Background Leakage.** Big spectacular bursts showing up on the surface tend to be repaired quickly and are generally not the main source of long-term leakage. The majority of leakage tends to be invisible and occurs at service connections, including (and especially at) the connecting point with the main pipe.

14. **Relationship between Pressure and Leakage.** Leakage rates vary with pressure; impact of pressure on leakage is obvious and intuitively understood, but often not fully appreciated, even by technical/engineering staff. The higher the pressure, the higher leakage. Often leakage can be significantly reduced by managing pressure. For example, installing stronger pumps will very likely lead to increased pressure and thus increased leakage.

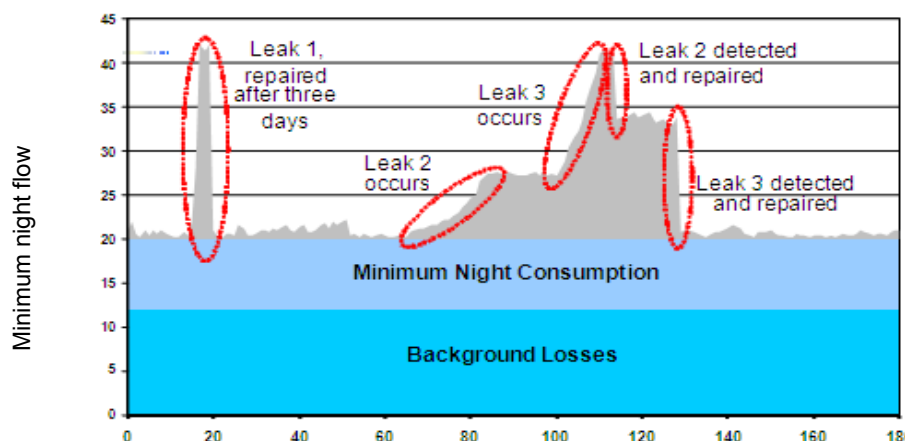
15. **Intermittent Supply.** Reducing supply time will immediately reduce the daily volume of leakage. Often the results of a creeping reduction of supply time will be interpreted as successful leakage reduction.

c. Investigate the Nature and Magnitude of Leaks by Measuring Flow and Pressure in Hydraulic Zones

16. **Network Zoning.** One of the fundamentals of network management is zoning, i.e., dividing the network into hydraulically independent zones or district management area (DMAs). The DMA concept was developed and introduced in England and Wales as the best alternative for getting the level of leakage in (relatively) poor-quality distribution networks under control. It is also a very appropriate concept for the heavily leaking networks of developing-country utilities. Especially if the infrastructure is in poor condition, it is very difficult to successfully manage leaks at low levels in large network zones. Small zones are needed to keep leakage levels low, and these small zones are also useful for pressure management. The ideal DMA size depends on a number of factors, but mainly on the infrastructure condition. In poorly performing networks, the average DMA size should be in the order of 1,000 service connections. By measuring flow and pressure at the entry point to the zone, it is possible to understand and more easily analyze pressure and flow profiles, identify problem areas, and obtain information needed to control and reduce leakage. Initially, DMA is used to determine which parts of the network are experiencing the highest level of leakage so that resources can be targeted to the greatest effect. Continuous measurement of flow and pressure allows real-time management of leaks.

17. **Measurement of Night Flow.** This is a powerful tool for understanding and controlling leakage. Figure A6.3 shows the measure of minimum night flows for a zone for 180 days. By subtracting minimum night-flow consumption from the flow measured, one can establish the volume and nature of leakage. Further interpretation of the flows measured shows the following conclusions. Leak 1 is a leak (presumably visible) that is repaired quickly. Leak 2 occurs gradually, but no action is taken. A third leak occurs and the utility sends a leak detection team, which detects one leak (Leak 2) and repairs it. The night flow shows that the problem is not solved yet and the leakage inspector is sent in for a second time and detects Leak 3. Figure A6.3 demonstrates the usefulness of the zoning approach as a tool for measuring leakage, real-time control of leaks, and the effectiveness of leak detection and repair efforts.

Figure A6.3: Leak Occurrence during Nonrevenue Water Reduction Campaign



Source: Walter Stottmann. 2008. *Some Background/Concepts on Private-Public Partnership in the Provision of Municipal Water Supply and Waste Water Services.*

d. Reduce Commercial Losses, and Initiate and Implement a Physical Loss Reduction Program

18. Commercial losses differentiate between customer meter under-registration and water theft. By introducing good customer meter management (system condition–specific meter selection, testing, maintenance, replacement), meter under-registration can be kept to a minimum. The fight against illegal connections, meter tampering, and meter-reader corruption is not a technical problem but a political one. Only with the full support of the utility owner, local government, and utility management can this (everlasting) battle be won.

19. **Change Management Focus.** Often, leak reduction is ignored or not taken seriously. Many misconceptions and obstacles need to be overcome, such as: it is a one-time, technical effort; it is non-prestigious, invisible work, no ribbons to cut; it is politically sensitive; it involves digging up streets. Serious NRW reduction programs are manpower intensive, often involve night work; they require allocation of tools and equipment and sufficient funding. The job cannot be done in spare time; only if the management fully understands and accepts the challenge can the work succeed.

20. **Fix Visible Leaks Fast.** Improve speed and quality of repairs: needed are clear repair policies and procedures, efficient organization from call through repair, availability of equipment and materials, and sufficient funding.

21. **Introduce Active Leakage Control.** Initiate and maintain a routine program for finding and locating leaks, using the many techniques and instruments available.

22. **Review and Improve Network Operating Practices.** Avoid wide pressure fluctuations and intermittent supply; they tend to increase the incidence of pipe bursting. Try to (re)establish continuous supply in some areas; inspect and maintain valves and hydrants regularly; operate reservoirs and pumping stations properly; keep network drawings or a geographic information system up to date.

23. **Introduce Network Zoning.** Dividing the network into zones is the best available leakage management method for rich and poor utilities based on the principle “what you can’t measure, you can’t manage.” Informed decision making saves money; the size of zones depends on the quality of the network. Poorer utilities can begin gradually, proceed in stages, initiate DMAs one at a time.

24. **Practice Pressure Management.** Pressure reduction is a very effective NRW reduction strategy. Pressure management does not necessarily require dramatic pressure reduction; sometimes good results can be achieved by establishing pressures at slightly lower levels or reducing excessive (and unnecessary) night pressures. Any direct pumping into the system, still practiced in many utilities in Viet Nam, should be avoided unless there is pressure control through variable speed drive. The best solution would be to organize the distribution system by elevation. Pressure-reducing valves have become a common method today for reducing pressure.

e. Use the Private Sector

25. Outsourcing of NRW reduction activities is nothing new; it has been done in industrialized countries for decades. In low- and middle-income countries a rather new trend can be observed—outsourcing of NRW reduction (or only leakage reduction) under performance-based contract arrangements. Such contracts were used, for example, in

São Paulo (Brazil), Kuala Lumpur (Malaysia), Bangkok (Thailand), and most recently in Ho Chi Minh City—the first time that the World Bank is funding such a contractual arrangement. Using the private sector is certainly no panacea for reform or for getting utility management and staff involved in NRW management, but can be a worthwhile option to substantially reduce NRW in a short time and put in place all systems that are needed to maintain a low level of NRW.

C. Summary

26. After decades of failed attempts or no action at all, it is high time that water utilities in developing countries get serious about NRW reduction. International development and funding agencies need to abandon the unsuccessful approaches of the past. The past approach of providing technical assistance for some training and funding leak detection equipment has not worked. New approaches, as outlined above, promise better results. In the recent past, many utilities in the developing countries have made significant progress. Also in Viet Nam, several utilities have already successfully initiated modern NRW reduction programs. Others need to follow. Reducing NRW throughout the country to an acceptable level of, let's say, 15% would dramatically reduce investment requirements in water production and reduce the costs of network operations.

TARIFF SETTING AND SELECTED UTILITIES IN VIET NAM

1. The Asian Development Bank (ADB) funded a technical assistance (TA) project¹ in 1995 to assist the Government of Viet Nam in developing its National Water Tariff Policy, taking into account the financial viability of water supply companies (WSCs) as well as socioeconomic considerations pertaining to consumers' affordability and willingness to pay. The TA study developed proposed methodologies and tariffs on the basis of the situation in the four pilot towns. The study also identified five key objectives to consider in formulating and recommending tariff methodologies. These objectives were (i) economic (to consider economic costs in order to achieve resource allocation efficiency); (ii) financial (to ensure that WSCs have enough revenues to meet operating expenses, debt service, taxes, and a portion of capital expenditure); (iii) social (to ensure that the poor have access to safe water supply at an affordable price); (iv) conservation (to use tariffs as an instrument for managing water demand and its conservation); and (v) administrative (to ensure that any metering, billing and revenue collection, and tariff recommendations can be carried out by the WSCs and are well understood by consumers). Ironically, up to the present, tariff setting remains a challenge for WSCs.

2. In Viet Nam, water tariff setting is vested in the provincial people's committees (PPCs) or provincial governments and their respective WSCs. To request tariff modification, the first step is for a WSC to prepare a detailed proposal and recommendation for tariff increase. The proposal is then submitted to an interdepartmental committee of the PPC, which is referred to as its committee of assessment. This committee is composed of the Department of Finance and Pricing, the provincial planning committee, and the Ministry of Construction. Following the review, tariff recommendations are submitted to the provincial or municipal people's committee for approval. There are several reasons for the differences in tariff structure. What is obvious, however, is that the final decision lies in the hands of the PPC. Although each PPC considers several measures (including a possible subsidy from commercial and industrial users to domestic consumers and state enterprises as consumers), the primary reason for the slow movement in raising water tariffs appears to be political and social unpalatability. This was verified by evidence from a review of the literature and several interviews with various water supply and sanitation (WSS) stakeholders in Viet Nam during the sector assistance program evaluation and project performance evaluation missions. The next question that comes to mind is: In the context of a socialist state, is operating a utility enterprise commercially viable? This appendix attempts to briefly describe the status of Viet Nam's electricity sector to provide a comparison (with water utilities) in terms of financial viability and sustainability of utility companies operating under a socialist state like Viet Nam.

3. **Power and Energy Sector in Viet Nam.**² ADB's country and strategy program for Viet Nam notes the importance of eliminating infrastructure bottlenecks in the energy sector to enhance the competitiveness of the country's private sector-led manufacturing and service sectors. Maintaining adequate investments to meet the rising energy demand remains a key challenge confronting the power sector in Viet Nam. Because power companies are public utilities, the issue of tariffication comes into the picture in the context of sustainability, particularly for state-owned enterprises in the energy sector.

¹ ADB. 1995. TA 1998-VIE: *National Water Tariff Policy Study*. Manila.

² The discussion drew largely from ADB. 2008. *Report and Recommendation of the President for the Proposed Loan on Song Bung 4 Hydropower Project*. Manila; and ADB. 2005. *Report and Recommendation of the President Proposed Loan Northern Power Transmission Expansion Sector Project*. Manila.

4. The power sector in Viet Nam is dominated by the state-owned Viet Nam Electricity (EVN). EVN was formed in June 2006 by converting the vertically integrated former Electricity of Viet Nam into a holding company structure. EVN's operating units, consisting of power plants, regional power distribution companies, and power transmission system operator, have been converted into independent subsidiaries. EVN is a large and complex organization, which is expected to undertake more than half of the projected capacity additions of over 40,000 megawatts (MW) from 2007 to 2017. In 2006, the Government decided to convert EVN into a holding company; most of its operating entities have since been converted into limited-liability (joint-stock) companies, with the company retaining whole or partial ownership, and most of the operating subsidiaries are expected to be partly privatized by the end of 2009. At present, several subsidiaries engaged in power generation and power engineering consultancies are partly privatized.

5. Since its creation in 1996, EVN has had profitable operations. It has financed the rapid expansion of Viet Nam's electricity sector without resorting to significant fiscal subsidies. Key financial performance indicators, such as the debt service coverage ratio, the self-financing ratio, and receivables, have been maintained at prudential limits. The average end-user tariff has stayed at around \$0.053 per kilowatt-hour (kWh) since January 2007.

6. EVN's electricity sales tripled from 1998 to 2006 (from 17.7 Terrawatt-hour [TWh] to 51.3 TWh), for an annual growth rate of 14.2%. Although average tariffs net of sales taxes have marginally increased, from D660/kWh (\$0.046/kWh) in 2000 to D853/kWh (\$0.053/kWh) by 2006, revenue has increased from D16.8 trillion (\$1.16 billion) in 2000 to D44.9 trillion (\$2,807 million) in 2006. The largest growth in electricity sales has been in the industrial sector, where average annual growth during the same period was 17%–18%. The industrial sector's share in total sales has also increased, from 40% in 2000 to 45% in 2006. The household sector has likewise shown annual growth of 12% over the last 12 years. This is a result of the combined increasing demand from existing customers and from new connections as more households hook up to the electricity supply system. To satisfy future demand for electricity resulting from rapid economic growth, EVN will need to make considerable investments in generation, transmission, and distribution. A substantial portion of these investments will be debt financed, and hence, sustained tariff increases are required to maintain adequate levels of debt service cover and self-financing of these new investments.

7. **Government's Power Sector Strategy.** The Government's policy for the power sector, which took effect in July 2005, is enunciated in the Electricity Law. The law is aimed at the development of a power market based on the principles of transparency and competition to (i) achieve economic efficiency, (ii) attract investments from state and non-state entities to the sector, and (iii) ensure the legitimate rights of consumers and investors in the sector. The law declares that the state monopoly in the sector would be limited to power transmission, national load dispatch, and strategically important large plants, leaving power distribution and nonstrategic power generation to potential private investors.

8. As part of the Electricity Law, the road map for electricity market establishment and development approved by the Prime Minister in 2006 envisages a phased approach to reforms. During the first phase of the development of the power market, competition will only be among sellers, and a single buyer will act as intermediary between the power plants and distribution companies. The single buyer will sell electricity to distribution companies and large consumers at regulated prices. The competitive generation market is expected to start in 2010. The second and final stages will further promote wholesale and retail competitive markets, respectively.

9. At present, tariffs are set by the Ministry of Industry and Trade, which consults the public on the matter, and are modified at the request of the EVN. In the distribution sector, regional power companies belonging to EVN are charged at an internal transfer price (i.e., bulk power tariffs) at the 110 kilovolt (KV) level and are responsible for power distribution to end users. The bulk tariffs are set by EVN to enable each power company to achieve a reasonable profit irrespective of its cost structure.

10. **Covenants and Tariff Changes.** ADB, the World Bank, and the Government have agreed to adopt new financial covenants based on (i) consolidated EVN financial statements, and (ii) EVN's overall financial viability and performance rather than arbitrary tariff levels set in foreign currencies. The covenants are as follows: (i) a self-financing ratio of 25%, (ii) a debt service cover ratio of 1.5, and (iii) a debt-equity ratio of 70:30. EVN complied with these covenants in 2000–2006. However, the absence of tariff increases in 2003–2006 reduced its net cash flow and operating profits. This reduced the self-financing ratio to 34% in 2006 from 77% in 2003, and the debt service ratio from 8.49 in 2003 to 2.77 in 2006. These reductions are expected to be reversed with the tariff increase of 6.6% effective January 2007 and 5.0% effective July 2008. However, with various sectors remonstrating, and Viet Nam entering into an inflation situation in 2008, the proposed tariff increase in July 2008 did not materialize.

11. EVN receives no direct operating subsidies from the Government to cover its operating costs. However, the Government injects additional capital to help finance specific investments like the 2,400 MW Son La Hydropower Project and access to lower-interest loans from state-owned banks. The report and recommendation to the President for the Song Bung Hydropower Project noted that, because of the delay in approving the tariff increase, the lower-than-expected tariff increase, and increasing capital investment, EVN's self-financing ratio was likely to be between 25% and 30% in 2007 and 2008.

12. In essence, tariff issues threaten the long-run sustainability of electricity utilities, similar to the case of WSCs. As in any public good, a decision to increase fees for the use of public utilities poses political and social challenges, especially in a socialist environment. Even so, given the planned reforms in the electricity sector, the sustainability of EVN is expected to be improved if the proposed plans are adhered to.

LOAN COVENANTS AND COMPLIANCE, RISKS, AND REMEDIES

Table A8.1: Loan Covenants and Compliance

Topic	Status of Compliance
Project Execution and Coordination	Complied with; PMUs generally created on time
Financial Performance, Cost Recovery, Tariffs, Financial Ratios	Partial compliance; most companies created back tariffs and retained depreciation charges; financial ratios met at times; some tariff increases; overall, WSCs not meeting targets
Commercial Performance of WSCs	Generally complied with
NRW Reduction	Not met in Loan 1273; most other WSCs meet targets, but reported NRW levels questionable; except for one WSC, no sustained NRE reduction effort
Institutional Reform, Utility Autonomy	Project objectives regarding utility autonomy not achieved; specific loan covenant under loan 1514 regarding merger of WSCs and URENCOs not complied with
Environmental Education and Sanitation	Complied with; generally well done
Midterm Review	Complied with
Reporting	Complied with
Financial Audits	Complied with
Monitoring Benefit Evaluation	Complied with during project execution, but discontinued thereafter; MEB activities seen as imposed by ADB and lacked ownership of WSCs, PPCs and CPMU
Environment	Complied with
Acquisition of Land and Right-of-Way	Complied with, albeit late at times
Resettlement	Complied with, albeit late at times

CPMU = core program management unit, NRW = nonrevenue water, PMU = project management unit, PPC = provincial people's committee, URENCO = urban environmental company, WSC = water supply company.
Source: Asian Development Bank sector assistance program evaluation team.

Table A8.2: Risks and Remedies

Loan	Risk	Remedies
1273	Inadequate capacity to manage project Lack of counterpart funds	Technical assistance
1361	No analysis	
1514	1. Delays in acquisition of land 2. Experience in project implementation 3. Implementing cost recovery program	1. Selection of available land 2. Provision of consulting services 3. Support in financial management
1880	1. Inadequate implementation capacity 2. Failure to collect adequate tariffs 3. Inadequate maintenance	1. Training and skilled personnel 2. No mitigating measures cited 3. Training and O&M guidelines to ensure sufficient funding
2034	1. Limited human capacities for implementation 2. Delays because of lack of experience 3. Uncertainty regarding tariff increases 4. Insufficient community participation 5. Lack of local government ownership	1. Institutional strengthening 2. Technical assistance 3. Time bound tariff increase program 4. Participation, awareness campaigns 5. PPC commitment to tariff increases
2272	1. Resistance to corporatization and tariff adjustments 2. Unforeseen inflation 3. Stakeholders not understanding project objectives 4. Lack of implementation capacity, unfamiliarity with procurement and disbursement procedures 5. Poor households not benefiting, inability connect	1. Policy dialogue and proposed time table for corporatization and tariff increases 2. Adequate contingencies 3. Identify incentives and sensitization workshops 4. Training 5. Deferred payment schemes

O&M = operating and maintenance, PPC = provincial people's committee.

Source: Asian Development Bank sector assistance program evaluation team.

WATERBORNE DISEASES IN FIVE PROJECT TOWNS

No.	Province	Bacillary Dysentery		Amoebic Dysentery		Dysentery		Diarrhea		Cholera		Typhoid	
		I	D	I	D	I	D	I	D	I	D	I	D
1	Thanh Hoa												
	2008 (9 months)	6	0	8	0	242	0	705	0	26	0	0	0
	2007	0	0	0	0	388	0	934	0	35	0	0	0
	2006	0	0	0	0	450	0	726	0	0	0	0	0
2	Quy Nhon												
	2008 (9 months)	48	0	4	0	170	0	21	0	0	0	1	0
	2007	94	0	2	0	57	0	148	0	0	0	2	0
	2006	59	0	10	0	75	0	81	0	0	0	6	0
	2005	73	0	12	0	76	0	58	0	0	0	6	0
	2004	60	0	19	0	39	0	45	0	0	0	1	0
	2003	77	0	17	0	36	0	50	0	0	0	2	0
3	Pleiku												
	2008 (10 months)	0	0	0	0	0	0	0	0	0	0	0	0
	2007 (11 months)	0	0	0	0	0	0	0	0	0	0	0	0
	2006	96	0	20	0	228	0	472	0	0	0	0	0
	2005	392	0	118	0	537	0	1,528	0	0	0	0	0
	2004	148	0	67	0	94	0	416	0	0	0	1	0
	2003	15	0	23	0	19	0	0	0	0	0	0	0
4	Phan Thiet												
	2008 (9 months)	32	0	0	0	75	0	1,136	0	0	0	1	0
	2007	28	0	11	0	255	0	1,219	0	0	0	1	0
	2006	72	0	19	0	264	0	1,026	0	0	0	2	0
	2005	90	0	16	0	180	0	781	0	0	0	3	0
	2004	16	0	9	0	162	0	761	0	0	0	5	0
	2003	67	0	6	0	260	0	1,152	0	0	0	5	0
	2002	50	0	3	0	278	0	1,874	0	0	0	6	0
	2001	53	0	16	0	242	0	2,055	0	0	0	7	0
5	Binh Duong												
	2008 (7 months)	31	0	42	0	745	0	6,069	0	0	0	0	0
	2007	68	0	98	0	1,063	0	2	0	0	0	1	0
	2006	142	0	209	0	1,407	0	9,863	0	0	0	0	0
	2005	111	0	287	0	1,287	0	7,676	0	0	0	0	0
	2004	209	0	271	0	1,871	0	7,462	0	0	0	10	0
	2003	231	0	214	0	1,570	0	7,442	0	0	0	26	0

D = death, I = incidence.

Note: The table shows the number of people infected with some waterborne diseases of diarrhea, amoebic dysentery, bacillary dysentery, dysentery, cholera, typhoid, from 2001 to 2008 at the five project towns. It can be seen from the table that the diseases of typhoid, bacillary dysentery, amoebic dysentery, and dysentery in the towns have been decreasing in recent years. In Phan Thiet, diarrhea has a trend of reduction; however, it has not in other towns. In 2005, the number of people infected with waterborne diseases increased sharply in Pleiku. Severe flooding in the suburbs that year caused problems of environmental sanitation.

Source: Center for Preventive Medicine, Thanh Hoa, Quy Nhon, Gia Lai, Binh Thuan, and Binh Duong.

PARTNERING WITH THE PRIVATE SECTOR¹ IN THE PROVISION OF MUNICIPAL WATER SUPPLY AND WASTEWATER SERVICES IN VIET NAM

1. Over the past 15 years, the water supply and sanitation (WSS) sector in Viet Nam has improved rapidly, yet much remains to be done to meet the Government's sector development targets, and above all to raise the enormous financial resources to do so. A rough estimate indicates that resource requirements will be three to four times the annual average of the investment levels over the past decade. These requirements must be met from a variety of sources:

- (i) **Continued official development assistance.** To sustain the rapid growth being experienced by Viet Nam, the present inputs of Official Development Assistance (ODA) should be sufficient to meet the quadrupling of investment requirements needed by the economy.
- (ii) **Local and national government contributions.** Government has contributed immensely to the development of the sector through grants and budgetary allocations. The capacity of both national and local governments is limited. Government support will clearly continue, but any such funding should be limited in a targeted way to poverty and environmental related investments.
- (iii) **Local credit markets.** As the creditworthiness of the sector improves and local credit markets mature, access to longer-term local financing will become ever more important. Government must continue to explore and support efforts to create local facilities for longer-term infrastructure lending. Issuing municipal bonds may be a possibility for raising capital for water and sanitation investments in the future.
- (iv) **Private Sector Participation.** So far no important private sector funding has materialized because of weaknesses in the current regulatory, legal, and financial environment. The Government should make these frameworks more private sector-friendly to attract more international private capital in the future.
- (v) **Internal Generation from Utilities.** Water supply company (WSC) and urban environment company (URENCO) revenues will have to share a much bigger share of the burden than in the past. This will require institutional reform, better management, more efficient operations, and higher tariffs.

1. Why PPP in Water Supply and Wastewater Treatment?

2. The challenge of supplying adequate and safe water and wastewater services in Viet Nam to unserved people remains immense. In the developing member countries of the Asian Development Bank (ADB), in 2002, about 700 million people in the Asia and Pacific region were still without safe water supply, and some 2 billion had inadequate or no sanitation. The nature and magnitude of the challenge varies widely among countries, but they all have to generate large financial resources for investments to expand and rehabilitate infrastructure and improve the efficiency of operations of water and wastewater systems. In all countries some form of sector reform and strengthening is necessary.

3. Traditionally, water and wastewater services in developing countries have been supplied within the public domain by government departments or public utilities. Experience demonstrates, however, that public service providers throughout much of the developing world do not have the managerial, financial, or technical capacity to discharge their responsibilities well. Disabling governance structures, misguided sector policies, and the absence of sufficiently skilled human resources are largely responsible for the inability of public service providers to supply water and wastewater services efficiently and affordably.

¹ Defined in this paper to include all modalities for private sector involvement in urban areas from service contracts to concessions, except small-scale providers.

4. Private financiers and operators have a long tradition of providing water and wastewater services efficiently in some cities of Western Europe and North America. The private sector can also be a valuable partner to improve service provision in developing countries. Since the beginning of the 1990s, frustration with public service provision has led to the formation of many private-public partnership (PPP) arrangements throughout the developing world. These PPPs took on many different forms, but all had both or part of the following objectives:

- (i) To provide expertise to improve utility management and operation; and
- (ii) To supply private investment resources.

5. Not all water and wastewater services in developing countries need to be put into private hands. If utilities perform well, the need to engage the private sector may be neither necessary nor desirable. If they perform poorly to the detriment of the population, however, and change in the public environment appears unattainable, bringing in the private sector may be the best alternative to generate investment resources and improve utility management and operations. This, and not ideological biases, have been the main rationale for the insistence of some international financial institutions (IFIs) and bilateral aid institutions on PPP.

2. Key Conditions and Principles for Structuring Successful and Durable PPP Arrangements

6. From worldwide experience with PPPs in the water and wastewater sector in the developing world in the past 20 years, several important lessons have emerged regarding the appropriateness and durability of PPP arrangements.

a. Choosing the Most Appropriate PPP Arrangement

7. There are many options under which the public and private sectors can come together. These options can be arranged along a spectrum of respective responsibilities between the private and public partners (Table A10.1). At one end of the spectrum are PPP arrangements in which the government retains full responsibility for operations, maintenance, capital investment, financing, and commercial risk, but delegates selected activities—meter reading or plant operation, for example—to a private firm under a service contract. At the other end of the spectrum is full divestiture of assets and all utility management and operation, as practiced in the United Kingdom.

Table A10.1: Private-Public Partnership Options

Type of PPP	Duration	Responsibility of Contractor	Payment	Asset Ownership
Service Contract	3–5 years	Specific tasks	Fee	Public
Management Contract	3–5 years	All O&M; excl. investments	Fee	Public
Operator's Contract	3–10 years	All O&M; excl. investments	Contractual tariff	Public
Lease/Affermage	8–15 years	All O&M including renewal excl. other investments	Contractual tariff	Public
Design, Build, and Lease	10–15 years	Design, Construction, O&M of facilities	Contractual tariff	Public
Build, Operate, and Transfer (BOT)	10–20 years	Design, Construction, O&M, then transfer ownership of	Contractual fee	Private then public

Type of PPP	Duration	Responsibility of Contractor	Payment	Asset Ownership
Concession	20–30 years	facilities All O&M investments	Contractual tariff	Private then public
Joint Ventures with public and private partners	indefinitely	All O&M investments	tariff	Private/public shareholding

BOT = build, operate, and transfer, O&M = operations and maintenance, PPP = private-public partnership.

Source: Walter Stottmann. 2004. *Some Background/Concepts on Private Public Partnership in the Provision of Municipal Water Supply and Waste Water Services.*

8. The choice depends on the objectives, expectations, and needs of the public partner. The objective should not be the “deal” itself, but an arrangement that is appropriate for a particular situation and brings the highest benefit to the utility and its customers in terms of service quality and safety, efficiency, and price. For example:

- (i) If mobilizing investment resources is the appropriate and primary objective, then a build-operate-transfer (BOT) arrangement may be the answer.
- (ii) If efficiency improvement in one specific area of utility management and operations (meter management or leakage reduction, for example) is the primary goal, service contracts may be the answer.
- (iii) If inefficiencies in the management and operation of the entire utility is the problem, system-wide management contracts or leases may be indicated.
- (iv) If both money and efficiency improvements are needed, a full system concession may be the best arrangement.

9. The choice among PPP options is obviously limited by the financial position of the public partner, regulatory constraints, and political preferences. Choices should be made with clear recognition of what is possible. For example, the financial potential of the Metropolitan Waterworks and Sewerage System in the Philippines and political support in 1992 allowed for a full-fledged concession. Severe financial shortages and the desperate need to address leakage and network and rehabilitation in Dushanbe, Tajikistan, made a \$10 million network management contract the appropriate and only choice.

10. Successive or parallel PPP arrangements may be an option. The public partner may choose one or more separate PPP arrangements to achieve its objectives: for example, a BOT contract to expand production and transmission, and a management contract or lease to improve network operations and reduce NRW. PPP contract options can build on each other. For example, a highly inefficient utility with severely constrained resources may start with a 5-year management contract to be followed by a more ambitious arrangement, an affermage or concession. This was the case in Yerevan, Armenia, where a successfully executed 4-year network management contract led to a longer-term system-wide lease arrangement.

b. Preparing and Structuring PPP Contracts

11. International experience yields the following lessons regarding the preparation of appropriate PPP arrangements:

- (i) **Make choices based on system-wide needs and conditions.** The selection of a PPP option must recognize the needs and conditions of the entire system, production and distribution, and service provision. Decisions should be guided by the overall objective of minimizing the investment and operating costs of the entire system. It should be sensitive to local political conditions and aspirations. Attracting private capital rather than achieving gains in technical, managerial, and allocative efficiencies is often wrongly perceived as the primary purpose of PPPs.

Performance-based management contracts and leases should be promoted by ADB at least as strongly as BOT-type interventions.

- (ii) **Adopt a participatory approach.** Many PPP arrangements did not come to fruition because of opposition by stakeholder support. Recognizing who the important stakeholders is in a particular situation (the mayor, the city council, nongovernment organizations [NGOs]), make sure that they fully understand and share objectives and approach.
- (iii) **Carefully scrutinize the justification for BOTs.** Special caution is needed regarding BOTs for water production or wastewater treatment. BOTs tend to work well if the main problem a utility faces relates indeed to insufficient water supply or wastewater treatment capacity. But if the problem is an inefficient and leaking distribution system or poor collection performance, a BOT will not address such shortcomings. Failure to properly take into account the overall system needs and conditions has led to the construction of many water and wastewater treatment plants with costly overcapacity in many countries. These BOTs have drained away resources that could have been better spent on more urgent needs in network expansions, better operations, or leak reduction. Another concern with BOTs appears to be exceedingly high prices, which have led to the termination of several BOTs.² Dissatisfaction with BOTs has led the Public Services International Research Unit of the University of Greenwich Business School to call for a “serious reappraisal of the economics of existing water supply BOTs and a moratorium on further developments.” While this view may be extreme, it illustrates the potential dangers associated with the BOT approach. In spite of these criticisms, BOTs remain a valid PPP tool, if properly conceived and justified technically, financially, and economically within the context of the conditions and needs of water system development.³
- (iv) **Ensure good contract preparation.** The success or failure of a PPP arrangement depends on the quality of contract preparation. A good PPP contract is based on (a) full understanding of the options available; (b) well-defined objectives and realistic expectations shared by key stakeholders and partners (utility management, politicians, customers, civil society); (c) clear contract scope and conditions with properly defined and allocated risk; (d) transparent and competitive selection of the financier or contractor based on good bidding documents; (e) appropriate and unambiguous legal documents with effective arbitration arrangements; (f) competent contract regulation and oversight by the public partner; and (g) common goals and trust between the private and public partners.
- (v) **Employ superior expertise and support in preparing PPP contracts.** Conceiving and structuring appropriate PPP arrangements needs technical skills to (a) define the nature and costs of interventions needed to achieve the stated objectives; and (b) expertise in preparing and implementing the PPP contract, from the first explanation of options to transaction design, bidding, and contract negotiations. PPP projects in water supply worldwide needed intensive transaction advisory services throughout the bidding process. In many cases, close support by an international financial institution (IFI) or bilateral institution has been

² Examples of BOTs that were terminated recently because of dissatisfaction with pricing conditions are (i) the Da Chang BOT in Shanghai, where the government declared the contract invalid because of an profit margin of 16% considered inflated; (ii) the Shenyang Public Utility was ended in 2002 because demand was lower than forecast and the receiving utility could not afford to pay; (iii) the Xian BOT, which was terminated for the same reason; (iv) a BOT contract in Bogota, Colombia, which was terminated when the city council found operating costs to be seriously inflated and paid \$80 million to buy out the contract; and (v) the Duc Thu contract in Ho Chi Minh City.

³ University of Greenwich Business School. 2004. *Water Privatization and Restructuring in Asia-Pacific*. Report prepared by the Public Services International Research Unit. London, December.

instrumental in providing the “comfort” required by the public partners and potential private sector investors and operators to go ahead with PPP.

- (vi) **Encourage, develop, and use local resources and capacity.** Not every contract can and should be performed by established international companies. In many countries, the emergence of capable local private providers will be a prerequisite for expanding PPP. Since such local expertise may not be available or may be insufficient, the creation of such capacity is of the highest priority.

c. Regulation and Oversight

12. Water supply service has natural monopoly characteristics, as well as significant health and environmental effects. Service providers (utilities), whether public or private, must therefore be regulated. Regulation ensures that tariffs and charges are fair and efficient, that service levels are adequate, that lower-income groups have access to the services, and that consumers’ rights are protected. Benchmarking WSS service providers should also be a part of this regulation. Regulatory arrangements are needed to monitor and ensure (i) efficient utility management and operations and quality of service; (ii) sustainable financial performance while protecting consumers from monopolistic pricing; (iii) compliance with health and environmental standards; and (iv) access to services for the disadvantaged. Adopting sound regulatory frameworks, facilitating cost recovery, and promoting competition could also help attract private participation in infrastructure and improve the efficiency and sustainability of the water sector. The obligation of such a regulator is twofold: (i) setting, monitoring, and enforcing the standards under which a service provider, a public utility or a private operator, performs its obligations; and (ii) ensuring that the service provider is given the tools needed to deliver the service.

13. Unlike the regulation of electricity or telecommunications, where the regulatory framework relies predominantly on national or regional arrangements, the regulation of water supply and wastewater services is largely a local or regional matter, certainly in those countries where decentralization makes local governments responsible for service provision. Regulation in such countries tends to rely on a two-tier approach. The national government defines the legal framework, “the rules of the game” under which utilities and local governments deliver the service, and sets basic sector development policies (on cost recovery, for example) and standards (on drinking water quality, effluent standards for wastewater discharge, occupational health and safety, for example). Government policies regarding wider, not sector-related, issues, such as foreign exchange management, taxation, accounting rules, or land use policies have an impact on sector development and PPPs.

14. Utility regulation and oversight rests with local government. For example, while general tariff policy may be set by the national government, approval authority for local tariffs tends to be under the de facto control of local political forces, mayors, or local councils. Within this general context, there are many ways to structure regulatory arrangements. Each country needs to define its own solutions, appropriate for local conditions and capacities. The United Kingdom model of national regulation under Office of Water Services (OFWAT) is an exception and not replicable elsewhere.

15. There are, however, some good-practice principles that are a prerequisite for effective regulation, regardless of whether the service provider is a public entity or a private operator or financier. A successful regulator operates under clear policies set by government and is accountable to government. To enforce these policies, the regulator must have sufficient independence to make decisions on technical and not political grounds, and the professional expertise—and funding—to deal with all technical and financial aspects of utility management and operations.

16. With respect to PPP arrangements, the most practical and common regulatory instrument is the contract that defines the obligations of the partners. The task of the regulator then is to ensure that both parties meet their contractual obligations. The nature and capacity of the regulatory entity depend on the complexity of the contract. A simple service contract may be overseen by a technical department of the utility. Regulating a concession, however, requires an office with extensive expertise in a number of technical and financial areas. Such a regulator will have to monitor, analyze, enforce, and make decisions regarding: compliance with technical performance standards, financial performance, rate of return, tariff setting, and investment planning.

17. Unfortunately, regulation in the water sector is very uneven. Although there are some notable exceptions (Manila, Dakar), regulatory frameworks throughout the developing world tend to be ill defined and poorly structured. Regulatory agencies tend not to have the professional capacity to engage with operators on an equal footing, and more often than not do not have the independence needed to make professional decisions on politically sensitive matters, such as tariffs. The creation and development of effective regulatory arrangements and capacity is perhaps the biggest challenge that developing countries face in their efforts to improve the performance of public utilities and take advantage of PPP arrangements. The absence of a sound regulatory, political, and legal environment for PPP is one reason why international operators and financiers are reluctant to engage in some countries and why some PPP contracts ended prematurely.

d. Sustained Political Will: The Ultimate Determinant for PPP

18. The creation of appropriate regulatory arrangements and success in introducing PPPs and maintaining them throughout the contract are largely a matter of political will. Without the support of local political stakeholders, PPP arrangements will not materialize and are unlikely to last. Political opposition to change and fear of consequences (job loss, higher tariffs, loss of political control, myths) and opposition by NGOs opposed to private sector entry have derailed many attempts at introducing PPP and have prematurely terminated existing contracts. The challenge for improving sector performance and introducing PPP arrangements is to make political leaders at all levels understand that PPP, if structured appropriately, could indeed be the most effective and fastest way of improving utility performance and the quality and reliability of service provision. The international sector community (IFIs and bilateral aid agencies) have spent and are still spending enormous energy and resources on bringing about sector reform, and in this context regulatory and PPP issues receive priority attention. These efforts need to continue with more focus on creating the political will where it matters most: local political stakeholders, who are the ultimate decision makers for the development of the water sector in their communities. The example of the People's Republic of China (PRC) demonstrates that, with political will, PPP can flourish. There, encouraged by a national policy decision, local governments have embraced PPP as an integral part of raising investment resources and improving utility performance. Where there is political will, there is a way for PPP.

e. PPP Is Not a Panacea and No Substitute for Reform

19. Too often, bringing in the private sector is hailed by some as a solution that will fix problems fast and without much pain. This is true only if the private partner is given the tools and means that are needed to achieve the contract targets. Private operators cannot succeed if they have to abide by the same rules and restrictions that have brought about the failure of the public utility. The ability to make decisions free from undue political interference and micromanagement is crucial. Employment and tariff issues are a particular concern. The operator cannot bring about financial viability if tariffs are kept too low. Successful and durable PPP arrangements require the

careful selection of options with a clear up-front understanding and commitment of the public and private partners of the obligations each is to assume.

3. Past Trends and Future Prospects for PPP in Municipal Water Supply and Wastewater

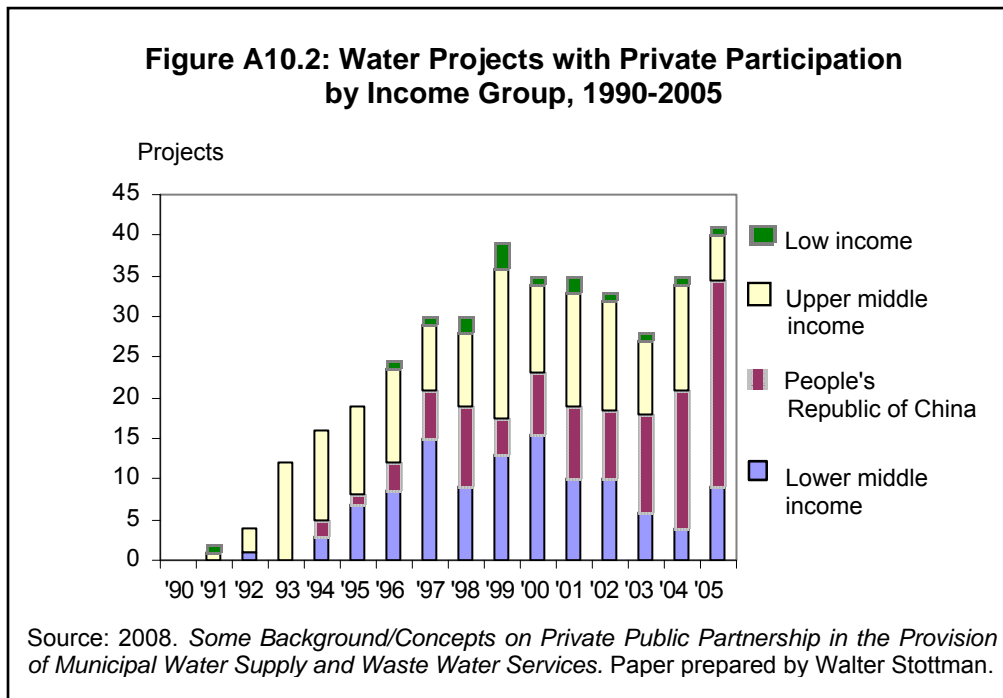
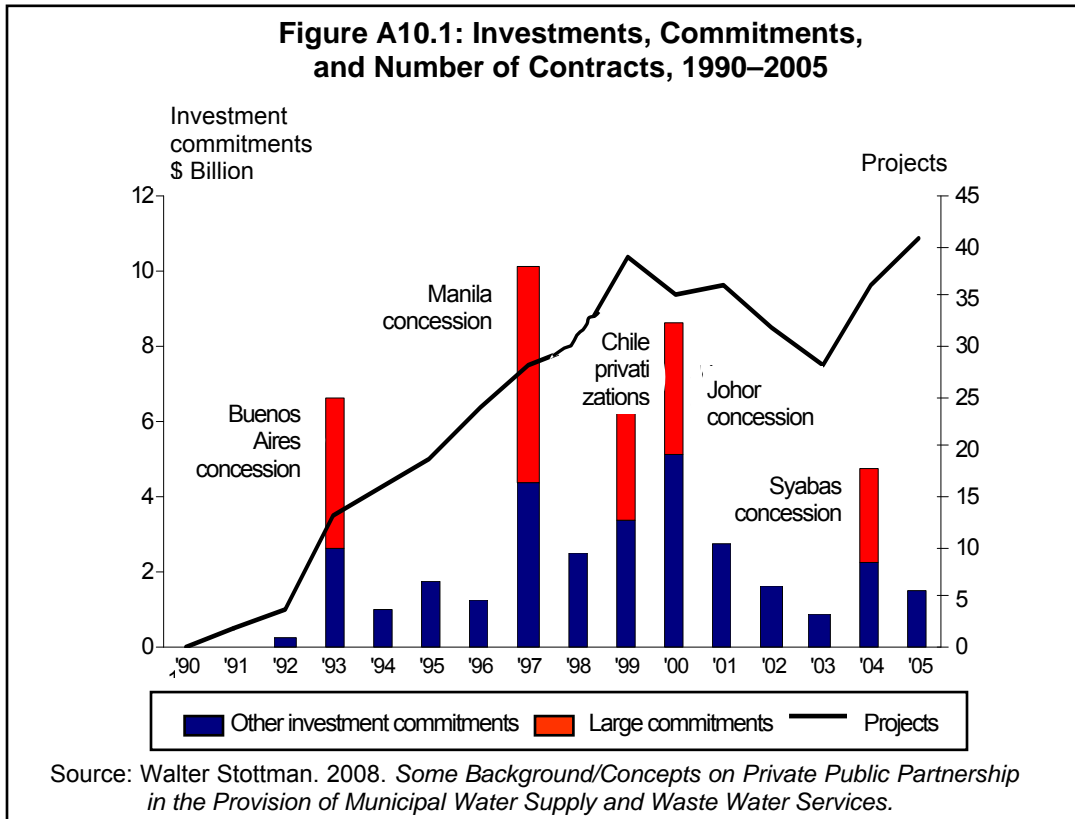
a. Worldwide Trends

20. Despite some apparent PPP fatigue in recent years on the part of governments and large international PPP contractors and some failures (Buenos Aires, Bolivia), PPP remains an attractive option for many countries. While the magnitude of private investments has declined over the past few years, the number of transactions per year has rebounded after registering a low in 2003 (Figure A10.1). The total number of countries with water PPPs in operation is still growing every year. In 2000, PPP contracts were operating in 49 countries. That number grew to 55 countries in 2005. Sixteen countries have introduced for the first time PPP in water since 2000. At present, most contracts are done in middle-income countries, with the PRC being the most active by far.

21. As the international water community has learned from good and bad experiences and has a better understanding of the many PPP options available, the composition of PPP arrangements is changing slowly. The prospects for large concessions such as those in Manila, Buenos Aires, or Jakarta are diminishing, while PPP activity in medium-size and smaller areas promises to increase. Despite the many problems, BOT-type arrangements for water and wastewater treatment plants continue to be the most important business line. In recent years, leases and management-type contracts have been gaining more acceptance as governments realize that improving utility management and operational efficiency may be more cost effective than adding capacity. Joint ventures between the public and private partner that take on investment and the management and operation of the entire water supply system (production and distribution) are emerging as effective options.

22. The great majority of PPP projects worldwide and in Asia were the result of direct interaction between the private and public partners, particularly in medium-size and smaller cities. International firms continue to market their services, but concentrate their efforts in countries that provide the most promising opportunities in terms of willingness to engage and providing an encouraging regulatory environment. All over the world, a growing number of local financiers, operators, and suppliers offer their services and engage in the market, large or small. Contract preparation and the contracting process itself are uneven, ranging from sophisticated competitive bidding to negotiated contracts based on unsolicited bids.

23. Overall, in spite of some temporary setbacks in the recent past, the trend is clearly in favor of more PPP. PPP arrangements, in their many different forms, will continue to be an important vehicle for sector development in many countries in the future.



b. PPP Trends in Asia

24. Experience with PPP in Asia presents a very mixed picture.

i. People's Republic of China

25. The PRC leads the rest of the world in PPP undertakings (Figure A10.2). This trend will continue, as the Government recognizes PPP in its many forms as an essential element for the development of the water sector. PPPs in the PRC are being arranged directly between local government and local and international private partners without assistance from IFIs or other bilateral organizations. BOTs or similar arrangements for water and wastewater treatment plants still dominate, but lately system-wide contracts (joint ventures, concession agreements) are emerging.

ii. Southeast Asia

26. In the Philippines, in spite of the successful concession in Manila and sustained advice and support from IFIs, the scope for PPP remains limited. The water sector in the Philippines is constrained by systemic governance and capacity problems, which afflict particularly the more than 500 water districts in small towns. There have been, however, some encouraging developments in some second-tier cities (Subic, Clark, and Mactan, for example) where local governments have concluded various PPP arrangements to increase water production and wastewater treatment capacity. While the willingness to engage in PPPs appears to be limited at the present time, there is reason to believe that, with continued encouragement by pro-PPP forces, the PPP market will open up over time.

27. In Viet Nam, the prospects for foreign finance in PPP are rather limited. To date, only two PPP contracts have been concluded. One of them is the ADB-supported Thu Duc water treatment plant BOT in Ho Chi Minh City, which was later terminated after a dispute over the financial requirements of the foreign operator. The Vietnamese Government has developed its own model: the publicly traded joint-stock company operating under affermage or lease arrangements. ADB has been requested to provide assistance in developing a project pipeline employing PPP arrangements. This work would be instrumental in charting the future of PPP modalities in Viet Nam, and provide examples that could be considered in other countries.

28. In Indonesia, in spite of the successful concession in Jakarta and Batang, scope for PPP has been very limited. The water sector in Indonesia continues to struggle with governance and policy issues and poor capacity. After decentralization, local governments have not been able to improve the performance of their utilities. Several attempts to initiate PPP arrangements have failed. There are, however, a few cities (Surabaya, Palembang, Bogor, for example) where more-progressive local governments might ultimately consider a PPP option. For the time being, however, prospects for concluding PPP arrangements remain poor.

29. Malaysia has demonstrated willingness to invite PPP arrangements. These projects were the product of locally conceived and prepared competitions without the involvement of IFIs or bilateral assistance agencies.

30. Thailand has resorted to PPP to raise funding and improve utility performance for Bangkok and some tourist destinations. While ADB was instrumental in opening the path toward PPP early on, contracts were developed locally without IFI involvement.

31. The Lao People's Democratic Republic and Cambodia are still struggling with sector reform. Although there has been movement in very small communities with small-scale providers, no PPP arrangements have emerged in larger cities, and the prospects for PPP arrangements remain poor.

iii. South Asia

32. India has been considering PPP for some time with interest, but significant “deals” have yet to materialize. Recent efforts by the Government indicate strong support for PPPs in water supply. India needs assistance in developing its capacity to conceive, structure, and process PPP transactions.

33. In Kathmandu, Nepal, a management contract supported by ADB has collapsed because of political opposition. The contract is to be rebid, but the outcome is uncertain, given the political resistance and instability in the country.

34. There is little hope for immediate PPP in the other South Asian countries—Pakistan, Sri Lanka, Bangladesh—although it is in these countries where PPP arrangements could be highly beneficial in improving service provision, now very poor.

iv. Central Asia

35. Except for small management contracts for system rehabilitation and leakage reduction in Samarkand and Buchara (Uzbekistan) and Dushanbe (Tajikistan), there is little PPP activity. Attempts by international operators to broker deals in the large cities so far have failed. There are local initiatives with joint ventures in Kazakhstan with questionable success. Sector governance structures and policies are still evolving. For the foreseeable future, prospects for PPP are rather limited.

c. PPP and International Financial Institutions (IFIs)

36. IFIs have been responsible for brokering and supporting large PPP deals early on (Buenos Aires, Bucharest, Manila, Dakar). Since the early 1900s they have been largely instrumental in introducing the concept of PPP in the developing world through extensive analytical work and technical assistance and advisory services. The number of PPP projects, however, with direct IFI support has been small worldwide. In Asia, there have been no more than a handful of IFI-sponsored PPP projects.

37. While the market for further direct IFI interventions may remain limited, several countries are experimenting within the range of PPP options available, engaging increasingly domestic financiers, operators, and suppliers. While this is an encouraging development overall, the effectiveness of many such contracts, especially those resulting from unsolicited bids, could be improved through better scrutiny of their financial and technical viability and efficiency. For the PPP market to mature and yield better contracts, knowledge and regulatory regimes need to improve. This leaves IFIs with the opportunity and obligation to continue advice and technical assistance within the context of their overall assistance strategy for the development of the water sector, even if such efforts may not result in PPP project lending.

CASE STUDY ON HO CHI MINH CITY ENVIRONMENTAL IMPROVEMENT PROJECT (Loan 1702–VIE)¹

1. Project Background

a. Scope

1. The Project had four components:
 - (i) Part A (Infrastructure Improvements): Urban drainage and sewerage, solid waste management (SWM), construction of crematoria, and capacity building.
 - (ii) Part B (Environmental Improvements): Industrial pollution control, and capacity building and strengthening.
 - (iii) Part C (Project Implementation Assistance): Administrative support to project management units (PMUs) and project implementing units (PIUs) for Parts A and B.
 - (iv) Part D (Management of Toxic and Hazardous Waste): Funded by the Norway Assistance Agency for Development (NORAD).

b. Costs

2. The original project cost was estimated at \$100.0 million equivalent. NORAD was to provide a grant of \$1.8 million for Part D. The Government was to cover the balance of the local currency costs, \$28.2 million equivalent. Actual Asian Development Bank financing was only \$5.08 million, which covered the cost of consulting services, revolving funds, incremental administration, and minor office equipment. No contracts were awarded for civil works and procurement of materials. NORAD disbursed the full amount of \$1.8 million. The project loan account was closed on 31 January 2008 with an undisbursed amount of \$70.31 million.

c. Project Schedule

3. The Project was to be implemented over 6 years, from 29 June 2000 to 30 June 2006. The project experienced start-up delays, particularly in the recruitment of consultants, and the completion and approval of feasibility studies. The Government's decision to change the landfill site led to major delays and ultimately to the cancellation of this component. Likewise, there were long delays in the preparation of the drainage component. A special administrative mission reviewed the situation in October 2006 and came to the conclusion that it would not be possible to complete the works by December 2008. By letter dated 13 April 2007, ADB informed the State Bank of Viet Nam that the loan closing date would not be extended. A partial cancellation of about \$70 million took effect on 13 April 2007. The project loan account was finally closed on 31 January 2008.

d. Implementation Arrangements

4. Because of the diverse scope of the project, the implementation arrangements were complex and involved several agencies of the Ho Chi Minh City Provincial People's Committee (HCMC PPC).
 - (i) Departments of Communications Transport and Public Works (DCTPW) and of Science, Technology and Environment (DOSTE) as executing agencies;

¹ Summarized from ADB. 2008. *Project Completion Report on the Ho Chi Minh City Environmental Improvement Project in Viet Nam*. Manila, September.

- (ii) City Environmental Company(CITENCO), HCMC Wastes Disposal Company (HOWADICO), and and Urban Drainage Company (UDC) as implementing agencies; and
- (iii) HCMC PPC as overall coordination and management company.

5. Several major changes in the implementation arrangements occurred during project implementation: (i) the incorporation of HOWADICO into CITENCO, (ii) the replacement of DTPW as the executing agency, and (iii) assumption of the PMU solely under DOSTE.

2. SAPE Mission Assessment

6. The sector assistance program evaluation mission agrees largely with the assessments made in the project completion report. In its view there were serious deficiencies in both the quality at entry and the supervision of the project.

a. Quality at Entry

7. Clearly, the project was not ready for appraisal and report and recommendation to the President approval for several reasons:

- (i) **Poor quality of feasibility studies.** The main reasons for the many delays that ultimately led to the cancellation of the project were the poor quality of the feasibility studies. More thorough technical surveys for the Hang Bang Drainage Canal could have revealed that the area had an underground utility that needed to be relocated. The feasibility study supporting the landfill site selection was flawed and did not recognize the arguments made by HCMC PPC in favor of the Cu Chi site. More thorough analysis of the feasibility studies by ADB staff and more-intense dialogue with the project implementing agencies could have avoided later problems.
- (ii) **Weak project implementation arrangement and capacity.** The project contained five major components whose implementation management required a complex implementation structure involving three separate PMUs in three different departments, all to be managed and coordinated by the PPC PMU. Realizing that the success of the project would depend on the existence of capable PMUs ready to work from the start, the project team should have been much more concrete in agreeing with the implementing agency on the composition and staff quality of the PMUs and required that the establishment of adequate PMUs be a condition for effectiveness.
- (iii) **Overambitious project scope.** The project contained seven major components. Given the weak institutional environment in HCMC, these may have been too many. Preparing all of these components and later supervising them may have been beyond the capacity of the ADB team. Concentrating on the solid waste and drainage components, may have been a better use of the team's limited capacity and resources.
- (iv) **Unrealistic project implementation schedule.** Although made irrelevant by subsequent events, the proposed implementation schedule demonstrates that the project team did not fully understand the difficulties ahead. Even with appropriate warning from severe delays in the previous project (HCMC Water Supply, Loan 1273), it was simply unrealistic to expect (a) implementation consultants to be on board 9 months after RRP approval; and (b) the urban drainage component to complete the purchase of pipes and box culverts at the same time the consultants were on board, and begin construction of package 1 within a year of the hiring of the consultants.

- (v) Overall, more thorough analysis of the feasibility studies by ADB staff and more intense dialogue with the project implementing agencies could have avoided many of the problems encountered during project implementation. This would have delayed the scheduled appraisal and RRP approval, but may have revealed the flaws. With more time and resources devoted to project preparation, improvements could have been made, and these in turn could have avoided the need to redo the work during project implementation.

b. Supervision

8. **Solid Waste Component.** The chronology of events reveals the evolution and eventual failure of the solid waste component.

- (i) From the beginning there seemed to a dispute about the landfill site selection. Although the Prime Minister approved the Dong Than landfill site, PPC was obviously in favor of the Cu Chi site.
- (ii) In August 2002, 3 years after RRP approval, the supervision mission was willing to consider a change in sites after HCMC PPC started to invest in the Cu Chi site. A new feasibility study was launched by inexperienced local engineering consultants.
- (iii) In July 2004, engineering designs were completed, but resettlement issues were still unresolved.
- (iv) In December 2004, 5 years after RRP approval, the ADB mission discussed with PMU and the HCMC people's committee the possibility of restructuring loan components, and initiated steps to propose a major change in project scope and an extension in the loan closing date to ADB Management.
- (v) In May 2005, ADB Management sent a special review mission to resolve disputes between the PMU/executing agency and NJS consultants. The review mission came to the conclusion that the solid waste component could not be completed by the proposed closing date of 31 December 2008.
- (vi) In September 2005, an ADB letter to the vice-chairman of the HCMC people's Committee suggested the restructuring of the loan and cancellation of the solid waste management component.

9. This sequence suggests that the implementation of the solid water component was mismanaged. Clinging to the recommendations of a poor feasibility study, the supervision missions did not seem to realize that the HCMC PPC clearly favored the Cu Chi site, allowing 5 years to pass before it officially proposed changes in project scope. Finally, the special ADB review mission in May 2005, 5.5 years after RRP approval, concluded correctly that the component should be canceled as the works could not be completed by the proposed closing date of 31 December 2008. There could have been a slight change to save the component, if the supervision mission had realized very early on that the Dong Thanh site was not acceptable, and had proceeded to restructure the project, leading to an all-out effort to complete the necessary reappraisal of the Cu Chi site.

10. **Drainage Component.** Again, the chronology of events reveals the many errors made in implementing the component. In May 2003, 3.5 years after RRP approval, the engineering design for the Hang Bang Canal drainage improvements was completed. International Competitive Bidding (ICB) documents were issued but failed to attract qualified contractors. HCMC suggested the use of the direct selection method in hiring contractors. In April 2006, almost 7 years after RRP approval, ADB informed HCMC that the direct selection method would not be allowed. The reasons for these delays are many, as outlined earlier. Some of them could possibly have been overcome with more intense and more proactive interventions during supervision, but, as was the

case with the solid waste component, the effects of poor feasibility studies and insufficient PMU capacity could not be overcome.

11. **Industrial Component.** This component failed to achieve the expected results, as there were not enough industries willing to participate in the facility. Of the 52 industries in Thu Duc originally targeted, only 13 showed interest and only 3 availed themselves of the revolving funds. The low utilization was caused by insufficient financial capacity of the potential borrowers, the requirement to relocate to the designated zone, and the existence of the HCMC industrial pollution minimization fund, which proved more attractive to the polluting firms. Clearly, the component was not properly prepared.

12. **Project Ratings.** The project received its first “partly satisfactory” rating in June 2003, after almost 4 years of insignificant progress on all components and almost no disbursements. In March 2005, just before the dispatch of the Special Review Mission, the rating was downgraded to “unsatisfactory.” The supervision missions clearly were not candid enough in reporting and assessing project progress and prospects. Given the poor performance of the project from the start, one would have expected an unsatisfactory rating much earlier. Also given the lack of progress in an important project, one would have expected ADB Management to react more quickly and more decisively.

3. Overall: General Lessons to be Learned

13. The failure of this project highlights the need for proper and sufficient preparation as a condition for project success. In this project, project implementation started with poor, unconvincing feasibility studies and insufficient implementation capacity. Spending more time and resources on improving the quality of the feasibility studies—for both major project components—and vetting them with the PPC decision makers and other stakeholders would have delayed appraisal and RRP, but may have made it possible for the project to succeed. Fewer project components may have freed up more time and resources to focus on the key project components, drainage and solid waste.

14. The failure of supervision to fully acknowledge and understand the consequences of the problems regarding technical choices, poor performance of implementation consultants, and insufficient PMU capacity contributed to the demise of the project. Had the supervision mission highlighted these problems early on, restructured the project, and supervised all aspects of implementation forcefully and proactively with the support of ADB Management, the project could have been successful in spite of its unsatisfactory quality-at-entry.

CHRONOLOGY OF EVENTS

Date	Action
7 October 1999	Date of Board approval
29 June 2000	Loan declared effective
January 2001	ADB mission expresses growing concern over slow approval of feasibility studies, resettlement plans, terms of reference for design and supervision consultants, and documentation for recruitment of international and national consultants.
23 April 2001	PMU submitted feasibility study to DPI for approval regarding Landfill 2 at Cu Chi site.
31 August 2001	Prime Minister approves feasibility for Dong Thanh landfill site. At the same time, HCMC People's Committee instructs PMU to review whether Dong Thanh landfill site is the optimal solution in favor of the landfill site at Cu Chi. HCMC People's Committee indicated it would provide all necessary information to ADB for consideration.
14 August 2002	ADB concurs that HCMC People's Committee will conduct a feasibility study for Cu Chi landfill site and that ADB's decision on the relocation will depend on the quality of the feasibility study. Meanwhile, HCMC People's Committee begins construction of Landfill 1 at Cu Chi using its own funds.
18 September 2002	The Government approves HCMC People's Committee's proposal to develop a new landfill at Cu Chi.
January 2003	HOWADICO merges with CITENCO, making CITENCO solely responsible for the SWM component. HCMC People's Committee closes the Dong Thanh landfill site. March 2003 Land acquisition is complete for Landfill 1 at Cu Chi; acquisition for Landfill 2 awaits ADB approval. PMU submits feasibility study of Cu Chi for ADB review and approval
14 April 2003	ADB receives 3rd revision of the feasibility study for Cu Chi landfill site. Additional information on IEE, SIEE, EMP, and resettlement and financial status of CITENCO required for resubmission.
May 2003	Engineering design for Hang Bang Canal drainage improvements completed and ICB bid documents issued but fail to attract qualified contractors.
16 June	Bid clarification on EIA and SIEE requirements for construction of Landfill 2 at Cu Chi to replace the Dong Thanh landfill site.
11 August 2003	PMU requested DPI for feasibility and design adjustment of Hang Bang Canal.
14 August 2003	PMU submits draft resettlement plan for Landfill 2 Cu Chi site to ADB.
9 December 2003	International consultants recruited
June 2003	Project receives "partially satisfactory" rating
July 2004	Engineering designs completed
2–3 August 2004	Resettlement mission is dispatched to assess resettlement issues and clarify that illegal settlers are entitled to compensation. Coordination issues with HCMC People's Committee remained
9 December 2004	ADB mission discusses with PMU and HCMC People's Committee the possibility of restructuring of loan components and initiates steps to (i) propose a major change in project scope to ADB Management, and (ii) extend the loan closing date.
March 2005	Project receives "unsatisfactory" rating
25–27 May 2005	A special review mission was dispatched to resolve disputes between the PMU/EA and NJS consultants. 30 September 2005 ADB letter to vice-chairman of the HCMC People's Committee suggesting the restructuring of the loan and cancellation of the SWM component
8 December 2005	ADB mission, upon discussion with the HCMC People's Committee, propose to extend the loan up to December 2008 to enable project completion, and without the SWM component.
18 April 2006	ADB reminds PMU to comply with procurement guidelines and that the direct selection method to engage contractors will not be allowed as an emergency case for Hang Bang Canal drainage improvement works.
30 June 2006	Original project closing date
13 April 2007	First cancellation of loan of \$37.0 million
18 December 2007	Final disbursement
31 January 2008	Second cancellation and closing of project account

ADB = Asian Development Bank, CITENCO = City Environmental Company, EA = executing agency, EIA = environmental impact assessment, EMP = environment monitoring program, HCMC = Ho Chi Minh City, HOWADICO = HCMC Waste Disposal Company, ICB = international competitive bidding, IEE = initial environmental examination, NJS = Nippon Jogesuido Sekkei, PMU = project management unit, SIEE = summary initial environmental examination, SWM = solid waste management.

^aFrom various project completion reports.

Source: Asian Development Bank sector assistance evaluation team.

MANAGEMENT RESPONSE TO THE SECTOR ASSISTANCE PROGRAM EVALUATION FOR THE URBAN SERVICES AND WATER SUPPLY AND SANITATION SECTOR IN VIET NAM

I. General Comments

1. We appreciate IED's comprehensive Sector Assistance Program Evaluation (SAPE) for the urban services and water supply and sanitation sector in Viet Nam. The SAPE provides a balanced and fair account of the challenges, shortcomings as well as achievements of both the Government of Viet Nam and ADB in the sector. We agree with the SAPE's overall rating of ADB's assistance to the sector as "successful on the low side." We also agree with the assessment that ADB's urban sector strategy has been "partly successful" and that operations program performance has been "successful." The SAPE identified significant challenges in project implementation, particularly the need to (i) harmonize cumbersome procurement procedures; (ii) prepare projects better, including assessing institutional capacity; and (iii) intensify policy dialogue to ensure financial viability of water supply companies. Addressing these issues is consistent with our assessments.

II. Comments on Specific Recommendations and Follow-Up Actions

2. **Recommendation (i): Take appropriate measures to shorten the final design process by strengthening feasibility studies, adopting realistic contingency plans, and increasing supervision.** We agree. ADB is considering alternatives to accelerate final designs. The Government and ADB have agreed that thorough up-front project preparation is critical for project success. The early identification of human capacity constraints, institutional bottlenecks, and major risks can reduce the likelihood of implementation delays. The suggestion that feasibility studies go beyond technical definition of the project to include final designs for at least the first year of the project will have significant implications for project preparation in terms of cost, and requires further consideration. Furthermore, the scope of project preparatory technical assistance (PPTA) focuses on the conceptual design of a project, not its final or detailed design. Preparation of final design as part of the PPTA could delay project preparation by a year or more, especially in Viet Nam where approval of final designs is a complex and often lengthy process.
3. **Recommendation (ii): Develop sector indicators (jointly with Government) for institutional reform and financial performance of water supply companies and urban environment companies by undertaking better business planning, clarifying responsibilities, and establishing separate accounting systems.** We agree. While there has been progress on policy-level dialogue with the Government, difficulties in operations arise when carrying out reforms such as raising tariffs, reducing non-revenue water, and organizational restructuring.¹ Comprehensive corporate and business planning can address limited human resource capacity, improve political commitment, and address approval processes. While we agree with

¹ In 2007, the Government enacted two key legislations for water supply and sanitation (i.e., Decrees 117 and 88), which provide the basis for technical, financial and institutional sustainable development of the sector; to include setting-up autonomous water and wastewater companies, relying on full cost recovery in water supply, and cost recovery in sanitation. The decrees also require the use of a service contract defining the scope and performance of the operation companies, and the tariff.

the use of comprehensive corporate and business planning tools, project preparation provides the key diagnostics for institutional strengthening and capacity building, project implementation allows for development of more specific action plans. Good indicators have been developed based on best practices in the sector, but achieving results requires political and institutional commitment. Continued dialogue is therefore important to enable change beyond the policy level.

4. **Recommendation (iii): Enhance borrower commitment to tariff adjustments needed for financial viability by establishing initial actions as per agreed business plans.** We agree. There should be firm commitment from the borrower during project preparation (specifically before appraisal) to avoid repeating past mistakes. Tariff increases could be set as a condition of appraisal and/or loan effectiveness, but this could delay project preparation. A further challenge is how to ensure that the borrower, and more important, the implementers commit to adjustment and other needed reforms after appraisal. ADB is fully aware of past expectations. Business plans and realistic client-owned targets can help define achievable objectives and build the necessary support.

5. **Recommendation (iv): Facilitate the integration of wastewater (sewer) treatment in future project design to supplement substantial investments in water supply.** We agree. Compared to water supply investments, the level of wastewater investments is indeed low. A major constraint, however, is institutional, where the responsibility for water supply and wastewater treatment services is divided among different companies and jurisdictions. Although there is greater awareness in Government on the need to integrate water supply and wastewater treatment, the legal framework for water supply and wastewater treatment also requires further development. This needs to be addressed in future country and sector programming.

DEVELOPMENT EFFECTIVENESS COMMITTEE

Chair's Summary of the Committee Discussion on 16 September 2009

I. COUNTRY ASSISTANCE PROGRAM EVALUATION FOR VIET NAM

1. DEC recognized ADB's contribution to Viet Nam's success as outlined in the country assistance program evaluation (CAPE) by the Independent Evaluation Department (IED). However, DEC emphasized shortcomings in some areas of ADB's operation in Viet Nam during the period 1999-2008.

Availability of data

2. DEC noted the CAPE's difficulty in updating the values of some of the current CSP's results framework indicators since data were not available. Management representatives (headed by Country Director, Viet Nam Resident Mission) explained that, with the Government of Viet Nam (Government) gradually recognizing the usefulness of disclosure and having officially adopted results framework in the implementation of its 5-year Socio-Economic Development Plan, improvements are being made with assistance from development partners, including ADB, to improve data availability. This would ensure that future evaluation work will be supported with adequate data. One DEC member noted the importance of validating reported development results, and inquired as to whether the resident mission staff is well equipped to address the challenges of working in Viet Nam.

Technical assistance (TA)

3. DEC observed a lack of adequate strategy in ADB's TA operations, including lack of government ownership for TA administration. Management agreed with the CAPE's recommendation to delegate TA administration to executing agencies (EAs) as an appropriate direction to be achieved over medium-term. For the immediate future, Management cited the experience of a previous pilot activity where a similar delegation was unsuccessful and had led to implementation delays and governance concerns. DEC and Management agreed that delegation requires appropriate capacity building efforts. IED emphasized that strengthening country ownership is important for Viet Nam's development as a middle-income country.

Reforms of state-owned enterprises (SOEs)

4. DEC noted some weaknesses in ADB's programs for SOE reforms including lack of direct follow-up on ADB's work on the reforms, failure to achieve nontranche conditions relating to SOE equitization, and having some invalid assumptions in program design. Management stated that new initiatives will be undertaken to focus on improving the efficiency and corporate governance of SOEs. In reforming SOEs, transfer of ownership should be considered as means rather than an objective, and corporate and financial restructuring will also help transfer of ownership.

Disbursement

5. DEC noted project implementation delays due to slow disbursement procedures and inadequate capacity. DEC emphasized that although delays did not have cost overruns, there

were time overruns that affect the overall effectiveness of the projects. Management acknowledged such a shortcoming and noted how government's internal procedures slowed down the process. Management agreed that it is necessary to accelerate project implementation, and mentioned the ongoing efforts between the "6 Banks group" and the Government's Inter-Ministerial Taskforce on ODA Management. Although major efforts are being made, improvements may be seen only in the medium-term as necessary reforms also require a number of procedural changes in the Government system that will take time.

Anticorruption

6. DEC expressed concern over ADB's lack of engagement with other development partners in the anticorruption dialogue and meetings. DEC emphasized the need to combat corruption as part of the long-term strategic framework, and noted that ADB has made only a few interventions addressing corruption issues. One DEC member noted the lack of capacity in this subsector within ADB headquarters. Management explained that ADB has been very active in supporting the Government in anticorruption initiatives, but there can be some misgivings on the part of some development partners as ADB has not been attending some of the anticorruption-related meetings that tend to approach the issue from the human rights-related aspects. ADB's involvement in anticorruption matters includes capacity-building in anticorruption and incorporating anticorruption measures in project designs. ADB also has assisted the incorporation of "code of conduct" provisions in the enactment of the new Civil Service Law.

Quality of consultants

7. DEC noted the CAPE finding on the uneven quality of consultants. Management explained that the uneven quality of consultants had arisen due to changes in government expectations without consultation with ADB. The terms of reference of consultants cannot be revised immediately without formal agreement and it was indeed necessary to have closer communication and improved coordination between ADB and EAs.

Conclusions

8. DEC expressed satisfaction with the good performance of Viet Nam and with ADB's contribution to this successful performance.

9. DEC noted that there is scope for further improvement in reducing implementation delays by aligning ADB's system to the country system, ensuring sustainability of ADB-supported projects through better focus on establishing appropriate systems to ensure the availability of necessary financial resources for maintenance purposes, and more, but perhaps gradual, delegation of TA governance to the Government.

10. DEC emphasized the importance of ensuring that data required for monitoring the results framework are available for carrying out evaluation work. Results framework should not be presented without an explicit assurance that the data would be available by the time results are to be monitored.

11. DEC underscored the importance of capacity development for managing the transition of Viet Nam from a formerly-planned economy to, not only a market-based economy, but to a middle-income country status in the near future. DEC also underscored the importance of capacity development for dynamic SOE reforms.

12. DEC saw scope for improving the perception by bilateral agencies and other donors on the emphasis that ADB attaches to its anti-corruption mission.

II. SECTOR ASSISTANCE PROGRAM EVALUATIONS

13. DEC discussed IED's evaluation of ADB's assistance programs to the transport, and urban services and water supply and sanitation sectors in Viet Nam.

A. Transport Sector in Viet Nam

14. DEC expressed concern on inadequate post-completion data, as IED emphasized that weak post-completion data hampers monitoring of sustainability of ADB operations.

15. DEC also expressed concern on the absence of floor price in bidding documents which may result in underbidding and unfair competition for private sector, and indirect subsidy by the government for contracts with equitized SOEs. IED emphasized that ideally organizations participating in bidding should be genuinely private organizations, but the private sector is currently crowded out and has not developed as a result of the domination of equitized SOEs in large construction contracts.

16. Management noted that there has not been any underbidding in recent years. Efforts have been made to introduce more market-based principles in the bidding system of the country, not just limited to ADB-financed projects.

17. DEC emphasized the importance of commitment to project maintenance. One DEC member noted that close coordination with development partners improves project sustainability by gaining government commitment to maintenance funding. Another DEC member suggested utilizing staff resources of Private Sector Operations Department, as well as entering into public-private partnerships.

18. Management acknowledged the importance of maintenance for greater sustainability. However, the issue to be recognized is the establishment of appropriate systems, since key parts of the problem results from the ongoing process of decentralization of project responsibilities from the central to the local level, and the associated assignment of necessary budget. A DEC member mentioned how the Board Group visit in Viet Nam noted that earlier ADB-assisted infrastructure projects appeared to be appropriately maintained, and so the focus should be in establishing a new system for O&M budget allocation in the context of decentralization. Given this scenario, ADB has taken various initiatives to support this area through capacity building efforts.

B. Urban Services and Water Supply and Sanitation Sector in Viet Nam

19. DEC again expressed concern on the lack of baseline data to assess impact of water supply improvement on public health. Management committed to establishing a mechanism to address this shortcoming.

20. DEC noted the recurring issue of implementation delays, and referred to IED's recommendation to shorten the final design process. Management cited the need to address the complex and often lengthy process of approval of final designs in Viet Nam. The government is aware of this problem and there are ongoing dialogues between the government and various development partners to address the problem. IED remained firm that detailed planning at project preparatory assistance stage would address the problem and would not have any implication on the total cost of a project. Management noted the need to consider possible reforms in the context of the Government's internal approval processes, since the issue is not just a matter PPTA design but its alignment with the Government procedures

21. DEC supported IED's recommendation to integrate wastewater treatment in future project design to supplement substantial investments in water supply. Management noted that in Viet Nam, different agencies handle the wastewater treatment projects, and integration of the two sub-sectors has not been looked at.

Conclusions

22. DEC noted with satisfaction ADB's contribution to the two sectors on the dynamic economy of Viet Nam. However, DEC saw considerable scope for improvement in reducing long implementation periods, including delays in planned time span which resulted in dissonance between disbursed and approved amounts.

23. DEC noted the need to address the issue regarding possible underbidding in projects resulting in either a threat of contract renegotiation at a later date and/or implicit government subsidy when underbidding involved an SOE. Management intends to address the issue both through the reforms in the public procurement system in Viet Nam and through the interventions in the SOE reforms.

24. DEC emphasized the importance of focusing on sustainability of projects through proper maintenance, including adequate financing and capacity building for maintenance.

25. DEC urged Management to consider the inclusion of preliminary design during the first year at the PPTA stage itself. Without any additional cost implications, by reducing the implementation delays, it would result in considerable welfare gain for DMCs. Current system with PPTA covering pre-feasibility and loan financing of detailed design was noted, and efforts will be continued to synchronize better the relevant Government actions and the areas that can be supported by PPTA and loan financed consultants.

Ashok K. Lahiri
Chair, Development Effectiveness Committee