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IMPLEMENTATION COMPLETION AND RESULTS REPORT
(LOAN IBRD-42920)

ON A

LOAN

IN THE AMOUNT OF US\$150 MILLION

(RESTRUCTURED AMOUNT US\$ 25 MILLION)

TO THE

FEDERATIVE REPUBLIC OF BRAZIL

FOR THE

SECOND WATER SECTOR MODERNIZATION PROJECT - PMSS II

April 30, 2009

Sustainable Development Department
Brazil Country Unit Department
Latin America and the Caribbean Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective March 18, 2009)

Currency Unit	=	Reais (R\$)
R\$ 2.30	=	US\$ 1.00
US\$ 0.43	=	R\$ 1.00

FISCAL YEAR

January 1 to December 31

ABBREVIATIONS AND ACRONYMS

BNDES	<i>Banco Nacional de Desenvolvimento Econômico e Social</i> – National Bank for Economic and Social Development
AGESPISA	Piauí State WSS utility
CAIXA	<i>Caixa Econômica Federal</i>
CAS	Country Assistance Strategy
CAERN	Rio Grande do Norte State WSS utility
CPS	Country Partnership Strategy
EA	Environmental Assessment
COMPESA	Pernambuco State WSS utility
GoB	Federal Government of the Federative Republic of Brazil
IBRD	International Bank for Reconstruction and Development
ICB	International Competitive Bidding
ICR	Implementation Completion and Results Report
IDB	Inter-American Development Bank
IPEA	<i>Instituto de Pesquisa Econômica Aplicada</i> - Institute for Applied Economic Research
LRF	<i>Lei da Responsabilidade Fiscal</i> - Fiscal Responsibility Law
MDG	Millennium Development Goals
MoC	Ministry of Cities
MOF	Ministry of Finance
MTR	Mid Term Review
M&E	Monitoring and Evaluation
N, NE & CW	North, Northeast and Center-West
NGO	Non-Government Organization
OECD	Overseas Economic Cooperation Fund
PAC	Program for the Acceleration of Growth
PAD	Project Appraisal Document
PDO	Project Development Objective
PLANASA	<i>Plano Nacional de Saneamento</i> - National Water Supply & Sanitation Program
PMSS	<i>Projeto de Modernização do Setor de Saneamento</i> - Water Sector Modernization Project
PMU	Project Management Unit
PSP	Private Sector Participation
PPAR	Project Performance Assessment Report
RECESA	National Training Network
SEURB	<i>Secretaria de Política Urbana</i> - Secretariat for Urban Policy
SEDU/PR	<i>Special Secretaria Especial de Desenvolvimento Urbano da Presidência</i> - Secretariat for Urban Development of the President's Office
SNSA	National Secretariat for Water Supply and Sanitation

SNIS	National Water and Sanitation Information System
<i>SFC</i>	<i>Secretaria Federal de Controle</i> – Federal Control Secretariat
TA	Technical Assistance
TOR	Terms of Reference
UFW	Unaccounted for Water
UGP	<i>Unidade de Gestão do Projeto</i> - Project Management Unit
UNDP	United Nations Development Program
WRM	Water Resources Management
WSS	Water Supply and Sanitation

Vice President:	Pamela Cox
Country Director:	Makhtar Diop
Sector Manager:	Guang Zhe Chen
Project Team Leader:	Carlos Velez
ICR Team Leader:	Patricia Lopez

FEDERATIVE REPUBLIC OF BRAZIL

SECOND WATER SECTOR MODERNIZATION PROJECT - PMSS II

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A. Basic Information			
Country:	Brazil	Project Name:	Brazil – Second Water Sector Modernization Project
Project ID:	P043420	L/C/TF Number(s):	IBRD-42920
ICR Date:	02/18/2009	ICR Type:	Core ICR
Lending Instrument:	SIL	Borrower:	Federative Republic of Brazil
Original Total Commitment:	US\$ 150.0 million	Disbursed Amount ¹ :	US\$ 25 million
¹ The Project was restructured in 2002 as a Technical Assistance project for US\$ 25 million . Therefore the disbursed amount is the full amount of the Loan			
Environmental Category: A			
Implementing Agencies: Secretaria Nacional de Saneamento Ambiental			
Co-financiers and Other External Partners: NA			

B. Key Dates				
Process	Date	Process	Original Date	Revised / Actual Date(s)
Concept Review:	11/21/1996	Effectiveness:	09/16/1999	09/16/1999
Appraisal:	04/22/1997	Restructuring(s):	12//12/2002	12/12/2002
Approval:	03/05/1998	Mid-term Review:	05/16/2005	05/16/2005
		Closing:	06/30/2004	10/31/2008

C. Ratings Summary			
C.1 Performance Rating by ICR			
Outcomes:	Satisfactory		
Risk to Development Outcome:	Negligible to Low		
Bank Performance:	Satisfactory		
Borrower Performance:	Satisfactory		
C.2 Detailed Ratings of Bank and Borrower Performance (by ICR)			
Bank	Ratings	Borrower	Ratings
Quality at Entry:	Moderately Satisfactory	Government:	Moderately Satisfactory
Quality of Supervision:	Satisfactory	Implementing Agency/Agencies:	Satisfactory

Overall Bank Performance:	Satisfactory	Overall Borrower Performance:	Satisfactory
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C.3 Quality at Entry and Implementation Performance Indicators

Implementation Performance	Indicators	QAG Assessments (if any)	Rating
Potential Problem Project at any time (Yes/No):	No	Quality at Entry (QEA):	Satisfactory
Problem Project at any time (Yes/No):	Yes	Quality of Supervision (QSA):	None
DO rating before Closing/Inactive status:	Satisfactory		

D. Sector and Theme Codes

	Original	Actual
Sector Code (as % of total Bank financing)		
Central government administration	8	65
Sewerage	53	0
Sub-national government administration	3	35
Water supply	36	0
Theme Code (Primary/Secondary)		
Decentralization	Primary	Primary
Other financial and private sector development	Primary	Primary
Other urban development	Primary	Secondary
Pollution management and environmental health	Primary	Secondary
Regulation and competition policy	Primary	Primary

E. Bank Staff

Positions	At ICR	At Approval
Vice President:	Pamela Cox	David de Ferranti
Country Director:	Makhtar Diop	Gobind T. Nankani
Sector Manager:	Guang Zhe Chen	Abel Mejia
Project Team Leader:	Carlos E. Velez	Carlos E. Velez
ICR Team Leader:	Patricia Lopez	

F. Results Framework Analysis

Project Development Objectives (from Project Appraisal Document)

1. Strengthen regulation, increase private sector participation (PSP) in investment and management, and improve the overall efficiency of Brazil's water supply and sewerage sector.
2. Within the North, Northeast and Center-West (N, NE and CW) regions increase the coverage levels of water supply and sewage collection and treatment services of participating utilities.
3. Within the North, Northeast and Center-West regions, improve the quality of water bodies located in states and municipalities served by participating utilities.

Revised Project Development Objectives (as approved by original approving authority)

1. To improve the overall efficiency of the water sector by, in particular, strengthening sector regulations and increasing private sector participation in the investment and management of the sector.

(a) PDO Indicator(s)

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Indicator 1 :	States and municipalities with new legal and regulatory frameworks approved by the legislative			
Value quantitative or Qualitative)	0	At least 10 states and 4 municipalities	At least 12 states and 6 municipalities	15 states and 35 municipalities
Date achieved	12/31/1997	03/06/1998	05/16/2005	10/31/2008
Indicator 2 :	People in the N, NE and CW regions receiving WSS services from private sector operators (under concessions, affermage, management or BOT/BOOT contracts)			
Value quantitative or Qualitative)	0.2 million with water supply and sewerage services	At least 2 million people	At least 3 million people	3.8 million
Date achieved	12/31/1997	03/06/1998	05/16/2005	10/31/2008

G. Ratings of Project Performance in ISRs

No.	Date ISR Archived	DO	IP	Actual Disbursements (USD millions)
1	06/25/1998	Satisfactory	Satisfactory	0.00
2	12/23/1998	Satisfactory	Satisfactory	0.00
3	06/21/1999	Satisfactory	Satisfactory	0.00
4	11/19/1999	Satisfactory	Satisfactory	0.00
5	06/28/2000	Satisfactory	Satisfactory	1.71
6	08/15/2000	Satisfactory	Satisfactory	1.71
7	03/22/2001	Unsatisfactory	Unsatisfactory	1.71
8	10/09/2001	Unsatisfactory	Unsatisfactory	2.14
9	05/02/2002	Unsatisfactory	Unsatisfactory	3.01
10	06/26/2002	Satisfactory	Satisfactory	3.01
11	12/05/2002	Satisfactory	Satisfactory	3.70
12	06/04/2003	Satisfactory	Satisfactory	3.70
13	12/05/2003	Satisfactory	Satisfactory	4.14
14	06/04/2004	Satisfactory	Satisfactory	4.36
15	06/23/2004	Satisfactory	Satisfactory	5.67
16	12/02/2004	Satisfactory	Satisfactory	5.67
17	04/07/2005	Satisfactory	Satisfactory	5.67
18	06/13/2005	Satisfactory	Satisfactory	5.67
19	05/12/2006	Satisfactory	Satisfactory	5.67
20	12/21/2006	Satisfactory	Satisfactory	9.93
21	05/05/2007	Highly Satisfactory	Satisfactory	11.96
22	12/10/2007	Satisfactory	Satisfactory	16.40
23	06/05/2008	Satisfactory	Satisfactory	20.07
24	10/29/2008	Satisfactory	Satisfactory	23.36

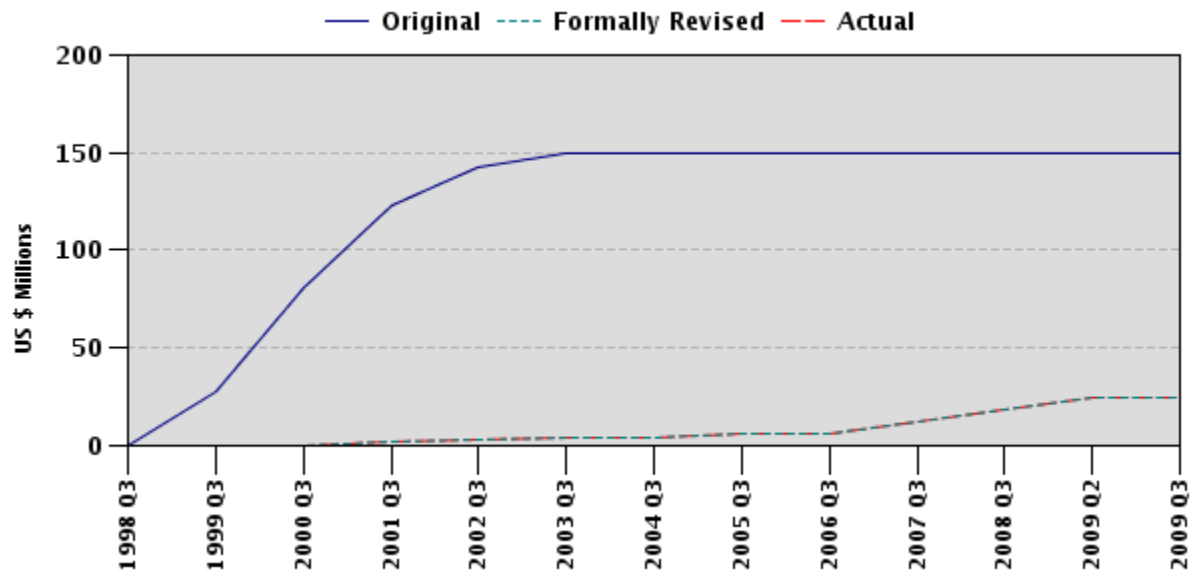
Note: The full loan amount of US\$25 million was disbursed by the end of the grace period following Project closure, i.e., February 2009.

H. Restructuring (if any)

Restructuring Date(s)	Board Approved PDO Change	ISR Ratings at Restructuring		Amount Disbursed at Restructuring in USD millions	Reason for Restructuring & Key Changes Made
		DO	IP		
12/12/2002	To improve the overall efficiency of the Borrower's water sector by, in particular,	S	S	3.70	The original project approved by the Board called for the on-lending of loan proceeds from the federal Government to sub-nationals. After Loan 4292-BR became effective, Brazil passed the Fiscal

Restructuring Date(s)	Board Approved PDO Change	ISR Ratings at Restructuring		Amount Disbursed at Restructuring in USD millions	Reason for Restructuring & Key Changes Made
		DO	IP		
	strengthening sector regulations and increasing private sector participation in the investment and management of the sector				<p>Responsibility Law in 2000, which severely restricted lending by federal authorities to lower tiers of government.</p> <p>As a result, a restructuring of the Project was agreed and approved by the Board in December 2002. The restructuring included:</p> <ul style="list-style-type: none"> (i) Amendment and reduction of Loan 4292 to US\$25 million for a technical assistance project to be implemented by the Federal Government; (ii) Approval of two additional Loans (one for CAIXA and one for BNDES for US\$75 million and US\$30 million respectively) to implement the investment components; (iii) Extending the closing date for all Loans to October 2007. <p>This ICR refers to Loan 4292, with the reduced amount of US\$ 25 million.</p>

I. Disbursement Profile



1. Project Context, Development Objectives and Design

1.1 Context at Appraisal

1. In 1997, at the time of appraisal, the water supply and sanitation sector (WSS) in Brazil was characterized by a lack of regulation and an unclear allocation of regulatory functions and responsibilities among the federal, state and municipal governments, unequal coverage rates, poor sector performance, low service and high water pollution rates. The legal ambiguity has been a permanent cause of political uncertainty and immobility in the sector's development in Brazil. By 1998, the lack of a well defined regulatory and institutional framework meant that political interference dominated crucial issues such as management, tariff setting and capital expenditure. More detail on these issues and how the original project design hoped to address them can be found in Annex 3.

2. The strategy of the Federal Government of the Federative Republic of Brazil (GoB) at the time of Appraisal, laid out in its **National Water Supply and Sanitation Policy**, sought to expand the provision of WSS services to Brazil's entire population and to improve service delivery efficiency by encouraging a more competitive and better regulated environment. The separation of competencies between the concession-granting authority and the service providers, as well as the promotion of different decentralized alternatives for service provision, were key elements of this strategy. The Bank's 1997 Country Assistance Strategy (CAS) to Brazil supported the implementation of the GoB's WSS Strategy. In turn, the Water Sector Modernization Project II (PMSS II), in its original design, aimed to support two objectives of the CAS: (i) the reform of Brazil's water WSS sector; and (ii) the reduction of poverty and inequity by improving the health conditions and quality of life of poor urban populations and regions (N, NE and CW).

3. The 1997 Asian crisis and the 1998 Russian crisis ultimately affected the Latin-American region at the end of the decade. Brazil was particularly hard hit and the government was forced to adopt a floating exchange rate regime and tighten fiscal policies considerably. These efforts were supported by an international financial package led by the International Monetary Fund (IMF), which included financing from the Bank and the Inter-American Development Bank (IDB). As result of the fiscal crisis and after the PMSS II Project (Loan 4292-BR) became effective in September 1999, Brazil passed the *Lei de Responsabilidade Fiscal*¹ (LRF, Fiscal Responsibility Law) which severely restricted lending by federal authorities to lower tiers of government. Though the Ministry of Finance (MoF) agreed that the Bank's Loan Agreement itself predated the LRF, it argued that the on-lending arrangements to state and municipal water companies contemplated by the project would come into effect after passage of the LRF and could therefore not be grandfathered.

4. After protracted discussions between the Bank and the Brazilian authorities and within the GoB, the MoF proposed restructuring the project (in particular the on-lending arrangements) to prevent precedents that could undermine the GoB's commitment to fiscal austerity. The

¹ LRF, Lei Complementar No. 101 of May 4, 2000

solution finally agreed with the MoF and the sector authorities and approved by the Board entailed:

- i) Reducing Loan 4292 to US\$25 million (through the cancellation of US\$125 million) and amending the Loan Agreement to eliminate project components that involved on-lending to sub-nationals. The Loan would thus be used by the Borrower, the GoB, as a technical assistance (TA) project which would not negatively impinge on the LRF;
- ii) Preparing two new Bank loans to the public sector banks *Caixa Econômica Federal* (CAIXA)² for US\$75 million to on-lend to public utilities and to *Banco Nacional de Desenvolvimento Econômico e Social* (BNDES³) for US\$30 million to on-lend to private operators;
- iii) Establish 31, 2007 as the new closing date for all Loans.

5. The PMSS II built on the first Bank-financed Water Sector Modernization project that had supported a first phase of the GoB's National Sector Modernization Program (*Programa de Modernização do Setor de Saneamento* - PMSS). The program was created by GoB in 1993 and has since become a permanent vehicle of support to the federal entity in charge of WSS, currently the National Secretariat for Water Supply and Sanitation (SNSA) in the Ministry of Cities. The program and the two Bank-financed projects designed to support it are widely known in Brazil as PMSS, so this document uses this acronym to refer to it.

1.2 Original Project Development Objectives (PDO) and Key Indicators

6. The following are the original PDO and key performance indicators as contained in the Project Appraisal Document (PAD) and approved by the Board on February 1998. See Section 3 and Annex 2 for a more detailed discussion on outcomes/outputs and indicators.

Project Development Objective	Key Indicator
Strengthen regulation, increase private sector participation in investment and management, and improve the overall efficiency of Brazil's water supply and sewerage sector	Number of states and municipalities with new legal and regulatory frameworks approved by the legislature. Number of people in the N, NE & CW receiving WSS services from private sector operators (under concessions, affermage, management or BOT/BOOT contracts).
Within the N, NE and CW regions increase the coverage levels of water supply and sewage collection and treatment services of participating utilities	Additional number of households in project areas receiving water supply and sewerage services.

² The new CAIXA Loan for US\$75 million was approved in the same Board session as the restructuring

³ The negotiations for the new BNDES loan experienced further difficulties (including disagreement over the application of Bank safeguard policies to the operation), and the new BNDES authorities did not authorize the presentation of the loan to the Bank Board

Project Development Objective	Key Indicator
Within the N, NE and CW regions, improve the quality of water bodies located in states and municipalities served by participating utilities	Additional volume of sewage collected and treated in project areas.

1.3 Revised PDO (as approved by original approving authority) and Key Indicators, and reasons/justification

Project Development Objective ⁴	Key Indicator
To improve the overall efficiency of the Borrower's water sector by, in particular, strengthening sector regulations and increasing private sector participation in the investment and management of the sector	<p>Number of states and municipalities with new legal and regulatory frameworks approved by the legislative.</p> <p>Number of people in the N, NE & CW receiving WSS services from private sector operators (under concessions, affermage, management or BOT/BOOT contracts).</p>

1.4 Main Beneficiaries

7. Direct project beneficiaries after the restructuring of the project were the federal, state and municipal governments and utilities (state and municipal, private and public) benefiting from TA for regulatory and institutional development and reform of the WSS services throughout Brazil.

1.5 Original Components

8. The original design anticipated four components: (i) Management & Promotion (cost estimated at around US\$7 million) to finance the management costs of the project at the federal level and the promotion and dissemination of project experiences; (ii) Water Sector Institutional and Regulatory Reform (cost estimated at around US\$22 million) to fund TA related to establishing sector regulatory frameworks and undertaking institutional transformation; (iii) Operational Development (cost estimated at US\$63.5 million) for the development and implementation of unaccounted-for-water control subprojects and other small but profitable operational, financial and administrative actions, in water utilities within the project area with minimal levels of operational and financial efficiency and committed to reform; and (iv) Investment (estimated cost of US\$165.7 million) to finance the expansion, upgrading and revamping of water supply and sewerage systems of utilities, within the N, NE and CW regions of Brazil.

1.6 Revised Components

9. At the time of project restructuring components 3 and 4 were removed from the original project scope (becoming the proposed stand-alone CAIXA and BNDES projects) and PMSS II's focus shifted to supporting the sector reform efforts, with two TA components: (i) Management & Promotion (estimated at US\$ 3 million); and (ii) Institutional and Regulatory Reform

⁴ As reflected in Loan Agreement Amendment Letter signed on August 2003. Key indicators for reformulated PDO are understood to have remained from the original Board approved PAD

(estimated at US\$ 22 million), funding the TA supporting institutional development and regulatory activities. The restructured project was thus designed to work at the federal, state/municipal and utility level to fund a wide range of activities: formulation and implementation of national policies for the WSS, elaboration of the legal and regulatory frameworks for the provision of WSS (including the preparation and implementation of draft laws, regulations, guidelines, general procedures, parameters, and standards), undertaking relevant sector studies and analytical work, supporting private sector participation processes as well as the development and implementation of sector information systems, knowledge sharing and dissemination activities, supporting strategic planning and utility restructuring, capacity building and training.

1.7 Other Significant Changes

10. The restructuring of the Project basically meant the shifting of CAIXA and BNDES from implementing agencies, under the original loan, to Borrowers, backed by a Guarantee Agreement from the GoB, to implement the investment components contemplated under the original project design. After a long process of negotiation with both entities concerning the preparation of the new loans,⁵ BNDES did not authorize its presentation to the Bank Board. The CAIXA loan was approved with the restructuring, but did not become effective within the eighteen month timeframe given at approval, following which the Bank decided to remove it from the portfolio.⁶ Considering the non materialization of the CAIXA and BNDES loans, the restructuring meant a significant change from the Project's original design, scope and scale. The PMSS II project was now a relatively modest in size (compared to the large sector needs) TA project no longer embedded in a large-scale investment operation.

11. At the time of appraisal it was envisaged that project management, promotion and coordination would be executed by the Project Management Unit/*Unidade de Gestão do Programa* (PMU/UGP) of the predecessor PMSS I, reporting to the Ministry of Planning and Budget through the Secretariat for Urban Policy (SEPURB) and the Institute for Applied Economic Research (IPEA). Following the standard practice in the country at the time for projects subject to external financing, UNDP was hired as a fiduciary agent⁷, a role that they had successfully undertaken in a number of projects, including PMSS I. To avoid creating a large structure, the PMU was to rely on the outsourcing of specific tasks to qualified consultants (individuals and consulting firms, as needed) to assist in the definition, implementation and supervision of subprojects as well as to carry out studies, etc. At the time of approval, SEPURB was the entity responsible for providing the national policy framework for WSS sector development. This responsibility was later assigned to the Secretariat for Urban Development of the President's Office (SEDU/PR) and then with the inauguration of the Lula Administration in 2003, it was transferred to the SNSA in the newly created MoC. Each change in the federal

⁵ Which coincided with a change of Federal Administration and the consequent changes to the heads of these two public banks

⁶ The CAIXA authorities requested to sign the loan on the last day of the 18 month period, at which point the RVP decided the Bank should no longer proceed with the signing.

⁷ UNDP's role diminished as the Government strategy gradually shifted towards a decentralized approach that fostered strengthened public service capabilities. Increasingly, projects were managed either by in-house staff (civil servants) or outsourced to the private sector

entity in charge of sector and project oversight brought about changes in the strategy for project implementation, causing delays and affecting the rhythm of implementation. The PMU itself remained relatively stable (the unit had only 2 coordinators in the ten-year project implementation period).

12. The Loan Amendment dated August 1, 2003 changed the closing date of the project to October 31, 2007. In August 2007, it was extended by an additional twelve months at the request of the GoB, to enable finalization of ongoing activities.

2. Key Factors Affecting Implementation and Outcomes

2.1 Project Preparation, Design and Quality at Entry

13. **Incorporation of Lessons Learned:** Project preparation for PMSS II built on lessons learned from the first Bank-financed PMSS and other country and global experiences⁸. The project made specific strategic choices at the time of design, such as limiting the scope of investments to the N, NE & CW regions in order to target federal investment efforts to the poorer and less developed areas of the country. This specific design would avoid dispersion of the loan (US\$150 million for nineteen states when compared to the previous much larger loan of US\$250 million), and plenty of preparatory work had been done before approval. As a result, the project was front-loaded with a significant pipeline of subprojects. Procurement planning was a priority during project preparation. Bidding documents were ready for a large part of the investments, including all sub-projects planned to start in the first year of implementation.

14. **Risks and Mitigations:** The risks presented in the PAD and their corresponding mitigation measures were reasonably well defined and proved to be relevant. Borrower commitment to sector reform was assessed by its efforts to separate sector operation and regulation and to bring innovative approaches to the institutional reform of the sector⁹. In addition, there was strong demand from sub-national entities for a follow-up project, reducing the risk of lack of ownership at the local level. A turn of events and risks that could not be foreseen at design were: (i) the impending fiscal crisis that eventually led to the passing of the LRF with its paralyzing effect on the operation given the on-lending arrangements; (ii) the subsequent shift of focus of the GoB and Bank assistance to fiscal and financial reforms – supported by several adjustment loans from the Bank – and TA away from the investment lending that was proposed under the CAIXA and BNDES loans¹⁰; (iii) the difficulties in first reaching an agreement regarding the restructuring of the original Loan (including the negotiations of the loans with CAIXA and BNDES) and then approving and signing the

⁸ These lessons learned were particularly relevant in the design of the original project with its large investment components

⁹ Government had financed every request from local governments to study, define and implement independent water regulatory agencies in their political jurisdictions, and had supported the sub-national governments seeking to define institutional models for improved performance (e.g., to state governments participating in reform-privatization Projects).

amendment; (iv) the changes in public sector institutions, sector counterparts, policies and strategies brought about by the taking of office of the Lula Administration in 2003; and (v) the impact of all these factors on project implementation arrangements, focus and schedule, and, more importantly, the pace at which sector reform could happen.

2.2 Implementation

15. Project implementation followed an uneven course. First, after approval, loan signature and project effectiveness were delayed for over 15 months¹¹. Then, the delay in making a final decision regarding the viability of the original institutional and on-lending arrangements (2000-2002), and the negotiation of the solution, including the two new loans with CAIXA and BNDES¹², meant that project implementation was effectively on stand-by for almost five years, as the project strove to solve the different emerging obstacles. At the time of project restructuring only US\$3.7 million of the Bank loan had been disbursed. Finally, the MoF/Treasury put forward the solution for the restructuring agreed with the Bank, whose approval coincided with the change of government in 2002/2003.

16. The beginning of the new Lula administration in January 2003 marked a significant shift in GoB policies and strategies in the WSS sector as well as in the overall public administration apparatus and institutional framework. The natural adjustment lags of a transition period were further impeded by differing views over the focus to be given to private sector participation in the WSS sector. The increased PSP as a main goal of the project became increasingly dissonant with the changing policy environment in GoB and played a role in contributing to the perception of the Bank as part of a “Washington consensus” promoting a privatization agenda, and undermining the new GoB’s broad institutional support for the project.¹³

17. In the period that followed the restructuring, disbursements were further impeded by other factors that affected other Bank projects in Brazil in the portfolio: (i) the “*contingenciamento*”¹⁴ of all federal programs included in Brazil’s general budget; (ii) internal delays in UNDP to process procurement requests due to difficulties arising with the introduction of SAP (System Application and Production) and the extinction of the project implementing unit

¹¹ Political uncertainty on the direction that the Brazilian WSS sector could take after the 1998 presidential election and former Japanese OECF (now JBIC) formal commitment to co-financing the Project account for this delayed effectiveness. As originally designed in 1998, OECF was specifically identified as the source of US\$105 million of the project’s overall US\$150 million in counterpart financing and the loan should become effective by December 1998 or otherwise the Bank loan would be suspended (unless adequate funds from other sources are made available for the project by the Borrower). However, meanwhile, as reported in ISRs of this initial period, progress was being made in the preparation of subprojects to be financed under the loan. At the time of the restructuring, the MOP to the Board talks about US\$14 million of works already tendered and awarded in the state of Ceara and US\$ 20 million earmarked in the state of Bahia.

¹² The key reason for this delay was a lack of common understanding and agreement within key GoB entities as to how the new LRF would be applied to the case of the PMSS II.

¹³ This difference of approach was so pronounced that the GoB’s WSS strategy of the period included the proposed elimination of the participation of IFIs in the financing of the sector

¹⁴ Perennial budget freezing

in the Brazilian Agency for Cooperation within the Foreign Relations Ministry¹⁵ (the entity that previously assisted UNDP in processing requests from all UNDP-executed projects); and (iii) amendment of the Technical Cooperation Agreement between GoB and UNDP to support the project as financial management agent, including an increase in the fees charged by the entity from 3 percent to 5 percent. The project Audit Report of March 2005 from the *Secretaria Federal de Controle* (SFC – Federal Control Secretariat) recognized this situation, indicating that delays at this level were seriously affecting project implementation. By the time of the Mid Term Review (MTR) in May 2005, project disbursements stood at US\$5.7 million.

18. Given the slow disbursements and poor project implementation track-record, the Bank proposed a cancellation of the remaining undisbursed balance (US\$19.3 million) at MTR. GoB firmly refused any suggestion by the Bank of canceling loan proceeds and the SNSA confirmed that the project was a priority given its potential to impact on sector policy dialogue and support to the reform at the federal, state and local levels. As a demonstration of this commitment, the MoF authorized a MoC to allocate additional counterpart funds to the project. By MTR, the number of planned activities had increased and target values for the PDO indicators had been reached, even though these results were not adequately reflected in Bank disbursement figures. (as Bank funds are not additional to the budget of the sectoral ministries, counterpart funds are usually spent before Bank loans are drawn-down).

19. The Bank's gamble in allowing the project to continue without any partial cancellation paid off: from the MTR in 2005 to closure in October 2008, the project enjoyed institutional stability and strong support from the GoB, sector stakeholders and civil society, as well as from the direct project beneficiaries and participants. Moreover, it managed to achieve a steady and agile implementation rhythm. By project closing, the full amount of the loan had been committed. After the end of the grace period, the project had disbursed the full amount of the loan and considerably exceeded the agreed financial counterpart financing (see Annex 2 for detail). The ratings in the implementation status reports were consistent overall with the progress made¹⁶ towards achieving the project objectives.

2.3 Monitoring and Evaluation (M&E) Design, Implementation and Utilization

20. **M&E Design:** The project's M&E framework was designed before the Bank initiated a more robust approach to results monitoring. However, the original PAD M&E framework was fairly consistent in terms of allowing a monitoring of progress towards achieving the PDOs and

¹⁵ In Portuguese, Unidade de Administração de Projetos de Agencia Brasileira de Cooperação do Ministério das Relações Exteriores

¹⁶ During the first two years, the Implementation Status and Result (ISR) rating was satisfactory since, despite the slow disbursements, the project was on track towards achieving its development objectives (the Memorandum of the President (MOP) to the Board on the restructuring mentions a pipeline of investments in states valued at US\$20 million). In the period 2000-2002, while the Project was awaiting a solution to the on-lending impasse through a suitable restructuring agreement, the ratings dropped to unsatisfactory. From the restructuring, the outcome achievement has been rated satisfactory except in one ISR which rated it as highly satisfactory, in recognition of the project achievements and outstanding performance in the specific period (first semester of 2007).

outcomes as defined. The main issues with the project M&E framework are the following:

- The reformulated PDO was the overall improvement of sector efficiency through increased PSP and regulation. Although this hierarchy of objectives is reasonable and the linkages between efficiency, PSP and strengthened regulation are well documented, the exact relationship between them (and thus of the indicators and PDO as reformulated) from the project's M&E framework can only be inferred.
- The reformulated PDO and M&E framework present a methodological issue which is common to TA Loans. It is very difficult that increased efficiency at an overall sector level can be met by a TA Loan on its own (though indeed most TA projects supporting reforms aim to contribute to this high-level goal). With hindsight, the project could have used the restructuring (and to an extent the MTR, though this would have required a second formal restructuring) as an opportunity to re-write the PDO and indicators to bring them more in line with what a TA Loan could reasonably achieve. The MTR took the opportunity to define a new set of indicators to monitor achievement of intermediate outcomes/outputs, reflecting the renewed project focus. While this provided a framework to assess progress in project outputs, the difficulty of establishing causal links between them and the PDO of increased overall sector efficiency, and measuring the exact project contribution to this goal, remained.
- With hindsight, the PDO was formulated at a time when PSP-oriented reform was considered the main tool for improving utility performance and sector reform. At that time, many projects in the WSS sector also included PSP as a development objective. However, new problems emerged with this global approach, such as how to address services for the poor, regulatory difficulties within a PSP context and how to work towards efficiency gains in public utilities. Today, PSP is widely considered by sector practitioners and most Bank clients as one tool within a range of options for improved service delivery and performance. Although the macroeconomic crisis at the end of the 1990s played a crucial role in shaping the project's ultimate outcome, the 2002/2003 change in GoB and its policies also exposed a lack of a broad consensus within key sector stakeholders in Brazil regarding the emphasis to be placed on this specific approach. Viewed today, the PDO focus is at odds with the more neutral approach in sector thinking and in the broader Bank strategy reflected in more recent CASs and in the current Country Partnership Strategy (CPS) for Brazil.

2.4 Safeguard and Fiduciary Compliance

21. The project was initially rated as a category A, largely due to its investment component. Therefore, detailed social and environmental work was done during project preparation (see Annex 2 for details). After the restructuring, the project was more aligned with a category B rating as a technical assistance loan, and many of these procedures were no longer relevant. In terms of fiduciary compliance, the project closed in October 2008 with satisfactory ratings for procurement and Financial Management (FM). During the last and final supervision mission, the overall FM rating was upgraded to satisfactory, reflecting the good work and corrective actions taken by the project during the last year of implementation.

2.5 Post-completion Operation/Next Phase

22. Due to the high relevance and priority that the GoB assigned to this project, the PMU has continued to be operational after the formal closing of the Bank loan to support it in order to fully execute all commitments made to the PMSS contractors and beneficiaries. By the end of the loan's grace period (February 2009), the GoB's counterpart contribution to the project was in the order of US\$ 7.3 million (almost doubling the original commitment).

23. The PMSS program, for which the Bank provided financing support, enjoys a good reputation and strong support in Brazil from a broad range of sector stakeholders. The federal authorities at SNSA and all other major sector stakeholders are satisfied with the way the PMSS program has guided GoB work in the sector during the last sixteen years and the results it has achieved. The GoB has now requested additional Bank support for a new and wider TA operation, comprising all water related sectors and involving different institutions dealing with water at the national level. Through this new operation, the GoB and the major sector stakeholders hope to preserve PMSS' inheritance while designing a more agile implementation arrangement.

24. The main objective of the new federal project with the Bank, called *Interáguas*, is to strengthen intersectoral planning and coordination in the water sector and to contribute to: (i) increasing efficiency of water use and water services provision; (ii) expanding sustainable water supply for multiple uses; and (iii) improving public expenditure in the water sector through better intersectoral coordination. The National Water Agency and three ministries will be directly involved as executing agencies: the Ministry of Environment (Water Resources Management), the MoC (Water Supply and Sanitation), and the Ministry of National Integration (Irrigation and Water Infrastructure). The project includes sector specific activities on WRM, WSS, and irrigation and infrastructure planning. In addition, it includes inter-sectoral activities such as inland river transportation and hydropower development planning that may involve other ministries, particularly the Ministry of Energy and the Ministry of Transport. This operation builds on the experience of PMSS and PROSANEAR in the WSS sector, PROAGUA in the WRM sector as well as several other TA Loans in the other mentioned sectors.

3. Assessment of Outcomes

3.1 Relevance of Objectives, Design and Implementation

25. The project has spanned several CASSs since its approval in 1998 and its objectives have remained relevant to Bank and country priorities through the several subsequent CAS/CPS exercises, as described in detail in Annex 3.

3.2 Achievement of Project Development Objectives

26. The PDO and indicators and their baseline, revised target and outcome values are provided below. By the closing date, the project had largely exceeded its PDO indicators target values (including the 2 original indicators plus one additional indicator agreed at MTR). PMSS II engaged very early on in TA to some states and municipalities committed to reform. By the end of the project, 15 states and 35 municipalities had completed their legal and regulatory framework and received approval from the legislature, and 3.8 million people were served under

private sector arrangements. In addition, 166 municipalities had formally agreed the regulation and provision of WSS with regional regulatory agencies. In many instances, support from PMSS to beneficiary entities included work on both operational and institutional issues (including loss reduction programs, technical and overall WSS system capacity diagnosis, tariff studies and other initiatives aimed at operational and financial improvement). Further detail on the evolution of these indicators and participating sub-nationals can be found in Annex 2.

Indicator	Value				Target	
	Baseline	May-05 (MTR)	Jan-07	Closing Date Value	Final Target (after MTR)	Original PAD Target
PDO: To improve the overall efficiency of the water sector by, in particular, strengthening sector regulations and increasing private sector participation						
Indicators:						
1. Number of states with sector legal and regulatory framework approved by the legislative						
<i>States</i>	0	10	10	15	12	10
<i>Municipalities</i>	0	4	35	35	6	4
2. Number of people in the North, Northeast and Central-West regions receiving water supply and sanitation services from private operators:						
	0	2,600	3,350	3,800	3,000	2,000
3. Number of municipalities with a formal agreement for the regulation and provision of water supply and sanitation services with regional regulatory agencies:						
	0	1	2	166	8	Agreed at MTR

27. **Other Project Outputs (Indicators 4-9):** Following the MTR, the project focused with renewed emphasis in supporting the generation of sector data and statistics, the elaboration of analytical work and capacity building activities. An important project outcome was the support given at the federal level, helping SNSA to formulate and elaborate its policies and programs and better perform its functions of sector oversight, knowledge dissemination and policy making. PMSS acted as a facilitator compiling and disseminating sector knowledge through its activities. The project has undertaken key strategic activities that helped shape the sector's overall policy direction and provided high-quality analytical work on key issues, done with substantial participation by top Brazilian researchers. Some of the most important activities undertaken under the project are listed below (please see Annex 2 for additional detail on each of these programs/activities¹⁷ and for a full table of indicators agreed at MTR, their actual value and expected target:

- **Think-tank support of the formulation of WSS sector policies and key legislation: Consortia Law No. 11.107/2005 and the new WSS Framework Law No. 11.445/2007,** which was approved unanimously in Congress in 2007 after a long discussion of different drafts over a number of preceding years. This law aims to increase investments for providing universal access to WSS services, while taking into account local specificities and using appropriate technologies that are in line with users' ability to pay, as well as providing a legal basis for the federal government in WSS, a role that had remained undefined during the

¹⁷ Additional information on these programs can be found in Project files and in the PMSS website: www.cidades.pmss.gov.br

previous twenty years. PMSS funded experts working on the preparation of different versions of the WSS Law and made comments, revisions and inputs to the final one that was presented by SNSA to Congress. The Consortia Law clarified the legal framework for regionalization processes and grouping of municipalities for the provision of the services. The preparation of this law was fully financed by PMSS. The project supported the structuring of consortia through its advisory work to several states and municipalities¹⁸.

- A consolidated, expanded and improved ***National WSS Information System¹⁹ (SNIS)***. After 13 years, SNIS is an important instrument in the evaluation of sector performance, as well as informing the formulation and execution of national policies and programs (in particular those related to regulatory and social aspects). In 2005/2006 a new solid waste database was created. SNIS enjoys wide credibility within Brazil, is considered a best practice model in WSS and solid waste benchmarking in the developing world and has been emulated in several other countries. At project approval, the number of municipalities regularly reporting to SNIS was 270; by project closure, this number had increased to 2,500. SNIS is now institutionalized in the MoC.
- **Demand-driven TA cooperation with sub-national entities**, working with the state and municipal governments, regulatory entities, service providers and managers. At the state, municipal and utility levels, TA focused on three areas: i) support to institutional reform, including proposals for different WSS institutional service provision models; ii) support to the restructuring and revitalization of public service providers; and iii) support in planning and executing regulatory activities. The project-financed activities contributed to the enhancement of efficiency and performance of beneficiary agencies. Further details on each of the state TA programs can be found in Annex 2.
- **Establishment of the National Training Network in WSS (RECESA)**, including a financing facility for research and studies and the definition and set-up of a country-wide network for training and technical exchange for utility professionals.
- **Com+Água Program**: Demonstration project for the ***integrated management of water losses and energy efficiency***, featuring an innovative methodology promoting best practices in management, social participation and education combined with the operational and technical solutions.
- The development and roll-out of the ***Integrated Management Information System for WSS services*** (GSAN), which is a free, „open source“ software for water utilities with integrated modules for customer registration, metering, billing, collection, customer service and management reporting, with a structure that is designed to be easily integrated to other management systems within the utility.
- **Research, studies and other analytical work**: The carrying out of a number of studies to investigate technical, economic-financial, and political-institutional aspects of service

¹⁸ The first Public WSS consortium in Brazil – CORESA SUL do PI – with the participation of the State of Piauí and 31 municipalities from the South of the State; the Intermunicipal Consortium Vale do Itapocu in Santa Catarina, with the participation of seven municipalities; the municipal-state consortium for Alto Solimões in Amazonas, with the participation of nine municipalities

¹⁹ SNIS – www.snis.gov.br

provision in Brazil, including, inter alia: (i) a study on *Dimensioning of sector investment needs*²⁰ for the universal provision of WSS services; and (ii) an *Evaluation of private sector participation in the provision of WSS services in Brazil*²¹. The latter study evaluates the impact of PSP in the provision of WSS services, from a company and consumer perspective, and how the different forms of PSP and institutional arrangements in place impact the overall experience and results. A steering/review committee was set up to agree on the scope and accompany the study, reviewing and commenting the study's results, incorporating representatives from different stakeholder groups as well as sector specialists, politicians and practitioners, with representation from sectors traditionally opposed and in favor of PSP. This approach had the result of bringing confronted parties together at the same table.²² A complete list of studies undertaken by PMSS can be found in Annex 2.

- **PMSS** played also a key role in: (i) **Knowledge sharing and dissemination activities**: through the publishing and dissemination of analytical work and best practices through a wide collection of WSS related publications; (ii) acting as a **Sector Focal Point** undertaking the ongoing organization and delivery of relevant sector national and international seminars, workshops and other events; and (iii) engaging in **National and International Technical Cooperation** fostering the promotion and development of studies, guidelines, pilot projects, events and training activities in key sector issues, including South-South and South-North learning exchanges.

28. **Sector Efficiency Outcome: Indicators (10-20)**: It is difficult to measure the exact contribution of project activities to the overall sector efficiency improvements (although efficiency improvements are evident in specific cases of TA to utilities). The intangible contribution of PMSS II to improved overall sector efficiency through its supported programs, studies and activities can however be inferred as significant. Prior to PMSS II, the lack of reporting from sub-national entities through a relevant information system did not allow proper monitoring of sector efficiency and performance to begin with. In addition, the impact of the strengthening of the SNSA to promote increased regulation and competition and a new legislation on sector efficiency will take some time to yield positive outcomes, but it is expected that this impact will be significant. Overall, the WSS sector in Brazil has followed a positive evolution in the efficiency indicators agreed upon at the MTR. The project helped the sector reach six of its eleven sector efficiency target values and came very close to achieving the other five. The agreed overall sector efficiency indicators, including their actual and target values can be found in Annex 2.

3.3 Efficiency

29. An ex-ante cost-benefit analysis for the TA component of the original project design (that after the restructuring became the full scope of the PMSS II project) was not undertaken during

²⁰ Dimensionamento das Necessidades de Investimentos para a Universalizacao dos servicos de Abastecimento de Agua e de Coleta e Tratamento de Esgotos Sanitarios do Brasil

²¹ Avaliacao do Impacto da Participacao do Setor Privado na Provisao dos servicos de Abastecimento de Agua e de Esgotamento Sanitario do Brasil

²² As an anecdote, the Terms of Reference (TOR) for the study took over one year to reach consensus on as they were reviewed by all of the different stakeholders with each proposing a different approach.

preparation, given that as TA, many of its benefits were judged intangibles. The project benefits would be measured by the number of municipalities and states that formulated new regulatory frameworks and adopted institutional models for service provision involving the private sector. Although the project was also expected to work at the federal level, the intention was to contribute to sector reform through these actions. The principal factor affecting project efficiency was the long delays in initiating and sustaining a steady rhythm of implementation and disbursement. The efficacy of the operation in terms of sector reform can be judged by the recent passing of the WSS framework law. Though similar framework legislative efforts in other countries in the region have also taken long periods of time (for example, Mexico and Chile), the long periods of inactivity negatively affected the efficiency of the operation in terms of the missed opportunity to advance progress earlier

3.4 Justification of Overall Outcome Rating

ICR Rating: Overall Achievement of Project Development Objective is Satisfactory

30. According to the harmonized evaluation criteria for ICR evaluations and the ICR guidelines issued in August 2006, the overall outcome rating for formally restructured projects should be assessed against both the original and the amended PDO, as the average of separate outcome ratings weighted in proportion to the share of the loan disbursements made in the periods before and after restructuring.

31. The original project was highly consistent with the previous two CASs and GoB priorities, which emphasize providing financing support to infrastructure for development and the need to reform key aspects of the WSS sector. However, given the very slow progress and disbursements, in particular during the negotiations of the on-lending impasse, the outcome achievement under the original operation before the restructuring is rated unsatisfactory.

32. After the restructuring, the project continued to be aligned with the GoB priorities and the recent Country Partnership Strategy (CPS), especially with the passing of the new federal WSS law. Both the GoB and sub-national entities are interested in continuing to prioritize and implement the type of activities pioneered and championed by PMSS, and the project enjoys wide acknowledgment and support throughout Brazil, across the sector's political/ideological differences. Though it took some time for the implementation to take-off after the restructuring, the project accomplished its stated PDO as measured by the attainment of its original and revised performance indicators. It met 13 out of the 18 new targets for the indicators agreed at MTR in 2005 (and came very close for the other five). It also had a remarkable financial performance in the last three years, achieving full disbursement during this period and mobilizing counterpart funds of almost twice the amount agreed at Loan signature. A TA loan achieving similar results within three years of implementation might be rated highly satisfactory. However, given: (i) the significant delay in achieving an effective project launch following the restructuring; and (ii) the missed opportunities of reformulating the PDO/M&E framework to reflect the difficulties in measuring the project's contribution to the stated PDO of improved overall sector efficiency and the reduced relevance of the PSP objective, the outcome achievement for the restructured operation is rated as satisfactory.

33. As shown in the following table, according to the ICR guidelines for the rating of restructured projects, the resulting overall rating after applying the weighing for disbursements is Satisfactory²³.

		Against Original PDOs	Against Revised PDOs	Overall Disbursements and Rating
1.	Rating	Unsatisfactory	Satisfactory	
2.	Rating value	2	5	
3.	Weight : % disbursements before and after amendment	15%	85%	100%
4.	Weighted value (rows 2x3)	0.3	4.25	4.55
5.	Final rating (rounded)			Satisfactory

3.5 Overarching Themes, Other Outcomes and Impacts

(a) Poverty Impacts, Gender Aspects, and Social Development

34. A portion of the TA work carried out under the project focused on poverty and social aspects related to the provision of WSS. The evaluation of the MDG related to WSS and the shortcomings of access to the service in Brazil, brought to the forefront the challenges Brazil faces in reaching the goal of universal access. The project also documented and widely disseminated the Brazilian condominium experience, a low-cost solution for the provision of WSS services that involves intensive community participation and that maximizes the efficiency of investments in irregularly occupied slum areas, making the connection to sewerage networks affordable to low-income households. The resulting publication is a consolidation of 30 years of experience in Brazil as an explanatory guide for sector practitioners to successfully implement this approach.

(b) Institutional Change/Strengthening

35. The project (and, more broadly, the PMSS program since 1993) has contributed to bringing about institutional change through its contribution to the national debate on WSS policies and the formulation of new legislation. The project has contributed to the change and institutional strengthening of the sector through the institutionalization of training and capacity building programs (not only promoting these in a national format, but also pioneering South-North and South-South knowledge management and learning exchanges), the consolidation of a national sector information system informing policy making, and the TA support that the project provided to states and municipalities across Brazil. The project's technical support to sub-nationals has contributed to a better understanding of the situation of service provision in the participating states and municipalities, and contributed to institutional strengthening, through the implementation of measures aimed at increasing efficiency, by providing options for viable institutional frameworks, and appropriate capacity building programs.

²³ Resulting overall rating should be rounded up to the next number

(c) Other Unintended Outcomes and Impacts (positive or negative)

36. The GoB considers PMSS as its flagship program in the sector, due to its impact on policy dialogue, overall sector development and support to the preparation and implementation of other WSS projects and activities. As such, PMSS had a leading role as a „think-tank“ for the discussion of key sector issues and policies in Brazil. The project’s rigorous and detailed approach to analytical work, research and studies, and the patient dissemination and discussion of its proposals is specifically noteworthy.

3.6 Summary of Findings of Beneficiary Survey and/or Stakeholder Workshops

37. In 2007, the PMU carried out a thorough study²⁴ (*PMSS, Transition to a Permanent Structure in the MoC*)²⁵ following the Delphi methodology to review different scenarios for the institutional restructuring and organization of the PMSS program in order to provide continuity after project closing. This study looked at the project’s history, assessed program outcomes and advanced the analysis of future scenarios. The Delphi study allowed the participation of 72 contributors representing a wide array of public and private stakeholders in the WSS sector and project beneficiaries (universities, international organizations, ministries and federal entities, legislative bodies, national councils, SNSA, beneficiary states and municipalities, program partners and individual collaborators). The detailed survey undertaken showed almost unanimous support within federal and local sector authorities and stakeholders on the need to continue the Program with or without Bank support through a third phase. For more than 80 percent of survey participants, the two main achievements of the PMSS program are: (i) its contribution to the development and approval of the sector legal and regulatory framework; and (ii) the consolidation of the national WSS information system, SNIS. Some additional results of the survey are highlighted below.

38. One hundred percent of surveyed participants recognized that the program contributed to sector development (67 percent decisively, 33 percent partially). According to surveyed participants, program actions that most contributed to the sector’s evolution include: (i) consolidation and evolution of the SNIS (96 percent); (ii) development and approval of a sector legal framework at the national level (86 percent); (iii) fostering an environment for discussion of the relevance of the sector’s institutional reform and creating adequate conditions for changes in the sector (83 percent); and (iv) measures focused on the management of water losses and energy efficiency in the sector (80 percent).

39. While this is a core ICR, it was deemed important to capture additional details on project results and lessons learned from the perspective of both project participants and of other sector stakeholders. To this effect, a one-day workshop was organized by the PMU on March 18, 2009. A summary account of the ICR workshop’s conclusions is included in Annex 7. Key findings from this discussion are included in the lessons learned section of this ICR.

²⁵ Programa de Modernizacao do Setor Saneamento (PMSS) – Transicao para uma estrutura permanente do Ministerio das Cidades.

4. Assessment of Risk to Development Outcome

Rating: Negligible to Low

40. At the time of writing this ICR, the risk that the improved efficiency outcome and other outcomes achieved by the project will not be maintained is considered negligible to low. Overall sector efficiency has progressively improved in recent years as demonstrated by the global indicators of SNIS and other databases. The steps taken at the local level in strengthening regulation and in involving the private sector in service provision under different models are unlikely to recede, and, on the contrary, their impact on efficiency will be further revealed in the years to come. In terms of advancing sector reform, the new WSS legal framework is expected to foster sector development and has opened great expectations in relation to institutional innovations, private sector participation, investment opportunities, universal service provision and efficiency improvements.

41. GoB commitment to the development of the sector and institutional support is evidenced by: (i) the WSS investments foreseen under the 2007 federal program for the acceleration of growth (PAC); (ii) the WSS strategy²⁶ approved by the Congress of Cities, that identifies six steps to improve service coverage and efficiency by encouraging a more competitive and better regulated environment; and (iii) the ongoing preparation of a new Water Sector TA operation with the Bank. All of this further supports the risk rating to development outcome as low. Lastly, other elements that favorably influence the sustainability of outcomes are the wide ownership and demand at the sub-national level for the type of activities supported by PMSS and the expected further consolidation, improvement and utilization of the SNIS, which will be able to inform a results-based policy which rewards service provision efficiency.

5. Assessment of Bank and Borrower Performance

(relating to design, implementation and outcome issues)

5.1 Bank Performance

(a) Bank Performance in Ensuring Quality at Entry

(i.e., performance through lending phase)

Rating: Moderately Satisfactory

42. The project objective was consistent with the Bank's assistance strategy and GoB priorities at the time of appraisal and approval. During preparation, the Bank took into account the adequacy of project design and all major relevant aspects, such as technical, financial, economic, institutional and safeguards issues. An important pipeline of subprojects had already been identified and fully prepared by Board approval. project investments as designed would

²⁶ The six pillars are: (i) the institutional separation of service providers and service regulators; (ii) promotion of different decentralized alternatives for service provision; (iii) promotion of social participation in service regulation and control; (iv) use of low-cost technologies; (v) development of financially sustainable pricing schemes which include subsidies for low-income families where required to assure universal access to basic services; and (vi) greater cooperation between federal and local authorities and civil society.

have had a considerable impact on poverty reduction by providing access to WSS services in the impoverished N, NE and CW regions, thus making an important contribution to social development. In addition, major risk factors and the lessons learned from past operations supported by the Bank in the WSS sector in Brazil were considered and incorporated into the project design.

43. The operation as originally designed focused on the right issues, though perhaps gave too much weight to specific means (e.g., PSP) as opposed to intended outcomes on the institutional side. The subsequent course of events is considered outside of the Bank control at the time of project appraisal, in particular the fiscal crisis that hit Brazil at the end of the 1990s and the resulting focus on financial reform and tightening of fiscal space, as well as other entry conditions that changed later-on (the non-formalization of the former Overseas Economic Cooperation Fund²⁷ (OECF)'s loan which was intended to fund sub-national counterpart contribution). Although these overall macroeconomic circumstances could not be predicted at design and were outside of the control of the Bank, these circumstances ultimately rendered a great part of the project's initial design (at least in regards to implementation arrangements, approach and scope) unfeasible, requiring a major restructuring after five years of stagnation. After the restructuring, key elements of the restructured operation did not materialize as agreed (the new loans to CAIXA and BNDES) and though the main objectives of the TA loan had remained relevant, i.e. increased efficiency and increased regulation, the PSP objective lost alignment with the new GoB priorities. Given these considerations, the rating of Bank Performance in the design phase (treating the restructuring as an opportunity to adjust design) is judged as Moderately Satisfactory.

(b) Quality of Supervision

Rating: Satisfactory

44. The implementation history of the project is divided in 2 distinct phases: before and after the project restructuring. Bank's performance was uneven during these two phases and therefore the satisfactory rating is the result of several factors discussed below.

45. Before the restructuring, and even though the project disbursement stagnation was outside of the control of the Bank, the long delays and uncertainties could have warranted an earlier reformulation of the project (though this was not necessarily within the control of the Bank alone). At the restructuring and thereafter, there was a missed opportunity to revisit the project PDO and indicators to reflect the reduced relevance of the increased PSP objective and bring it more in line with what the TA project could reasonably achieve (though doing this at MTR would have required a second almost immediate formal restructuring and approval by the Board and these associated costs may not have been warranted). Instead the new project focus and GoB commitment was reflected through the indicators for intermediate outcomes agreed at MTR.

²⁷ Now Japan Bank for International Cooperation (JBIC)

46. After the restructuring, in spite of a tense initial relationship with the incoming sector representatives at SNSA of the federal administration, the Bank team developed a pro-active relationship with these authorities and with other key stakeholders and was thus able to engage the new federal sector players in an ongoing and continually improving dialogue, facilitating the clarification of misperceptions and engaging in a meaningful debate over sector issues and priorities. The team was successful at adjusting project activities to the new administration's expectations and standpoints and proactively attempted to engage former and current authorities and other stakeholders at a time when the Bank-country relationship in the sector was going through a period of mutual wariness. This proactivity and involvement in the dialogue allowed the project to achieve important results overall. The Bank task team was able to remain a valuable partner to the country by contributing with sound technical concepts, best practices and methodologies applied in Bank projects in Brazil and other countries. The experience of PMSS has helped forge a solid partnership between GoB and the Bank in the WSS sector, which will fully leverage under the projected new federal water sector TA operation building on, inter alia, lessons learned from PMSS.

47. Supervision missions were consistently carried out at least twice a year and reporting was frequent throughout. Generally, missions were well-staffed, including fiduciary specialists. Given the circumstances affecting project implementation during the first phase are considered largely outside of the Bank's control, and the proactive role that the task team played in securing the new GoB commitment to the project and overall outcome achievements during the second phase, the quality of supervision overall is rated as Satisfactory.

(c) Justification of Rating for Overall Bank Performance

Rating: Satisfactory

48. The overall assessment of the Bank performance is rated as Satisfactory. Project identification and appraisal were satisfactory given the sector realities and priorities at the time, though circumstances meant that a significant amendment to the loan became necessary in the course of its immediate implementation. The Bank strove to minimize project delays resulting from the on-lending impasse, the political changes in the country, the new counterparts at the sector level, and the related new policy emphasis. Although the long implementation delays have somewhat hindered the efficiency of the operation, and the PDO definition as adopted at restructuring poses limitations to measuring the exact project contribution to the PDO attainment, on balance the achieved outcomes justify the long engagement. Therefore overall Bank performance is rated as Satisfactory.

5.2 Borrower Performance

(a) Government Performance

Rating: Moderately Satisfactory

49. It is difficult to assess overall performance of the Borrower over the course of the project life, as its ownership and commitment to achieving the PDO wavered considerably throughout the project history as demonstrated by: (i) the readiness for implementation proved inadequate for a rapid and efficient project launching, even before the on-lending impasse with the passing

of the LRF²⁸; (ii) the impediments to implementation brought about by the LRF were not resolved in a timely fashion and involved lengthy internal discussions between different ministries and GoB agencies, with a lack of clarity and consensus in some instances as to the course the project should follow, as the GoB's political and administrative project counterparts (Ministry of Planning, the President's Office and, currently, the MoC) accorded different degrees of priority to the project during its history.

50. Following the restructuring proposed by the MoF and until the MTR, there were differences in the focus that SNSA and the Bank gave to PSP in water sector reform. These difficulties were in addition to the challenges that SNSA was facing in defining a sustainable strategy for the sector and were reflected in a passive stance toward the project at the beginning of the Lula Administration and in a consequent stagnation of disbursements. This is partly explained by the fact that the new administration had much to contend with just after it took power in 2003, and Bank's reluctance to move away from PSP as the preferred policy tool to reform the sector might have compounded this situation. However, the GoB could have been more proactive in ensuring a timely response (while the GoB would have moved away from a PSP-led reform by 2003/2004, a proposal to reformulate project focus and activities was not submitted until the MTR in 2005).

51. Since the new approach to the project agreed at MTR, the GoB has shown a strong financial support and commitment to achieving project objectives and this has contributed to a successful project implementation with remarkable results. However given the shortcomings in the longer history of the project, GoB's performance is rated as moderately satisfactory.

(b) Implementing Agency or Agencies Performance

Rating: Satisfactory

52. The key implementing agencies were the PMU as project coordinator and the UNDP as the project fiduciary agent, and, in a wider sense, the entities in charge of WSS policy and project oversight to which the PMU reported in different moments of time, i.e., SEPURB, then SEDU/PR and now SNSA.

53. The overall performance of the implementing and oversight entities is judged Satisfactory. The changes in the agencies in charge of the WSS sector and project oversight throughout the life of the project affected the efficiency and effectiveness of implementation, and the budget freezing of funds affecting all federal programs negatively influenced disbursement flows after the restructuring. However, to a certain extent, these factors were outside the control of the PMU and lately of SNSA. Overall, the strong commitment to sector development and high quality and professionalism of staff and consultants deployed by the PMU/PMSS throughout its history, and similarly demonstrated by SNSA later on, has contributed to a successful performance, particularly in the last three years with the GoB's renewed commitment to the project.

²⁸ The lack of agreement with the OECF for a new loan which would provide counterpart financing under the Bank Project largely accounted for these delays

54. UNDP's performance since 2004 has been disappointing based on the information reviewed during the ICR preparation. The entity experienced internal processing problems, particularly since the extinction of the project implementing unit in the Brazilian Agency for Cooperation within the Foreign Relations Ministry.²⁹ This entity used to assist UNDP in processing requests from all UNDP executed projects and its disappearance meant an increase in UNDP's time to process a procurement request from 45-90 days to 80-160 days, this time elapsing once the Bank's corresponding no objection had been received³⁰.

(c) Justification of Rating for Overall Borrower Performance

Rating: Satisfactory

55. Despite the numerous challenges and some significant shortcomings faced throughout the life of the project and the consequent variability of its performance, the Borrower concluded the project in a successful manner and achieved the target value for most of its key performance indicators (which were taken as proxies for the project outcomes), as well as many other positive outcomes. This recent performance and its impact on the outcome achievement rating, coupled with the low risk to development outcome, warrant a Satisfactory Rating.

6. Lessons Learned

Project-specific lessons learned

Strengths

56. The Project's think-tank role and its contribution to sector knowledge management has helped to maximize PMSS Program impact. A TA project can actively contribute to sector reform by: (i) working as a think-tank to promote national debate on key issues, helping to channel differences and achieve consensus amongst key stakeholders; and (ii) generating solid analytical materials (studies, information systems) on which to base decision-making;

57. The solid analytical work sponsored under the project has been extremely valuable in the design of other Bank projects (as noted in Annex 2), policy notes and other Economic and Sector Work (ESW) publications and to inform the overall Bank's support strategy for the WSS sector, as well as informing the GoB strategy and policy making.

58. The project has worked well at the three levels of government, the federal, state and municipal, and has introduced systems that require their coordination, like SNIS. This was a challenge (and is for many of the Bank projects in Brazil) but the project has performed remarkably well in this intergovernmental regards. The project's emphasis on outreach and dissemination efforts partially account for this achievement.

²⁹ In Portuguese, Unidade de Administração de Projetos de Agencia Brasileira de Cooperação do Ministerio das Relacoes Exteriores

³⁰ In addition, the cost of the services was increased financial costs from 3 percent to 5 percent of the project cost.

59. The strong partnership and commitment achieved between the Bank and the counterpart teams, despite considerable wariness concerning the Bank's agenda for sector reform on ideological grounds, has provided for excellent outcomes under very challenging circumstances, and provides a solid foundation for future sectoral engagement at the federal and sub-national level.

Weaknesses

60. The project has tried to cover too many areas within the broad array of sector issues, and it might have had more impact if it had focused its efforts more.

61. The PMSS could have developed clear eligibility and prioritization criteria for its areas of action, as well as for their identification and ranking, in order to target its support to those beneficiary utilities through which greater impacts could be achieved.

62. PMSS could have focused more on positively influencing the budget, credit and financing priorities and mechanisms of the GoB so as to direct spending on sectoral issues that have proven benefits and impacts.

63. PMSS could have reached more sub-national entities by leveraging its resources by working with training institutes, expanding its pool of consulting firms and ensuring that the specific hands-on experience was fully replicated.

Lessons learned of wide general application

64. Structural sector reform processes have their own pace and timing. A wide-ranging reform in any sector will require the participation of key stakeholder groups, as well as firm government commitment. The pace at which reform can happen and specific milestones in the reform process in highly decentralized countries such as Brazil are often complex and involve multiple stakeholders, often with widely differing interests and views. In the case of the PMSS, the project provided substantial assistance to the GoB and beneficiaries in the regulatory area, but progress in passing critical legislation was slower than expected (the recently approved national WSS framework law was under preparation for over a decade) partly because of the lack of political consensus among different stakeholders on key issues, such as who holds the conceding power of concessions in metropolitan areas, an issue currently under review by the Federal Supreme Court. This experience replicates that of other developed and developing countries in achieving a reasonable level of stakeholder buy-in for WSS sector reform (Spain, France, Chile, Mexico). As commented in other ICRs³¹ and in a Project Performance Assessment Report (PPAR)³² for other WSS projects implemented in Brazil in the same period as PMSS, this shows the importance of treating the institutional objectives as long-term

³² Project Performance Assessment Report (PPAR) for the Water Quality And Pollution Control Project and the Espirito Santo Water Coastal Pollution Management Project

programmatic engagements, rather than projects, and this requires persistence, patience, follow up and flexibility by the Bank team.

65. Though in the PMSS case the outcomes achieved and the current level of GoB ownership overall are thought to ultimately justify the long engagement under the project, an early restructuring of project objectives – or a cancellation– if they cease to be relevant as defined (i.e., a change of Government priorities vs. stated project objective) might be warranted to overcome stagnation and long implementation delays, as these affect the efficiency of operations and pose difficulties in assessing both Bank and Borrower performance.

7. Comments on Issues Raised by Borrower/Implementing Agencies/Partners

(a) Borrower/implementing agencies

66. The borrower is overall satisfied with the quality and content of this final ICR report and has appreciated the inclusion of their comments to an earlier draft. The GoB is highly satisfied with the PMSS II outcomes and has proposed its own ratings in their ICR report accordingly, which is attached as Annex 8.

(b) Cofinanciers

Not Applicable

(c) Other partners and stakeholders

(e.g. NGOs/private sector/civil society)

Not Applicable

Annex 1. Project Costs and Financing

(a) Project Cost by Component (in USD Million equivalent)

Components	Appraisal Estimate (USD millions)	Actual/Latest Estimate (USD millions)	Percentage of Appraisal
Management and Promotion	7.00	2.64	38%
Water Sector Institutional and Regulatory Reform	22.00	29.66	135%
Operational Development	63.50	0.00	0%
Investment	165.73	0.00	0%
Total Baseline Cost	258.23	32.30	12.5%
Physical Contingencies	22.92	-	-
Price Contingencies	18.85	-	-
Total Project Costs	300.00	32.30	11%

(b) Financing

Source of Funds	Type of Co-financing	Appraisal Estimate (USD millions)	Actual/Latest Estimate (USD millions)	Percentage of Appraisal
Borrower		0.00	7.30	-
International Bank for Reconstruction and Development	Loan	150.00	25.00	17%
Overseas Economic Cooperation Fund		105.00	0.00	0%
Water Utilities	Own resources	45.00	0.00	0%

Annex 2. Outputs by Component

The Project originally comprised four components: (1) management and promotion, (2) water sector institutional and regulatory reform, (3) implementation of non-revenue water programs in selected utilities, and (4) investment in water supply and sewerage infrastructure.

With the Project's formal restructuring and cancellation of US\$125 million, the Project's focus shifted towards Technical Assistance to support the sector reform efforts. As such, this annex presents the outputs of components 1 and 2, given that the financing corresponding to components 3 and 4 was cancelled.

- **Management and Promotion (US\$2.64 million)**

This component financed the staff and expenses of the PMU, including salaries, facilities, equipment and travel required to carry out project activities under the institutional and regulatory reform component throughout the implementation period.

- **Institutional and Regulatory Reform (US\$29.66 million)**

This component aimed to finance Technical Assistance to support water sector institutional and regulatory activities at the federal, state, municipal and utility levels. Most of the studies and activities financed under the project can be found at the program's website: www.cidades.pmss.gov.br

1. At the *federal level*, the project provided technical support to the SNSA in the MoC, undertaking key strategic projects that helped shape the sector's overall policy direction, this support included:

- a) *Think-tank supporting the national debate in water and sanitation sector policies and to the formulation of Consortia Law No. 11.107/2005 and the new WSS Framework Law No. 11.445/2007* approved unanimously in Congress in 2007 after a long process of discussion of different drafts throughout the years. This law aims to increase investments for universal access to water and sanitation, while taking into account local specificities and using appropriate technologies that are in line with users' ability to pay. It also aims to increase sector transparency and "social control" and fills a void by providing a legal basis for the federal government in water and sanitation, a role that had remained undefined during the previous twenty years. As well as its contribution through analytical work and serving as a discussion forum, the PMSS Project has funded experts working on the preparation of different versions of the WSS Law and made comments and inputs to the final one.

The law is a compromise between diverging interests of a broad array of stakeholders. It thus leaves some important issues undefined. One of these issues is the responsibility for service provision in large metropolitan areas, where some municipalities have challenged the

constitutionality of service provision by state companies.³³ The Supreme Court is expected to rule soon on two such cases. The Government has also launched a new Program for the Acceleration of Growth (PAC) that includes major investments in highways, airports, ports, energy, as well as providing housing, water supply and sewage collection services that would benefit poor Brazilians. The Consortia Law clarified the legal framework for regionalization processes and grouping of municipalities for the provision of the services, having an important impact in allowing for innovation and exploration of efficient institutional models for service provision at the local and regional levels. The preparation of this Law was 100 percent financed under the PMSS program. The Project also became a national reference in structuring consortia through its work with several municipalities in structuring consortia³⁴.

- b) Consolidated, expanded and improved (i.e., by creating the solid waste information system) Continued financing and implementation of the **National Water and Sanitation Information System (SNIS)**³⁵. After 13 years of existence supported under the PMSS Program, SNIS is nowadays an important instrument in the evaluation of sector performance, as well as in the formulation and execution of national policies and programs, including those related to regulatory and social aspects of the sector. In 2005/2006 a new solid waste database was created. SNIS enjoys wide credibility within Brazil and is considered a best practice model in WSS and solid waste in the developing world and has been emulated in several other countries. At Project approval, the number of municipalities regularly reporting to SNIS was 270. By Project closure, this number had increased to 2,500.
- c) Establishment of the **National Training Network in Environmental Water and Sanitation, (RECESA)**, together with the Ministry of Science and Technology, FUNASA and the Water Resources Sector Fund. PMSS led the creation of FINEP – a financing facility for research and studies and the definition and set-up of the Network for training and technical exchange. Four regional focal points were created, with 4 universities coordinating the almost 80 participants country-wide (including service providers and other sector entities). The PMSS program was the executive center within RECESA Management Committee. The Project has funded international training in regulation, water resources integrated management, energy efficiency, non-revenue water management, amongst other highly relevant matters.
- d) The creation of the **Integrated Management System for Water Supply and Sanitation Services (GSAN)**, which is a free and open source software developed to assist water utilities in improving service provision through integrated modules for customer registration, metering, collection, customer service and management reporting with a structure that is ready to be integrated to other management systems within the utility. This software was developed with the participation of three WSS state utilities (Pernambuco –(COMPES) A, Rio Grande do Norte – CAERN, and Roraima – CAER), and another four utilities (Amazonas – private company, Pará – COSANPA, Maranhão – CAEMA and Bahia – EMBASA) are in the process of adopting this system.

³³ These cases are currently with the Supreme Court

³⁴ The first Public WSS consortium in Brazil – CORESA SUL do PI – with the participation of the State of Piauí and 31 municipalities from the South of the State; and the Inter-municipal Consortium Vale do Itapocu in Santa Catarina, with the participation of seven municipalities

³⁵ SNIS – www.snis.gov.br

- e) Technical and institutional demonstration project for the *integrated management of water losses and energy efficiency for specific water supply systems (the Com + Água Program)*. The project features an innovative methodology promoting best practices in management, social participation, education and awareness rising as a centerpiece of the strategy, combined with the operational and technical solutions. This pilot project provided technical support to ten water supply service providers (3 states and 7 municipalities) ranging from 17,000 to 173,000 connections. The project provided a detailed diagnostic of the water system management, training, equipment and consulting TA. From the perspective of loss reduction the program had positive results with seven out of the ten service providers registering a reduction in losses. The project contributed to an estimated combined total reduction of losses in the order of 10.5 million cubic meters per year with a value of about R\$7.85 million, as shown in the Table A below. From an energy efficiency perspective, the project contributed to a reduction of 2,721 MWh of energy consumed in six municipalities, which represent an estimated savings of R\$516,008, as shown in Table B below.

Table A: Results of Com +Água Program in Reduction of Water Losses

Municipality (State)	Losses - Liters/Connection/Day			Number of Connections	Gains – Volume (m ³ /year)	Gains – Value (R\$/year)
	Jun-05 / Jun-06	Jun-07 / Jun-08	Loss Reduction			
Viçosa (MG)	413	321	92	17,562	589,732	\$ 480,247
São Bento do Sul (SC)	209	217	-8	22,000	(64,240)	\$ (162,929)
Ituiutaba (MG)	200	231	-31	29,898	(338,296)	\$ (13,901)
Guaratinguetá (SP)	371	285	86	38,746	1,216,237	\$ 764,524
Ilhéus (BA)	542	564	-22	39,734	(319,064)	\$ (385,487)
Santa Maria (RS)	598	548	50	59,602	1,087,737	\$ 1,299,192
Montes Claros (MG)	547	419	128	89,620	4,187,046	\$ 3,893,953
Caxias do Sul (RS)	639	601	38	101,312	1,405,197	\$ 857,910
Santo André (SP)	290	246	44	167,483	2,689,777	\$ 1,045,345
Sorocaba (SP)	381	380	1	173,272	63,244	\$ 67,039
TOTAL			378	739,229	10,517,371	\$ 7,845,893

Note: BA: Bahia, MG: Minas Gerais; RS: Rio Grande do Sul; SC: Santa Catarina; SP: São Paulo.

Table B: Results of Com+Água Program on Energy Efficiency

Municipality (State)	Reduction in Electricity Consumption	
	MWh/Year	R\$/Year
Ilhéus (BA)	264.33	\$59,344
Ituiutaba (MG)	193.55	\$41,998
São Bento do Sul (SC)	0.00	\$0
Viçosa (MG)	0.00	\$0
Caxias do Sul (RS)	174.17	\$66,557
Guaratinguetá (SP)	438.43	\$89,186
Montes Claros (MG)	0.00	\$0
Santa Maria (RS)	1,273.09	\$157,723
Santo André (SP)	377.73	\$101,200
Sorocaba (SP)	0.00	\$0
TOTAL	2,721.30	\$516,008

Note: BA: Bahia, MG: Minas Gerais; RS: Rio Grande do Sul; SC: Santa Catarina; SP: São Paulo.

- f) **Research, studies and other analytical work:** PMSS funded diverse studies to investigate technical, economic-financial, and political-institutional aspects of service provision in Brazil, opening the basis for discussion of key issues by providing in-depth information, data and analysis to inform policy making. The most relevant of these studies were:
- A high-reach study on *Dimensioning of sector investment needs*³⁶ for the universal provision of water supply, as well as sewage collection and treatment and wide dissemination of findings (one of the studies on the subject most cited in the press);
 - *Manual on the Low-cost Condominial System for Wastewater Collection* providing key information on required elements for a successful implementation and a Publication, **Condominial Systems – an Answer to the Universal Provision of Sewerage Services**; aiming to promote the importance of this approach as a sustainable means of attaining universal service provision;
 - An *Evaluation of private sector participation in the provision of water supply and sewerage services in Brazil*, and country-wide dissemination of findings. This study evaluates the impact of PSP in the provision of WSS services, from a company and consumer perspective, and how the different forms of PSP and institutional arrangements in place impact the overall experience and results. This study had a steering/review committee which incorporated representatives from different stakeholder groups with varied ideologies, including those historically opposed to PSP, those more in favor, as well as sector specialists, politicians, practitioners and other stakeholders. This innovative approach had the unprecedented impact of bringing these “opposing” parties to the same table.
 - An evaluation of the *Millennium Development Goals related to sanitation and the shortcomings of access to basic sanitation services in Brazil*. This study provided a country-wide mapping of water and sanitation service provision and defined the probability of meeting the Millennium Development Goals in Brazil.
 - An evaluation of water *quality monitoring for human consumption in Brazil*, based on the terms of the current legal framework (decree MS518/2004). It reviews and analyzes performance a sample of service providers with regards to adequate monitoring of water quality and proposes instruments and mechanisms for dealing with any shortcomings.
- g) **Promoting national and international technical cooperation** in the sector participation in different national and international programs, through partnering with public and private entities fostering the promotion and development of studies, guidelines, pilot projects, events and training in key sector issues. Worth mentioning are PMSS’ associations with: i) the Program for Conservation of Electric Energy (PROCEL); ii) the National Association for Municipal WSS services (ASSEMAE); or iii) the Brazil group for the assessment of Private Sector Participation in WSS (GT PSP Brazil) in the national scenery. Internationally, PMSS cooperation with Italy’s HYDROAID for training and capacity building activities in municipalities in particular, with the participation of 100 municipalities from Brazil and Portuguese speaking African countries.

³⁶ Dimensionamento das Necessidades de Investimentos para a Universalização dos serviços de Abastecimento de Água e de Coleta e Tratamento de Esgotos Sanitários do Brasil

- h) **Knowledge sharing and dissemination activities**, which included the dissemination of analytical work and best practices contributing to the political and institutional debate on key issues through a comprehensive and wide collection of WSS related publications, including the series entitled *Saneamento para Todos* (Sanitation for Everyone). The Project also contributed to information transparency and outreach through public and regular dissemination of sector information and studies in the PMSS website (receiving around 12,316 monthly visits on average).
- i) **Sector Focal Point**. PMSS has undertaken the permanent organization and delivery of relevant sector national and international meetings and other events such as the recent International Roundtable Dialogue on the Condominial Approach to WSS Services (organized jointly with the Water and Sanitation Program).

At the **state, municipal and utility levels**, the project focused on providing demand-driven Technical Assistance cooperation, working with the regional and local governments, regulatory entities, service providers and managers. TA focused in three areas: (i) support to institutional reform, including proposals for different institutional models; (ii) support to the restructuring and revitalization of public service providers; and (iii) support in planning and executing regulatory activities. The Project focused on financing activities at the regulatory, institutional and operational levels that could enhance the sector overall efficiency and performance, as well as improve the quality of service. This support included:

- **Demand-driven technical assistance cooperation** with seven states in Brazil, namely Amazonas, Mato Grosso, Pernambuco, Piauí, Rio Grande do Norte, Rondonia and Roraima, in which diagnostic studies were undertaken with recommendations for improvements at the technical, institutional and regulatory levels.
 - a) In Amazonas, the project's support consisted of a comprehensive diagnostic review of the current state of the sector, including regulatory and service quality provision aspects. The state's experience with a private concession for service provision in 2000 was not positive, prompting the state to decentralize service provision to the municipal level, which resulted in chaotic service provision levels due to the lack of preparedness and technical capacity of most municipalities. In the course of the study, the team visited all of the sixty one municipalities in the state and evaluated their water supply, sewerage, solid waste and drainage systems, including aspects related to the current institutional framework in place as well as the municipalities' technical capacity for service provision and investment needs.

The technical assistance provided to the state also included a subsequent study focusing on institutional and regulatory options for efficient water supply and sanitation service provision in the state. Its recommendations were incorporated into the design of the Alto Solimões Basic Services and Sustainable Development Project financed by the World Bank (Loan 75130), an Additional Project Loan that will implement the recommended option in two of the six recommended sub-regions in the state. Another World Bank-financed project is under preparation in partnership with the state, and plans to incorporate in its design and objectives the implementation of the recommended option in a third region.

- b) In *Mato Grosso*, the state government also opted for the municipalization of water supply and sanitation service provision with mixed results, given that the municipalities have chosen distinct paths for service provision, including private sector participation, municipal companies, municipal departments, etc. The PMSS project provided technical assistance to the state for a comprehensive diagnostic study on technical, regulatory and institutional aspects of service provision, providing support to the State's Regulatory Agency (AGER) as well as documenting challenges, successes and lessons learned. This technical support and study will serve as an important input to state officials as they decide on future policies aimed at further sector development.
- c) In *Pernambuco*, PMSS provided support in three key areas of importance to the state government: (i) institutional optimization of the state's water supply and sanitation utility (COMPESA), whose recommendations have been adopted by the company; (ii) a water demand study for the Metropolitan Region of Recife, which, together with a loss-reduction program, has assisted the company in reducing rationing and improving service provision levels in the region. The study's results and recommendations have been incorporated into COMPESA's sector planning, and have laid the groundwork for a long-term engagement with COMPESA, which is taking place through the Pernambuco Sustainable Water Project currently under preparation. This study also served as an input into the design of the Pernambuco State Urban Upgrading Project and the Capibaribe Melhor Municipal Project, both are currently under supervision.
- d) In *Piauí*, PMSS provided support to the underperforming state water utility (AGESPISA), by undertaking a diagnostic study which confirmed the precarious service provision levels in the state due to low tariff levels and a deficient institutional framework. The project developed an extensive technical assistance program to the company's technical, planning and company restructuring aimed at improving the company's long-term financial sustainability.

During the course of this assistance, it was evident that an institutional restructuring was needed at the state level to improve water supply and sanitation service provision. As a result, PMSS supported a study that would provide options for an institutional model that would enable the efficient and sustainable provision of services. The recommended model was one where AGESPISA's area of influence was limited to the state capital and surrounding larger municipalities. The remainder of the state would be divided into four sub-regions in which the municipalities would undertake a cooperative model of service provision promoting adequate economies of scale that would ensure long-term sustainability. The recommended option was approved by the state government and its implementation has begun in one of the identified regions in the south of the state.

- e) In the state of *Rio Grande do Norte*, PMSS provided technical assistance in 2003 in the form of a rapid diagnostic and proposal for emergency priority actions that were undertaken by the state water company (CAERN). Subsequently, a more detailed and comprehensive sector diagnostic was undertaken in 2004; however, the state opted not to implement the recommendations of the study.

- f) In the state of *Rondônia*, at the request of the state government, PMSS provided technical assistance to the state water utility (CAERD) by carrying out a detailed diagnostic of the service provision situation with a view towards providing universal access to water supply and sanitation in a sustainable and efficient manner. This work included an evaluation of current systems, as well as training of company staff in technical, management and operational aspects of service provision with the goal of internalization of a results-oriented approach to service provision.
- g) In *Roraima*, PMSS provided technical assistance for improving the efficiency and sustainability of the state water utility (CAER) in 2003. The technical assistance focused in the areas of institutional restructuring, improving internal process, system and equipment modernization, the implementation of a loss-reduction program, and building staff's technical capacity, all of which are currently being implemented by the company.
- Demand-driven support for municipalities in the following areas: (a) assistance to the municipal regulatory agency for the municipalities of Diadema, Salto and Birigui, in the State of São Paulo, and Itabirito and Barbacena in the state of Minas Gerais; (b) support to ten municipalities in carrying out diagnostic studies with a focus on the service provider and existing systems;³⁷ (c) support to the proposition of an associated management model for the provision of water and sanitation services to five municipalities of the Itapocu River Basin in the state of Santa Catarina,³⁸ which resulted in the creation of the Inter-municipal Consortium for Water Supply and Sanitation Services in the Itapocu Valley; and (d) water supply and sanitation technical and operational planning support for the municipalities of Diadema, Salto, Birigui (in the state of São Paulo), as well as Itabirito and Barbacena (in the state of Minas Gerais).

Table C: Key Project Outcome and Output Indicators

Indicator (Achievement of PDO)	Value				Target	
	Baseline	May-05 (MTR)	Jan-07	Closing Date Value	Final Target (after MTR)	Original PAD Target
1. Number of states with sector legal and regulatory framework approved by the legislative						
<i>States</i>	0	10	10	15	12	10
<i>Municipalities</i> ³⁹	0	4	35	35	6	4

³⁷ These municipalities are: *Caxias do Sul* and *Santa Maria* in the state of Rio Grande do Sul; *Santo André*, *Guaratinguetá* and *Sorocaba* in the state of São Paulo; *Ituiutaba*, *Viçosa* and *Montes Claros* in the state of Minas Gerais; *São Bento do Sul* in the state of Santa Catarina; and *Ilhéus* in the state of Bahia.

³⁸ These municipalities are: *Corupá*, *Guaramirim*, *Jaraguá do Sul*, *Massaranduba*, *Schroeder*

³⁹ The municipalities of Campo Grande - AGENREG; Cachoeiro do Itapemerim - ARGESA; Natal - ARSBAN; Fortaleza; Joinville - AMAE; as well as thirty municipalities in the state of Piauí have approved legislation that sets up the framework for the provision of water supply and sanitation services, establishing rules for the planning, organization, regulation, monitoring and service provision. The municipalities in the state of Piauí are as follows: Alvorada do Gurguéia, Antonio Almeida, Avelino Lopes, Barreira do Piauí, Bom Jesus, Colônia do Gurguéia, Canavieira, Corrente, Cristalândia, Cristino Castro, Curimatá, Currais, Curimatá, Gilbués, Guadalupe, Júlio Borges, Landri Sales, Manoel Emídio, Marcos Parente, Monte Alegre do Piauí, Morro Cabeça no Tempo, Palmeira do Piauí, Parnaguá, Porto Alegre do Piauí, Redenção do Gurguéia, Riacho Frio, Santa Filomena, Santa Luz, Santa Filomena, Sebastião Barros, Sebastião Leal and Uruçuí.

Indicator (Achievement of PDO)	Value				Target	
	Baseline	May-05 (MTR)	Jan-07	Closing Date Value	Final Target (after MTR)	Original PAD Target
2. Number of people in the North, Northeast and Central-West regions receiving water supply and sanitation services from private operators	0	2,600	3,350	3,800	3,000	2,000
3. Number of municipalities with a formal agreement for the regulation and provision of water supply and sanitation services with regional regulatory agencies	0	1	2	166	8	This indicator was agreed at MTR

- PDO Indicator 1: Number of states and municipalities with sector legal and regulatory framework approved by the legislative:*** The PAD target value for the number of states with a new sector legal and regulatory framework (ten) was achieved by mid-term review. The PMSS II Project engaged very early on in technical assistance to some states committed to reform, such as Amazonas, Mato Grosso, and Ceará. By the end of the Project, 15 states⁴⁰ had completed their legal and regulatory framework and received approval from the legislature. In many instances, the technical assistance from PMSS covered advisory work on operational and institutional issues. The number of municipalities with new regulatory frameworks was set by the PAD at four and revised to six at MTR. Since then, five states and 31 municipalities approved a regulatory framework for WSS services, establishing the rules for planning, organization, regulation and oversight of service provision.
- PDO Indicator 2: Number of people in the North, Northeast and Central-West regions receiving WSS services from private operators:*** By Project closing, the PAD target of two million people served by private operators had been exceeded with 3.8 million people served through arrangements with private sector operators.
- PDO Indicator 3: Number of municipalities with a formal agreement for the regulation of the provision of WSS services with regional regulatory agencies:*** This indicator was introduced at MTR and the target was largely exceeded. By MTR, only one municipality had a formal agreement with its state regulatory agency for the regulation of service provision (Juazeiro do Norte). The target value for this indicator was set at eight municipalities reaching formal agreement with other state agencies. This value was 166 municipalities by October 2008, including the passing of 156 municipal laws in the state of São Paulo to delegate service regulation to the state regulatory agency ARSESP.

⁴⁰ 1. Alagoas, 2. Amazonas, 3. Ceara, 4. Distrito Federal, 5. Goias, 6. Mato Grosso do Sul, 7. Mato Grosso, 8. Para, 9. Paraíba, 10. Pernambuco, 11. Rio de Janeiro, 12. Rio Grande do Sul, 13. Tocantins, 14. São Paulo (ARSESP), 15. Santa Catarina (AGESC). From the Closing Date, new states have joined

Table D: Indicators 4 -9 on SNIS, Training and Publications

Indicator	Baseline May-05 (MTR)	Closing Date Value	Final Target	% Achieved
SNIS				
4. Inclusion of information about service quality and customer service attention in SNIS	13 indicators reported by some service providers	Revised group of indicators reported in the annual report	Revised group of indicators reported in the annual report	NA
5. Number of municipalities reporting their water and sanitation information to the SNIS	2,000	4,516	2,500	181%
6. Average monthly hits to the SNIS web site	5,000	15,185	5,000	300%
Training				
7. Number of people trained by the Project in regulation, reduction of non-revenue water, water and energy conservation, efficient management of service provision, among others	1,000	4,300	1,500	287%
Studies and Publications				
8. Number of water supply and sanitation sector studies undertaken and financed by the Project	11	22	15	147%
9. Number of water supply and sanitation sector publications financed by the Project	21	56	30	187%

Table E. Overall WSS Sector Efficiency Indicators

OVERALL WATER SUPPLY AND SANITATION SECTOR EFFICIENCY						
Indicator	Unit	Values			Target	
		Baseline	MTR	Closing Date Value	Target	% Achieved
10. Labor productivity index (water and wastewater connections)	Staff/'000 connections	3.3	2.6	2.5	2.5	100%
11. Labor productivity index (water connections only)	Staff/'000 connections	4.9	3.7	3.6	3.3	91%
12. Labor cost as a percentage of total cost	%	36.4	29.2	26.5	28	105%
13. Labor cost over operating cost, excluding depreciation (%)	%	53.3	42.8	38.5	39	101%
14. Percentage of metered water connections	%	77.6	87.9	89.2	90	99%
15. Investments financed with internally generated resources/total investments	%	37.5	55.7	52.7	59	89%
16. Monthly Consumption of water	m ³	18.6	14.1	14.4	14.0	97%
17. Energy efficiency in water systems	kWh/m ³ produced	Not available	0.68	0.67	0.63	94%
18. Working ratio (operating expenses as a % of operating costs)	%	68.3	68.3	68.7	68.0	99%
19. Current ratio (current assets/current liabilities)	Times	0.92	0.87	1.01	0.92	110%
20. Collection rate	%	86.9	89.9	91.7	90	102%

PMSS Financial Performance

The Project closed after the end of the grace period in February 2009 having withdrawn 100 percent of loan proceeds. The Loan agreement had initially envisaged a counterpart contribution of US\$3.7 million dollars. However, the counterpart has allocated US\$2.5 additional million to cover the devaluation of the US Dollar and to continue ongoing project activities after the closure, plus US\$ 1.1 million to pay for UNDP services. This means a total counterpart allocated to the Project of US\$7.3 million. During project execution, PMSS allocated US\$8.6 million to other activities/subprojects which had been contemplated under the Amended Loan Agreement but later on, due to changes in the Brazil legislation, ceased to be eligible as Bank financed expenditures.

Annex 3. Context at Appraisal

Key Sector Issues

In 1997, at the time of appraisal, the WSS sector in Brazil was characterized by a lack of regulation and an unclear allocation of regulatory functions and responsibilities among the federal, state and municipal governments, unequal coverage rates, poor sector performance and service levels and high water pollution rates. Below are additional details on the six key sector issues identified at appraisal, as a complement to Section 1.1 in the main section of this document.

1. The N, NE and CW regions were characterized by a lack of WSS service and the poorest population in the country. Coverage expansion happened unequally as PLANASA⁴¹, the first federal government initiative in water and sanitation in Brazil in place since the late sixties, prioritized the country's richer regions of the South and South East. In 1991, while 86 percent of all urban households had in-house water connections, only 67 percent of households in the north, 78 percent in the northeast, and 80 percent in the center-west had in-house water connections. In the same year, 37 percent of all urban households making two minimum salaries or less did not have in-house water connections, and 56 percent did not have in-house sewerage connections or even a septic tank.
2. Increasingly poor provision of services, in particular in the poorer regions and to the poorest population. More than one-half of the country's population connected to a water system received less than fully satisfactory services and suffered from intermittent provision and rationing of water service.
3. Seriously deteriorated environmental conditions in the larger metropolitan centers and heavily industrialized areas partially due to water pollution. Water pollution, in turn, was caused by inadequate levels of investment, lack of appropriate cost recovery, ineffective technology, insufficient coordination between different government levels, inadequate capacity to enforce environmental regulations and standards, and limited involvement of users and NGOs.
4. Recurrent financial problems, particularly in the N and NE regions, where many utilities had become financially insolvent. Sector financial policies, in particular tariff and subsidy policies and their cost controls, required urgent revision. The lack of appropriate labor and commercial policies, as well as proper maintenance and rehabilitation of existing facilities, had contributed to the deterioration of the utilities' financial situation. A de facto grant policy via periodic state government absorption of the utilities' long-term debt added more confusion and lack of clarity to the sector's financial policy.
5. Politicization of investment process of management and lack of accountability demanded a new and more competitive institutional model. The investment decision process was not

⁴¹ The National Water Supply and Sanitation Plan

governed by financial and economic principles but by a system dominated by politics that usually discriminated against rehabilitation and other less expensive solutions. Despite the substantial progress achieved by PLANASA, the model was deemed outdated, and to improve the sector's poor performance, a major institutional reform was required, including PSP.

6. Allocation of regulatory functions and responsibilities between states and municipal governments was unclear. This ambiguity had been a permanent cause of political uncertainty and immobility in the sector's development. The National Water Supply and Sanitation System supported by PLANASA had created twenty-seven state-owned WSS companies in 1968. Approximately 3,200 of Brazil's 5,564 municipalities took advantage of the plan (although often without formal contracts), granting concessions to the state companies for twenty to thirty years. Some 1,800 municipalities chose to continue providing services directly on their own or indirectly through municipal companies. The return to democracy in 1985 and the decline in federal funding encouraged many states and municipalities to devolve services to the local level.

The 1988 Federal Constitution did not clearly assign the responsibility for WSS to either municipalities or states, contributing to the legal ambiguity. WSS policy thus entered a new era of legal uncertainty and political controversy. During the 1990s, different state and municipal governments adopted different models for service provision (including private sector concessions, return to the municipalities, strengthening of the state company). In February 1995, the Public Concession Act was passed, casting additional legal uncertainty on existing public concession contracts with state water companies. By 1998, the lack of a well defined regulatory and institutional framework meant that political interference dominated crucial issues such as management, tariff setting and capital expenditure.

The Government strategy at the time of appraisal, contained in the National Water Supply and Sanitation Policy, sought to expand the provision of WSS services to Brazil's entire population and to improve service delivery efficiency by encouraging a more competitive and better regulated environment. The Bank's 1997 CAS to Brazil supported this policy. In turn, PMSS- II aimed to support two objectives of the 1997 CAS: (i) the structural reform of Brazil's water WSS sector; and (ii) diminish poverty and inequity by improving the health conditions and quality of life of poor urban populations and regions (N, NE and CW). The following summarizes the objectives of the government's reform and modernization strategy as initially supported by the Water Sector Modernization (PMSS II) Project:

- 1) Separation of competencies between the concession-granting authority and the service providers;
- 2) Promotion of different decentralized alternatives for service provision;
- 3) Promotion of wide social participation in the regulation and control of services;
- 4) Implementation of low-cost technologies in efficiently operated systems;
- 5) Provision of technically, financially and economically feasible services, with tariff schemes and subsidies for low-income families adequate to assure universal access to basic services; and
- 6) Participation, cooperation and integration of the Federal and local Governments and civil society in the solution of the sector's problems.

The operation as originally designed focused on the right issues, though with hindsight gave too much weight to specific means (e.g., PSP) as opposed to intended outcomes on the institutional side. At appraisal, the Bank team properly identified the impact of infrastructure investment on poverty reduction, and made an accurate diagnosis of Brazil's weaknesses in the WSS sector, particularly in terms of policy and legislative and regulatory framework shortcomings, inefficiencies in the provision of services and limited private sector participation. The regulatory framework, efficiency and competition, and institutional development were rightly identified as the areas on which the project should focus, as well as much needed investments for poverty reduction.

The Project was expected to benefit two key target groups:

- Directly, the private and public state and municipal water companies within the north, northeast and center-west regions, benefiting from the technical assistance for institutional development and reform; and
- Indirectly, the population of these regions through the extension of basic services and service level improvement.

At the time of appraisal, subprojects in six states and twenty-four municipalities were under preparation,⁴² with municipalities, municipal water companies, and state water companies as beneficiaries. The benefits expected from the decentralized provision of water and sewerage services in a competitive and appropriately regulated environment and from the encouragement of private sector participation were: improved operational and financial performance of participating utilities; reduced financial transfers from the public sector to water utilities; and a temporary but significant generation of jobs for unskilled workers.

Project benefits would include an expansion of water supply and sewage collection and treatment services, an elimination of intermittent provision and rationing of water service, an improvement in the quality of water supplied and a reduction of water pollution levels. The improved hygienic and environmental conditions resulting from increasing coverage, quality and reliability of water and sewerage services would translate into better quality of life indicators for the targeted population. Improved hygienic conditions would lead to decreased infant mortality and reduced incidence of water-borne diseases. Improved environmental conditions would also contribute to the recovery of beaches, enhance tourism activities and other water uses, and increase recreational activities.

By the end of the useful life of investments, about 1.3 million people would benefit from water production and transmission projects; 0.9 million more would benefit from sewage collection;

⁴² The municipalities with subprojects under preparation are: Joao Pessoa, Campina Grande and Santa Rita (Paraíba); Fortaleza and Aracati (Ceará); Caruaru, Pesqueira and Varzea do Una (Pernambuco); Pedro II, Altos, Piripiri and Floriano (Piauí); Cuiabá, Varzea Grande, Juara, Juina, Pontal, Pontes e Lacerda, Primavera, Sinop, Sorriso (Mato Grosso); and Juazeiro and Itabuna (Bahia).

and 0.7 million more would have their sewage treated. The foreseen investments had a strong poverty focus⁴³.

Relevance to CAS and Government Priorities

The Project has spanned several CASs since its approval in 1998 and its objectives have remained relevant to Bank and country priorities through the several subsequent CASs.

CAS 1997: At the time of its approval, the Project was fully aligned with the 1997 CAS objectives of achieving structural reform of Brazil's water supply and sewerage sector and reducing poverty and inequality by improving the health conditions and quality of life indicators of poorer urban population and regions of the N, NE & C. This CAS reflected the central objective of Bank assistance to Brazil for Poverty Reduction throughout the 1990s and early 2000s. The strategy (and the Project) focused on directly addressing the roots of poverty (education, health and provision of basic services). The growth element of the strategy supported the government's decentralization and privatization of infrastructure through technical assistance in regulation and selective lending. With the fiscal crisis at the end of the decade, the strategy focus shifted to adjustment lending and technical assistance loans, while maintaining assistance to the social sectors (a revised CAS was presented to the Board in 1998 as the original did not consider adjustment loans). The restructuring of PMSS II was affected by this new lending dynamics to Brazil, as well as by the restrictions brought about by the LRF.

CAS 2004-2007: The Project was consistent with the 2004-2007 CAS by contributing to Brazil's long term goal of more equitable access to local services under the Sustainability Pillar. Towards this objective, a medium term outcome was an integrated federal framework for investment in water and sanitation infrastructure. This outcome was largely achieved at the end of the CAS period, with the passing of a landmark federal water law that ended a frustrating fifteen year period of institutional stalemate and underinvestment. PMSS II contributed to this outcome by helping to develop the framework for regulation and supporting technical assistance and analytical work required for the development of the new water law.

2008-2011 Country Partnership Strategy (CPS): The objectives of the PMSS II Project are also consistent with the new CPS for the period 2008-2011. The CPS presents several pillars, in line with the Government's priorities, to accelerate economic growth by tackling one of the major causes of slow growth, namely the low quality and quantity of infrastructure. Bank support to the infrastructure sectors during the CPS period will contribute primarily to advancing results under the competitiveness and improved investment climate pillar. PMSS's continued partnership with key sector players, top analytical work and technical advice has helped design the new legal institutional framework, and prepare operationally for its implementation as well as for better quality and efficiency of public and private investment in the sector. This "low-case"

⁴³ Estimates based on actual surveys in five localities representative of the targeted population showed: that about 65 percent of the expected beneficiaries of water investments and 59 percent of sanitation investments were in the poverty group (households earning less than 3 minimum salaries per month)

involvement is regarded as incredibly valuable and positions the Bank to provide strong support in the coming period as sector investments pick up. Water remains a key element of Brazil's strategy to promote sustainable growth and a more equitable and inclusive society and the country still faces daunting challenges to expand and improve water services.

Bank Safeguard Compliance

The Project was initially rated as a category A, largely due to its investment component, which was expected to finance a wide variety of water and sanitation infrastructure projects in participating states and municipalities that would receive category A environmental ratings. Detailed social and environmental work was done during project preparation. An approach to conducting Environmental Assessment (EA) was agreed and a sectoral EA for the WSS sector was undertaken. All thirty-three sub-projects proposed during preparation were subjected to a detailed screening for potential negative environmental impacts and full EAs were carried out for the most sensitive projects. After the restructuring, the Project would have been rated category B as a TA loan, and many of these arrangements were no longer relevant.

Annex 4. Economic and Financial Analysis

The project appraisal document included a detailed financial, economic and distributive analyses, as well as risk and sensitivity calculations on a sample of five water supply and four sewage disposal sub-projects, which accounted for 55 percent of the total project cost.

To identify the incremental costs and benefits resulting from each subproject, “with” and “without” project scenarios were built for each one of them. The “with” project scenario considered the proposed investment plan and its associated targets. The “without” project scenario considered that the service would remain unchanged, that is, the current performance, coverage, non-revenue water levels and other operational and financial indicators would remain the same during the projects’ expected life. Investments needed to keep these indicators unchanged were considered in the flow of costs in the “without” project scenario.

Costs and benefits associated with the “with” and “without” project scenarios were projected for thirty years. The cash flows were discounted using a discount rate of 12 percent which was estimated to be a proxy of Brazil’s opportunity cost of capital. Benefits from the water supply subprojects included the reduction or elimination of rationing and intermittent water supplies, water quality improvements, and service coverage increases. Benefits from sewerage (sewage collection and treatment) subprojects include a reduction of water pollution levels and service coverage increases. Based on the sample, the analyses concluded that the project was financially and economically viable, with a financial internal rate of return of 42 percent and an economic internal rate of return of 56 percent.

No effort was made to quantify specific health benefits, and it was assumed that all benefits resulting from a better environment were captured in the willingness to pay survey for sewage disposal services. Additional benefits, that were not included in the analysis, comprise a reduction of financial transfers from the local governments to the water utilities and a temporary, but significant, generation of jobs during project implementation.

A detailed financial analysis at the utility level was also undertaken for a sample of seven utilities that had expressed interest in participating in the Project, with a view towards (i) determining the financial capability of these utilities to service the World Bank loan and provide counterpart funds in a timely manner, (ii) estimating the utilities’ financial indicators that determine their eligibility for financing today and in the future, and (iii) identifying additional actions that needed to be taken by each of the utilities in order to improve their eligibility levels.

Given that the project restructuring ultimately resulted in the cancellation of the investment components planned under the project, an ex-post economic and financial analysis cannot be undertaken given the change in the project’s nature to one of mostly technical assistance to the sector.

Annex 5. Bank Lending and Implementation Support/Supervision Processes

(a) Task Team members

Names	Title	Unit	Responsibility/ Specialty
Lending			
Carlos Velez	Lead Economist	LCSUW	
Caroline van den Berg	Sr. Economist	ETWWA	
Juan D. Quintero	Sr. Environment Engineer	EASRE	
Alex Bakalian	Lead Water Resource Specialist	MNSSD	
Abel Mejia	Sector Manager	ETWWA	
Yoko Katakura	Sr. Infrastructure Specialist	CSFDR	
Claudio Mittelstad	Financial Management Specialist	LCSFM	
Supervision/ICR			
Carlos Velez	Lead Economist	LCSUW	Task Team Leader
Alexandre Borges de Oliveira	Procurement Specialist	LCSPT	
Caroline van den Berg	Senior Economist	ETWWA	
Juliana Menezes Garrido Pereira	Infrastructure Specialist	LCSUW	
Lizmara Kirchner	Water Supply and Sanitation Specialist	LCSUW	ICR contributor
Luciano Wuerzius	Procurement Specialist	LCSPT	
Manuel G. Marino	Lead Water and Sanitation Spec	LCSUW	
Martin P. Gambrill	Senior Water Engineer	LCSUW	
Nicola Ruggero Saporiti	Investment Officer	CIADR	
Nicolas Drossos	E T Consultant	LCSFM	
Patricia Lopez	Senior Financial Analyst	LCSUW	ICR main author
Sandra Monica Tambucho Perez	Disbursement Team Leader	LOADM	

(b) Staff Time and Cost

Stage of Project Cycle	Staff Time and Cost (Bank Budget Only)	
	No. of staff weeks ⁴⁴	USD Thousands (including travel and consultant costs)
Lending		
FY96	11	41.04
FY97	61	219.96
FY98	24	84.64
FY99	1	4.51
FY00	13	46.61
Total:	110	396.76
Supervision/ICR		
FY98	2	10.07
FY99	8	51.71
FY00	7	49.72
FY01	22	112.92
FY02	23	141.18
FY03	12	88.81
FY04	12	92.37
FY05	15	120.80
FY06	16	106.22
FY07	15	113.79
FY08	13	100.03
FY09	7	53.73
Total:	152	1,041.35

⁴⁴ Lending: Only the staff weeks for FY00 were available from the system, the remaining years were calculated based on the average staff week cost for FY00. Supervision/ICR: staff weeks for FY98 and FY99 were calculated based on the average staff week costs for FY00 through FY08.

Annex 6. Beneficiary Survey Results

In 2007, the PMU carried out a thorough study⁴⁵ (*PMSS, Transition to a Permanent Structure in the MoC*) following the Delphi methodology to review different scenarios for the institutional restructuring and organization of the PMSS program in order to provide continuity after Project closing. This study looked at the project's history, assessed program outcomes and advanced the analysis of future scenarios. The Delphi methodology meant the participation of 72 panelists representing a wide array of public and private stakeholders in the WSS sector and project beneficiaries (universities, international organizations, ministries and federal entities, legislative power, national councils, SNSA, beneficiary states and municipalities, program partners and individual collaborators). The detailed survey undertaken showed almost unanimous support within federal and local sector authorities and stakeholders on the need to continue the Project through a third phase. For more than 80 percent of participants in the survey, the two main achievements of the PMSS program are: i) its contribution to the development and approval of the sector legislative and regulatory framework; and ii) the consolidation of the WSS information system, SNIS. Some additional results of the Survey are highlighted below:

One hundred percent of surveyed participants recognized that the program contributed to sector development (67 percent decisively, 33 percent partially). According to surveyed participants, program actions that most contributed to the sector evolution include: i) The consolidation and evolution of the SNIS (96 percent); ii) development and approval of a sector legal framework at the national level (86 percent); iii) fostering a discussion environment about the relevance of the sector's institutional reform and creating adequate conditions for changes in the sector (83 percent); and iv) measures focused on the management of water losses and energy efficiency in the sector (80 percent).

⁴⁵ Programa de Modernizacao do Setor Saneamento (PMSS) – Transicao para uma estrutura permanente do Ministerio das Cidades.

Annex 7. Stakeholder Workshop Report and Results

A one-day beneficiary roundtable workshop was held on March 18, 2009, to discuss the results and lessons learned of the PMSS II Project.

Participants included:

- Representatives of the National Water Supply and Sanitation Secretariat of the Ministry of Cities (the Acting Secretary)
- Representatives of the PMSS PMU/UGP (Coordinator and other key staff)
- AEASBE, the Brazilian Association of State Water Companies
- ASSEMAE, the Brazilian Association of Municipal Water Companies
- ABAR, the Brazilian Association of Water Regulating Agencies
- ABCON, the Brazilian Association of Private Water Operators
- State water companies
- Municipal water companies
- Universities
- Consulting firms and individuals

Summary of discussions:

- The PMSS program has proven to be extremely robust and has maintained its important 'think tank' role in the Brazilian WSS sector, throughout the years.
- Despite political changes in the federal government, PMSS has continued to act as a 'flagship' vehicle at the national level for sectoral policy and legal dialogue, for preparation of key sector studies and think pieces and for providing strategic TECHNICAL ASSISTANCE and capacity building activities.
- PMSS should continue to provide this 'think tank' role for the sector, and should eventually be transformed into a permanent entity that does not depend on outside financing to guarantee its functioning.
- Better mechanisms should be developed and implemented to more fully and broadly disseminate the work that PMSS produces to a national audience.
- PMSS should develop clear eligibility criteria and prioritization criteria for its areas of action and for its identification and ranking of potential beneficiaries. It should increase the universe of beneficiaries and have better criteria for identifying those beneficiary utilities through which greater impacts can be achieved. More attention should be given to scaling-up successful pilot activities.
- PMSS should be better used to positively influence the budget, credit and financing priorities and mechanisms of the federal government so as to direct spending on sectoral issues that have proven benefits and impacts.
- In identifying priority areas of study, technical assistance, capacity building, PMSS should better respond to the realities of the Brazilian WSS sector, including: providing sustainable access of WSS services to the urban and rural poor; improving non-revenue water; increasing wastewater collection and treatment; tackling urban water quality and pollution control; etc.

- SNIS should not be allowed to decline; on the contrary, SNIS indicators should be further developed to include those related to quality of service provision.
- PMSS should do far more in supporting the issue of WSS regulation.
- The organizational structure of a future PMSS should learn from the successes and difficulties encountered in implementing PMSS II: the PMU should be led by Ministry staff and supported by individual consultants (or consulting firms) in key areas as appropriate; the role of UNDP or a similar financial/technical intermediary should be carefully reviewed to avoid a repetition of the considerable delays that UNDP inflicted on PMSS II's implementation; if the volume of procurement were to be significantly increased under a future PMSS then the use of a consulting management firm might have to be considered.

Annex 8. Summary of Borrower's ICR

I. INTRODUCTION

1. As part of its mission, the National Secretary of Water Supply and Sanitation (SNSA) of the Ministry of Cities (MoC) promotes the development of the Brazilian Water and Sanitation (WSS) sector, contributing technical assistance, undertaking studies and surveys, participating in training for the Brazilian cities and states in the area of basic sanitation, collaborating on the development of legal frameworks and local and regional WSS plans, and, lastly, investing in management structures and in the revitalization of service providers. In recent years, many of these initiatives were developed by the Water Sector Modernization Project (PMSS), under the direction of SNSA/MoC.

2. The first phase, PMSS I, began in 1993, and it evolved into a program of continuous support for the branch of the Federal Government responsible for WSS, currently SNSA/MoC. The second phase, PMSS II, is the result of Loan Agreement No. 4292/BR, signed by the Brazilian Government and the International Bank for Reconstruction and Development in 1999.

3. There were two integral components of this Loan Agreement: (i) Institutional Reform and Regulation, and (ii) Management and Promotion. The first component includes actions related to: (a) technical assistance to states and municipalities, directed to managers, operators and regulators; (b) development of studies and surveys; (c) training and technology activities through courses, dissemination, publications; (d) support to WSS entities; (e) specialized assistance to SNSA/MoC for the development of a legal and regulatory framework for the sector; and (f) National Water Supply and Sanitation Information System (SNIS). The second component includes initiatives increasing the visibility of the Project through the participation of managers and technicians at events and the carrying out of activities related to the monitoring and evaluation of the Project.

4. PMSS was structured around supervision, through the Project Steering Committee, and execution, through the PMU. A partnership with the UNDP was signed for Project implementation to act as the Project's fiduciary agent.

5. The following is an executive summary of the Final Report to be included in the PMSS Implementation and Completion Results (ICR). The historical trajectory of the Project presents evidence justifying *highly satisfactory* results, as they had a significant impact on the Brazilian WSS sector.

II. INSTITUTIONALITY OF THE PROJECT

6. If analyzed from a historical perspective, taking into account the diverse administrations, PMSS presented relative institutional stability given the different governmental transitions. Over the years, the Project survived the various WSS institutional arrangements within the Federal Government. To cite the most recent, the WSS sector was first linked to the Secretary for Urban Policy of the Ministry of Planning, Budget and Management (SEPURB/MPO), then to the National Secretary for Urban Development under the President of the Republic (SEDU/PR), and finally, in 2003, SNSA/MoC.

7. PMSS II encountered implementation difficulties after effectiveness of the Loan Agreement. The intensive search for a solution, which directly involved the MoF, reinforced the

Project's level of institutionalization within the Brazilian Government. The on-lending of investments was foreseen in the original institutional arrangements. However, the Fiscal Responsibility Law (LRF), passed in 2000, prevented the Brazilian Government from lending to lower tiers of government, thus preventing this part of the Project.

8. Discussions with the MoF and the World Bank on a solution to this problem led to the restructuring of the Project. The resources devoted to civil works were canceled and the resources for the components on Institutional and Regulatory Reform and Management and Promotion were increased, though only slightly. This process extended until the end of 2002, and only in August 2003, with the new government of President Lula, was an amendment passed. The delay in reaching a solution extended the deadline for implementation of PMSS II.

9. There are several reasons why this episode should not be given any weight in the evaluation of the Project. First, because the effective implementation of PMSSII occurred after its restructuring, more precisely, after the signing of the Amendment Term, the project was actually executed within five years. In the most conservative situation, considering the year 2002 as the baseline, the implementation occurred in six years. In both situations, the time frames were completely satisfactory for projects with the complexity of PMSS II.

10. Second, the LRF was of maximum importance for the national macroeconomic situation; therefore, it was unthinkable that a governing body of the Project, even its executing agency, could devise a solution or a timeframe for resolving the problem. This was the responsibility of the MoF who had their own agenda. The Project should not be penalized for the delay in this process. Instead, the episode should be considered a lesson learned, with the record showing that greater flexibility in institutional arrangements could avoid future difficulties and impediments which are unforeseen during Project preparation.

III. POLITICAL-INSTITUTIONAL REFERENCE

11. The political and constitutional reforms initiated in 1988 put the WSS sector on a clear road to reform. The effort to overcome the institutional void since the failure of PLANASA resulted in diverse and competing proposals for the institutional rearrangement of the sector.

12. These proposals were of distinct ideological origins, some based on government initiatives, for example PL 4147, and others based on social and political restructuring, for example PLC 199. In this context, PMSS actively promoted studies and debates and opened opportunities for the participation of specialists that enhanced the understanding of the sector from the judicial, institutional, economic, environmental and social points of view.

13. The Project contributed to the definition of the legal framework for the WSS sector, based on planning, regulation and supervision, in a cooperative not controlling manner, and on the provision of services. PMSS prominently participated in the discussion and approval of Law 11.107/2005 that regulates Public Consortia and supported SNSA/MoC in the construction of PL 5.296/2005, as well as in the debates that culminated in the presidential approval of Law 11.445/2007, which set forth national guidelines and established a basic federal WSS policy.

14. In this context, it is clear that the inclusion of the Project in the political-institutional agenda of SNSA/MoC was stable and at the same time functionally flexible. The Project possessed two of the essential characteristics for the high quality performance of SNSA/MoC. One of these characteristics was its operational flexibility, which allowed the Project to provide

the Secretary with the maximum agility and high quality consultants and specialists. The second characteristic was the Project's *modus operandi*, which ensured the ownership over the studies, methods and systems for the permanent team of SNSA/MoC.

IV. STRUCTURED PROJECTS

15. Throughout its implementation, PMSS served as the principle support instrument for the Federal Government's WSS policy as it sought to create an environment that is conducive for the development of the country's WSS sector. Numerous subprojects were developed, involving links with diverse national and international partners. Some of these subprojects include:

- a) **National Water Supply and Sanitation Information System (SNIS)** – This is the most recognized product of PMSS in its thirteen years of implementation. SNIS consolidates an important tool for the formulation and implementation of policies and programs to evaluate the performance of service providers and guide regulatory, surveillance and social control activities in the sector. Its credibility allowed it to consolidate a series of historical data and information provided by a survey of WSS service providers. This survey is progressively expanded in size and representation.
- b) **Technical Assistance to States and Municipalities** – Support to managers, regulators and service providers improved efficiency indices, and, consequently, the ability to finance the sector. PMSS provided technical assistance in different areas: (i) support and incentives for institutional reform, including the proposal of new models of organization of services; (ii) support for the restructuring and revitalization of public service providers; (iii) support for the planning and exercise of regulatory activities. The overall performance of PMSS is highlighted in the following activities:
 - Support to State Government of Piauí for restructuring of WSS services in the State, including revitalization of AGESPISA;
 - Support to State Government of Pernambuco and Municipality of Recife for renegotiation of service concessionary;
 - Diagnostic and proposals to revitalize the Santa Catarina State WSS utility CASAN;
 - Proposal to restructure the management of WSS services in the State of Rio Grande do Norte, including CAERN;
 - Technical-operational planning of WSS services in the State of Rondônia, including CAERD;
 - Support for restructuring of CAER/RR;
 - Technical-operational planning of WSS services in the Municipalities of Diadema, Salto and Birigui in the State of São Paulo and the Municipalities of Itabirito and Barbacena in the State of Minas Gerais;
 - Support to the management model proposal for WSS services in five municipalities in the Bay of the River Itapocu in the State of Santa Catarina (Corupá, Guaramirim, Jaraguá do Sul, Massaranduba and Schroeder), which resulted in the creation of the Inter-municipal Consortium of WSS in the Itapocu Valley;
 - Support to the state (ARCE/Ceará, AGR/Goiás, AGER/Mato Grosso) and municipality (ARCG/Campo Grande/MS, AGERSA/Cachoeiro do Itapemirim/ES, ARSBAN/Natal/RN and AMAE/Joinville/SC) regulatory agencies;

- Support to ten municipalities (Caxias do Sul/RS, Santa Maria/RS, São Bento do Sul/SC, Santo André/SP, Guaratinguetá/SP, Sorocaba/SP, Ituiutaba/MG, Viçosa/MG, Montes Claros/MG, Ilhéus/BA) for the implementation of situational diagnostics focused on service providers and the existing systems.
- c) **Political-institutional agenda of SNSA/MoC** – PMSS always provided technical support for the formulation and implementation of the legal and regulatory framework for the sector. The Project contributed to the discussion and approval for Law 11.107/2005 that regulates the Public Consortia and to the creation and adoption of Law 11.445/2007 that establishes the national guidelines and institutes federal WSS policy.
- d) **National Network of Training and Technology Extension in WSS (RECESA)** – In partnership with various Federal Government agencies and Funding for Studies and Surveys (FINEP), PMSS led the process of creating and structuring the Network, including implementing a national agenda for training and technical exchange. Four regional centers were established, coordinated by fourteen universities, and close to eighty partner institutions were added. PMSS played the role of Executive Center on the Management Committee of RECESA.
- e) **Com+Água Program** – The innovative methodology in the management of water losses and electrical energy adopted the concepts and practices of management, social mobilization, education and culture, and social communication as the principal strategy that integrates technical-operational engineering solutions to achieve satisfactory and sustainable results. Technical-institutional projects for the management of water losses and the use of electrical energy were developed in ten Brazilian municipalities by three state service providers and seven municipal operators (Caxias do Sul/RS, Santa Maria/RS, São Bento do Sul/SC, Santo André/SP, Guaratinguetá/SP, Sorocaba/SP, Ituiutaba/MG, Viçosa/MG, Montes Claros/MG, Ilhéus/BA).
- f) **Integrated Water Supply and Sanitation Management System GSAN** – Inaugurating an unprecedented platform for the sector, this system provided technical support to service providers through freely-available software. During its development the system served COMPESA/PE, CAERN/RN, CAER/RR, Águas do Amazonas (private company); COSANPA/PA; CAEMA/MA; e EMBASA/BA.
- g) **Studies and surveys** – This component focused on technical, economic, financial, political, institutional and management themes by exploring issues important for the development of the sector, expanding reflection and analysis, providing knowledge of tendencies and perspectives for development, and contributing to the implementation and evaluation of public policies, of which the following should be emphasized:
- Investment Needs to Achieve Universal WSS Service in Brazil;
 - Project of Incentives for Efficiency and Results in WSS Actions Financed by FGTS;
 - Status of Deficiencies to Access to WSS in Brazil and Evaluation of Millennium Development Goals in Sanitation;
 - Decentralization of WSS Service Providers: The State of Mato Gross Case;
 - Evaluation of Private Sector Participation in the Provision of WSS Service in Brazil;
 - Evaluation of Control and Monitoring of Water Quality for Human Consumption in Brazil;

- System to Evaluate Satisfaction with WSS Services;
 - Condominial WSS System Manual, which resulted in the publication of the “Condominial System: A response to the challenge of achieving universal water supply and sanitation”;
 - Technical-operational and institutional diagnostic of WSS services in the municipalities of the Watershed of Rio Xingu, in September 2005;
 - Standardized diagnostic methodological tools for WSS service providers with a view to integrated management of water losses and the efficient use of electrical energy;
 - Study of Scenario for the Institutional and Operational Restructuring of PMSS, with the objective of continuing PMSS; and
 - Study on management associated with Solid Waste in the State of Piauí.
- h) **Development of Public Consortia** – Based on Law 11.104/2005, this fostered the development of an alternative model of organization and management of services, and pioneered a national discussion, that continues to this day, on this model as an option for the country. Through technical and institutional support, PMSS was crucial in the creation of two consortia: 1º Public Consortium of WSS in Brazil, the CORESA SUL of Piauí, with the participation of thirty one states in the south of the State; and 2º Inter-municipal Consortium on WSS in the Itapocu Valley, in the State of Santa Catarina, with the participation of seven municipalities (Barra Velha, Corupá, Guaramirim, Jaraguá do Sul, Massaranduba, São João do Itaperiú e Schroeder).
- i) **Integration with Other Initiatives of SNSA/MoC** – This involved technical and financial support for the development of works, such as the national debate on WSS, approved by Law 11.445/2007; the National Project to Combat Wasted Water (PNCDA); the National Project for Public Management and De-bureaucratization (GESPUBLICA); the Environmental Education and Social Mobilization for WSS Project (PEAMSS); and the projects to promote an improved management of solid waste, among others.
- j) **National Technical Cooperation** – This cooperation occurred through the creation of partnerships with the Electrical Energy Conservation Project; the National Association of Municipal WSS Service Providers (ASSEMAE); the Brazilian Association of Sanitary and Environmental Engineering (ABES); the Brazilian Institute of Municipal Administration (IBAM); the Brazilian Group to Evaluate Private Sector Participation in WSS (GTPSP Brazil); among others. In addition, it promoted the development of studies, technical-operational guides, model projects, events and training in themes related to the development of the WSS sector.
- k) **International Technical Cooperation** – Through the Brazil-Italy Cooperation Protocol in WSS, signed between the MoC and HYDROAID (*Scuola Internazionale dell’Acqua per lo Sviluppo*), this partnership developed training activities specializing in public management, focused on municipalities, through technical-scientific research, which motivated joint cooperation between Brazilian universities and partners (especially, Manaus, Recife, Belo Horizonte and Santo André) and Italian institutions. The cooperation also brought together the Government of Portugal and the State of Piauí in providing management training activities to over one hundred municipalities in Brazil and Portuguese-speaking countries in Africa (Angola, Mozambique and Cape Verde).

- l) **Disclosure and Dissemination of Experiences** – This partnership with Brazilian WSS entities involved providing technical and financial support at various events.
- m) **Editorial Program** – This Program regularly publishes materials promoting political-institutional reflection and technical exchange and dissemination, including the recent development of the WSS Modernization Series and the “WSS for All” Publication and Magazine Series, among which the following should be highlighted:
- Five editions of WSS for All, each on a central sector theme;
 - Five consecutive annual editions, since 2002, of Diagnosis of Urban Solid Waste Management, under SNIS;
 - Three consecutive annual editions, since 1995, of the Diagnosis of WSS Services, under SNIS;
 - WSS for All – Publication 1 – Law Program no. 5296/2005: Guidelines for WSS public services and national policy on WSS – PNS;
 - Guides for Municipal WSS Plans, March 2006;
 - WSS for All – Publication 2 / First Part – Restructuring services for WSS in the State of Piauí – the first Public Consortium of WSS – Study scenarios for WSS service provision in the State of Piauí, April 2006;
 - WSS for All – Publication 2 / Second Part – Restructuring services for WSS in the State of Piauí – the first Public Consortium of WSS – The process of implementation of Regional WSS Consortium in the south of Piauí – CORESA Southern Piauí, April 2006;
 - WSS for All – Publication 3 – The clean development mechanism as a factor of financing WSS projects and the impact of PL 5296/05, May 2006;
 - Territory and Integrated Urban Water Management;
 - WSS for All – Publication 4 – Management of urban rainwater;
 - Six Practical Guides – operating techniques in water systems;
 - Domestic solid waste: a project of selective collection with social inclusion, in partnership with the Municipality of Londrina/PR;
 - Condominial System: A response to the challenge of achieving universal WSS service provision;
 - Extensive literature on the Com+Água Project;
 - **Websites for SNIS (www.snis.gov.br) and PMSS (www.cidades.pmss.gov.br)** that publish studies and experiences on the Project, include a database of SNIS.

V. RESULTS ACHIEVED

5.1 Targets and indicators for monitoring and evaluation

16. The World Bank undertook a Mid-Term Review in May 2005, and according to the Aide-Memoire, PMSS II had met all the results and targets set by its closure. Given these results, the World Bank and the Brazilian Government revised the targets and respective indicators for the evaluation of the results of PMSS II. They agreed to maintain those targets and indicators foreseen in the Loan Agreement and also added nine new targets and incorporated new indicators. The table below presents the various results and indicators distributed into the following columns: Initial (December 1997); MTR (May 2005); Final Situation (February 2009); and the Final Target foreseen for PMSS II.

17. Some of the indicators were direct and concrete results of PMSS actions, while others resulted from the general evolution of the sector, with the majority of those obtained by SNIS. The targets were met for seventeen of the twenty one indicators, with fifteen exceeding the targets, and with the other two just meeting the targets. Finally, for the other four indicators, the overall performance of the sector did not meet the target.

18. The first group of indicators, as shown in the table below, expresses highly satisfactory results, some with final values above the agreed targets; for example: (i) the number of municipalities reporting their water and sanitation information in the SNIS for which the final results are 81.9 percent above the agreed target; (ii) the number of people trained by the project in regulation, non-revenue water, water and energy conservation as well as management of services has a final result that is 186.7 percent above the target; (iii) the number of sector studies undertaken, which is 46.7 percent above the agreed target; and (iv) the number of publications, which is 86.7 percent above the agreed target.

19. The group of indicators related to the general water sector evolution in Brazil was included in the list of performance indicators of the PMSS, considering that within the program's objectives is the development of actions that contributed to an overall better sector performance in the country as a whole. Evidently, that are a lot of public and private actors responsible for this evolution; however, considering the history of PMSS and that the participation of the program in the sector reform process and improvement of services is a known fact, the analogy of the analysis with such indicators is fully justified.

20. With the results achieved it is possible to affirm that the country has lived all of these years, since the creation of PMSS an effective evolution of its overall performance, as the highly positive results demonstrate, with a clear improvement in the indicators over the last ten years, as indicators 10 through 19 in the table below show. Only four indicators did not achieved their agreed targets, although the final results were very close to the targets, one of each reached 99.1 percent of the target (indicator 14), signaling an improvement in the overall efficiency of the Brazilian water sector in this period and by analogy towards the great performance of the PMSS.

Indicator	Unit	Values				
		Baseline	May-05 (MTR)	February 2009	Final Target	% Achieved
1. Number of states with sector legal and regulatory framework approved by the legislative	States	0	10	15	12	125%
	Municipalities	0	5	35	6	583%
2. Number of municipalities with a formal agreement for the regulation and provision of water supply and sanitation services with regional regulatory agencies	Municipalities	0	1	166	8	2,075%

Indicator	Unit	Values				
		Baseline	May-05 (MTR)	February 2009	Final Target	% Achieved
3. Number of people in the North, Northeast and Central-West regions receiving water supply and sanitation services from private operators	Thousand People	0	2,600	3,804	3,000	126.8%
NATIONAL WATER AND SANITATION INFORMATION SYSTEM (SNIS)						
4. Inclusion of information about service quality and customer service attention in SNIS	Quality of service and customer satisfaction indicators	N/A	13 indicators reported by some service providers	Revised group of indicators reported in the annual report	Revised group of indicators reported in the annual report	100%
5. Number of municipalities reporting their water and sanitation information to the SNIS	Municips.	280	2,000	4,547	2,500	181.9%
6. Average monthly hits to the SNIS web site	Hits/month	N/A	5,000	15,185	5,000	303.7%
TRAINING						
7. Number of people trained by the Project in regulation, reduction of non-revenue water, water and energy conservation, efficient management of service provision, among others	People	0	1,000	4,300	1,500	286.7%
SECTOR STUDIES AND PUBLICATIONS						
8. Number of water supply and sanitation sector studies undertaken and financed by the Project	Studies	9	11	22	15	146.7%
9. Number of water supply and sanitation sector publications financed by the Project	Publics.	12	21	56	30	186.7%
OVERALL WATER SUPPLY AND SANITATION SECTOR EFFICIENCY						
10. Labor productivity index (SNIS indicator I ₀₄₈)	Staff/1,000 water and sanitation connects.	3.3	2.6	2.5	2.5	100%
11. Labor productivity index (SNIS indicator I ₀₄₅)	Staff/1,000 water connections	4.9	3.7	3.6	3.3	91%
12. Labor expenses as % of operational revenue (SNIS indicator I ₀₃₁)	%	36.4	29.2	26.5	28.0	105%

Indicator	Unit	Values				
		Baseline	May-05 (MTR)	February 2009	Final Target	% Achieved
13. Labor cost as a percentage of total operating cost (SNIS indicator I ₀₃₅)	%	53.3	42.8	38.5	39.0	101%
14. Percentage of metered water connections (SNIS indicator I ₀₀₉)	%	77.6	87.9	89.2	90.0	99%
15. Investments financed with internally generated resources/total investments	%	37.5	55.7	52.7	59.0	89%
16. Monthly household water consumption (SNIS indicator I ₀₅₃)	m ³ /household/ month	18.6	14.1	14.4	14.0	97%
17. Energy efficiency in water systems (SNIS indicator I ₀₅₈)	kWh/ m ³ produced	N/A	0.68	0.67	0.63	94%
18. Working ratio (SNIS indicator I ₀₃₀)	%	68.3	68.3	68.7	68.0	99%
19. Current ratio (SNIS indicator I ₀₆₁)	Ratio	0.92	0.87	1.01	0.92	110%
20. Collection rate (complement of SNIS indicator I ₀₂₉)	%	86.9	89.9	91.7	90.0	102%

5.2. Qualitative Evaluation Using the Delphi Survey

21. The program carried out a study on alternative scenarios for the institutional and organizational restructuring of PMSS, aiming at the program's continuity, which resulted in a publication entitled "*Water Sector Modernization Program – Transition to a Permanent Structure in the Ministry of Cities.*" This study goes over the history of the PMSS, undertakes an evaluation of the program and an analysis of future scenarios, guided by the Delphi technique, with the participation of 72 stakeholders, in a composition highly representative of the public and private actors that are active in the water and sanitation sector in Brazil, including: universities, specific water sector agencies, NGOs active in the area of water sector public policies, international organizations, ministries and federal government agencies active in the water sector, federal legislators, national councils, the National Secretariat for the Water Sector in the Ministry of Cities, States and Municipalities that were supported by the program (beneficiaries), partners involved with PMSS activities in the sector, individual collaborators highly active in the sector.

22. The final report of this study presents detailed survey data and analyses. It is important to note the summary of some of the relevant results, which contribute to the qualification of the performance of PMSS.

23. **Advances in the Water Sector in Brazil.** For more than 80 percent survey participants, the two main advances in the water and sanitation sector in Brazil in the last ten years among the options presented are: (1) the evolution in the development and approval of the regulatory framework for the sector, and (2) the consolidation of SNIS.

24. These advances are results of actions of the SNSA for the Water Sector in the MoC, which counted with the active participation of the PMSS, according to the view of survey participants and also manifested in the comments made in the open sections of the questionnaire.

25. **Relevance of PMSS to the Sector.** The study also evaluated PMSS' contribution to the sector development. The program's longevity, institutional stability and ability to survive many institutional arrangements for the water sector in the federal government add weight to this analysis.

26. The results indicate that 100 percent of surveyed participants that responded to this question recognize that the PMSS has decisively (67 percent) or partially (33 percent) contributed to advances in the Brazilian water sector reform and development. The option "no" presented in the questionnaire had zero responses.

27. It is important to note that this study has as a premise that other sector stakeholders also performed a decisive role in the sector's development. As such, the questionnaire always had "partially" as an option.

28. In order to explore more thoroughly the quality of PMSS' participation, the Study has as a reference the program's role in providing technical support to the National Secretariat for the Water Sector in the MoC. For this role, the study evaluates the surveyed responses to the work program of PMSS. For the surveyed participants, the actions of the program that have significantly contributed for the sector's development are:

- 96 percent for the consolidation and further development of the SNIS.
- 86 percent for the development and approval of the sector's legal framework.
- 83 percent for the role of fostering an environment open to discussion on the relevance of institutional reform and creation of adequate conditions for sector change.
- 80 percent for the measures related to the management and control of water losses and increased sector energy efficiency.

29. The surveyed participants also attribute relevance in the order of 70 percent to all of the other actions supported by PMSS, with the exception of the revitalization of public operators and support to the establishment and operation of regulatory agencies (state and municipal) for which the indexes were close to 60 percent.

30. It is interesting to note the coherence in the responses among what is, in the view of surveyed participants, sector development and what better characterizes the importance of PMSS' role.

31. **Sector Risks with the Closing of PMSS.** The study asks surveyed participants to evaluate if the finalization of actions under PMSS, as a result of the Loan's closing, poses risks of jeopardizing the advances achieved in the water sector. For almost all of participants of the survey (95 percent) this risk exists, 82 percent of which qualified this risk as potential, while 13 percent qualified as partial.

32. In qualifying this risk, the respondents evaluated that the discontinuity of PMSS becomes critical in regard to the continuity of development of SNIS, support to institutional reform, continuity and scaling up of the training program and to the development of research and studies.

33. Of the work program undertaken by PMSS, supporting the mission of National Secretariat for the Water Sector in the MoC, the discontinuity of almost all of the activities developed by program represents a high or medium risk for 70 percent of the participants. Below this percentage, there are exceptions only to those actions related to the re-starting investments and the qualification of public expenditures, which are in fact more linked to decisions and measures adopted by the of National Secretariat for the Water Sector in the MoC.

34. **Consensus.** The study reveals two areas of large consensus; the first the recognition of the National Secretariat for the Water Sector in the MoC as the body that defines guidelines and formulates policies and programs for the sector.

35. The other confirms the importance of the technical support provided by PMSS to the National Secretariat for the Water Sector in the MoC, which includes:

- The relevance of the work program developed by PMSS, characterized mainly for
 - a. Its role as a sector think-tank, highlighted as a privileged space of thinking on water sector issues, supporting the SNSA in the MoC in the formulation and evaluation of policies and programs through undertaking studies, research, as well as production and dissemination of knowledge
 - b. Support to sector stakeholders (managers, regulators, operators, users) through technical assistance support aiming at an improved performance and quality of water and wastewater service provision.
 - c. Fostering capacity building, which has become a strategic instrument for the general evolution of the sector and the qualification of active sector stakeholders.
- The recognition of the importance of PMSS for the water sector in Brazil and for the mission of the SNSA in the MoC.

5.3 Financial Performance

36. The table below presents the amount of financing used under the PMSS. As it can be seen, a total of US\$48.96 million have been used, which is 42.5 percent above the values established in the Loan Agreement, reaffirming **the highly satisfactory results of the PMSS**, including with regards to financial performance.

37. In total, the US\$28.75 million determined in the Loan Agreement, with US\$25 million in financing from the World Bank and US\$3.75 million from the national counterpart funds. Due to the devaluation of the US Dollar, which happened in the last years of implementation of the program, the total value of PMSS projects went above the total amount envisaged under the Loan Agreement, when the resources were exchanged from Brazilian Real to the US Dollar. For this reason and to assure the full implementation of all program activities, the Brazilian Government added a contribution of US\$1.8 million and extended by its own accord the deadline for the finalization of activities until August 2009, when the final completion of all projects initiated by the PMSS II is expected, demonstrating the strong ownership by the Government to the project activities.

38. Aside from the above, the Brazilian Government provided resources for the financing of UNDP in the amount of US\$1.148 million. In addition, it should be added that during project execution, the PMSS was able to secure resources from other financiers for a total estimated in

US\$8.6 million, which were used in projects planned under the Legal Agreement, but that due to changes in the Brazilian Legislation could not be computed as eligible expenditures by the project, such as:

- a) Expenses with payment of staff, airline tickets and per diem for the core team of the Project Management Unit since January 2004 for a total of US\$2.8 million (Source of funding: OGU, through Ministry of Cities; Reason: Prohibition from the Public Labor Ministry that the core PMU staff continue to be contracted directly through international programs, with the treasury now contracting them through public exams).
- b) Expenses with capacity building activities of RECESA, created by the PMSS in 2005 for a total of US\$3.5 million (source of funding: OGU, via CT-HIDRO – sectoral fund for water resources, MoC and FUNASA – National Health Foundation; reason: legal country norm in place since 2004 prevents the contracting of teachers of public Brazilian universities as resources for international programs).
- c) Expenses with activities related to the cooperation Brazil-Italy in the water sector, between 2005 and 2008, for an amount of US\$2.3 million (source of funding: Government of Italy, through HYDROAID; reason: a significant part of the activities refer to the training of municipal managers in water issues, given the reasons of item b above; in addition, there have been many activities of exchange and dissemination of experiences in which resources from the Italian portion of the cooperation was used for expenses in Italy).

Loan Agreement 4292 (US Dollar)

Year	World Bank		Counterpart Funds		Total	
	Annual	Cumulative	Annual	Cumulative	Annual	Cumulative
2000	1,710,000.00	1,710,000.00	301,764.71	301,764.71	2,011,764.71	2,011,764.71
2001	1,295,820.00	3,005,820.00	228,674.12	530,438.82	1,524,494.12	3,536,258.82
2002	690,030.00	3,695,850.00	121,770.00	652,208.82	811,800.00	4,348,058.82
2003	448,275.26	4,144,125.26	79,107.40	731,316.22	527,382.66	4,875,441.48
2004	1,526,000.00	5,670,125.26	269,294.12	1,000,610.34	1,795,294.12	6,670,735.60
2005	-	5,670,125.26	-	1,000,610.34	-	6,670,735.60
2006	4,263,110.70	9,933,235.96	752,313.65	1,752,923.99	5,015,424.35	11,686,159.95
2007	7,203,214.66	17,136,450.62	1,271,155.53	3,024,079.52	8,474,370.59	20,160,530.14
2008 (*)	7,497,624.40	24,634,075.02	1,323,110.19	4,347,189.71	8,820,734.59	28,981,264.73
2009 (*)	365,924.98	25,000,000.00	64,575.00	4,411,764.71	430,499.98	29,411,764.71

(*) Includes the values applied in the grace period (10/31/2008 until 02/28/2009)

Additional Financing Mobilized by the Program (US Dollar)

Additional financing by the Federal Government to cover the devaluation of the Dollar	1,800,000.00
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UNDP Payment	1,147,843.53
Staff, travel expenses for core PMU staff	2,800,000.00
REeCESA – National Capacity Building Network for the Water Sector	3,500,000.00
Cooperation Brazil – Italy in the water sector	2,300,000.00
TOTAL	11,547,843.53
GRAND TOTAL	40,959,608.24

VI. Brief Comments on the World Bank Participation

- a) The PMSS developed in close coordination with the World Bank, which acted not only as a financier, but also as a partner in the concept and development of projects, closely following up and contributing with up-to-date and mature technical knowledge of the sector, introducing concepts and techniques applied in other World Bank projects developed in Brazil or abroad.
- b) When there was a need to restructure the PMSS II, the World Bank's role was highly productive from the point of view of finding a solution. In addition, the interface between the World Bank and other Ministries of the Brazilian Government, in particular the Finance Ministry, contributed decisively to the continuity of the program.
- c) With the change of Governments, the World Bank was very diplomatic in its relationship with the new team of Lula's Government, articulating in a pro-active form in favor of the program's execution, conciliating the PMSS II actions with the demands and new policies of the Government, without de-characterizing and compromising its scope, objectives and targets, assuring the World Bank's position in have as a priority the development of the water sector in Brazil.
- d) This position increased even more the high regard that the World Bank enjoys within the Brazilian Government, especially within the MoC. Working in partnership with the World Bank allowed for the international recognition of the PMSS, with presentation of its various activities in seminars, conferences and congresses held abroad. These include SNIS, Com + Água, the study on the Evaluation of Private Sector Participation in the sector and the Manual for Condominial Sewerage, which was presented with success during Water Week 2009.
- e) In light of the above, and according to our view that the program's execution was done in a joint fashion, the merits for the excellent results of the PMSS II are also merits of the World Bank, reason for which one should attribute the participation of the **World Bank the rating of highly satisfactory.**

VII. Lessons Learned

7.1 Strengths

The strengths are tangible and intangible characteristics that optimized the Project's performance.

- a) **PMSS has become an important technical reference for the sector, given its continuous and specialized actions; it has earned the role of a think-tank in the Brazilian water supply and sanitation sector.** It has become an agent of reflection and an inducer of changes in the sector. The publications, technical assistance works and other events sponsored by the Program helped to raise the level of the debate. PMSS included the participation of professionals from diverse areas of knowledge, thus enriching the research on water supply and sanitation, and presenting a predominant engineering vision. The Project emphasized and disseminated an interdisciplinary vision from the perspective of lawyers, scientists, politicians, geographers, urban specialists, sanitation specialists, economists, sociologists, environmentalists, among others. The development of studies and surveys with both national and regional scopes assisted the Federal Government in developing policies and projects, evaluating government performance and its implications for the sector and disseminating this knowledge for the public.
- b) **In particular, the Project stood out as a national parameter in water supply and sanitation information systems.** The technical reference of PMSS gained prominence with SNIS – National Information System on Water Supply and Sanitation, which is recognized as an important instrument in the development and implementation of policies and projects, orientation and application of resources; improvement in management; orientation of regulatory activities, benchmarking, and reference for performance evaluation, supervision and social control. SNIS is the largest and best database of water supply and sanitation indicators in Brazil, and it is fully public and freely available by the public, private enterprise, universities, civil society, non-governmental organizations, technicians, consultants, politicians, government leaders, service provider managers and regulatory agents. Among the many factors of success, was the importance of collective construction involving the main Brazilian water supply and sanitation agents, together with the leadership and coordination of PMSS, which was clearly identified and recognized in the country. It is also worth saying that both in Brazil and on the international scene, SNIS acquired recognition as an important reference for the modeling and structure of water supply and sanitation information systems.
- c) **Through cooperative actions in the field of management, PMSS helped leverage the institutional development of the water supply and sanitation sector.** Continuous actions in support of management and institutional reform qualified the Project on the national scene as a reference for technical assistance, training and proposals of alternatives for review of the processes and models of institutional organization. It is worth stating that the achievement of results in this field takes time and should be done continuously and satisfy the technical-institutional and political characteristics at both the local and regional levels. In this context, the fact that PMSS has taken national leadership, at the level of responsibility of the Federal Government, in the actions and debates on the institutional reform of the sector and on the orientation of government policies issued by the secretaries, was decisive for the strong results achieved. The studies and technical assistance undertaken by the Project were based on the concept of training in process. The support for sector agents translated in the empowerment of people with positive implications for the strategic plan of the organization. The modus operandi adopted by PMSS for the actions of technical assistance and training induced the agents to internalize the content, techniques and methods and their suitability to local conditions. There is a consensus in the Brazilian water supply and sanitation sector on the importance of a continuous process of support for the revitalization of service provision,

which includes both preserving the positive aspects of the current sector organization and overcoming the inefficiencies and inadequacies of the various orders, which may involve the need of new models of management including the provision and regulation of services. In this process of restructuring and revitalization of the sector, the need for a constant dialogue with the key partners in the sector, as well as the diagnostic and technical analysis and improvement of public policies for management of water supply and sanitation sectors and actions in diverse areas, such as engineering, economics, finance, planning, institutional development and organization, legal, communication, information technology, environmental management, regulation, participation and social control, among others, reinforces the importance of the reference created by PMSS throughout its years of implementation.

- d) **The Project initiated international cooperation in SNSA/MoC.** PMSS provided technical support and logistics to SNSA/MoC in the implementation of international cooperation program with Italy (Brazil-Italy Water Supply and Sanitation Cooperation), creating an innovative agenda for the program that helped further refine the strategic role of the Secretary. In this context, the participation of PMSS was a great opportunity to disseminate relevant work at the international level, thus elevating the name of SNSA/MoC, promoting technical exchange and opening concrete possibilities for important international partnerships for the development of the Brazilian water supply and sanitation sector.
- e) PMSS played a leading role in emerging issues for the sector. The Millennium Development Goals and international treaties challenge the sector on issues that go beyond the traditional form of planning, organizing and providing water and sanitation services. The Project served in cutting-edge and important areas for the management of water supply and sanitation services in Brazil, with emphasis on the following projects. The Integrated System for Management of Water Supply and Sanitation Services (GSAN), which opened a new platform for the sector in the field of technical assistance and support for service providers through the availability of free software; a partnership with the National Program to Combat the Waste of Water (PNCDA) and the Electrical Energy Conservation Program (PROCEL), which promoted the development of studies and technical-operational guides in the efficient use of electrical energy in water supply and sanitation systems. Moreover, the knowledge, skills and technical acquisitions nationally recognized in the area of water loss management, turned PMSS into a reference point in the debate over solutions to the problem. It is especially important to cite the Com+Água Program, which developed an innovative methodology for integrated and participatory management, focused not only on technical-operational actions in the engineering and commercial areas, but also on internal cultural changes at all levels in the service providers, using strong tools for social mobilization, communication, education and culture. Lastly, the encouragement of regionalization and management associated with water supply and sanitation services, especially through the creation of public consortia, encouraging the development of an alternative model of organization and management of services, and paving the way for a national discussion, which occurs today, on this model.
- f) **The organizational model of the Project enabled the agility of implementation and survived the different institutional arrangements in the sector.** Compared to the structure of other governmental organs, the PMSS model granted the appropriate degree of administrative, financial autonomy and functional flexibility. The Loan Agreement was essential in ensuring the continuous flow of resources to the Project.

- g) **The Project was effectively included in the political-institutional agenda of SNSA/MoC.** PMSS demonstrated its significant ability to support SNSA/MoC in the formulation and evaluation of guidelines and public policies. In implementing the public policies for the sector, the Project was subject to performance guidelines defined by the Government for the sector at the same time as it offered the expertise of highly specialized consultants, which was a particular model of organization in which the participation of specialists was required and was always met with speed and technical quality. In this context, it is also worth citing the invaluable contribution of the Project in the elaboration and approval of the regulatory and legal framework of the Brazilian water supply and sanitation sector.
- h) **The partnership with the World Bank has evolved into the development of joint actions and programs.** The close coordination of PMSS with the World Bank was strategic for adding quality and technical knowledge to the programs not only through the participation of qualified technicians from the Bank but also through the use of successful experiences of other Bank financed projects, not only in Brazil but also in throughout the world.

7.2 Weaknesses

- a) By definition, the weak points are tangible and intangible characteristics that should be minimized to avoid negative influences on the performance and to point to opportunities for improvement. The main difficulties facing PMSS point to the structural problems arising from the characteristics inherent in the format of projects subject to loan agreements with international agencies, and also, in the case of PMSS, the need to implement the Project through a partnership with an international organization in the case of the UNDP. Some limitations also arose from the temporary and discontinuous nature of the staff that worked in the Project.
- b) **Delays in implementing the Project arising from the response capacity of UNDP in the procurement process.** The activities of PMSS, referring to the hiring of consultants, companies and services, as well as financial management, compromised the agility of Project activities and restricted their implementation abilities due to the poor performance of UNDP in its work.
- c) **Dependence on the no-objection of the World Bank.** Despite the record of this original arrangement in the Project and the Loan Agreement, the need for no-objection caused a certain level of dependency that led, in some cases, to relative delays in the implementation of the activities.
- d) **Insufficiency and insecurity in the contractual framework of the Project.** The core PMSS team was initially formed by retainer consultants hired by UNDP, with contracts renewed every six months. These were then replaced by temporary workers with little experience who were placed in the MoC and whose contracts had the specific objective of acting with PMSS until its conclusion. Later, other workers were added to the permanent team, but they also had little experience. Despite the great professional development of the core PMSS team, the Project suffered from the inadequacy of the framework for the exercise of proper administrative, management, monitoring and evaluation functions.
- e) **The risk of discontinuity of the actions undertaken by the consultants.** Despite the expertise and diversity of the framework of consultants, which undoubtedly added to the technical capacity and agility of intervention, the continuity of Project actions was partially

undermined by gaps caused by the contractual mechanism of the *noventena* (period of ninety days after the termination of a contract during which the consultant could not sign a new contract with the Project). The strategy of performance through expert consultants was appropriate for the characteristics of PMSS and sufficient to guarantee the political-institutional reference of SNSA/MoC in the work developed by consultants, not characterized by *ad hoc* actions. This strategy waived more efficient mechanisms to promote better communication between PMSS and the SNSA/MoC technicians.

- f) **Dispersion of focus and on the method of meeting the demands for technical assistance.** The response capacity of the Project was inferior to the level of demand presented by various agents. This is the result of the difficulty of PMSS in anticipating the demand and sometimes in focusing on the strategic agenda of the sector. Besides the dispersion in the focus, which occurred at certain times, there was also the relative difficulty of systematizing the developed works, which had its own technical abilities and possibility to generate more benefits through the replication of experiences. Ultimately, there is the risk of losing or diluting the memory of public services.
- g) **Dependence on the implementation of reform actions by the states, municipalities and service providers.** The actions of technical assistance for reform had a maturation time period that was not always consistent with the technical timetables but depended on decisions of government leaders, whose decisions depended on the political-institutional arrangements, which imposed a slow rhythm and sometimes impeded the implementation of proposed solutions. This situation was unavoidable as PMSS related only to technical support and not to taking any decisions in specific cases, which inhibited some of the results of the Project.

Annex 9. Comments of Cofinanciers and Other Partners/Stakeholders

Not applicable.

Annex 10. List of Supporting Documents

1. IRIS Project Files
 2. ISRs for Project 1998-2009
 3. Water Sector Reform Project II Project Appraisal Document (PAD)
 4. Water Sector Reform Project II restructuring documents
 5. Project Performance Assessment Report (PPAR) for the Water Quality And Pollution Control Project and the Espirito Santo Water Coastal Pollution Management Project, June 2007
 6. Brazil: Forging a Strategic Partnership for Results: An OED Evaluation of World Bank Assistance, 2004
 7. Country Assistance Strategy 1997
 8. Country Assistance Strategy 1998
 9. Country Assistance Strategy 2004-2007
 10. Country Partnership Strategy 2008- 2011
 11. PMSS Website: www.cidades.pmss.gov.br and SNIS website: www.snis.gov.br
 12. Studies produced under PMSS, in particular:
 - Investment Needs to Achieve Universal WSS Service in Brazil;
 - Status of Deficiencies to Access to WSS in Brazil and Evaluation of Millennium Development Goals in Sanitation;
 - Evaluation of Private Sector Participation in the Provision of WSS Service in Brazil;
 - PMSS, Analysis of scenarios for the Transition to a Permanent Structure in the MoC
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