Document of
The World Bank

Report No: ICR00003284

IMPLEMENTATION COMPLETION AND RESULTS REPORT
(IBRD-76610, IBRD-76620 and IBRD-81490)
ON THREE LOANS

IN THE AMOUNT OF US$4 MILLION
TO THE
GOVERNMENT OF THE STATE OF SÃO PAULO (GESP)
IN THE AMOUNT OF US$100 MILLION
TO THE
COMPANHIA DE SANEAMENTO BÁSICO DO ESTADO DE SÃO PAULO (SABESP)
IN THE AMOUNT OF US$20.82 MILLION
TO THE
MUNICIPALITY OF SÃO BERNARDO DO CAMPO (PMSBC)
FOR THE
INTEGRATED WATER MANANGEMENT IN METROPOLITAN SÃO PAULO
ADAPTABLE PROGRAM LENDING (APL)
(PROGRAMA DE SANEAMENTO AMBIENTAL DOS MANANCIAIS DO ALTO TIETÊ - MANANCIAIS PROGRAM)

September 29, 2017

Water Global Practice
Latin America and Caribbean Region

CURRENCY EQUIVALENTS
(Exchange Rates Effective June 9, 2009; March 1, 2012; September 30, 2015; and March 30, 2017)

Currency Unit = Brazilian Real (BRL)
BRL 1.00 = US$0.4 - APL, GESP, and SABESP Projects Board Approval
US$1.00 = BRL 2.50

BRL 1.00 = US$3.12 - GESP and SABESP Projects Closing Date

BRL 1.00 = US$0.57 - PMSBC Project LCR VP Approval
US$1.00 = BRL 1.74

US$BRL 1.00 = US$ 0.3 PMSBC Project Closing Date
US$1.00 = BRL 3.96

FISCAL YEAR
January 1–December 31

ABBREVIATIONS AND ACRONYMS

APL	Adaptable Program Lending
B/C	Benefit Cost Ratio
BOD	Biochemical Oxygen Demand
BRL	Brazilian Real
CAS	Country Assistance Strategy
CAT	Alto Tietê River Basin Committee
CBA	Cost Benefit Analysis
CBH	River Basin Committee
CDC	Committee of Coordinators
CDHU	State of São Paulo Urban Development & Housing Company
CEF	Federal Bank (Caixa Economica Federal)
CETESB	Environmental Sanitation Technology Company
COD	Chemical Oxygen Demand
CPF	Country Partnership Framework
CPS	Country Partnership Strategy
CRH	State Water Resources Council
ERR	Economic Rate of Return
FM	Financial Management
GDP	Gross Domestic Product
GESP	Government of the State of São Paulo
IAP	São Paulo State-specific Raw Water Quality Index for Public Water Supply (*Indice de qualidade de Água bruta para fins de abastecimento Público*)
IAP	São Paulo specific Raw Water Quality Index for Public Water Supply
IBGE	Brazilian Institute of Geography and Statistic

IBRD	International Bank for Reconstruction and Development
ICR	Implementation Completion and Results Report
IERR	Internal Economic Rate of Return
IFR	Interim Financial Report
IQA	National Water Quality Index (*Indice de Qualidade de Água*)
IQVU	Quality of Urban Life Index (*Indice de Qualidade de Vida Urbana*)
IVA	São Paulo State-specific Water Quality Index for Protection of Aquatic Life (*Indice de qualidade de água para proteção da Vida Aquática*)
IWRM	Integrated Water Resources Management
LA	Loan Agreement
LCR	Latin America and the Caribbean Region
LRF	Brazilian Federal Responsibility Law (*Lei de Responsabilidade Fiscal*)
M&E	Monitoring and Evaluation
MDG	Millennium Development Goal
MQUAL	Mathematical Model Correlating Land-use and Water Quality
MRSP	Metropolitan Region of São Paulo
MTR	Midterm Review
O&M	Operation and Maintenance
OECD	Organisation for Economic Co-operation and Development
OM	Operations Manual
PAC	Growth Acceleration Plan
PAD	Project Appraisal Document
PDO	Project Development Objective
PDPA	Environmental Development and Protection Plan (*Plano de Desenvolvimento e Proteção Ambiental*)
PHRD	Japan Policy and Human Development Fund
PIU	Project Implementation Unit
PMG	Municipal Government of Guarulhos
PMSBC	Municipal Government of São Bernardo do Campo (*Prefeitura Municipal de São Bernardo do Campo*)
PMSP	Municipal Government of São Paulo
PQA	Water Quality and Pollution Control Project
RAP	Resettlement Action Plan
RF	Resettlement Framework
SABESP	State Water and Sanitation Autonomous Utility (*Saneamento Básico Do Estado De São Paulo*)
SCD	Systematic Country Diagnostic
SMA	State Secretariat for the Environment
SP	São Paulo
SSE	State Secretariat for Water, Sanitation and Energy
SSRH	State Secretariat for Water, Sanitation, and Water Resources (*Secretaria de Saneamento e Recursos Hídricos*)
ToR	Term of References
UGL	Local Management Unit
UGP	Program Management Unit
UN	United Nations

WRM	Water Resources Management
WSS	Water Supply and Sanitation
WWTP	Wastewater Treatment Plant

Vice President	Jorge Familiar Calderon
Country Director	Martin Raiser
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BRAZIL
BR APL Integrated Water Management in Metropolitan São Paulo

CONTENTS

DATA SHEET

A. Basic Information

Country:	Brazil	Project Name:	Brazil APL Integrated Water Management in Metropolitan Sao Paulo
Project ID:	P006553	L/C/TF Number(s):	IBRD-76610 IBRD-76620 IBRD-81490
ICR Date:	09/29/2017	ICR Type:	Core ICR
Financing Instrument:	Adaptable Program Lending (APL)	Borrower:	State of São Paulo State Water Company of São Paulo Municipality São Bernardo do Campo
Original Total Commitment:	US$124.82 million	Disbursed Amount:	US$ 93.54 million
Revised Amount:	US$ 104.11 million		

Environmental Category: A

Implementing Agencies:

State Secretariat for Water, Sanitation, and Water Resources (*Secretaria de Saneamento e Recursos Hídricos - SSRH*)

State Water and Sanitation Autonomous Utility (*Saneamento Básico Do Estado De São Paulo - SABESP*)

Municipal Government of São Bernardo do Campo (*Prefeitura Municipal de São Bernardo do Campo - PMSBC*)

Cofinanciers and Other External Partners:

B. Key Dates

Process	Date	Process	Original Date	Revised/Actual Date(s)
Concept Review:	12/21/2006	Effectiveness:	03/26/2010	03/24/2010
Appraisal:	07/31/2007	Restructuring(s):		09/30/2015
Approval:	07/09/2009	Mid-term Review:	04/15/2013	03/21/2013
		Closing:	09/30/2015	03/30/2017

C. Ratings Summary

C.1 Performance Rating by ICR

Outcomes:	Unsatisfactory
Risk to Development Outcome:	Moderate
Bank Performance:	Unsatisfactory

Borrower Performance:	Moderately Unsatisfactory

C.2 Detailed Ratings of Bank and Borrower Performance (by ICR)

Bank	Ratings	Borrower	Ratings
Quality at Entry:	Unsatisfactory	Government:	Moderately Unsatisfactory
Quality of Supervision:	Moderately Unsatisfactory	Implementing Agency/Agencies:	Moderately Unsatisfactory
Overall Bank Performance:	Unsatisfactory	**Overall Borrower Performance:**	Moderately Unsatisfactory

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):	None
Problem Project at any time (Yes/No):	Yes	Quality of Supervision (QSA):	None
DO rating before Closing/Inactive status:	Moderately Unsatisfactory		

D. Sector and Theme Codes

	Original	Actual
Major Sector/Sector		
Public Administration		
Public administration - Water, sanitation and flood protection	11	11
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Land Administration and Management	7	7
Urban Development	37	43
Services and Housing for the Poor	37	37
Urban Infrastructure and Service Delivery	6	6

E. Bank Staff

Positions	At ICR	At Approval
Regional Vice President:	Jorge Familiar Calderon	Pamela Cox
Country Director:	Martin Raiser	Makhtar Diop
Practice Manager:	Rita E. Cestti	Guang Zhe Chen
Task Team Leader(s):	Juliana Menezes Garrido Oscar Alvarado	Martin P. Gambrill
ICR Team Leader:	Juliana Menezes Garrido Oscar Alvarado	
ICR Primary Author:	Paula Dias Pini	

F. Results Framework Analysis

Project Development Objectives (from Project Appraisal Document)

The overall objectives of the APL are (i) to protect and maintain the quality and reliability of MRSP's water resources and potable water sources; (ii) to improve the quality of life of the poor populations residing in key targeted urban river basins in MRSP; and (iii) to strengthen institutional capacity and improve metropolitan management and coordination in MRSP in water resources management, water pollution control, land-use policy and basic service provision.

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

Not applicable.

(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:	Pollution loads of relevant water bodies reduced (mg/l BOD) Tanquinho stream/Guarapiranga.			
Value (Quantitative or Qualitative)	329	25	Dropped in restructuring	-
Date achieved	06/30/2007	09/30/2015	09/30/2015	
Comments (including % achievement)	Indicator dropped in the September 2015 restructuring because it proved to capture too many externalities.			
Indicator 2:	Pollution loads of relevant water bodies reduced (mg/l BOD) -Das Predras River/Guarapiranga			
Value (Quantitative or Qualitative)	75 mg/l	25 mg/l	Dropped in restructuring	-
Date achieved	06/30/2007	09/30/2015	09/30/2015	
Comments (including % achievement)	Indicator dropped in the September 2015 restructuring because it proved to capture too many externalities.			
Indicator 3:	Volume of BOD pollution loads removed by the treatment plants and sewerage systems supported under the project (tons/year)			
Value (Quantitative or Qualitative)	0	-	2,949 tons/year	2,574 tons/year
Date achieved			09/30/2015	03/30/2017
Comments (including % achievement)	Achieved 87%. Included in the September 2015 restructuring.			
Indicator 4:	Water bodies quality maintained, even with population increases (several monitoring points and different evaluation methods, resulting in a total of 9 measurements)			
Value (Quantitative or Qualitative)	Bad	Good/normal	Dropped in restructuring	-
Date achieved	06/30/2007	09/30/2015	09/30/2015	
Comments (including % achievement)	Dropped in the September 2015 restructuring because it proved to capture too many externalities.			
Indicator 5:	Studies for monitoring the water quality of key water sources sub-basins (number)			
Value (Quantitative or Qualitative)	0	-	3	3
Date achieved			09/30/2015	03/30/2017
Comments (including % achievement)	Achieved 100%. Included in the September 2015 restructuring.			
Indicator 6:	Increase in water production capacity due to project intervention. (m^3/year).			

Value (Quantitative or Qualitative)	0	-	157,680,000 (m^3/year)	157,680,000 (m^3/year)
Date achieved			09/30/2015	03/30/2017
Comments (including % achievement)	Achieved 100%. Included in the September 2015 restructuring.			
Indicator 7:	Degree of satisfaction of the population: on physical, social and environmental changes due to the program (opinion survey)			
Value (Quantitative or Qualitative)	Low	High	Dropped in restructuring	-
Date achieved	06/30/2009	09/30/2015	09/30/2015	
Comments (including % achievement)	Removed as part of the September 2015 restructuring as a result of the activities related to the Municipal Government of São Bernardo do Campo (PMSBC) were dropped without implementing any activity.			
Indicator 8:	Degree of satisfaction of the population: real estate valuation (market and opinion survey)			
Value (Quantitative or Qualitative)	BRL 211.00/m^2	BRL 306.00/m^2	Dropped in restructuring	-
Date achieved	06/30/2007	09/30/2015	09/30/2015	
Comments (including % achievement)	Dropped in the September 2015 restructuring. It mostly reflected activities under the PMSBC Project, which closed without implementing any activity.			
Indicator 9:	Degree of satisfaction of the population: proportion of dwellings with adequate WSS services. (%)			
Value (Quantitative or Qualitative)	55%	65%	Dropped in restructuring	-
Date achieved	06/30/2007	09/30/2015	09/30/2015	
Comments (including % achievement)	Dropped in the September 2015 restructuring. It mostly reflected activities under the PMSBC Project, which closed without implementing any activity.			
Indicator 10:	Degree of satisfaction of the population: IQVU (Urban Quality Index)			
Value (Quantitative or Qualitative)	TBD	TBD	Dropped in restructuring	-
Date achieved	06/30/2007	09/30/2015	09/30/2015	
Comments (including % achievement)	Dropped in the September 2015 restructuring. IQVU proved to be difficult to measure and included too many data with limited influence from the program.			
Indicator 11:	Parks and free public areas urbanized implemented (ha)			
Value (Quantitative or Qualitative)	n.a.	170 ha	60 ha	55 ha
Date achieved	06/30/2007	09/30/2015	09/30/2015	03/30/2017
Comments	Achieved 91%. The target was revised in the September 2015 restructuring.			

(including % achievement)				
Indicator 12:	Direct project beneficiaries (number), of which female (percentage)			
Value (Quantitative or Qualitative)	0	-	2,117,000 (51% female)	2,523,250 (51% female)
Date achieved			09/30/2015	03/30/2017
Comments (including % achievement)	Achieved 99%. Included in the September 2015 restructuring. The target includes direct beneficiaries under the Projects of the Government of the State of São Paulo (GESP) (430,000 beneficiaries) and State Water and Sanitation Autonomous Utility (SABESP) (2,093,250 beneficiaries).			
Indicator 13:	PDPA for Guarapiranga Basin revised			
Value (Quantitative or Qualitative)	0	1	Dropped in restructuring	-
Date achieved	06/30/2007	09/30/2015	09/30/2015	
Comments (including % achievement)	Dropped in the September 2015 restructuring. It was both a Project Development Objective (PDO) and intermediate indicator. It remains as an intermediate indicator.			
Indicator 14:	PDPA prepared and implementation initiated for each sub-basin			
Value (Quantitative or Qualitative)	0	4	Dropped in restructuring	-
Date achieved	06/30/2007	09/30/2015	09/30/2015	
Comments (including % achievement)	Dropped in the September 2015 restructuring. Indicator was both a PDO and an intermediate indicator. It stays as an intermediate indicator.			
Indicator 15:	Draft of specific laws for each sub-basin prepared and submitted to the State Legislative			
Value (Quantitative or Qualitative)	1	4	Dropped in restructuring	-
Date achieved	06/30/2007	09/30/2015	09/30/2015	
Comments (including % achievement)	Dropped in the September 2015 restructuring. Beyond project limits.			
Indicator 16:	Studies developed to improve institutional capacity for water resources planning			
Value (Quantitative or Qualitative)	0	-	3	1
Date achieved			09/30/2015	03/30/2017
Comments (including % achievement)	Achieved 30%. Included in the September 2015 restructuring to better reflect studies developed.			
Indicator 17:	International comparative study on metropolitan governance concluded and discussed			
Value	0	Study concluded and discussed	Dropped in restructuring	-

(Quantitative or Qualitative)				
Date achieved	06/30/2007	09/30/2015	09/30/2015	
Comments (including % achievement)	Dropped in the September 2015 restructuring. The drought emergency increased difficulties to address metropolitan governance issues.			
Indicator 18:	Discussion Forum established and seminars held on metropolitan governance and water in MRSP with broad stakeholder participation			
Value (Quantitative or Qualitative)	0	Forum established and 5 seminars held	Dropped in restructuring	-
Date achieved	06/30/2007	09/30/2015	09/30/2015	
Comments (including % achievement)	Dropped in the September 2015 restructuring.			
Indicator 19:	Study on water demand profile and scenarios concluded; demand-driven water policy for MRSP prepared			
Value (Quantitative or Qualitative)	0	Study concluded and policy prepared	Dropped in restructuring	-
Date achieved	06/30/2007	09/30/2015	09/30/2015	
Comments (including % achievement)	Dropped in the September 2015 restructuring.			
Indicator 20:	Macro metropolis water resources master plan revised and improved, including specific technical studies for key interventions			
Value (Quantitative or Qualitative)	-	-	Main aspects of the plan finalized	Activity not implemented
Date achieved			09/30/2015	03/30/2017
Comments (including % achievement)	Activity was not implemented given schedule constraints.			

(b) Intermediate Outcome 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:	PDPA for the Alto Tiete Basin prepared			
Value (Quantitative or Qualitative)	0	1	1	1
Date achieved	06/30/2007	09/30/2015	09/30/2015	03/30/2017
Comments (including % achievement)	Achieved 100%. In the September 2015 restructuring, the indicator was revised to refer to the Alto Tiete Basin, instead of to only the Guarapiranga Basin as originally planned.			
Indicator 2:	PDPA prepared/revised for each sub-basin			
Value (Quantitative or Qualitative)	0	0	10	10
Date achieved			09/30/2015	03/30/2017
Comments (including % achievement)	Achieved 100%. Original: PDPAs prepared and implementation initiated for each sub-basin. 'Implementation initiated' was removed because it was beyond the project limits.			
Indicator 3:	Drafts of specifics laws for each sub-basin prepared and submitted to the State Legislative			
Value (Quantitative or Qualitative)	1	4	Dropped in restructuring	-
Date achieved	06/30/2007	09/30/2015	09/30/2015	
Comments (including % achievement)				
Indicator 4:	International comparative study on metropolitan governance concluded and discussed.			
Value (Quantitative or Qualitative)	0	Study concluded and discussed	Dropped in restructuring	-
Date achieved	06/30/2007	09/30/2015	09/30/2015	
Comments (including % achievement)				
Indicator 5:	Seminar or workshop carried out to discuss water resources management and planning aspects of MRSP			
Value (Quantitative or Qualitative)	0	2	2	2
Date achieved	06/30/2007	09/30/2015	09/30/2015	03/30/2017
Comments (including % achievement)	Achieved 100%. Revised in the September 2015 restructuring. Original: Discussion Forum established and seminar held on metropolitan governance and water in the MRSP with broad stakeholder participation.			
Indicator 6:	Study on water demand profile and scenarios concluded; demand driven water policy for MRSP prepared			
Value (Quantitative or Qualitative)	0	Study concluded and policy prepared	Dropped in restructuring	-
Date achieved	06/30/2007	09/30/2015	09/30/2015	

Comments (including % achievement)	Dropped in the September 2015 restructuring because the activity was beyond the project limits.			
Indicator 7:	Environmental and sanitary education implemented			
Value (Quantitative or Qualitative)	0	60,000 people involved, 20,000 in PMSBC	Dropped in restructuring	-
Date achieved	06/30/2007	09/30/2015	09/30/2015	
Comments (including % achievement)	Dropped in the September 2015 restructuring since it is a regular activity that SABESP carries out through its own finances.			
Indicator 8:	Integrated Citizenship implemented			
Value (Quantitative or Qualitative)	0	1	-	1
Date achieved	06/30/2007	09/30/2015	-	03/30/2017
Comments (including % achievement)	Achieved 100%. Center facilitates issuing of required personal identification documents.			
Indicator 9:	Hydrodynamic monitoring models of reservoirs developed (number)			
Value (Quantitative or Qualitative)	0	5	Target revised in restructuring to 4	4
Date achieved	06/30/2007	09/30/2015	09/30/2015	03/30/2017
Comments (including % achievement)	Achieved 100%. Four studies: Guarapiranga (2012), Billings (2012), Jaguari (2014), and Jacarei (2014).			
Indicator 10:	Interventions implemented to adapt infrastructure for settlements, benefiting (number) of families			
Value (Quantitative or Qualitative)	0	5,800 families	Dropped in restructuring	-
Date achieved	06/30/2007	09/30/2015	09/30/2015	
Comments (including % achievement)	Dropped in the September 2015 restructuring. This indicator reflected activity under Component 2, which was entirely dropped.			
Indicator 11:	Interventions implemented to urbanize slums, benefiting (number) of families			
Value (Quantitative or Qualitative)	0	3,900	Dropped in restructuring	-
Date achieved	06/30/2007	09/30/2015	09/30/2015	
Comments (including % achievement)	Dropped in the September 2015 restructuring. This indicator reflected activity under Component 2, which was entirely dropped.			
Indicator 12:	Housing unit constructed for family resettlement (families)			
Value (Quantitative or Qualitative)	0	1,350 families	Dropped in restructuring	-

Date achieved	06/30/2007	09/30/2015	09/30/2015	
Comments (including % achievement)	Dropped in the September 2015 restructuring. This indicator reflected activity under Component 2, which was entirely dropped.			
Indicator 13:	Resettlement of families completed (families)			
Value (Quantitative or Qualitative)	0	1,350 families	Dropped in restructuring	-
Date achieved	06/30/2015	09/30/2015	09/30/2015	
Comments (including % achievement)	Dropped in the September 2015 restructuring. This indicator reflected activity under Component 2, which was entirely dropped.			
Indicator 14:	Parks and free public areas urbanized implemented (ha)			
Value (Quantitative or Qualitative)	0	170 ha	Dropped in restructuring	-
Date achieved	06/30/2007	09/30/2015	09/30/2015	
Comments (including % achievement)	Indicator was both PDO and intermediate; remains as a PDO indicator.			
Indicator 15:	Areas restored or re/afforested (ha)			
Value (Quantitative or Qualitative)	0	213 ha	213 ha	100 ha
Date achieved	06/30/2007	09/30/2015	09/30/2015	03/30/2017
Comments (including % achievement)	Achieved 47%. Original: Degraded areas recovered. Revised in restructure to a core indicator.			
Indicator 16:	Pollution loads removal implemented (number)			
Value (Quantitative or Qualitative)	1	3	Dropped in restructuring	-
Date achieved	06/30/2007	09/30/2015	09/30/2015	
Comments (including % achievement)	Dropped in the September 2015 restructuring.			
Indicator 17:	Water treatment processes in water treatment plants (WTP) optimized (number)			
Value (Quantitative or Qualitative)	0	6	Dropped in restructuring	-
Date achieved	06/30/2007	09/30/2015	09/30/2015	
Comments (including % achievement)	Dropped in the September 2015 restructuring.			
Indicator 18:	Reduction of chemical products used for water treatment in ABV WTP (kg/1,000 m^3)			
Value (Quantitative or Qualitative)	94.5	92.0	Dropped in restructuring	

Date achieved	06/30/2007	09/30/2015	09/30/2015	
Comments (including % achievement)	Dropped in the September 2015 restructuring.			
Indicator 19:	Reduction of chemical products used for water treatment in Rio Grande WTP (kg/1,000 m^3)			
Value (Quantitative or Qualitative)	86.5	79.0	Dropped in restructuring	
Date achieved	06/30/2007	09/30/2015	09/30/2015	
Comments (including % achievement)	Dropped in the September 2015 restructuring.			
Indicator 20:	Mean reduction of chemical products used for water treatment in all WTP with program support (kg/1,000 m^3)			
Value (Quantitative or Qualitative)	68.8	60.0	Dropped in restructuring	
Date achieved	06/30/2007	09/30/2015	09/30/2015	
Comments (including % achievement)	Dropped in the September 2015 restructuring.			
Indicator 21:	People provided with access to "improved water source" under the project (number)			
Value (Quantitative or Qualitative)	0	130,000	Revised in restructuring to 1,500,000	1,500,000
Date achieved	06/30/2007	09/30/2015	09/30/2015	03/30/2017
Comments (including % achievement)	Achieved 100%. Original: Households benefiting from the expansion of water supply systems.			
Indicator 22:	Improved loss indices related to: improvement of water loss indices related to Cabucu production water system			
Value (Quantitative or Qualitative)	54.60	40.06	Dropped in restructuring	-
Date achieved	06/30/2007	09/30/2015	09/30/2015	
Comments (including % achievement)	Dropped in the September 2015 restructuring. The activity was related to the expected Municipal Government of Guarulhos (PMG) project. The PMG declined participating in the project on May 23, 2013.			
Indicator 23:	Improved loss indices related to: billings (%)			
Value (Quantitative or Qualitative)	0	0	Dropped in restructuring	
Date achieved	06/30/2007	09/30/2015	09/30/2015	
Comments (including % achievement)	Dropped in the September 2015 restructuring. The activity was related to the expected PMG project. The PMG declined participating in the project on May 23, 2013.			
Indicator 24:	Improved water loss related to: distribution (%)			

Value (Quantitative or Qualitative)	0	0	Dropped in restructuring	
Date achieved	06/30/2007	09/30/2015	09/30/2015	
Comments (including % achievement)	Dropped in the September 2015 restructuring. The activity was related to the expected PMG project. The PMG declined participating in the project on May 23, 2013.			
Indicator 25:	Improved loss indices related to: linear (m^3/day/km)			
Value (Quantitative or Qualitative)	0	0	Dropped in restructuring	
Date achieved	06/30/2009	09/30/2015	09/30/2015	
Comments (including % achievement)	Dropped in the September 2015 restructuring. The activity was related to the expected PMG project. The PMG declined participating in the project on May 23, 2013.			
Indicator 26:	Improved loss indices related to Martins city: per connection (%)			
Value (Quantitative or Qualitative)	0	0	Dropped in restructuring	
Date achieved	06/30/2007	09/30/2015	09/30/2015	
Comments (including % achievement)	Dropped in the September 2015 restructuring. The activity was related to the expected PMG project. The PMG declined participating in the project on May 23, 2013.			
Indicator 27:	Improved loss indices related to Martins city: billings (%)			
Value (Quantitative or Qualitative)	0	0	Dropped in restructuring	
Date achieved	06/30/2007	09/30/2015	09/30/2015	
Comments (including % achievement)	Dropped in the September 2015 restructuring. The activity was related to the expected PMG project. The PMG declined participating in the project on May 23, 2013.			
Indicator 28:	Improved loss related to Martins city: distribution (%)			
Value (Quantitative or Qualitative)	0	0	Dropped in restructuring	
Date achieved	06/30/2007	09/30/2015	09/30/2015	
Comments (including % achievement)	Dropped in the September 2015 restructuring. The activity was related to the expected PMG project. The PMG declined participating in the project on May 23, 2013.			
Indicator 29:	Improved loss related to Martins city: linear (m^3/day/km)			
Value (Quantitative or Qualitative)	0	0	Dropped in restructuring	
Date achieved	06/30/2007	09/30/2015	09/30/2015	
Comments (including % achievement)	Dropped in the September 2015 restructuring. The activity was related to the expected PMG project. The PMG declined participating in the project on May 23, 2013.			
Indicator 30:	Improved loss indices related to Martins city: linear (m^3/day/km)			

Value (Quantitative or Qualitative)	0	0	Dropped in restructuring	
Date achieved	06/30/2007	09/30/2015	09/30/2015	
Comments (including % achievement)	Dropped in the September 2015 restructuring. The activity was related to the expected PMG project. The PMG declined participating in the project on May 23, 2013.			
Indicator 31:	People provided with access to "improved sanitation facilities"			
Value (Quantitative or Qualitative)	0	20,110	Target revised in restructuring to 50,700	33,250
Date achieved	06/30/2007	09/30/2015	09/30/2015	03/30/2017
Comments (including % achievement)	Achieved 66%. Replaced by core indicator. Original: Households benefiting from the expansion of sewerage.			
Indicator 32:	Municipal waste disposal capacity created under the project (tons)			
Value (Quantitative or Qualitative)	0	0	Target revised in restructuring to 46,000 tons	0
Date achieved	06/30/2007	09/30/2015	09/30/2015	03/30/2017
Comments (including % achievement)	Activity not implemented.			
Indicator 33:	Procurement process for solid waste collection equipment concluded and equipment in use			
Value (Quantitative or Qualitative)	0	Equipment in use	Equipment in use	Equipment in use
Date achieved	06/30/2007	09/30/2015	09/30/2015	03/30/2017
Comments (including % achievement)	Achieved 100%.			

G. RATINGS OF PROJECT PERFORMANCE IN ISRs

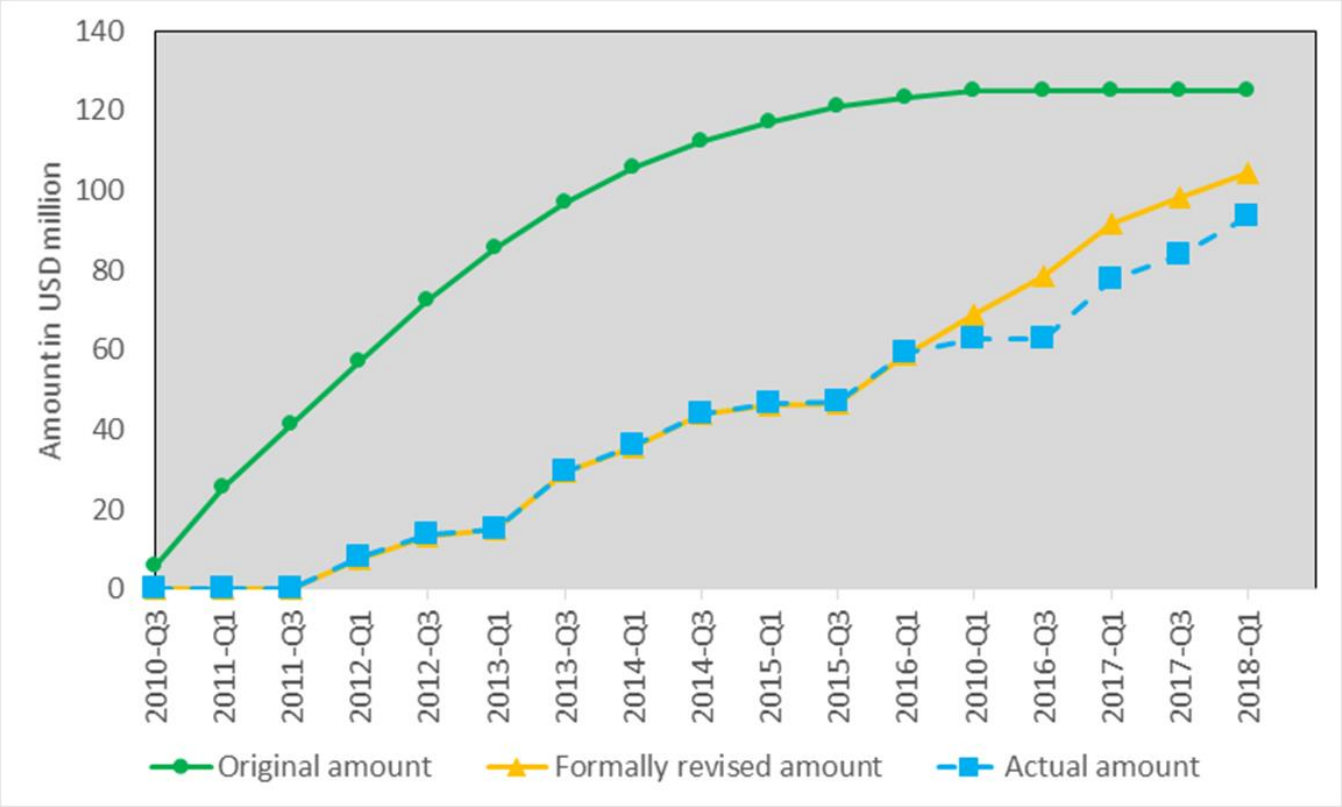
No.	Date ISR Archived	DO	IP	Actual Disbursements (US$, millions)
1	11/10/2009	Satisfactory	Satisfactory	0.00
2	06/06/2010	Satisfactory	Satisfactory	0.00
3	02/14/2011	Satisfactory	Satisfactory	0.00
4	08/08/2011	Satisfactory	Moderately Satisfactory	4.49
5	04/10/2012	Satisfactory	Moderately Satisfactory	13.24
6	11/19/2012	Satisfactory	Moderately Satisfactory	21.02
7	07/28/2013	Moderately Satisfactory	Moderately Unsatisfactory	31.89

8	03/07/2014	Moderately Satisfactory	Moderately Unsatisfactory	43.78
9	10/20/2014	Moderately Unsatisfactory	Moderately Unsatisfactory	46.37
10	04/06/2015	Moderately Satisfactory	Moderately Satisfactory	46.52
11	10/19/2015	Moderately Satisfactory	Moderately Satisfactory	58.97
12	03/30/2016	Moderately Satisfactory	Moderately Satisfactory	62.33
13	09/18/2016	Moderately Unsatisfactory	Moderately Unsatisfactory	77.33
14	05/01/2017	Unsatisfactory	Unsatisfactory	83.50

H. Restructuring (if any)

Restructuring Date(s)	Board Approved PDO Change	ISR Ratings at Restructuring		Amount Disbursed at Restructuring in US$, millions	Reason for Restructuring and Key Changes Made
		DO	IP		
09/30/2015	N/A	MS	MS	58.84	For the GESP and SABESP loans: (i) an 18-month closing date extension (from September 30, 2015 to March 30, 2017); (ii) revision of the Project's scope to prioritize activities to help solve the ongoing drought crisis affecting the Metropolitan Region of Sao Paulo (MRSP); (iii) review of the institutional arrangements and indicators to accommodate the changes in scope; and; (iv) the increase in percentage of loan financing for the GESP Project. The Results Framework was also changed to reflect the proposed restructuring.

I. Disbursement Profile



Summary and Overview of ICR Findings

1. The Integrated Water Management in Metropolitan São Paulo Horizontal[1] Adaptable Program Lending (APL) - Mananciais Program – was a second- generation operation in the cluster of Water Quality and Pollution Control Projects (PQA) that started in the 1990's. As its predecessors, the São Paulo Water Quality and Pollution Control Project - Guarapiranga Project, it was designed to address the inter-related issues of urban water pollution, poverty and land use. More precisely, the APL represents the continuation of the Guarapiranga Project, which played a major role in changing Brazil's approach to urban water resources and pollution control in large densely occupied conurbations with high degree of informal settlements. However, a major difference between the APL and its predecessors is the lending arrangement. While the predecessors were single-loans to State Government and included on-lending to executing agencies including municipalities, the APL was designed as a series of projects and their corresponding loans. The passage of the Brazilian Federal Responsibility Law (LRF) in 2000 prohibited the on-lending arrangements.

2. The Project Appraisal Document (PAD) contemplates four projects and respective loans under the APL, with the Government of the State of São Paulo (GESP), the State Water and Sanitation Autonomous Utility (*Saneamento Básico do Estado De São Paulo,* SABESP), the Municipal Government of São Bernardo do Campo (*Prefeitura Municipal de São Bernardo do Campo,* PMSBC), and the Municipal Government of Guarulhos (*Prefeitura Municipal de Guarulhos,* PMG). The APL structure was designed to allow additional subsequent loans to be presented to the World Bank on compliance with the eligibility criteria.[2] Three of the four loans were signed: GESP (US$4 million), SABESP (US$100 million), and PMSBC (US$20.82 million). The PMG declined to participate in the program. No subsequent loan was requested under the APL.

3. The APL preparation was long (between 2002 and 2009) and its rationale and approach were complex, as result of (a) the APL's large geographic area target: the water resources within the Metropolitan Region of São Paulo (MRSP) (39 municipal governments, 22 million people, 8,000 kilometer square (km^2 territory); (b) the complexity of protecting the water resources in the MRSP, requiring multisector initiatives, strong intergovernmental coordination, and, mainly, extensive slum-upgrading interventions to extend sanitation infrastructure to these areas preventing the discharge of wastewater into the water bodies; (c) the need to attract as many projects as possible to the APL, to ensure consistency with APL designs and its rationale and approach; and (d) the need to send a single package to the federal government, consolidating all demands into a program (considering also each borrower fiscal and financial capacity). By mid-preparation, the APL appeared to have succeeded in achieving a critical mass of projects: twelve borrowers were interested in joining the operation. The APL was then designed as a sizable intervention, which shaped its appraisal analyses, the Project Development Objective (PDO), and Results Framework. Also, the APL was considered an integral part of a much larger intergovernmental initiative that would also contribute to achieving of the APL PDO.

[1] PAD dated June 9, 2009. Page 4, paragraph 9. Page 5, paragraph 13.

[2] Agencies and municipal governments which: (a) are located in, or operate in, the Metropolitan area; (b) contain critical areas for pollution control; (c) possess sufficient debt capacity to borrow according to the Brazilian regulation; (d) have per capita investment capacity of at least BRL40; (e) have financial management (FM) and procurement capacity acceptable to the World Bank.

4. However, only three projects, and the respective borrowers, effectively joined the APL and just two of the projects were implemented. The fewer number of projects caused the APL PDO and the projects to disconnect, since none of them alone was designed to, or could achieve, the APL PDO individually. Moreover, the large intergovernmental intervention that was expected to largely contribute to achieving the APL PDO did not occur. Also, reacting to the broad focus and ambitious scope of their projects, both borrowers (GESP and SABESP) adopted a selective approach on implementation by focusing essentially on the project activities that were clearly aligned with their core institutional mandate, widening the disconnect between the APL PDO and projects. The GESP and SABESP Projects were restructured; the latter supported the SABESP's response to the severe water crisis that the MRSP faced. This support was highly commended by the SABESP.

5. **Clarification on the format of this Implementation Completion and Results Report (ICR).** This ICR had to be customized to fit the nature of the APL. The main text presents the ICR assessment of the overall program. Appendixes 1, 2, and 3 represent the ICRs for GESP, SABESP and PMSBC Projects, respectively.

1. Project Context, Development Objectives and Design

1.1 Context at Appraisal

1.1.1 Background

6. **São Paulo's strategic importance.** At the time of Program approval, the sprawling MRSP was emblematic of the urban challenges facing Brazil. It was the fourth largest urban area in the world, South America's biggest economic center, and accounted for about 17 percent of the national gross domestic product (GDP). Some of the challenges are described in the following paragraphs.

7. **Metropolitan management** was and still is a commonly complex issue in federative countries. In Brazil, the constitutional framework further complicated the picture, given that the municipalities had the same autonomous federative status as the states and were not subordinated to either states or the federal government. Urban planning, land use, and provision of local services were and still are matters of municipal jurisdiction.

8. **São Paulo water challenges.** The region's water supply and demand balance was a critical issue for the city's economic growth and social and environmental sustainability. The extremely low per capita water availability was comparable to the driest areas of the Brazilian Northeast. Half of the city's potable water was imported from neighboring river systems. The other half came from the headwater reservoirs systems (*mananciais*) within the MRSP itself. The Guarapiranga and Billings reservoirs supplied 30 percent of the water. Should they be lost as raw water bodies, the next closest sources were very distant and could only be brought to MRSP at multibillion *real* costs.

9. **The land use/environmental nexus.** Some 1.9 million people resided in the Guarapiranga and Billings river basins—the vast majority of whom were poor, having illegally occupied these areas given their proximity to the city center. The informal/slum settlements caused direct

pollution of the reservoirs through wastewater discharge, thus threatening their future as water bodies.

10. **State's Water Resources Management (WRM).** Despite the advances in the state many challenges remained. GESP needed to develop, refine and implement effective WRM instruments and adopt pragmatic approaches to create political and organization capacity in the sector to promote efficient water use by stakeholders. To tackle the state's most pressing WRM challenges, the GESP's WRM strategy promoted coordination involving local governments, stakeholders and basin committees.

11. **Joint strategy for improving water quality and land use in the MRSP.** The main challenges of the land use/urban informality/environmental nexus were to: (a) improve water quality and guarantee sustainability of water supply; (b) improve living conditions of the poor in slums and irregular settlements; (c) improve urban development and land use planning, management, and control mechanisms; and (d) build a new metropolitan governance model based on cooperation and integration of sectors. The APL was designed to respond to the land use, water resources, environmental, and social challenges described earlier.

1.1.2 Rationale for Bank Assistance

12. The APL was developed in support of the vision for a more equitable, sustainable, and competitive Brazil outlined in the federal government's pluri-annual development plan. The Program was emblematic of the challenges facing metropolitan regions and large cities in Brazil as they grappled with constraints to growth, social inclusion, environmental degradation, and the appropriate planning and management of services. The Country Partnership Strategy (CPS # 42677, dated May 6, 2008) laid out a program of continued support to Brazil through four pillars: equity, sustainability, competitiveness, and sound macroeconomic management. The CPS asserted that Brazil would continue to falter in the area of environmental sustainability, and water scarcity and environmental degradation were urgent problems hindering the country's sustainable growth.

1.2 Original Project Development Objectives (PDO) and Key Indicators (*as approved*)

13. The original three-part PDO, as defined in the PAD for the Brazil Integrated Water Management in Metropolitan São Paulo –Adaptable Program Lending (APL) was: (i) to protect and maintain the quality and reliability of Metropolitan Region of Sao Paulo's (MRSP) water resources and potable water sources; (ii) to improve the quality of life of the poor populations residing in key targeted urban river basins in MRSP; and (iii) to strengthen institutional capacity and improve metropolitan management and coordination in MRSP in water resources management, water pollution control, land-use policy and basic service provision.

14. As defined in the PAD, the key PDO indicators were:

(a) **To protect and maintain the quality and reliability of MRSP's water resources and potable water sources**: (i) reduction of pollution loads to the Guarapiranga water body (measured by using two monitoring points, one located in the Tanquinho Stream and the other in the Pedras River); and (ii) maintenance of the water quality of Guarapiranga and Billings water bodies, even with projected population increases

(measured by using nine monitoring points and the following three analytical methods IAP[3] IVA,[4] IQA[5]).

(b) **To improve the quality of life of the poor population residing in key targeted urban basins in MRSP**: (i) improved physical, social and environmental changes (measured by using public opinion surveys); (ii) increase in real estate valuation (measured by using real estate value surveys); (iii) increased access to improved water supply, sewerage, drainage and solid waste services (measured by using the following two methods: proportion of dwellings with adequate WSS services[6] and IQVU[7]); and (iv) increase in number and size of leisure and green areas (parks, squares, other public spaces, etc.) (hectares).

(c) **To strengthen institutional capacity and improve metropolitan management and coordination in MRSP in water resources management, water pollution control, land-use policy, and basic service provision**: (i) PDPA – Plans for Environmental Development and Protection prepared and implementation initiated for each sub-basin (number); (ii) drafts of specific laws for each sub-basin prepared and submitted to the State Legislative Assembly (number); (iii) international comparative study on Metropolitan Governance concluded and discussed; (iv) discussion Forum established and seminars held on Metropolitan Governance and Water in RMSP with broad stakeholder participation; and (v) study on water demand profile and scenarios concluded (measured as demand-driven water policy for MRSP prepared).

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

15. The PDO was not revised. The Level II Restructuring revised the PDO indicators, as described below:

(a) **To protect and maintain the quality and reliability of MRSP's water resources and potable water sources**: (i) New -Studies for monitoring the water quality of key water sources sub-basins (Number); (ii) New - Volume (mass) of BOD pollution load removed by the treatment plants under the project (tons/year); and (iii) New - Increase in water production capacity due to project intervention (m^3).

[3] IAP – São Paulo State specific Raw Water Quality Index for Public Water Supply (*Indice de qualidade de Água bruta para fins de abastecimento Público*).
[4] IVA - São Paulo State specific Water Quality Index for Protection of Aquatic Life (*Indice de qualidade de água para proteção da Vida Aquática*).
[5] IQA – National Water Quality Index (*Indice de Qualidade de Água*).
[6] The indicator is currently used by the Brazilian Census Institute of Geography and Statistic (IBGE); data is available and published at the municipal level with census, and defines what "adequate basic water and sanitation" sanitation' means and quantifies it.
[7] The Quality of Urban Life Index (*Indice de Qualidade de Vida Urbana* (IQVU), consists of 11 variables: commerce and services, culture, economy, education, housing (housing conditions and water supply and sanitation), health, urban management instruments, socio-political participation and organization, urban environment, public safety, and transport). The calculation of the index uses a mathematical model that considers the weighted impact of a total of 49 variables.

(b) **To improve the quality of life of the poor populations residing in key targeted urban river basins in MRSP**: (i) Revised - Parks and free public areas urbanized implemented. (Hectares); and (ii) New - Direct project beneficiaries (number), of which female (percentage)

(c) **To strengthen institutional capacity and improve metropolitan management and coordination in MRSP in water resources management, water pollution control, land-use policy, and basic service provision**: (i) New - Studies developed to improve institutional capacity for water resources planning; and (ii) New - Macro metropolis water resources master plan revised and improved, including specific technical studies for key interventions.

16. **Reasons for the change in key indicators.** The Restructuring Paper, dated September 30, 2015, presents the justifications for the changes: (i) mainstream indicators in a more strategic, consolidated manner, reflecting direct program expected results; and (ii) reflect changes of scope and activities in the context of the ongoing water crisis; the Urban Upgrading Component was dropped and new indicators for the new activities in response to the water crisis were included. Indicators were adjusted to include core indicators and account for the new closing date. Numerous changes were also made to the intermediate indicators.

1.4 Main Beneficiaries

17. **Beneficiaries before the September 30, 2015 restructuring.** Beneficiaries were not clearly identified in the PAD. Section D of the PAD[8] indicates that the APL would directly benefit approximately 4,000 families through slum urbanization, over 6,000 families through interventions to improve urban environmental infrastructure in other low-income settlements, 1,350 families receiving new housing units, and more than 24,000 inhabitants receiving improved WSS services. According to the Economic Analysis[9], the direct beneficiaries of the urban upgrading are 118,961 inhabitants, including the indirect beneficiaries the number increases to 768,185 inhabitants; and the 4 million people are expected to benefit from the water quality preservation.

18. **Beneficiaries in the September 30, 2015 restructuring.** In the restructuring, a new (core) indicator was added: direct project beneficiaries (number), of which female (percentage). The target for the APL was set at 2,117,000 people, of which 51 percent female. The APL target was the sum of the GESP Project target (431,000 people of which 51 percent female) and the SABESP Project target (1,686,000 people of which 51 percent female).

1.5 Original Components

19. The original Program included four components.

Component 1 - Institutional Capacity Building (US$32.18 million total cost, out of which **US$13.85 million** IBRD financing). This component was designed to support GESP and the other

[8] APL PAD, dated June 9, 2009, Section D. Social, page 18.
[9] Economic Analysis –- Final Report, dated May 31, 2007.

executing agencies to strengthen their institutional capacity and promote improved metropolitan management and coordination with regard to the key metropolitan challenges of water resources management, water pollution control, land-use policy, and basic service provision. The component aimed at supporting the following activities: (i) improved integrated land-use and water resources management and coordination at the metropolitan level, through: (a) support to the preparation and implementation of sub-basin Environmental Development and Protection Plans' and their corresponding specific land-use laws, (b) drafting of 'MRSP Metropolitan Water Governance' structure and corresponding legal/institutional instruments and implementation strategy, (c) creation of a forum for seminars on 'Metropolitan Governance and Water in MRSP'; (ii) carrying out studies such as (a) metropolitan governance, (b) MRSP water demand profiles and scenarios, (c) water demand management policy preparation, (d) water reservoir behavior and potable water treatment improvements, among others; (iii) environmental and water quality monitoring; (iv) environmental education and social outreach; (v) creation and operationalization of the State WSS Regulatory Agency; and (vi) project management, monitoring, evaluation and dissemination.

20. **Component 2 - Urban Upgrading (US$54.30 million total** cost, out of which **US$11.50 million** IBRD financing). This component was designed to improve the standards and layouts of urban occupation in the targeted sub-basins as well as the quality of life of the residents of these sub-basins, especially the low-income communities living in informal settlements, through the following activities: (a) urbanization of slums and irregular settlements, (b) recuperation of high-risk and degraded areas, (c) involuntary resettlement, (d) preparation of housing plans, (e) environmental and urban layout standardization of settlements, and (f) socio-environmental supervision for urban upgrading and housing interventions. These activities were expected to take place in the Municipality of São Bernardo do Campo and/or in other selected municipalities in the program area.

21. **Component 3 - Environmental Protection and Recovery (US$23.16 million total** cost, out of which **US$13.67 million** IBRD financing). This component aimed at protecting and recovering natural habitats and environmentally sensitive and degraded areas in the sub-basins to improve environmental quality, by supporting the following activities: (a) revegetation and reforestation; (b) urbanization of public areas with the creation of green and leisure spaces for common use; (c) establishment of environmentally protected areas; (d) rehabilitation and protection of reservoirs and water production systems; and (e) control of the transportation of hazardous substances in the region.

22. **Component 4 - Integrated Water Supply and Sanitation (US$122.38 million total** cost, out of which **US$89.49 million** IBRD financing**).** The component aimed at reversing the main factors that contributed to the pollution of the reservoirs and providing integrated WSS services to the poor, by supporting: (a) wastewater management improvements; (b) water supply system improvements; and (c) solid waste management improvements.

1.6 Revised Components

23. The APL components were not revised. The components under the GESP and the SABESP Projects were revised in during the September 2015 restructuring. Significant changes were made. The GESP Project was substantially simplified by the removal of activities that had not been implemented; and inclusion of a key long-term study to support the response to the drought.

Similar change was made to the SABESP Project, in which new activities were added to respond to the water crisis faced by the MRSP. The components in the PMSBC Project were not revised and the Project closed on the original closing date of September 30, 2015, without implementing any activity. The GESP and SABESP Projects are presented in the Appendices.

1.7 Other Significant Changes

24. The September 2015 restructuring made other significant changes to the GESP and SABESP Projects. Most of the changes aimed at removing features included in the loan agreement with GESP concerning the undertaking of coordination activities involving other participating agencies, namely the deletion of the Committee of Coordinators (CDC), which was not functioning. Also, one of the three executing agencies under the GESP Project, CDHU, was removed from the loan agreement with GESP, since it did not have any role under the Project. In addition, under the GESP Project, the percentage of expenditures financed under Category (1) was increased from 25 percent to 50 percent; on the APL Results Framework, the Intermediate Indicators related to the PMG Project were removed; and the GESP and SABESP Projects was extended to March 30, 2017.

2. Key Factors Affecting Implementation and Outcomes

2.1 Project Preparation, Design and Quality at Entry

25. The APL was approved by the Board on July 9, 2009. Together with the APL, the Board approved the SABESP Project (US$100 million IBRD loan) and the GESP Project (US$4 million IBRD loan). The PMSBC Project (US$20.82 million IBRD loan) was approved by the Latin America and the Caribbean Regional Vice President on March 1st, 2012. The expected fourth IBRD loan to support the PMG Project did not materialize. The PMG declined to participate on May 23, 2013. The issues that significantly shaped the APL design are highlighted below.

26. **Main pollution source to water bodies - slums lacking sanitation infrastructure.** The mapping and modeling exercises carried out during the preparation phase, which correlated land use, pollution loads, and poverty rates of the Guarapiranga and Billings reservoirs, reaffirmed in general the strong correlation between the highly urbanized areas of the basins and pollution load and, more specifically, between the informal and densely occupied slum areas of the basin and the pollution rates.[10] Later studies determined that slums without sewerage infrastructure generated about 94 percent of phosphorus in the Guarapiranga reservoir.[11] In line with the evidence, the APL envisaged undertaking physical interventions in urban environmental infrastructure and urban upgrading in slum areas, to abate the pollution loads in the reservoir. Hence, the APL focused on the heavily urbanized and degraded water bodies and sought to attract municipal governments because the slum-upgrading works fall under their responsibility.

27. **The choice of the APL instrument.** The APL instrument was chosen because it allowed a lending arrangement that was consistent with the technical and territorial approach supporting the operation, which aimed at tackling the interrelated issues of urban pollution and poverty/land

[10] APL PAD dated June 9, 2009. Page 38, paragraph 1, page 38.
[11] PDPA for the Guarapiranga Basin, GESP, Environmental Secretariat, Companhia Brasileira de Projetos e Empreendimentos - COBRAPE, 2000, revised 2007.

issues in the MRSP territory. The horizontal APL instrument allowed to address the Brazilian legislation prohibition to on-lend.

28. **The APL was designed envisaging the prospects of a large operation.** During the early years of the APL preparation, discussions held with several stakeholders in the MRSP resulted in a dozen state entities and municipal governments requesting clearance from the federal government to borrow from the World Bank to participate in the APL.[12] In light of the growing interest, the APL was developed into a large operation encompassing numerous borrowers, mostly municipal governments. However, three years later, the appraised package included only five projects instead of the twelve originally expected. Different reasons explained the low number of participants: (i) limited borrowing capacity, (ii) access to other lending sources, and/or (iii) fiscal constraints that resulted in ineligibility to borrow.

29. **Long preparation.** The reasons for the APL's long preparation included the following: (i) the World Bank held back the preparation of the Program based on concerns regarding potential difficulties in implementing several loans, many of which could be of small size, and the triggering of most of the social and environmental safeguard policies; and (ii) the non-compliance with fiscal requirements from subnational governments willing to participate under the APL delayed the federal government clearance to borrow from the World Bank.

30. **Municipality of São Paulo (PMSP) withdrawal from the APL.** The five original participants included four borrowers (GESP, SABESP, PMSBC, and PMG) and the PMSP as a co-financier. The PMSP could not borrow given the fiscal constraints but was willing to participate in the APL by bringing its own financed large urban upgrading program and was aware of implications such as the required compliance with the World Bank safeguard policies. However, two years later, during the negotiations of the GESP and SABESP Projects, in January 27, 2009, the World Bank Legal Department found the arrangement with the PMSP in disagreement with the applicable rules and demanded its removal from the APL[13]. The changes are reflected in the PADs for the APL and participants' projects dated June 9, 2009. Besides the removal of references to the PMSP in the PADs, no other major change was made on the PADs or on the other technical documents pertaining to the preparation phase.

31. **Disconnects between the APL and the PDO.** While most of the references to the PMSP were removed from the PAD, neither the PDO nor the results framework were updated. Thus, the PMSP removal caused the APL and the PDO to disconnect. The clearest evidence of the disconnect is found in the economic analysis, which claimed that the impact in maintaining the quality of the reservoirs[14] would be achieved through the implementation of the urban-upgrading interventions

[12] APL PAD dated June 9, 2009. Paragraph 4, page 2.
[13] Mentioned in the Negotiations Minutes.
[14] First objective to Objective 1of the APL PDO: "To protect and maintain the quality and reliability of MRSP's water resources and potable sources".

to be undertaken by the PMSP and other municipalities.[15] In addition, the first-part of the PDO [16] aiming at improving the quality of two tributaries draining sub-basins dominated by slum areas, and, the quality of the reservoirs through the provision of basic infrastructure services to a large number of slums and informal settlements that could not be achieved with the remaining activities. after the PMSP removal. Likewise, the second-part of the PDO[17] was meant to reflect the large impact in poverty reduction expected from the PMSP urban-upgrading interventions, which did not materialize. Nevertheless, the improvement in quality of life of the poor could still be achieved through the PMSBC Project's slum-upgrading intervention, although on a much smaller scale.

32. **The PMSP and other governmental interventions were expected to contribute to the APL objectives.** While the PMSP removal resulted in the APL losing a key intervention sustaining its approach. It was expected that the PMSP urban-upgrading intervention would still be implemented in parallel to the APL implementation. Therefore, the PMSP impact in improving the quality of the reservoirs was still expected to occur. Given the relevance of the PMSP intervention, the GESP's Management Unit also monitored the PMSP urban-upgrading implementation. The PMSP urban upgrading intervention was implemented until 2013, when the new municipal government administration declared different priorities. In consequence, the key activities to abate pollution loads in the Guarapiranga and Billings reservoirs were only partially implemented. Besides the PMSP urban-upgrading intervention, the PAD also took into account the expected impact from the implementation of numerous ongoing and/or planned governmental activities in the MRSP. Those were considered part of a package of interventions that would contribute to improving urban standards and water quality in the APL priority basins. The expected impacts from these interventions were also considered in the achievement of the first two objectives under the APL.

33. **Other disconnected design elements.** Other relevant elements in the APL were disconnected. One of those was the CDC, which was designed as a strategic advisory body to ensure integration of projects as well as coordination with the river basin committees involved. The CDC worked well during preparation but was never operationalized during implementation. Likewise, most of the institutional capacity building components under the participants' projects were not implemented. They included challenging tasks such as developing a new metropolitan governance model, improving land use regulations, and defining new water and sanitation policies. These tasks, apart from being extremely challenging from the technical, institutional, and political perspectives, did not clearly fall under the mandate of the institutions involved. As a client team member said "these and other APL features lost their purpose once the number of participants under the APL dropped dramatically".

34. **Too general activity description, a burden for the client.** While the PAD included an in-depth concept discussion, the description of activities was not specific enough. This presentational choice was meant to give flexibility to implementation. However, lack of specificity

[15] The APL Economic Analysis took into account an extensive urban upgrading intervention, implemented by six municipal governments and directly benefiting 110,000 people living in 42 slums and informal settlements and, indirectly, 760,000 people living in the neighboring areas. This extensive intervention was considered in a preliminary APL design. The APL PAD, appraised on July 20, 2007, included only two municipal governments: the PMSP (as co-financier), co-financier and the PMSBC (as borrower).

[16] Pollution loads of relevant water bodies reduced (mg/l BOD) – (i) Tanquinho Stream; and (ii) Pedras River.

[17] To improve the quality of life of the poor populations residing in key targeted urban river basins in MRSP.

also meant that the activities would be defined during the implementation phase. The generic description provided a limited sense of priority or connection with respect to the PDO. As a high-level client representative said "the general activity description constitutes a major implementation problem for the client because it requires teams with specific skills to conceive the activity, different from the implementation team; there was not enough information to substantiate a credible implementation schedule and estimate costs, thus these critical elements became totally unpredictable; and it disrupted the client's organizational schemes that were in place".

35. **The APL format and appraisal analysis.** The Program had a full PAD while each Project had an abbreviated PAD. The appraisal was carried out for the Program as a whole, while for each Project, the appraisal project, they focused mostly on the fiduciary aspects. The PAD considered a much larger number of projects, for which activities were implemented in an integrated manner. However, during implementation, the number of Projects fell to just two and the activities implemented did not require integration. Full appraisal of each Project would have probably helped avoid some constraints that became evident during implementation. Also, it would have been essential for the post-completion evaluation concerning, in particular, the risks associated with each specific Project, as well as its economic assessment.

36. **Risks.** A major risk the operation faced that was not considered was the risk of participants dropping out of the operation. The APL rationale, objectives, Results Framework, and Economic Analysis considered the participation and implementation of a large number of projects. However, the number of participants fell during the preparation and implementation phases. The APL would have benefited from a sort of 'adjustment plan' to respond to a significant drop in participant projects, which included the remaining projects being implemented in isolation.

37. **Projects' and PDO inconsistency.** The PDO of the Program and participant Projects' PDO were almost the same. However, each Project, per se, could not individually achieve the PDO it was legally bound to through the loan agreement. Its achievement depended on the implementation of activities falling under the responsibility of number of institutional actors, beyond each Project institutional boundaries and beyond the Program's actual size and scope.

38. **Ambitious objectives, complex scope and long preparation time.** A main conclusion reached during the final stakeholder workshop, held as part of the ICR preparation, was that achieving the APL expected results was extremely challenging given the major difficulties associated with the combination of ambitious objectives; complex scope, and long preparation. The participants concluded that the APL, as conceived, was prone to face significant constraints during implementation.

39. **Externalities affecting the APL.** During the long preparation, the political, economic, and fiscal issues in Brazil, including in the State of São Paulo, significantly changed to a less positive environment. The changes negatively affected the APL, causing potential participant borrowers to focus on other urgent priorities.

2.2 Implementation

40. The main issues faced by the three participant Projects during implementation are summarized below.

41. **Selective implementation focus.** Both the SABESP and the GESP adopted a selective approach for Project implementation by focusing on the group of activities under their respective Projects that were aligned with their regular institutional priorities. The GESP Project focused on developing the technical studies, since they had of the water resources, which have been proved to be relevant tools for water resources policies. The SABESP Project on the other hand focused on water and sanitation services (developing technical studies and/or constructing infrastructure). The PMSBC Project did not adopt a selective focus but pursued the implementation of all activities planned. However, the project did not conclude the preparatory activities to initiate implementation within the Project implementation period.

42. **Unconventional activities requiring complex preparation.** The implementation of the activities that exceeded the regular institutional priorities included challenges such as: (i) lack of details developed during preparation; postponing the undertaking of a significant effort required to assess the activity; technical, institutional, legal, and political feasibility; (ii) lack of professional expertise in the market to assist the Project to conceive and develop the activities; (iii) the significant institutional challenges associated with the potential implementation of the activity; (iv) the long time between preparation and implementation; and (v) the changes in priorities given political and fiscal constraints. The ICR stakeholder workshop raised an extremely relevant issue associated with this point: "For a company such as the SABESP, carrying out activities for which costs cannot be included in the tariffs faces major prioritization constraints".

43. **Cost analysis constraints.** The PAD of the Program and Projects provided general cost information, limited to the total components amount and the activities described in general terms. During implementation, the Projects focused on fewer activities than those planned, and several activities were dropped or added during restructuring. These factors combined created significant difficulties to compare the estimated and final costs of the activities.

44. **The changing political, economic, and fiscal context.** During implementation, the political, economic, and fiscal context severely deteriorated, clearly affecting the implementation performance. The availability of counterpart funds significantly decreased as well as the dedication of funds to activities such as financing consultancies to develop studies, which, at a certain point, the Government declared as ineligible for funding. In addition, responding to the increasing drought affecting the water supply in the MRSP became the top priority action for the Government.

45. **Midterm review (MTR) and restructuring.** At the APL MTR, a restructuring aimed at addressing the constraints faced by the three Projects was discussed in detail and processing was initiated. However, as the droughts affecting the MRSP water supply services dramatically increased, the restructuring proposal was updated to focus on assisting the clients in responding to the water crisis. Given its urgency and high relevance, the restructuring was rapidly processed within the entities involved. The SABESP highly commended the World Bank for the support in responding to the water crisis.

46. **GESP Project.** The Project developed studies and plans that were highly relevant for the implementation of the water resources policies in the MRSP. They provided details on the technical data required for monitoring and protecting critical water bodies; as well as technical inputs needed for the development of the specific laws to regulate land use and water bodies' protection in five sub-basins within the Alto Tietê River Basin. The Project also supported the

development of a park offering environmental services and recreational opportunities to the population. The September 30, 2015 restructuring improved the focus of the Project by removing activities that had not been developed. It also increased the loan financing of expenditures from 25 percent to 50 percent, which was significant given the fiscal constraints the state government faced. In addition, several updates in the institutional arrangement were made.

47. **SABESP Project.** The Project implemented several activities under Component 4. Sanitation systems were improved and expanded in three low-income neighborhoods, one in the Guarapiranga basin and one in the Billings basin. These were urban settlements that were considered irregular because they did not follow the urban low-density standards required by law. But because they have existed for about three decades, a waiver supported by environmental legislation was given, allowing the SABESP to construct the sanitation infrastructure. The construction of the system in the Billings basin concluded in 2015 and is currently operational. These systems will significantly contribute to the removal of pollution loads to tributaries located in these three sub-basins. These, together with other SABESP's investments in sanitation, expanded the overall sanitation collection coverage in the Guarapiranga basin to 70 percent. The sanitation coverage in the formal areas was approximately 100 percent.[18] The sanitation collection system is connected to the main interceptor that exports the wastewater to a wastewater treatment plant (WWTP) located outside the headwater basins. The remaining 30 percent of the population without coverage correspond to the slums areas, where investing in sanitation requires complementary investments, legal authorization to invest in an unregulated urban settlement, and falls under the municipal government authority. The Project also financed the construction of a WWTP in a river basin from where water is transferred to supply the MRSP. The rehabilitation of a major pumping station also contributed to ensure water supply services to the MRSP. The Project restructuring responded to the water supply crisis triggered by severe droughts starting in 2013–2014. About half of the loan financed ongoing major infrastructure works to increase short-term water supply availability and improve medium- and long-term water security.

48. **PMSBC Project.** The Project was declared effective on December 6, 2012, and closed on September 30, 2015, without implementing any activity. The main issues faced by the borrower included the following: (i) the long delays in concluding the designs of the slum upgrading interventions; (ii) the increase in costs of the interventions; and (iii) the lack of funds to finance the resettlement management plan.

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

49. **M&E design.** The M&E was designed to reflect (a) the APL objectives through the PDO-level outcome indicators, and (b) the participant Projects outputs through the Intermediate outcome indicators. The PDO-level outcome indicators did not reflect any of the Projects individually; they were designed to reflect the outcomes to be achieved through an integrated and coordinated implementation of several projects activities. The GESP Project was structured to report on the PDO-level outcome indicator. However, the Project Coordination Unit understood that because only two Projects had been implemented, the PDO-level outcome indicators could not be pursued and subsequently could not be monitored. Nevertheless, the complex, long, and costly studies and

[18] Information provided by the SABESP in interviews for the ICR preparation.

surveys required to report on the PDO-level indicators were indicated as too demanding monitoring tools.

50. **M&E Implementation**. Each one of the participant Projects assumed their share of the M&E and simplified it to reflect the activities they selected to implement. While the M&E was kept updated, it was not used effectively as a tool to guide implementation, but rather as a tool to consolidate the results achieved by the project. Also, the intermediate outcome indicators reflected the participant Projects outputs and did not require the undertaking of studies and surveys. Moreover, in the September 30, 2015 restructuring, the Results Framework was simplified to reflect the project implementation status as well as the change in activities financed under the GESP and SABESP Projects. Also, the complex monitoring tools such as surveys and studies were dropped.

51. **M&E Utilization.** A simplified M&E version for each Project was created and used to register targets and achievements and few indicators will continue to be monitored by the client.

2.4 Safeguards and Fiduciary Compliance

52. The Program received a World Bank Environmental Category A rating and triggered the following safeguards: OP 4.01 (Environmental Assessment), OP 4.04 (Natural Habitats), OP 4.11 (Physical Cultural Resources), OP 4.12 (Involuntary Resettlement), and OP 4.37 (Safety of Dams). The World Bank safeguard specialists — social and environmental — reviewed all activities under the Program and participating Projects during the preparation and implementation phases.

53. **OP 4.12 - Involuntary Resettlement.** One of the safeguards instruments adopted by the Program to mitigate potential impacts associated with the OP 4.12, in particular the involuntary resettlement related to slum upgrading intervention, was a Resettlement Framework (RF). This RF was disseminated, discussed with stakeholders and disclosed as required. The RF incorporated the lessons learned from several slum-upgrading interventions implemented under the antecessor project (the Guarapiranga Program), which were of great relevance for guiding resettlement solutions under slum-upgrading interventions because they had been tested and achieved proven positive results. A principle adopted by the RF was that resettlement solutions were an integral part of the slum-upgrading intervention. The RF was incorporated in the Operations Manual (OM) guiding the implementation of PMSBC and SABESP Projects and was complied with, as described below.

54. **OP 4.12 / PMSBC Project**. The main activity under this project was the undertaking of a slum-upgrading intervention benefiting approximately 3,000 low-income families. Large segments of the area were under constant risk of erosion causing the precarious houses to slide on the slopes. In addition, the entire area was deprived of basic infrastructure and services, generating serious health risks to the population and, also, pollution loads to the Billings reservoir. During the implementation of the PMSBC Project, a Resettlement Action Plan (RAP) was prepared along with the development of the slum-upgrading engineering designs. Accordingly with the RAP, a total of 976 families were affected by resettlement, including 154 rented houses, of which 146 were residences and 8 were used for commercial activities. The RAP implementation involved a significant amount of resources, which the Project was not able to finance. At the end, the slum-

upgrading interventions were dropped from the Project. None of the activities related to RAP were implemented.

55. **OP 4.12 / SABESP Project.** The construction of the Bragança Paulista wastewater treatment plant (WWTP) was the only activity that raised questions related to OP 4.12. During the construction, the precise location of a road to access the WWTP and a pumping station raised concerns from landowners in the vicinity. They contacted the state environmental agency as well as the World Bank. Information was provided clarifying that the changes in location did not cause the impacts they were concerned about. Subsequently, the works resumed.

56. **OP 4.01 - Environmental Assessment.** A Regional Environmental Assessment was prepared in accordance with the requirements for an Environmental Category A operation. It was disseminated, discussed, and disclosed following the procedures required under OP 4.01. During implementation, specific environmental assessments were prepared for each intervention. Also, specific environmental studies were undertaken, as required by the Brazilian environmental licensing procedures. All environmental assessment and studies were disseminated, discussed, and disclosed as required both by OP 4.01 and the Brazilian environmental legislation.

57. **OP 4.04 - Natural Habitats.** Program design included interventions in environmentally protected areas. However, during implementation, the sole intervention that triggered OP 4.04 was the slum-upgrading investments under the PMSBC Project. The preparation of the slum-upgrading designs fully complied with the OP 4.04 requirements. Nevertheless, the implementation of the slum-upgrading intervention did not take place.

58. **OP 4.11 - Physical Cultural Resources.** Procedures in agreement with OP 4.11 were incorporated, as appropriate, in the OM as well as in the Construction Manual. During implementation, the specific environmental assessment prepared for each intervention also carried out an assessment following OP 4.11 directives. Elements associated with OP 4.11 were not found in the intervention areas.

59. **OP 4.37 - Safety of Dams.** During the preparation phase, several interventions under the Program triggered the OP 4.37. However, these interventions were not carried out. During implementation, a new intervention was included under the SABESP Project that triggered OP 4.37 involving the recovery of the Taiaçupeba Dam Hydraulic Basin Capacity, which included the removal of vegetation that had grown in the basin and activities to enhance and protect the green area buffer zone around the reservoir. To finance this activity, the World Bank asked for review from a panel of experts to further confirm that the Taiaçupeba existing dam would properly respond to the use of the reservoir's full capacity. The Dam Safety Panel Report was concluded in August 2017, and was presented and discussed on a workshop held on September 6, 2017. The report main conclusions are: (a) The dam's structures have been properly operated and maintained and they comply with the safety criteria concerning the hydrological, hydraulic, concrete structures and geochemical requirements, and, moreover, the reservoir presents appropriate safety conditions for its filling, and (b) There are concerns regarding eventual social impacts associated with future reservoir operation under regular and extreme events that could affect an unregulated settlement that is gradually encroaching an area downstream the reservoir. The Panel's recommendations are to: (i) prepare and implement a "reservoir filling monitoring program" taking into account the measures the Panel recommended; (ii) undertake a study simulating downstream social impacts

scenarios associated with future reservoir operation under regular and critical events; (iii) update the existent Dam Emergency Plan taking into account the recommendations from study recommended in item (ii); (iv) update the existent Dam Safety Plan taking into account the recommendations from the Panel's report; and (v) prepare a consolidated version of the Panel's report. It was agreed that an Action Plan (programs, timetable and budget) for the recommendation provided for in (i), (ii) and (iii), as well as the report mentioned in (iv) will be sent to the World Bank by October 16, 2017.

2.5 **Financial Management**

60. **Loan 76610 - GESP**. All FM supervision missions were rated Satisfactory or Moderately Satisfactory. Initially, there were delays in adjusting the state's administrative system to generate consolidated interim financial reports (IFRs) at the program and project level, and there was also a need to strengthen the internal control arrangements further. These aspects improved during implementation. The Project Implementation Unit (PIU) and the management firm's experience were also important factors to ensure that acceptable FM arrangements during implementation. Agreed action plans were generally implemented, but were not sufficient to improve the disbursement rate, especially during the last years of the Project, as result of the devaluation of the Brazilian *real* since 2015 and fiscal constraints imposed by the federal and state governments. The FM risk rating was considered Low throughout the project's life. Audit reports were generally received on time (with the exception of the 2014 report). All audit reports expressed unqualified/unmodified audit opinions. All IFRs received during the life of the project were considered acceptable and were received on a timely basis as well. There were no instances of ineligible expenditures identified.

61. **Loan 76220 – SABESP**. All FM supervision missions were rated Satisfactory. Initially there were delays in adjusting the SABESP's corporate system to generate IFRs, which improved during implementation. SABESP's experience and corporate internal control arrangements were essential to ensure that good FM arrangements throughout implementation. Agreed action plans were implemented. During Project implementation, the SABESP was financially affected by the state water shortage crisis and the devaluation of the Brazilian *real* since CY15, with some impact on the Project disbursement rate. The FM risk rating was considered Low throughout the Project's life. All audit reports were received on time and expressed unqualified/unmodified audit opinions. All IFRs received during the life of the Project were considered acceptable and were received on a timely basis. No instances of ineligible expenditures were identified.

62. **Loan 81490 – PMSBC.** This loan was not implemented (99.54 percent of the loan funds were cancelled towards the end of the Project). All Financial Management (FM) supervision missions were rated Moderately Satisfactory. The FM risk rating was considered Low throughout the project's life. Because of the low disbursement rate and lack of Project activities, no formal audit was undertaken for the loan. Instead, the FM Specialist performed alternative procedures (transaction review) to assure the eligibility of expenditures. All Interim Financial Reports (IFRs) received during the life of the Project were considered acceptable and were received on a timely basis. There were no instances of ineligible expenditures identified.

2.6 **Procurement**

63. **GESP.** The GESP procurement practices fluctuated considerably: sometimes the procurement processes were well done and quick, and sometimes were very confusing and slow. Technical and political aspects influenced the quality of the processes. The Procurement Plan changed several times and often the quality of the Terms of References (ToRs) was questionable. These issues resulted in long delays given that the technical discussions to improve ToRs were time-consuming and complex. The resistance of the GESP team to use the standardized World Bank procurement documents was another issue to surmount. The GESP team had limited experience with the World Bank's Procurement rules and this was an issue during early Project implementation. Later, the issues faced were mostly administrative and related to the quality of technical documents. Overall, the GESP procurement processing was acceptable and did not trigger any major concerns.

64. **SABESP.** From the procurement point of view, the SABESP always was an agency of excellence, well organized and with several standardized procedures and documents. Of course, the use of the World Bank procurement rules required a greater learning time for the SABESP's procurement team, resulting in delays in developing documents acceptable both the World Bank and the SABESP. As the SABESP's organization structure involves several sectors (i.e., legal, technical, procurement, control, among others), the discussions on new standard documents were long. Once the bidding documents were ready, the procedures were conducted satisfactorily. The Project restructuring had significant impact on the bidding procedures because many ongoing proceedings were suspended, canceled, and eventually relaunched, generating a series of changes in the Procurement Plan and in the progress of the processes. Nevertheless, there is no doubt that among the three borrowers, the SABESP's technical capacity in conducting biddings and selection of consultant stands out.

65. **PMSBC.** Unfortunately, PMSBC faced substantial difficulties in conducting the procurement processes defined in the Procurement Plan. The capacity of the team to handle international consulting services was low given the PMSBC's limited exposure to multilateral agencies. PMSBC only concluded one procurement process: hiring of an Individual Consultant to help the municipality to prepare other procurement processes following World Bank rules, and even this process took almost nine months to conclude. Other technical and political uncertainties influenced the procurement work, and given the technical issues and low capacity, the procurement from the PMSBC was unsatisfactory for the entire life of the Project.

2.7 Post-completion Operation/Next Phase

66. At the time of the ICR, there were no indications of a possible follow-up APL operation. Concerning post-completion operation, the following aspects are to be considered:

(a) The GESP Project built a linear park which falls under the responsibility of the PMSP. The GESP and the PMSP signed an agreement concerning the park's operation and maintenance (O&M) responsibilities.

(b) Table 1 summarizes the post-completion steps to be followed for the investments under the SABESP Project to become fully operational.

(c) Post-completion operation does not apply to the PMSBC Project.

Table 1. Investments and Post-Completion Operation

Investment	Post-Completion Operation
Works on the Cocaia-Lagoinha (Grajaú District - Billings basin) sewerage system completed in 2014. It included primary and secondary networks, pumping stations, connecting to existent WWTP (outside the basin). It benefited 25,000 people, abating 392 tons per year biochemical oxygen demand (BOD).	The investment has been operational since late 2014. The number of households connected to the system is estimated at 70–80 percent. This is the average connection rate achieved in low-income settlements of similar socioeconomic characteristics.
Mombaça and Crispim sewerage secondary and main pipelines, pumping stations, and interceptors connecting to existent WWTP (outside the basin) (Itapecerica da Serra - Guarapiranga Basin) almost completed, benefiting 16,000 people, abating 248 tons per year of BOD. Expected to conclude later in 2017.	Execution of the works was almost concluded by March 30, 2017. SABESP informed that the system would become operational as soon as the works are concluded. Also, that the household connection rate will reach 70–80 percent in three years. This is based on the SABESP's experience in similar low-income areas.
Branca Flor sewerage interceptors system (Itapecerica da Serra municipality, Guarapiranga reservoir) concluded in July 2017. System benefits 5,600 people, abating 88 tons per year of BOD.	The Project financed construction of sewerage interceptors. The secondary pipeline already existed and number of households connected is higher (close to 90 percent).
Works on the TO-13 sewerage primary and secondary pipeline almost I completed in municipalities Carapicuíba and Cotia (Upper and Lower Cotia Basins), benefiting 2,800 people, abating 44 tons per year of BOD.	The works were almost completed by March 2017. The secondary pipeline already existed and the number of households connected is much higher (almost 100 percent), given that the secondary sewerage pipeline has been in place for years and income is higher.
Works on Bragança Paulista Wastewater Treatment Plan completed in 2015, benefiting 130,000 people, abating 2.050 tons per year of BOD (Juqueri-Cantareira basin).	The WWTP is fully operational since 2014.
Works on Grajaú Water Treatment Plant pumping station executed, benefiting 130,000 people. Concluded in 2014.	Operational since 2014
Services for reducing water leakage carried out.	Operational
Works and equipment for Boa Vista water treatment plant filtering membranes system executed, increasing water production to 1 m^3 per second, benefiting approximately 300,000 people (together with Rio Grande and Rio Pequeno transfers).	Operational since 2015
Works on 4 m^3 per second water transfer from Rio Grande to Taiaçupeba Dam executed, benefiting 1.2 million people (together with Boa Vista filtering membranes and Rio Pequeno transfer).	Operational since 2015
Works on 4 m^3 per second water intake from the Rio Pequeno to Rio Grande (Billings reservoir) executed, benefiting 1.2 million people (together with Boa Vista filtering membranes and Rio Grande transfer).	Operational since 2015

3. Assessment of Outcomes

3.1 Relevance of Objectives, Design and Implementation (Pre- and Post-restructuring)

67. **Relevance of objectives: Substantial.** The objectives of the Program and participating Projects were consistent with the development priorities and circumstances at the time of project preparation and implementation. The FY08-FY11 Country Partnership Strategy (CPS), dated May

1, 2008, laid out a program of continued support to Brazil through four pillars of engagement: equity, sustainability, competitiveness, and sound macroeconomic management. The CPS asserted that Brazil continued to falter in the area of environmental sustainability, and that water scarcity and environmental degradation were urgent problems hindering the country's sustainable growth. The FY12-FY15 CPS [19], valid by project closure, was also structured around four strategic objectives: increase the efficiency of public and private investments, improve quality and expand provision of public services for low-income households, promote regional economic development through strategic investments and policies, and improve sustainable natural resources management and climate resilience. The third and fourth strategic objectives were highly relevant to the Program and participating Projects' rational and objectives. The results areas under these strategic objectives were also closely aligned with the Program; namely, improved policy coordination at territorial level, expanded access to improved basic sanitation, integrated water resources management, and improved environmental management.

68. In addition, the Program objective's relevance to the current situation of the country still remains high. It is consistent with Brazil's Country Partnership Framework (CPF)[20]for the period of FY18–FY23. The CPF presents three areas of priorities, being number 3 the one that focus on inclusive and sustainable development with the objective, among others, to increase urban resilience and provide more sustainable and inclusive urban services. Promoting the improvement of the quality of urban infrastructure, improving the efficiency of service delivery, and building resilience of populations against the variability of water supply are among the key activities proposed. In conclusion, the APL objectives are still closely aligned with the CPS in place by the project closure and the CPF valid for the coming years.

69. The protection of the MRSP headwater continues to be a high priority for the state and municipal governments as well, as confirmed during a stakeholder workshop carried out as part of the ICR preparation. Working in complex urban upgrading environment is seen by municipal government as a key role that the Bank should continue to support. Moreover, the implementation and monitoring of the action plan ensuring water security in the MRSP continues as a top priority for state and municipal governments as demonstrated by several comprehensive plans and measures.

70. **Relevance of design and implementation: Modest.** The design and implementation of the Program and Projects proved to be modestly relevant. The main weaknesses of the design are associated with: (i) inclusion of activities to complement activities under a different Projects, thus establishing interdependence between two Projects implemented by two different, autonomous governments, whose priorities were not always aligned; (ii) inclusion of a large number of activities that were planned to be fully financed with funds other than those of the loan, and whose implementation depended on executing agencies other than the main executing agencies under the Project and that never materialized; and (iii) the inconsistency between the participant Projects PDO and respective components/activities. The results framework was revised during the

[19] CPS report number 89498 - BR, FY2012—2015.In 2016, the World Bank launched the Brazil Systematic Country Diagnostic (SCD) to inform the preparation of a new Country Partnership Framework (CPF).
[20] CPF report number 113259-BR for FY2018-2023 was approved by the Board in June 2017.

restructuring to reflect the project implementation status as well as align with the change in activities financed under the GESP and SABESP Projects.

3.2 Achievement of Project Development Objectives

71. The achievement of the Program PDO was formally tied to three Projects: GESP, SABESP and PMSBC Projects, as shown in the Table 2 below:

Table 2. PDO Program and Projects

Program PDO	Projects PDO		
	GESP	SABESP	PMSBC
To protect and maintain the quality and reliability of MRSP's water resources and potable water sources.	✓	✓	✓
To improve the quality of life of the poor populations residing in key targeted urban river basins.	✓	✓	✓
To strengthen institutional capacity and improve metropolitan management and coordination in MRSP in water resources management, water pollution control, land-use policy, and basic service provision.	✓	—	—

72. The efficacy assessment, which is summarized in Table 3, breaks the PDO down into its three parts and aligns available evidence for the achievement of the Results Framework. The GESP and SABESP Projects were restructured, and although their PDO remained unchanged, most of the PDO indicators and Intermediate Indicators were amended during the September 30, 2015 restructuring. For that reason, the Program's efficacy is judged related to both the pre- and post-restructuring PDO indicators. The PMSBC Project was not restructured. It closed on the original closing date.

Table 3. Summary of Efficacy Rating Pre- and Post-restructuring per Project under the APL[21]

Three-Part PDO	Pre-restructuring			Post-restructuring		Overall
	GESP	SABESP	PMSBC	GESP	SABESP	
To protect and maintain the quality and reliability of MRSP's water resources and potable water sources	Negligible	Negligible	Negligible	Negligible	Substantial	—
To improve the quality of life of the poor populations residing in key targeted urban river basins	Negligible	Negligible	Negligible	Substantial	Substantial	
To strengthen institutional capacity and improve metropolitan management and coordination in MRSP in water resources management, water pollution control, land-use policy, and basic service provision	Modest	—	—	Modest	—	

[21] See details in section "3.4 Justification of Overall Outcome Rating" in Appendices 1 and 2, GESP Project and SABESP Project ICRs respectively.

Three-Part PDO	Pre-restructuring			Post-restructuring		Overall
	GESP	SABESP	PMSBC	GESP	SABESP	
GESP						Unsatisfactory
SABESP						Unsatisfactory
PMSBC						Highly Unsatisfactory

73. Since there were three parts to the PDO, efficacy is rated separately for each part, pre- and post-restructuring, as shown in Table 4.

Table 4. APL - Summary of Efficacy Rating Pre- and Post-Restructuring

Three-Part PDO	Pre-Restructuring	Post-Restructuring
To protect and maintain the quality and reliability of MRSP's water resources and potable water sources	Negligible	Substantial
To improve the quality of life of the poor populations residing in key targeted urban river basins	Negligible	Substantial
To strengthen institutional capacity and improve metropolitan management and coordination in MRSP in water resources management, water pollution control, land-use policy, and basic service provision	Modest	Modest
Average **Rating**	Negligible	Substantial

Objective 1: To protect and maintain the quality and reliability of MRSP's water resources and potable water sources. Pre-restructuring: Negligible; Post-restructuring: Substantial

Pre-restructuring

74. Part-one PDO would be achieved through the implementation of the three participant Projects under the Program. It was measured through ten PDO-level indicators. Two of these indicators would measure the impact in the quality of the water in sub-basins, reflecting mostly the investments in sanitation infrastructure in existent slums. The other eight PDO-level indicators would measure the impact on the overall water quality in both the Guarapiranga and Billings reservoirs.

75. The first two indicators were directly linked to slum-upgrading interventions included in the PMSP investment plan. However, the PMSP participation in the Program did not occur. The other eight indicators would capture improvements in the quality of water of the two reservoirs as a consequence of several other sanitation infrastructure investments through slum-upgrading interventions expected under a broader government program, which did not materialize. Also, the slum-upgrading intervention under the PMSBC Project would contribute to improve the quality of the water in the Billings reservoir. However, this intervention was not implemented.

76. . The SABESP Project financed the rehabilitation and expansion of sewerage systems in the Guarapiranga and Billings basins. These systems have contributed to remove significant pollution loads from tributaries. However, this removal has limited impact on improving the quality of both reservoirs and no impact on the Part-one PDO indicator. Also, SABESP has informed that the sanitation coverage in the overall Guarapiranga basin has reached 70 percent with sanitation coverage in formal urban areas close to 100 percent. Thus, the remaining 30 percent

without sanitation coverage corresponds to the slum areas, where the expansion of sanitation systems depends on comprehensive slum-upgrading interventions that fall under the municipal governments' responsibility. The sanitation coverage status confirms, once again, that the pollution load in the Guarapiranga and Billings water bodies is directly linked with the existent large number of slums in these two basins.

Post-restructuring

77. The GESP and SABESP Projects would contribute to achieve Part-one PDO, measured through three indicators: (i) studies for monitoring the water quality of key water sources sub-basins; (ii) volume (mass) of BOD pollution load removed by the treatment plants and sewerage systems under the Projects; and (iii) increase in water production capacity due to project interventions. At closing, the three studies for monitoring the water quality of key water sources were completed, so the target was 100 percent achieved. As shown in Table 5, the total BOD pollution load removed amounted 2,822 tons/year, exceeding the target of 2,800 tons/year. Three of the four sanitation systems are operational and the fourth was near completion by Project closure.

Table 5. BOD Removal Status

Sewerage Plants/System	**Location**	**Beneficiaries (People)**	**Potential BOD Load Removal (tons per year)**	**BOD Removed by Project Closure (tons per year)**
Sewerage main and secondary pipelines and pumping stations	Mombaça and Crispim - Itapecerica da Serra, Guarapiranga basin	16,000	248	System not yet operational (expected by Dec. 2017)
Sewerage system	Cocaia and Lagoinha, Grajaú, Billings basin	25,000	392	System operations for two years. About 50 percent connection rate expected to increase to 70–80 percent in third year.
Sewerage main secondary pipelines	Branca Flor - Itapecerica da Serra, Guarapiranga basin	5,600	88	System operational
Sewerage main pipelines	Carapicuíba/Cotia, Cotia basin	2,800	44	System operational
Wastewater treatment plan works	Bragança Paulista, Juqueri-Cantareira basin	130,000	2,050	Fully operational.
Total		179,400	2,822	

78. The sewerage systems of Crispim/Mombaça and Cocaia/Lagoinha will have significant impact on the sub-basins. The Table 6 shows the impact expected from these two systems.[22]

[22] Monitoramento da Qualidade das Águas –- Guarapiranga. Consórcio PRIME Engenharia, ECOLABOR. 2014.

Table 6. BOD Removal Impact

Sewerage systems/Status at Closure/ Population Served	Potential BOD load removal[(a)] (tons/ per year)	Expected connections rate[(b)] (%)	Expected BOD removed [(c)] (tons/ per year)	Sub-basin totalBOD estimate (tons/ per year) [(d)]	Estimated Impact on the sub-basin	Sub-basin share / total reservoir BOD load
Crispim/Mombaça/ (Guarap.) Final works stage/ 16,000	248	70 to 80%, after three years in operation	186	255	72%	8.3%
Cocaia/Lagoinha/ Operational/ 25,000 (Billings)	392		294	693	42%	27.0%

Legend: (a) Estimate based on 100 percent connection. (b) Expected connection based on the historic connection rate. (c) Expected BOD removed based on expected final connection rate. (d) BOD load estimate at monitoring point.

79. Activities to address the water crisis in São Paulo were included in the SABESP Project in the September 2015 restructuring, supported by the retroactive financing mechanism. These activities allowed SABESP to maintain the water supply services levels through the June–September low water inflow period. Specifically, it allowed supply of additional 4 m^3/sec to the Alto Tietê water system, reducing the pressure to the highly-stressed Cantareira water system, and also allowing it to maintain its Technical Reserve II capacity through the dry season. In addition, it increased the water treatment capacity at the Guarapiranga plant by an additional 1 m^3/sec. The Project increased water production by 157,680, 000 m^3/year, reaching 100 percent of the target.

Objective 2: To improve the quality of life of the poor populations residing in key targeted urban river basins in MRSP. Pre-restructuring: Negligible; Post-restructuring: Substantial

Pre-restructuring

80. Part-two PDO would be achieved through the implementation of the three participant Projects under the Program. It was measured through five PDO-level outcome indicators, which would reflect the overall improvements achieved through slum-upgrading interventions. This included the degree of satisfaction of the population with physical, social, and environmental changes; real estate valuation; proportion of dwellings with adequate WSS services; improvements in urban quality index; and increase in the number of leisure and green areas.

81. The only slum-upgrading intervention included under the Program, through the PMSBC Project, was not implemented. In addition, other slum-upgrading interventions expected to be implemented by other governmental entities not participating in the Program were not implemented either. As result, three indicators linked to Part-two PDO could not be measured. The "proportion of dwellings with adequate WSS services (in Guarapiranga and Billings basins)" indicator was 100 percent achieved, reflecting the close to 100 percent sanitation coverage in

formal urban areas provided by SABESP. The "increase in number of leisure and green areas" indicator was partially achieved through the construction of two parks under the GESP Project.

Post-restructuring

82. The September 2015 restructuring simplified the outcome indicators under Part-two PDO as follows: (i) parks and free public areas urbanized implemented; and (ii) direct project beneficiaries including percentage of female beneficiaries. The GESP Project built 55 ha of parks and free public areas, achieving 91 percent of target. The total number of beneficiaries reached 2,523,250, with 51 percent female, so the targets were 119 and 100 percent achieved, respectively. The breakdown of beneficiaries is shown in Table 7 below.

Table 7. Number of Direct Beneficiaries and Target Achievement

Project	Number of Beneficiaries		
	Target	Achieved	% Achieved
GESP	431,000	430,000	100
SABESP	1,686,000	2,093,250	124
APL	2,117,000	2,523,250	119

Objective 3: PDPA - Plans for Environmental Development and Protection revised for each sub-basin: Rating: Pre-restructuring: Modest; Post-restructuring: Modest

Pre-restructuring

83. Part-three PDO would be achieved through the implementation of just one of the three participant Projects under the Program, the GESP Project. The achievement of Part-three PDO was measured through the following six indicators: PDPA plan for Environmental Development and Protection of Guarapiranga revised, PDPA plans for Environmental Development and Protection prepared and implementation initiated for each basin; drafts of specific laws for each sub-basin prepared and submitted to the State Legislative Assembly; international comparative study on Metropolitan Governance concluded and discussed; discussion Forum established and seminars held on Metropolitan Governance and Water in MRSP with broad stakeholder participation, and, a study on demand profile and scenarios concluded and demand-driven water policy for MRSP prepared.

84. The GESP Project financed the revision of PDPAs for Guarapiranga, Billings, Alto Juquery and Alto Tietê Cabeceiras, Cabuçu, Tanque Grande, and Cotia. Thus, the Project exceeded the target. The Project also supported the preparation of PDPAs for 3 sub-basins (Guaió, Alto Juquiá, Jaguari). The target set (four PDPAs prepared) was partially achieved. None of the other indicators were achieved by the restructuring - no draft of specific laws was prepared, no Discussion Forum on Metropolitan Governance was also held, no International Comparative Study on Metropolitan Governance was prepared, no study on demand profile and scenarios was conducted, and no demand-driven water policy for MRSP was prepared. These indicators were dropped in the September 2015 restructuring.

Post-restructuring

85. The September 2015 restructuring simplified the indicators under Part-three PDO as follows: (i) 3 studies developed to improve institutional capacity for water resources planning; and, (ii) a macro metropolis water resources master plan revised and improved, including specific technical studies for key interventions. By Project closure one of the three-targeted studies was completed and the achievement rate was 33 percent. The master plan was not developed given timetable limitations and changes in government's priorities.

3.3 Efficiency Rating: Modest

86. The efficiency of the Program is rated Modest, reflecting the shortcomings vis-à-vis the expected benefits as per the economic analysis at appraisal. Nonetheless, the Program's efficiency measured by the economic analysis conducted at the time of loan closure suggests that many of the individual activities had reasonable achievements and positive impacts, and that, for the Program as a whole, the activities carried out had a positive return. In particular, the analysis indicates that those activities for the SABESP Project after restructuring had significant impacts.

87. The Cost-Benefit Analysis (CBA) at appraisal was carried out for a much larger Program, with an estimated cost ofUS$272.3 million. The analysis was conducted for the Program as a whole, which included several expected participants (GESP, SABESP and several municipalities) that were to implement a full set of activities in a coordinated manner. These activities in turn were expected to result in significant benefits to the quality of the water in the reservoirs and the quality of life in selected slums. The ex-ante analysis included a CBA for the urban upgrading and improvement of water and sanitation services investments. The results of the CBA indicated that, the present value of net benefits at 12 percent discount rate would be BRL137 million and an internal economic rate of return (IERR) of 23 percent. In addition, a CBA for the interventions to preserve existing water sources to supply MRSP with potable water was conducted. The results of this CBA indicated that, the present value of net benefits would be BRL 294 million and an IERR of 22 percent, without quantifying the benefits to industries and larger users.

88. The ex-ante and ex-post analysis are not comparable as the investments in each stage were not the same. The implemented Program included only three participating Projects. The Sao Bernardo do Campo municipal government was the only Project that included slum upgrading works for one area of the city, but the Project closed with no activity implemented. The other two participating Projects, GESP and SABESP, carried out a set of activities that focused on environmental sanitation improvements and monitoring; and capacity building, and after the September 2015 restructuring, activities on water security were added.

89. The ex-post analysis included a CBA to evaluate the activities of the Program implemented, using actual costs and actual quantifiable benefits. For the overall Program: by Program end, the Program carried out a set of activities including water supply, sewerage and wastewater treatment that contributed to improve sanitary conditions of beneficiaries and avoided pollution that was deteriorating the water quality of the source reservoirs and water bodies. Sanitation activities contributed to health improvements by potential reduction of diarrhea and parasitic diseases in Sao Paulo metropolitan region. In addition, the above-mentioned restructuring was significant and

focused on helping respond to the water crisis in the MRSP by improving water security by increasing water availability by 5 m^3/sec to the region and benefitting about 1.5 million users. Additionally, the GESP project carried out several activities including environmental protection studies and plans, constructed two parks, a Citizen Center and purchased vehicles for solid waste collection.

90. The CBA was done for a 25-year period and the following benefits were quantified: (i) volume of BOD and COD pollution loads removed; (ii) increase in water production; (iii) parks and free public areas implemented; (iv) beneficiaries value of improved water and sanitation; and (v) burden of disease avoided.

91. This overall economic analysis resulted in an IERR of 18.5 percent with health benefits and 17.3 percent without health benefits. Present value of net benefits and benefit cost ratio (B/C) were estimated for two discount rates, 12 percent and 6 percent. For a 12 percent discount rate, the present value of net benefits and B/C were estimated at US$43.38 million and 1.41, respectively. For a 6 percent discount rate, the present value of net benefits and B/C were estimated at US$165.45 million and 2.05, respectively. Additional scenarios for the water security activity, gauged (i) the effect of valuing the additional water at the price imposed by SABESP at the time of the drought (average tariff + 40% for those who were overspending water); and (ii) the assumption that no drought periods materialize in the evaluation period (as opposed to 0.004 probability assumed in the main analysis). Even in this case, the net present value was estimated at US$26 million and the B/C ratio at 1.25.

92. The results suggest a positive return for the Program when adding all contributions that were estimated, even with adverse assumptions. Clearly the analysis shows that most of the benefits are contributed by water security (70-80 percent of the benefits), and took place at the beginning of the period, at the time of the water crisis.

3.4 Justification of Overall Outcome Rating Rating: Unsatisfactory

93. In order to arrive to the overall outcome rating, a split evaluation was carried out. The details of the evaluation are presented in Table 8 below. The outcome under the original design is rated Unsatisfactory (a value of 2 on the 6-point scale), based on Substantial relevance of objective and Modest relevance of design and implementation, Negligible efficacy (negligible achievement of two objectives and modest achievement of one objective) and Modest efficiency. The outcome after the September 2015 restructuring is rated Moderately Unsatisfactory (a value of 3 on the 6-point scale), based on Substantial relevance of objectives and Modest relevance of design and implementation, Substantial efficacy (substantial achievement of two objectives and modest achievement of one objective) and Modest efficiency. The outcome rating is then determined by applying the share of disbursement before and after restructuring, 71 percent and 29 percent, respectively. The weighted value of the outcome rating before and after the restructuring are 1.42 and 0.87, respectively. Thus, the weighted average value is 2.29, which corresponds to an overall outcome of Unsatisfactory.

Table 8. Split Evaluation

	Against Original PDOs	Against Revised PDO-level Indicators	Overall
Relevance			—
Relevance of Objectives	Substantial		—
Relevance of Design &and Implementation	Modest		—
Efficacy			—
PDO Objective 1: To protect and maintain the quality and reliability of MRSP water resources and potable water sources	Negligible	Substantial	—
PDO Objective 2: To improve the quality of life of the poor populations residing in key targeted urban river basins in MRSP	Negligible	Substantial	—
PDO Objective 3: To strengthen institutional capacity and improve metropolitan management and coordination in MRSP in WRM	Modest	Modest	—
Efficiency	Modest		—
Rating	Unsatisfactory	Moderately Unsatisfactory	Unsatisfactory
Rating value	2	3	
Weight (percent of loan disbursed before/after restructuring)	71	29	
Weighted value	1.42	0.87	2.29
Final rating (rounded)			2

3.5 Overarching Themes, Other Outcomes and Impacts

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

94. The Program implemented activities that had positive poverty impacts. Among those, the following had outstanding impacts: (i) the SABESP Project expanded sewerage systems in low-income neighborhoods that contributed to improve overall living conditions; (ii) the activities that increased water production benefited low-income neighborhoods located in distant areas where the water pressure was lower; (iii) the GESP Project built a Citizen Centre that facilitated the issuing of personal documents to low-income population living in the area; and (iv) the GESP Project built parks that provided environmental services and leisure to low-income population living around the park.

(b) Institutional Change/Strengthening

Not applicable

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

Not applicable

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

95. A Stakeholder Workshop Report and a Stakeholder Workshop Results took place on March 27 and 28, 2017, respectively. The first workshop participants included those teams that were involved during the preparation and implementation of the three Projects under the Program. The second one included key stakeholders to brainstorm about the concept of Integrated Urban Water Management and ways of moving forward. The main lessons learned that the workshops' participants highlighted are summarized below. Annex 6 provides additional details.

(a) **The long preparation** was raised as one of the main causes triggering the difficulties the Program faced over the operation life. Among other constraints, the long preparation exposed the operation to several political, fiscal, and institutional changes, including many changes to the priorities supported by the numerous governmental entities involved in the project.

(b) **The Program focus was extremely open;** its structure was highly complex and faced severe political and institutional difficulties to address many of the topics included in the operation, in particular those related to the metropolitan governance. In addition, widely varying activities combined with a broad range of thematic areas targeted resulted in lack of focus, dispersion of efforts, requirement of teams with multiple technical skills, difficult coordination, and lack of efficacy during implementation.

(c) **To succeed, the Program needed strong political and institutional support for its objectives and scope,** which was extremely difficult to obtain given the large number of actors involved and recurrent changes given that, between states and municipalities, there are elections every two years.

(d) **The long preparation involving many actors** and recurrent changes within the governments' structure created difficulties in understanding the Program objectives and design.

(e) **Program including several borrowers, difficult coordination.** Given that the participants' Projects were associated with autonomous borrowers (a lending arrangement that was different from the on lending arrangement under the predecessor Guarapiranga Project), it was difficult to replicate the coordination practices that had proved greatly successful under the predecessor project.

(f) **Challenges due to priorities changes and implementation of small activities.** Changing project priorities creates significant difficulties and delays during implementation. Moreover, implementation of small activities adds further difficulties given that they require the same amount of effort to bid.

(g) **Successful studies but difficult implementation.** Although the Program was successful in financing the development of key studies and data that are relevant tools supporting improvements to the water resources policies in the MRSP, the efforts made to ensure that the entities involved would implement and update the tools was less successful.

(h) **Environmental assessment and licensing timeframe**. The long timeframe required to carry out an environmental assessment and to undertake the licensing processing must be properly taken into account in the implementation schedule.

(i) **The World Bank's flexibility in the Program restructuring was fundamental** and allowed SABESP and GESP to respond to the water crisis.

(j) **Project priorities must be allowed** to adapt to critical short-term events.

4. Assessment of Risk to Development Outcome

Rating: Moderate

96. The overall risk to development outcomes for the Program is rated Moderate. The GESP Project risk to development outcomes is Moderate, based on risks related to each area of project intervention. The risks to the Project outcomes related to institutional strengthening are considered to be Moderate. The studies developed supporting the implementation and strengthening of the water resources policies in the MRSP are part of core activities undertaken by the SSRH. The risks to the Project outcomes related to creation of two parks are considered to be Moderate. The two parks, which offer environmental improvements and leisure opportunities are maintained by the PMSP following the signature of an agreement signed by both institutions.

97. The SABESP Project risk to development outcomes is Moderate, based on risks related to each area of the SABESP Project intervention. The risks to the Projects outcomes related to sewerage investments are considered to be Moderate. The risk to the Projects outcomes related to the water production investments is also considered to be Moderate. SABESP O&M procedures in water supply and sanitation are classified as appropriate in the ranking of WSS companies in Brazil. Moreover, both investments are an integral part of the water and sanitation infrastructure managed by SABESP in the MRSP serving about 20 million people. The quality and reliability of services are satisfactory.

98. The PMSBC Project has not implemented any activity; thus, the risk to development outcome is not applicable.

5. Assessment of Bank and Borrower Performance

5.1 Bank Performance

(a) Bank Performance in Ensuring Quality at Entry **Rating: Unsatisfactory**

99. The Program was under preparation for 7 years, from 2002 – 2009. The long preparation is basically explained by the thorough preparation of the studies supporting the Program's rationale and scope, as well as the substantial effort made in bringing participants to the Program. A large number of participant projects/borrowers was necessary to achieve a critical mass of interventions compatible with the Program rationale and approach. By mid-preparation period, there were a dozen borrowers willing to join the Program, but gradually this number significantly reduced. The PMSP participation did not materialize as well. The Program was approved including four potential participant Projects, of which only two came to completion. Although the significant changes in the number of participants, the Program was not adjusted to a context including fewer participants. Its PDO, Results Framework and other key elements were kept in line with a vast

arrangement, reflecting actions and actors broader than those that indeed participated in the operation. The uncertainty regarding possible participation of additional actors probably led to avoiding adjusting the Program to the few confirmed borrowers. Additional borrowers depended on multiple and ever changing variables such as borrowing capacity, willingness to borrow, and the Bank lending priorities. In addition, the Program structure allowed borrowers to join the operation after implementation started, increasing the uncertainty on the final size of the operation. However, the operation size did not expand, it shrank. As result, the Program PDO and the design of participant Projects are not consistent. Although the Program and participant Projects share the same PDO, this could not be achieved through the implementation of the activities in participant Projects.

100. Other aspects that substantially affected quality of entry included:

- The limited readiness for implementation, lacking basic feasibility evaluation both for consultancies and works. Most of the activities in the participant Projects were not addressed during the implementation. Counterpart representatives explained that some were extremely ambitious, others did not properly fall under the institution mandate, and the feasibility could not be confirmed for some, despite the technical effort made.

- To allow flexibility during implementation, the activity description in the Projects was kept in very general terms. This choice might have been appropriate given the long life of the Program and its Projects, during which many political, economic and institutional changes occurred. However, the Projects were left without enough clear guidance toward achieving objectives. This flexibility allowed the borrowers to implement the activities that were aligned with their priorities.

- For all the above reasons, the Bank performance in ensuring quality at entry has been rated Unsatisfactory.

(b) Quality of Supervision **Rating: Moderately Unsatisfactory**

101. The World Bank's supervision of the Program is rated Moderately Unsatisfactory. The World Bank team provided strong supervision in many respects, including consistently providing overall guidance with respect to project implementation, responding on time to questions from counterparts, and identifying constraints and weaknesses and designing solutions. Along the 7-year implementation period, there was strong continuity among staff members and team leaders over many years. Furthermore, there was continuity regarding key aspects of implementation support, particularly in fiduciary areas and safeguards.

102. Despite these strengths, however, the Bank team did not take early action regarding the inconsistencies between the PDO, Project activities, and the M&E framework and, related to that, did not focus on the ultimate development impact of the Program as part of supervision. Similarly, supervisory reporting focused primarily on implementation progress, rather than on development impacts. Bank missions, while undertaken on a semiannual basis, focused mostly on contract implementation. The restructuring of Program/Projects outcome and output indicators occurred late into implementation (on the original closing day), after five years of implementation. Nevertheless, the restructuring demonstrated the Bank's eagerness to support the clients in

responding to the critical water crisis the MRSP was facing. Also, it demonstrated the Bank team readiness to timely and efficiently process the restructuring.

(c) Justification of Rating for Overall Bank Performance Rating: Unsatisfactory

103. The overall assessment of the World Bank's performance has been rated Unsatisfactory, reflecting the ratings for the World Bank Performance in ensuring quality at entry and for the quality of supervision.

5.2 Borrower Performance

(a) Government Performance Rating: Moderately Unsatisfactory

104. **GESP.** The borrower was represented in the Project by three executing agencies: SSRH, SMA, and CDHU. The first had the leading role in the Project, while the two others played specific roles. The US$4 million loan was initially shared by SSRH (US$3 million) and SMA (US$1 million); however, the latter opted for not accessing the available loan. In the September 2015 restructuring, the CDHU dropped out of the Project. SSRH properly performed the Project implementation tasks. The counterpart's funds faced several issues during implementation. SSRH ensured juridical and technical actions needed for properly carrying out FM and procurement. Concerning the decision making regarding the entity priorities, the SSRH adopted a selective approach by focusing attention exclusively on the activities included in the Project that were clearly consistent with the entity's technical priorities. As result, the technical and financial resources available were focused on the development of the technical tools that support the implementation and improvement of the water resources policies in the MRSP. Possibly, when the Project was prepared, the institutional vision was different or the broad institutional ambiance seemed more favorable to bold institutional actions. That said, the Project shortcomings might mostly reflect an institutional pragmatism consistent with the political and fiscal constraints that affected Project implementation.

105. **SABESP** showed inconsistent commitment to the Project during implementation but changed completely once it needed support to deal with the drought crisis. The Project was embedded in SABESP organizational structure, lacking a dedicated team to develop Project activities. However, as the Project was embedded in SABESP structure special procedures like the Bank procurement rules faced difficulties, since these could not be streamlined jointly with the procurement rules regularly followed by SABESP. As GESP did, SABESP also adopted a selective approach by focusing implementation on the activities clearly aligned with the corporation priorities.

106. **PMSBC.** The PMSBC was successful in finding solutions to critical elements of the Project such as increase of costs. Clients were highly committed to the Project objectives but lacked understanding of the World Bank procedures. However, the solutions for additional funds were not still available by the Project closing date. Given the several problems the Project faced, it is plausible to infer that Government actions and projections did not translate a realistic approach.

(b) Implementing Agency or Agencies Performance Rating: Moderately Unsatisfactory

107. **GESP.** The implementing agency —the Program Management Unit (UGP)— was supported by a consulting company holding expertise in carrying out technical, financial, and procurements tasks in World Bank-financed projects. The quality of tasks performed was appropriate.

108. **SABESP.** The departments in the SABESP responsible for implementing the Project actively worked to streamline and systematize procurement processes throughout implementation; however, they faced competition from other financing sources that offered faster procedures. The departments involved supervised the implementation of the Project, and enabled the restructuring preparation and processing. Excluding the delays in hiring the Dam Safety Panel associated with the Taiaçupeba reservoir, the environmental and resettlement safeguard were properly undertaken. Regular progress reports were produced but usually delayed, incorporating procurement and FM reports, as well as outcome/output monitoring reports.

109. **PMSBC.** The implementing agency, despite its high commitment with Project objectives and its drive for finding alternative solutions to the urban upgrading investments, failed in providing the basic technical support required to finalize the packages for starting the bidding processes, including the consultancies.

(c) Justification of Rating for Overall Borrower Performance Rating: Moderately Unsatisfactory

110. The overall performance of the borrower and the implementing agency is rated Moderately Unsatisfactory, taking into account the implementation strengths discussed earlier and compliance with safeguard and fiduciary controls.

6. Lessons Learned

111. **Undertaking preparation during implementation.** The technical and financial resources made available to support the operation preparation were exclusively channeled to the development of the concept supporting the Program approach. The development of the activities under the participant Projects were not targeted during preparation. In line with this choice, the Program PAD included an in-depth analysis of the multiple elements supporting the APL approach, while the activity description was extremely general—definitions were left to the implementation phase, as well as the development of required technical elements. A client representative stated that this format is unacceptable because it places an enormous burden on the client's organization, given that a team with appropriate skills to conceive the activities has to join the implementation team, which has different skills conceiving the activity to the level of definition to confirm that the activity is indeed feasible is resource intensive and time consuming; and the implementation schedule becomes unpredictable, as well as the estimate costs. In summary, for an organization for which commitment to technical and financial deliverables is a major issue, the responsibility of implementing a project that is not ready for implementation becomes a major onus. The preparation of similar projects should focus on defining in more detail the activities planned.

112. **Objectives shared under the horizontal APL.** Under this operation, a horizontal APL, the participant Projects shared the Program PDO objectives. This meant that more than one participant Project contributed to the same objective, which, in turn, could not be achieved separately by just one of the participant Projects. Moreover, their share in the objective was not defined. Nevertheless, through the LA, each participant Project was formally bound to achieving, in its entirety, the PDO objective it was associated with. So, even in the case that a borrower's project impeccably accomplished all the outputs agreed with, the Project would not have achieved the objective had formally committed to. Given the complexity of the multiple elements involved, this mismatch might not be so evident to the Borrower. However, when the implications were understood, the Borrower's representatives stressed that they should have been alerted to these details. The main lesson is that the connection between a project and its objective must be evident both for the Bank and the client. Also, client might need a reiterated alert regarding the formal commitment he/she is assuming in achieving the objective of the project. This might also require presenting the post-implementation evaluation methodology to the client at some point in the preparation phase and formally registering the event.

113. **Complex APL requires political support.** A project such as the APL, for which objectives are quite broad and complex, requires the support of a strong and comprehensive intergovernmental coordination to succeed. This support is difficult to achieve, particularly given the large number of actors involved and the invariable political, economic, fiscal, and other changes occurring over the project lifetime. Project teams need to communicate better and improve the marketing of the project in order to enhance the political support needed.

114. **The integrated approach to tackle urban water pollution continues to be relevant and up to date.** Despite the complex and difficult challenges as well as the extensive time frame required, the stakeholders reiterated that the integrated approach continues to be valid as the foremost solution to effectively address the numerous multi-sectoral issues. Also, they reiterated that the World Bank's decisive support to the approach was critical and conducive to its consolidation as a valid, tested approach and widespread acceptance. However, they also pondered that a loan has its limitations, which might create difficulties to address the integrated approach in its totality. In conclusion, the choice of supporting strategic elements of the approach might be more consistent with the limitations of a loan and, as such, more effective.

115. **Activity versus tariff equation.** The attempt to implement an activity where costs cannot be considered in the tariff equation faces severe constraints in a water and sanitation services provider, such as SABESP. The activity becomes a burden to the department to which it has been assigned. This aspect should be taken into account when designing a project.

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

(a) Borrower/implementing agencies

116. All three borrowers have sent minor suggestions for revision to the draft ICR which have been incorporated in the document. Letters were also received from all borrowers as well where comments were made to the overall document and program results (see Annex 7 for full letter translated to English).

(b) Co-financiers

117. Not applicable

(c) Other partners and stakeholder

118. Not applicable

Annex 1. Project Costs and Financing

(a) Projects Costs by Component (in US$, million equivalent)

Components	Projects							
	GESP			SABESP			PMSBC	
	Appraisal[23]	2015 Restructuring	Actual August 31, 2017	Appraisal[24]	2015 Restructuring	Actual August 31, 2017	Appraisal[25]	Actual August 31, 2017
1.Institutional Capacity Building	**20.81**	**14.37**	**8.78**	**7.69**	**—**	**—**	**5.74**	**0.01**
Borrower	17.01	10.89	6.64	0.69	—	—	0.04	—
IBRD	3.80	3.48	2.14	7.00	—	—	5.70	0.01
2. Urban Integration	**30.22**	**—**	**—**	**—**	**—**	**—**	**32.68**	**—**
Borrower	30.22	—	—	—	—	—	18.88	—
IBRD	—	—	—	—	—	—	13.80	—
3. Environmental Protection and Recovery	**5.24**	**7.87**	**4.26**	**11.43**	**13.71**	**6.04**	**2.94**	**—**
Borrower	5.18	7.87	4.26	1.03	2.65	0.60	1.67	—
IBRD	0.06	—	—	10.40	11.06	5.44	1.27	—
4. Integrated Water Supply and Sanitation	**4.18**	**6.25**	**4.71**	**104.36**	**124.52**	**118.25**	**—**	**—**
Borrower	4.04	5.73	4.71	22.01	35.84	32.65	—	—
IBRD	0.14	0.52	—	82.35	88.68	85.60	—	—
Total	**60.45**	**28.49**	**17.75**	**123.48**	**138.23**	**124.29**	**41.35**	**—**
Unallocated	0.04	1.40	—	1.27	—	—	—	—
Front-end Fee	0.01	0.01	0.01	0.25	0.25	0.25	0.05	0.05
Total	**60.50**	**29.90**	**17.76**	**125.00**	**138.48**	**124.54**	**41.50**	**0.10[26]**

Financing	Borrower	56.50	25.90	15.61	25.00	38.48	33.25	20.58	-
	IBRD	4.00	4.00	2.15	100.00	100.00	91.29	20.82	0.10

[23] PAD Report No. 47493-BR – page 113.
[24] PAD Report No. 47493-BR – page 148.
[25] PAD Report No. 66805-BR – page 117.
[26] Rounded up by the system.

(b) APL Costs by Components (in US$, million)/Financing

Components	APL		
	Appraisal	Restructuring	Actual - August 31, 2017
1. Institutional Capacity Building	**34.24**	**14.37**	**8.78**
GESP/SABESP/PMSBC	17.74	10.89	6.64
IBRD	16.50	3.48	2.14
2. Urban Integration	**62.90**	**—**	**—**
GESP/SABESP/PMSBC	49.10	—	—
IBRD	13.80	—	—
3. Environmental Protection and Recovery	**19.61**	**21.58**	**10.30**
GESP/SABESP/PMSBC	7.88	10.52	4.86
IBRD	11.73	11.06	5.44
4. Integrated Water Supply and Sanitation	**108.54**	**130.77**	**122.96**
GESP/SABESP/PMSBC	26.05	41.57	37.36
IBRD	82.49	89.20	85.60
Total	**225.28**	**166.72**	**142.04**
Unallocated	1.31	1.40	
Front-end Fee	0.31	0.26	0.31
Total	**226.90**	**166.72**	**142.35**

(c) APL Financing

Source of Funds	Type of Cofinancing	Appraisal Estimate (US$, millions)	Actual/Latest Estimate (US$, millions)	Percentage of Appraisal
Borrower	Counterpart	102.08	48.81	48
IBRD	Loan to: GESP/SABESP /PMSBC	124.82	93.54	75

Annex 2. Outputs by Component

1. The most relevant outputs from the GESP and SABESP Projects are summarized below. The complete list of outputs is included in the specific ICR for each project, included in Appendixes A, B, and C. The PMSBC Project did not generate outputs.

GESP Project

2. **Under Component 1 - Institutional Capacity Building**, the project financed the development of the following studies and plans.

3. **Nonpoint source water pollution for the Alto Tietê water production system**. This study provided information about the land use impact on the quality of the water bodies in the headwaters of the Alto Tietê river basin. It measured the impact both in dry weather and on a rainy day to quantify the pollution load impact as well as to identify its origin. Pilot sub-basins were selected as proxies for the study. Based on the findings, there were established 'load coefficient values' for dry weather and 'average pollution loads' for rainy days. Those were applied to the mathematical model MQUAL to estimate the total load amount generated in the sub-basin constituting the Alto Tietê river basin.

4. **Monitoring the water quality of the Guarapiranga and Billing reservoirs**. The objective of this study is to evaluate the pollution load in the two reservoirs by the data collected during the study time frame to the mathematical model MQUAL. It includes describing data collected and comparing the simulated and monitored results, as well as verifying the model representativeness. In addition, it includes proposing adjustments as needed. The main results are as follows: the Billing and Guarapiranga tributaries draining urban sub-basins are heavily contaminated by domestic wastewater and are not in conformity with the water category under which they are classified by the environmental legislation. Regarding the phosphorus contamination, the study found that 86 percent of the load is generated by only four sub-basins where the urban land use is dominant.

5. **PDPA.** The review and update of the following existent PDPAs, which are associated with approved specific laws, were prepared: Guarapiranga, Billing, Alto Juquery, and Alto Tietê Cabeceiras. The review and update of the existent PDPAs were prepared: Cabuçu, Tanque Grande, and Cotia. The first PDPA version for the following were developed: Guaió, Alto Juquiá, and Jaguari.

6. **Under Component 3 - Environmental Protection and Recovery**, a 530,000 m^2 Nove the Julho Park was built offering protection to the Guarapiranga reservoir against urban encroachment and also providing leisure opportunities benefiting mostly low-income population living in the neighborhoods close to the park.

SABESP Project

7. **Component 4 - Integrated Water Supply and Sanitation was the project's major focus.** The investments in sanitation systems included the following larger contracts.

- **Bragança Paulista WWTP**. The construction of this WWTP was financed under the project to fulfill a compensatory measure required by the Piracicaba, Capivari, and Jundiaí River Basin Committee to continue allowing the water withdrawal transposition from this basin to the Alto Tietê basin, to complement the MRSP water supply needs. The WWTP treats 100 percent of the wastewater generated by the 150,000 inhabitants of Bragança Paulista.

- **Cocaia - Lagoinha (Billings river basin).** The project financed the construction of a sanitation system including connection pipeline and interceptors connecting to the main sewerage network exporting the wastewater to a treatment plant located outside the Billings river basin, where no effluent can be formally discharged. The investments benefit a low-income community that has gradually developed since early 1970. The provision of sanitation infrastructure to the area is supported by the approved plans to consolidate established low-income developments, hence, improving the life conditions and urban standards. The sewerage system has a total BOD removal capacity of 248 tons per year, while the total BOD generated in this sub-basin is 255 tons per year.[27] Considering a 70–80 percent connection rate, the system is expected to contribute by removing approximately 72 percent of the pollution load generated in the sub-basin where it is located. The construction concluded in 2014, and the system is fully operational. The 70–80 percent connection rate is expected to be achieved by the third year of operation.

- **Carapicuíba (Cotia river basin)**. The investments in sewerage collection and transportation benefit a low-income community and is part of the effort to improve the urban standards and living conditions in the area. Moreover, it will contribute to improve the quality of the Cotia River, which is a source of water supply to the metropolitan area. The system was concluded in 2015.

- **Mombaça - Cripim/Branca Flor (Guarapiranga basin)** The investments in sewerage collection and transportation benefit a low-income community that has gradually developed in the area since 1970. The investments are supported by approved plans to consolidate low-income communities. The works are expected to become operational by late 2017 and will contribute to remove BOD from the Guarapiranga basin.

8. The investments in increasing water supply and production include the following:

   (a) **Grajaú water supply pumping station construction.** This US$21.4 million investment improves water supply distribution benefiting 130,000 people.

   (b) **Water leakage reduction.** This investment contributed to increased water availability to the MRSP, and it was also included in the project support to address the water crisis. The main investment focus on replacing water pipelines concentrating higher leakage rates.

[27] Monitoramento da Qualidade da Água - Guarapiranga. Consorcio PRIME Engenharia, ECOLABOR, 2014.

(c) **Boa Vista water treatment plant filtering membranes system.** This US$13.1 million investment increased the water production to 1 m^3 per second, benefiting 300,000 people.

(d) **The Rio Grande transfer to Taiaçupeba Dam.** This US$14,3 million investment increased the water production to 4 m^3 per second.

(e) Complementing the above investment, the US$4.1 million investment water intake from Rio Pequeno to Rio Grande benefited 1.5 million people.

Annex 3. Economic and Financial Analysis

1. During the Program preparation and implementation, two ex-ante economic analyses were undertaken: one at appraisal and a second one as a basis for the restructuring (mainly intended at improving water security). The restructuring introduced significant changes in the PDO-level indicators, and as result, it produced important changes in the expected benefits and associated beneficiaries.

Ex-ante Economic Analysis at Appraisal

2. The Program originally proposed a wide range of diversified actions aimed at improving the quality of life especially of poor people living in slums by supporting activities for urban upgrading; for improving water supply and sanitation services; and for protecting and recovering existing sources used for the water supply of the Metropolitan Region of São Paulo

3. The detailed ex-ante CBA was undertaken for the full Program. Costs and benefits corresponding to all components were included in the analysis. The Program for which this economic evaluation was carried out was significantly larger than, and to some extent different from the final one, as it costed significantly more (amounting to a total cost of US$272.3 million), and focused more on the integrated urban upgrading interventions, which at the end didn't materialize.

4. The ex-ante CBA of the urban upgrading and improvement of water supply and sanitation interventions at appraisal resulted in an overall IERR of 23 percent and a net present value of net benefits at 12 percent discount rate of BRL 137 million. In addition to the ex-ante CBA for the urban upgrading and water supply and sanitation interventions in the targeted basins, an ex-ante CBA of preserving the existing sources to supply MRSP with potable water was conducted by assessing the opportunity cost of investments otherwise required to preserve water quality. The net present value of net benefits of preservation of existing sources of potable water was estimated at BRL 294 million, with an IERR of 22 percent, showing that the Program was expected to have high positive returns to the economy.

Ex-ante Economic Analysis at Restructuring

5. A major Program restructuring was undertaken in September 2015, intended to help alleviate the negative impacts of the severe drought event that started to affect the Sao Paulo region since 2013. Funds within the SABESP Project were reallocated to address the key issue of water security and focused on increasing the amount of water to be made available to the area. The SABESP Project was expected to provide an additional 5 m^3/sec of water and to maintain the level of reliability of the service at 98 percent, avoiding water rationing or cuts for water users (securing about 1.5 million users). The cost of these interventions were expected to be US$ 52.6 million.

6. In order to measure the economic impacts of the activities under the restructuring, a complementary CBA was undertaken. The benefits expected from the newly introduced water security investments were evaluated mainly in light of the costs of alternative solutions to provide water at times of scarcity. This included: water tankers at R$ 38.87/m^3 (about US$12/$m^3$); and the tariff charged to high consumption (contingency tariffs) R$ 10.36/m^3 (about US$4/$m^3$). During the

lifetime of the project, the additional water brought with the project was to be used, as needed, depending on water level of the reservoirs. This evaluation included likelihood of rainfall events and so the probability of using the additional water brought by the project. Results indicated that the proposed actions would allow to maintain the water supply for 1.5 million inhabitants as forecasted. The economic average expected rate of return was as high as 245 percent and the expected average present value of net benefits was evaluated at US$770 million during the lifetime of the Project.

Ex-post Economic Analysis

7. The activities undertaken by the Program resulted in various impacts and associated benefits which can be grouped as follows: (i) improvements in sanitation; (ii) capacity building, (iii) environmental protection; and (iv) water security. Water security impacts derived mostly from the activities implemented post September 2015 restructuring. The original ex-ante economic analysis carried out for the entire Program could not be reassessed in the original terms. Furthermore, the ex-ante and ex-post analysis are not comparable as the investments in each stage were not the same.

8. The ex-post CBA was carried out for the overall actual Program activities. All Program costs were included in the analysis, and only the economic benefits that could be quantified were incorporated, namely, the environmental benefits associated with the removal of BOD and COD pollution loads; the consumer surplus associated with improved water supply services; the willingness to pay for improved sanitation services; the benefit associated with improving water security; the health effect associated with burden of diseases avoided; and the savings in travel costs associated with the existence of nearer urban parks. Other benefits such as property appreciation, environmental impacts, relaxation, among others were not quantified in monetary terms.

9. The evaluation was done for 25 years of estimated benefits. The overall cost of the Program that was considered in the analysis was US$142.5 million, out of which around US$60 million were invested in water security measures. The operation and maintenance costs were estimated at 5 percent of the investment costs for water security measures and 3 percent for the rest. The estimated benefits are presented in Table 3.1 below.

Table 3.1 – Estimated Benefits of Overall Program Activities[28]:

Assumptions	**Economic Benefit (US$)**
Reduction of BOD/COD pollution loads 2,822 BOD tons and 4,899 COD tons of pollution loads removed per year. A ton of BOD removed was valued at US$36 and a ton of COD removed at US$120.	691,680
Improved water supply services Consumer surplus of improved water supply services for 130,000 and 1.63 million inhabitants assuming a 10 percent suppress	319,800 (up-to year 2016) 4,009,800 (2017 onwards)

[28] Explanation of sources and excel table showing calculations can be found in the Project files.

demand, average consumption 225 liter/capita/day, price elasticity of 0.25 and average water price of US$1.5/m^3	
Improved sanitation services Willingness to pay for improved sanitation services for 49,400 inhabitants.	564,642
Saving travel costs associated with urban parks The 1-ha "Caminho Atlantica" Park and the 54-hectare "9 of July" Park in the Guarapiranga left bank have different functions and associated benefits. They provided a green belt, and contributed to diminish the diffuse pollution that goes into the reservoir. In addition, they have a social dimension, as it provides free access to leisure to the less advantaged population estimated at 20,000 visitors. Saving in travel costs for 20,000 visitors to existing 55 hectares of urban parks assuming US$0.2 saving per trip, and 12 visits per year.	65,436
Increased water security by m^3/sec Additional water available at Taiaçupeba reservoir by transferring 4 m^3/sec water from the Rio Pequeno branch to Rio Grande branch of the Billings reservoir. This allowed to increase water production during 2016 by 36.288 million m^3 valued at the cost of the next water source of US$2.3/m^3. The probability of a similar drought is assumed at 0.004. In addition, the Boa Vista treatment station of Guarapiranga increased its capacity by 1 m^3/sec through expanded filtration system. This allowed to increase water production during 2015-2016 by 23.3 million m^3, valued at the cost of the average water tariff of US$1.2/m^3. These works benefited approximately 1.5 million people.	83.6 million (in 2016) 0.38 million (2017 onwards) 27.99 million (2015-2016) 18.92 million (2017 onwards)
Burden of diseases avoided The burden of diseases avoided was estimated assuming 10 percent of cost avoided for diarrhea and parasitic diseases in the Sao Paulo Metropolitan Region, equivalent to US$5.89 or US$3.5 per capita per year.	5.89 million (from 2021 onwards)

10. This overall economic analysis resulted in an IERR of 18.5 percent with health benefits and 17.3 percent without health benefits. Present value of net benefits and benefit cost ratio (B/C) were estimated for two discount rates, 12 percent and 6 percent. For a 12 percent discount rate, the present value of net benefits and B/C were estimated at US$43.36 million and 1.41, respectively. For a 6 percent discount rate, the present value of net benefits and B/C were estimated at US$165.40 million and 2.05, respectively. The results suggest a positive return for the Program when adding all contributions that were estimated, but clearly the water security contributes the

most (75-80 percent of the benefits). Additional scenarios for the water security activity gauged (i) the effect of valuing the additional water at the price imposed by SABESP at the time of the drought (average tariff + 40% for those who were overspending water), and (ii) the assumption that no drought periods would materialize in the 25 years evaluation period (as opposed to 0.004 probability assumed in the main analysis). Even in this case, for a 12% discount rate the net present value was estimated at US$26 million and the B/C ratio at 1.25.

11. The Program included a component dealing with capacity building. The citizenship center, that benefited around 350,000 low income inhabitants, can be considered as an important contribution, as it is often the case that such low-income population don't have access to this type of services. The Program also financed studies to improve knowledge on water quantity and quality. This knowledge will raise awareness on water issues in the metropolitan region, which is key in water scarce regions. The benefits of these type of actions are real even if they cannot be quantified in economic terms. This type of "soft" actions financed within the Program should help support the sustainability of the proposed infrastructures by raising awareness and changing behavior (water savings, health information, etc.) among beneficiaries.

Annex 4. Bank Lending and Implementation Support/Supervision Processes

(a) Task Team Members

Names	Title	Unit	Responsibility/ Specialty
Lending			
Susana Amaral	Loan FM Specialist	GGODR	FM Specialist
Oscar Alvarado	Senior Water and Sanitation Specialist	GWADR	Task Team Leader (TTL) during the PMSBC project reappraisal
Martin P. Gambrill	Lead Water and Sanitation Specialist	GWADR	TTL for the Program
Juliana Menezes Garrido	Senior Water and Sanitation Specialist	GWADR	Operations Analyst and co-TTL
Sinue Aliram	Procurement Specialist	GGODR	Procurement Specialist
Marta Molares - Halberg	Lead Counsel	LEGLE	
Catarina Portelo	Senior Counsel	LEGLE	
Mila Freire	Senior Adviser	FEU	
Karina de Souza Marcelino	Program Assistant	LCC5C	
Jose Alexandre Monteiro Fortes	Consultant	LCSUW-HIS	Environmental Specialist
Paula Dias Pini	Senior Urban Development Specialist	GSURR	Social Specialist
Luis R. Prada Villalobos	Senior Procurement Specialist	GGODR	
Perla Virginia Castillo Miranda	Team Assistant	GWADR	
Maria Angelica Sotomayor	Lead Specialist	GSURR	
Carlos E. Velez	Lead Economist	LCSWS - HIS	
Adriana M.G.M. Weisman	Operations Officer	OPSPQ	
Thadeu Abicalil	Senior Water and Sanitation Specialist	GWADR	
Soraya Melgaço	Social/Resettlement Specialist	Consultant	
Monica Porto	WRM Specialist	Consultant	
Clarisse Dall'acqua	Social/Resettlement Specialist	Consultant	
Teresa Serra	Peer Reviewer - Senior Adviser	EAPVP	
Tim Campbell	Peer Reviewer - Chairman, Urban Age institute	Consultant	
Catherine Tovey	Peer Reviewer - Water and Sanitation Specialist		
Julia Tierney	Junior Professional Associate		
Supervision/ICR			
Sinue Aliram	Procurement Specialist	GGODR	
Susana Amaral	Financial Management Specialist	GGODR	
Oscar Alvarado	Senior Water and Sanitation Specialist	GWADR	Former TTL – Current co-TTL
Perla Virginia Castillo Miranda	E T Temporary	LCSUW-HIS	
Wanessa Matos	Program Assistant	LCC5C	
Michele Martins	Program Assistant	LCC5C	
Carolina de Abreu	Program Assistant	LCC5C	
Juliana Menezes Garrido	Senior Water and Sanitation Specialist	GWADR	Former co-TTL – Current TTL
Marta Elena Molares-Halberg	Lead Counsel	LEGES	

Names	Title	Unit	Responsibility/ Specialty
Catarina Isabel Portelo	Senior Counsel	LEGLE	
Waleska Pedrosa	Paralegal	LEGLE	
Thadeu Abicalil	Senior Water and Sanitation Specialist	GWADR	
Alexandre Fortes	Environmental Specialist	Consultant	
Soraya Melgaço	Social/resettlement Specialist	Consultant	
Menahen Libhaber	WSS Specialist	Consultant	
Paulo Fantini	Engineer	Consultant	
Eri Watanabe	Operations Analyst	Consultant	
Willow Latham	Junior Professional Associate		

(b) Staff Time and Cost

Stage of Project Cycle	Staff Time and Cost (Bank Budget Only)	
	No. of Staff Weeks	US$(including travel and consultant costs)
Lending		
FY02	2.91	39,374.48
FY03	12.83	54,867.37
FY04	5.60	27,475.77
FY05	14.66	89,627.22
FY06	1.54	7,616.58
FY07	34.17	139,471.10
FY08	25.09	131,721.70
FY09	27.57	127,219.20
FY10	3.43	11,133.00
TOTAL:	**127.8**	**628,506.42**
Supervision/ICR		
FY10	24.87	94,402.54
FY11[29]	29.94	152,065.80
FY12	23.83	109,568.20
FY13	19.60	88,743.06
FY14	19.13	120,082.10
FY15	24.71	121,283.37
FY16	15.12	108,175.50
FY17	13.42	123,207.21
FY18[30]	1.18	15,221.03
TOTAL	**171.80**	**932,748.81**
Total Lending and Supervision/ICR:	**299.60**	**1,561,255.23**

[29] In addition, in FY11, the reappraisal and approval of the PMSBC Project was charged to a specific code P125829 and included no. of staff weeks needed was 36.43; and Costs were USD 136,318.82.
[30] Data from SAP collected on September 25, 2017.

Annex 5. Beneficiary Survey Results

Not applicable

Annex 6. Stakeholder Workshop Report and Results

1. Two Stakeholder Workshop Report and Results were undertaken. The first took place on March 27, 2017, and the participants were team members from the three projects under the APL: GESP, SABESP, and PMSBC Projects. Approximately 30 team members in total from the three borrowers entities participated.

2. The second workshop took place on March 28, 2017. It was a high-level brainstorming session on the 'Integrated Water Management in the MRSP' agenda, in particular concerning how the strategies adopted have evolved over the last three decades. It also highlighted the importance of the World Bank support to this agenda, as enabler and convening power. The participants were top representatives of both the water and sanitation sector and the water resources sector, including the President of SABESP, the State Secretary of Water and Sanitation and Water Resources, and the President of the Brazilian Sanitary Engineer Association (ABES)- São Paulo, among other key representatives. The complete summary of both workshops as well the list of participants is available in the project records.

(a) Stakeholder Workshop Results

3. The main lessons learned that the workshop participants highlighted are summarized below. The full Stakeholder Workshop Report, including the list of participants, is in the APL records.

Main Lessons - Preparation, Implementation, and Restructuring

Preparation

4. **The long preparation** was raised as one of the main causes triggering the difficulties the APL faced over the operation's life. Among other constraints, the long preparation exposed the operation to several political, fiscal, and institutional changes, including many changes to the priorities supported by the numerous governmental entities involved in the project.

5. **The APL focus was extremely open;** its structure was highly complex and faced severe political and institutional difficulties to address many of the topics included in the operation, in particular those related to the metropolitan governance.

6. **To succeed, the APL needed strong political and institutional support** to its objectives and scope, which was extremely difficult to obtain given the large number of actors involved and recurrent changes given that, between states and municipalities, there are elections every two years.

7. **The long preparation involving many actors** and recurrent changes within the governments' structure created difficulties in understanding the APL objectives and design.

Implementation

8. **The APL including several borrowers, difficult coordination.** Given that the participants' projects under the APL were associated with autonomous borrowers (a lending arrangement that was different from the onlending arrangement under the predecessor

Guarapiranga Project), it was impossible to replicate the coordination practices that had proved greatly successful under the predecessor project.

9. **Broad objectives and approach lacking focus.** Widely varying combined with a broad range of thematic areas targeted resulted in lack of focus, dispersion of efforts, requirement of teams with multiple technical skills, difficult coordination, and lack of efficacy during implementation.

10. **Challenges because of priorities changes and implementation of small activities.** Changing project priorities creates significant difficulties and delays during implementation. Moreover, implementation of small activities adds further difficulties given that they require the same amount of effort to bid.

11. **Environmental assessment and licensing time frame.** The long time frame required to carry out an environmental assessment and to undertake the licensing processing must be properly taken into account in the implementation schedule.

Restructuring

12. The World Bank's flexibility in the APL restructuring was fundamental and allowed the SABESP to respond to the water crisis. Project priorities must be allowed to adapt to critical short-term events.

Main Lessons - Institutional and Implementation Arrangements

13. **Strong overall coordination was needed.** An effective, strong, and formal coordination entity is fundamental for the implementation of a project of such complexity as the APL. Besides the implementation units in the participating projects, a deep involvement of many governmental entities was also required and did not happen.

14. **Limited APL/river basin committees' coordination.** Coordination of the APL activities with the river basin committees was limited. Also, there was a lack of coordination with entities responsible for land use regulation.

15. **APL - lack of strong political support**. Given the APL complexities, its implementation required a strong political, institutional, and technical commitment, which did not materialize.

16. **World Bank convening power is extremely relevant.** In particular, given the institutional arrangements limitations, the World Bank played an important role in bringing the multiple actors involved in the APL to the table.

17. **APL - importance of municipalities' involvement.** The municipalities' fiscal constraints did not allow the municipal governments to participate in the APL, as it was required to keep consistence with the APL objective and design.

Main Lessons - GESP Project, Components 1, 2, and 3

18. **GESP - priority given to water resources tools.** Studies supporting the water resources policies were implemented as appropriate, while the implementation of the physical interventions faced important limitations.

19. **Studies facing difficult implementation.** Although the PDPA studies were properly developed, the entities involved in operating the technical tools, the studies made available did not perform as expected. Also, updating of the studies data was not carried out.

20. **Broad focus of the APL was a recurrent problem.** An excessive broad focus was seen as a major and recurrent problem initiatives such as the APL face, as well as the inherent constraints associated with the need to articulate many institutional actors.

21. **Studies recommendations face implementation constraints.** The team involved in the development of the studies supporting the water resources policies acknowledged that the reality in the field does not reflect the changes recommended in these studies.

Main Lessons - SABESP Project, Components 1, 3, and 4

22. **SABESP priority: address water and sanitation.** The SABESP's priority is given to financing opportunities allowing the execution of investments addressing demand and expansion of sanitation systems. The water crisis redirected the corporation efforts to the water supply systems.

23. **Activities: scattered in a broad territory.** The activities under the project were too dispersed in a large territory. Consequently, the impact of the project activities was difficult to measure.

24. **Constraints to account for environmental investments**. The corporation acknowledges the relevance of activities which nature is exclusively environmental; however, the cost of these activities cannot be recovered through the tariffs. Thus, their impact on the corporation financial results cannot be ignored, creating a tension that cannot be ignored in the context of the project.

25. **Large corporations culture and project objectives consistency.** Large corporations tend to have strong institutional culture that creates difficulties for implementing actions as those proposed by the project, which in most cases results in those actions not being implemented.

26. **Project and corporation investment plan consistency.** Project actions need to be aligned with the corporation investment plans and in strong coordination with the respective organizational units under the corporation.

(b) Brainstorming on 'Integrated Urban Water Management in the MRSP'

Background

27. The MRSP is shaped by its structural water resources scarcity, requiring water transfers from other river basins to respond to the water supply demand. The recent water crisis in the MRSP

dramatically exposed the water scarcity and triggered heavy investments by the SABESP on new hydraulic structures to increase water security. In addition, the unregulated urban expansion over key river basins threatens the quality of the available water. Critical examples are the Guarapiranga and Billings basins, where approximately 1.9 million people lived in 2015 (about 10 percent of the overall MRSP population).

28. The early 1990s algal blooms, putting at risk the Guarapiranga reservoir, triggered the World Bank's support to the preparation of the Guarapiranga Project, which involved a large number of state entities and municipal governments, under a loan to the GESP. The project achievements were substantial focusing on (a) expansion of infrastructure slums and unregulated settlements, mostly though urban-upgrading investments, (b) development of studies to better understand the various impacts on the quality of the water bodies, and (c) undertaking of technical and management initiatives toward improving legislation on urban development, in particular concerning the unregulated settlements, and strengthening the water resources and land use interdependence.

29. The Mananciais Program, also supported by the World Bank, aimed at a much larger intervention than its predecessor, the Guarapiranga Project. But mostly given fiscal constraints, the program could not bring together a critical mass of borrowers compatible with its broad objectives. After a long preparation and implementation, the program closed, marginally achieving its objectives. Because the concerns with the MRSP headwater basins started to scale up to alarming levels, about 20–25 years ago, some thematic areas acquired relevance, as presented below.

Metropolitan/Territory Governance

30. Under the urban, environment, and WRM systems, the legislation improved, seeking adherence to the reality in the field, in particular in the Guarapiranga and Billings basins. Undoubtedly, a better cooperation between state and municipalities flourished. Also, the improved legislation allowed meaningful achievements, such as the implementation of slum-upgrading interventions and the provision of services to unrelated settlements. However, broader attributions were also given to the WRM system, as well as to the river basin agencies, which achievements were far less relevant. Such unbalances created huge impasses to issuing of licensing and permit to investments in the headwater basins as well as to ensuring an effective control of the urban sprawl. Given the critical management limitations in place, the following questions are pertinent.

- Is it plausible to persist with the current territorial management attributions, or is it possible to envisage an alternative arrangement?

- Is it possible to implement a structured and effective management arrangement for headwater basins or, as for many other relevant metropolitan issues, will the immense distance between the ideal and the reality persist?

- Despite the existent cooperation culture between state and municipal governments, while the water quality has a major relevance for the state government, a major priority for municipalities is to meet the demands from communities. Are these

different priorities inevitable? Is it possible to seek a better balance under the lack of structured arrangements today in place?

- The difficult in obtaining environmental licenses reflects the enormous gap between the regulated and unregulated urban settlements, although the regulation gap is smaller now than under previous legislation. It also reflects the gaps between the urban and the environmental management systems. In other terms, it reflects the existent gaps within the public sector, which attempts to make investments but cannot obtain licenses issued under a different branch of the same public sector.

Reaching the Pollution Load Targets Established by Law

31. The pollution load target established by law is a maximum of 147 kg per day of phosphorus in the Guarapiranga reservoir, while it is 308 kg per day currently. In the Billings reservoir, the legal target is set at 280 kg per day, while it is estimated at 800 kg per day currently. The gap between the targets and the reality in the field is gradually getting smaller, although in a very slow pace and still of a major size. Different causes to consider include the following: (a) the sanitation coverage increased significantly over the last 20–25 years and currently reaches about 70 percent of the population, and (b) nevertheless, closing the gap requires undertaking slum-upgrading interventions, which are costly and fall under the municipal government's mandate. Thus, the following questions arise:

- How much of the pollution load in the reservoirs can be abated by enforcing the procedures known as 'optimized operation of the sewerage system'?

- Given the current fiscal crisis the public sector faces, which would be a realistic expected timing for the implementation of the needed infrastructure investments (mostly slum upgrading) to reach the pollution load targets?

- Given the challenges associated with the investments needed, should investments on water treatment technology become the priority instead?

The World Bank's Strategic Role

32. The World Bank collaboration with the Integrated Urban Water in Brazil started by 1990, with the preparation of the Water Quality Projects that includes the Guarapiranga Project. Relevant lessons were learned, including institutional and technical issues as well as concerning the integrated interventions on urban upgrading. In addition, the World Bank's convening power was instrumental to bring the multiple stakeholders involved to the table, during preparation and implementation.

33. Given the long and relevant role the World Bank played in supporting that agenda and considering the importance of a continued support, the following questions are relevant.

- Would there be a more appropriate format for the World Bank to continue to support the integrated urban water agenda?

- Should the new support adopt a narrower, selective focus? For example, on enhanced water treatment technology?

- Payment for results? On what?

- Over the recent decades, the World Bank acknowledged the importance of the ‘integrated urban water agenda’ and supported it. Was any national financing source ever open to support this agenda?

Annex 7. Summary of Borrower's ICR and Comments on Draft ICR

Summary of Borrower's ICR

Part I

1. The Mananciais Program is the second generation of the Guarapiranga Program[31], initially conceived and implemented in the 1990s. As is well known, the original program focused on the Guarapiranga river basin and was intended to address critical water quality issues in the reservoir and its tributaries. At the time (1990–1991), algal blooms had been detected in the reservoir, raising concerns about whether the water could still be used for public supply.

2. Initially, actions were proposed at the sector level - basically under the responsibility of the state sanitation concessionaire, SABESP. The idea was to expand the sewage collection system (outflow would be released/treated outside the river basin) and improve the operating conditions of existing networks and pumping stations (which, back then, covered about 35 percent of demand, for a total population of about 550,000 inhabitants, according to the census). However, during the initial diagnostic stage, it became clear that this urban phenomenon was broader than expected, especially because of the notable and growing presence of irregular population settlements in low-income regions and slums (*favelas*). Program design thus shifted to focus on urgent multi-institutional interventions, bringing together different organizations from various levels of government. More specifically, several entities were invited to participate in a cooperative effort: the PMSP through its Housing Secretariat (SEHAB), State Government bodies, SABESP, Secretariat of Works (later renamed Secretariat of Sanitation and Water Resources), Secretariat of the Environment, CDHU, and Eletropaulo (this was a public company at the time as well as the dam concessionaire and owner of the strips adjacent to the reservoir).

3. Thus, it was no longer just a matter of addressing the coverage and efficiency of the sewage system but also of intervening in irregular land occupations—by bringing basic public infrastructure to low-income areas and slums, which would require bolder urbanization measures —preserving strategic regions with no defined use and encrusted in urban areas (preferably by building public parks), recovering strips adjacent to the reservoir (often underutilized for leisure and sporting purposes and marked by informal uses with negative effects), providing the technical elements for use as a basis for making radical amendments to environmental legislation and the laws that guide land use and occupation in the regions surrounding the basin (highly restrictive, of little effectiveness in controlling informal urban use) and, finally, establishing yet another way of managing the land (basin committee/WRM system). The Program's aggregate budget totaled US$262 million, of which the World Bank contributed US$119 million.

4. The institutional framework required by a program of this magnitude and level of organization was completely unprecedented and contrary to the customs and practices of typical public interventions—which, even in a region with such complex and intertwined problems such as the MRSP, remained predominantly sectoral in nature. The originality of the arrangement itself, however, prompted a possible program risk related to the degree of efficiency that could be expected from cooperative work carried out by organizations not used to this type of strategy and

[31] The program and projects' names are presented as used at the local level.

procedure. Another risk derived from the decision to urbanize the slums, an initiative considered bold for its time. This had only been done in a handful of places (essentially, in the cities of Santo André and Diadema) and expertise was relatively limited, which raised questions about the urban and environmental sustainability of the initiative. There was also uncertainty about the outcome of the proposed legislation, which would replace laws passed 20 years earlier covering everything from the technical aspects of the intended amendments (as there was no legislation in place to cover the dynamic relationship between land use and water quality) to the feasibility of the institutional solution, which assumed—as in the Guarapiranga Program itself—somewhat permanent cooperation across the different levels of government.

5. By the end of the 1990s—and with continued support from the World Bank throughout the process—the results were quite positive. This includes, among other points, the quality and extent of urbanization initiatives in *favelas*, the expansion of sewerage coverage, the building of parks, the increased body of technical knowledge about water quality, the creation of the technical group in charge of amending the legislation (and ensuring the passing of a series of laws to bring about such changes), and finally, the unprecedented degree of conceptual understanding and interinstitutional action, bringing together the São Paulo city government and the state government (by establishing a standard for integrated municipal and state government interventions in dense areas marked by urban informality).

6. This experience paved the way for a second stage of interventions, and planning began even before the Guarapiranga Program (2000) had concluded. With its successor (the Mananciais Program), the idea was to expand the actions to other water sources that supply to the public in the MRSP—replicating the experience of intergovernment action from the previous program. The scope of the interventions was maintained with extra emphasis on ensuring the presence of the state in areas where the crime rate had seemingly increased.

7. Somewhat surprisingly (considering the positive and innovative success of the Guarapiranga Program), evolution to the second stage brought a disconnected succession of mixed results—both positive and negative. Nine years passed between the initial program idea and the signing of the LA by the SABESP and the state government.

8. Initially, after the first Consultation Letter seeking new World Bank financing, no understanding could be reached with the GESP and its Treasury Department. On the one hand, there were fiscal constraints and debt capacity was relatively limited; on the other hand, high-budget transportation and urban mobility projects were given priority when scarce resources were allocated. The Consultation Letters were forwarded to Cofiex/federal government only in 2003–2004, where they faced new obstacles—partly political, partly fiscal in nature. The scope of the Mananciais Program was considerably reduced and excluded the cities of Santo André (which chose to use tax revenues from the federal government to execute its urban action plan), Mogi das Cruzes (due to lack of interest by the local administration), Suzano (small scale of selected interventions), Diadema, and later Guarulhos (both for fiscal reasons).

9. Only the state government (the secretariat now known as the Secretariat of Sanitation and Water Resources, as well as the SMA and the CDHU), the SABESP, and the PMSBC remained. Apart from the Guarapiranga Program, with a single LA signed with the state government—and contracts for transfers to the City of São Paulo and the SABESP, at that stage, and pursuant to the

provisions of the Fiscal Responsibility Act—there would be three relatively independent LAs in place; nonetheless, the Secretariat of Sanitation and Water Resources would play an important role in project coordination.

10. The GESP and SABESP Consultation Letters would only be approved in 2006. In the first half of 2007, the projects were prepared jointly by the state Government, the SABESP, and the World Bank and the respective LAs were negotiated. During negotiations, the PMSP, which would be participating in the program with its own funding (it could not access financed resources because of fiscal limitations; its participation represented a continuation of the cooperation policy put to test when the Guarapiranga Program was first implemented) was ultimately excluded, after an impasse caused by requirements imposed by the World Bank's Legal Department.

11. The signing of the LAs by the GESP and the SABESP would only take place two years later, in the second half of 2009—in this case, the delay was because of resistance from the World Bank office in Brasilia. The aggregate budget of the two agreements would amount to US$185.5 million (with US$104 million provided by the World Bank), significantly lower than the amount made available for the Guarapiranga Program. This was a clear reflection of the difficulties faced by the Mananciais Program since the initial preparatory phase.

12. Paradoxically, while there were successive delays in the preparation and formalization of the Mananciais Program, urban interventions in the Billings and Guarapiranga reservoirs basins at the time were progressing rather well, now that they were under the PMSP (SEHAB) rather than the state government. These interventions were funded by tax revenues from the municipal and federal governments and, to a lesser extent (but just as importantly from a functional and institutional perspective), from the SABESP and the CDHU. Interventions included the urbanization of slums and the expansion of infrastructure (and of urbanization actions) in low and very low-income population areas, with a few technical changes made to the projects (they were expanded to include new community installations and green areas) and special attention to land titling demands. The budget for the first stage of the municipal program exceeded BRL 1 billion (in 2008–2009 values).

13. This initiative, spearheaded by the municipal government and structured in 2007, was closely aligned with (and on the radar of) the Mananciais Program. The existence of two programs—the one by the municipal government and the set of LAs with the World Bank (both entitled 'Mananciais Program)—explains the use of the term 'Metropolitan Mananciais Program' in the PAD. It was understood that the three LAs to be signed with the World Bank constituted a subset—and not the largest one (in terms of environmental and social impact and budget)—of the abovementioned Metropolitan Program or the Mananciais Program, more broadly.

14. At the time, other programs and projects were also under preparation and execution, namely the Córrego Limpo Program, an initiative by the SABESP and the City of São Paulo focused on the sanitation of valley bottoms, encompassing sewage and drainage systems; the Pro-Billings Project, with funding provided by Japan International Cooperation Agency to the SABESP for the expansion of sewage systems in the drainage area of the Billings dam, in the municipality of São Bernardo do Campo; the Orla Guarapiranga Project, under the PMSP, intended to build parks and leisure and sporting areas on the right bank of the Guarapiranga dam; the Rodoanel Work, south section, an express ring road running from east to west in the southern

portion of the Billings and Guarapiranga headwaters. For the purposes of the topic at hand, this project will include environmental compensation in the form of a series of relatively large parks covering the areas closest to the headwaters of water bodies flowing into the two dams; the Defesa das Águas Operation, under the PMSP, to reorganize and intensify inspections to control irregular occupations in headwater areas.[32] The situation back then could be described as follows: (a) public investment initiatives in headwater areas, especially in the two dams located in the southern portion of the metropolis, had multiplied since the Guarapiranga Program—a clear sign that the 'headwaters' topic had achieved a greater level of priority in the public agenda—and (b) the Mananciais Program suffered considerable delays at the state government level, for the reasons explained above. In any case, the overall balance of programs and projects was quite positive, generating (justified) optimism regarding the environmental and urban impacts expected at the end of the investment cycle.

15. A few years later, the situation had changed considerably. In 2013, three programs were virtually paralyzed—the Mananciais Program, under the PMSP (which had fallen behind schedule somewhat because of funding limitations); the Córrego Limpo Program (again, a decision made by the municipality, with minor impact on the Billings and Guarapiranga basins up until that moment); and the Defesa das Águas Operation. Later, during a severe water crisis of metropolitan proportions (beginning in the fourth quarter of 2103), Pro-Billings came to a virtual halt as well. Between 2010 and 2013, the performance of the Mananciais Program was deemed average according to the LAs with the GESP and the SABESP. In 2014, the SABESP's participation nearly ceased, as the water crisis severely restricted the company's revenue inflow and forced it to concentrate emergency investments on finding solutions to maintain the water supply system. The extended water crisis prompted a timely restructuring of the Mananciais/SABESP Program, agreed upon with the World Bank in 2015, which resulted in the cancellation of interventions in any way related to environmental sanitation and the inclusion of emergency water supply works—the expansion of the Alto da Boa Vista water treatment plant/Guarapiranga production system, the interconnection of the Billings/Rio Grande/Taiaçupeba reservoirs, and initiatives to control losses.

16. In the end, the disbursement scenario could be summarized as follows:

(a) The Mananciais/São Bernardo do Campo Program did not advance, so the respective LA closing date was not extended in 2015; this, in turn, prompted the first Mananciais/GESP budget cut (from US$60.5 million to US$29.9 million), with the cancellation of housing units scheduled to be built and which would be under the responsibility of the CDHU, in support of the municipal project.

(b) The GESP Program suffered a second budget cut in March 2016, subsequently confirmed, in the amount of US$10 million (counterpart funds); this cut—the result of an economic recession coupled with a severe fiscal crisis in the public sector—made at least two bidding processes impossible. This, compounded by a problem in another contract (Embu-Guaçu), made it impossible to spend the limited resources allocated by the World Bank.

[32] For more information on these programs and projects, see pages 154 et seq. of the *Relatório de Planejamento Estratégico - Programa Mananciais* (Strategic Planning Report - Mananciais Program), edited by the Management Unit of the Mananciais Program - PMU, June 2009.

(c) The SABESP Program is estimated to disburse 90 percent of the loan proceeds and higher counterpart funds than the expected amount.

17. The following points should be noted about the final scope of the programs:

(a) At first glance, the scope of the Mananciais/GESP Program (with final budget of US$20 million and disbursements at a slightly lower level) may have seemed unorthodox (as a set of different initiatives without a clear guiding thread). Instead, it could be regarded as a combination of technical studies related to the management of headwater areas (PDPA), diffuse load study in the Upper Tietê/Cabeceiras sub-basin, monitoring of the loads flowing into the Billings and Guarapiranga reservoirs, and the execution of exemplary actions Nove de Julho Park and Caminho Atlântica - examples of actions meant to humanize the metropolis; acquisition of equipment for cleaning and maintaining public spaces - an example of compensatory transfer to municipalities; Center for Citizenship Integration - an example of government presence).

(b) The SABESP Project operated on two fronts: partly in accordance with the original program design and partly motivated by the water crisis.

Part II

18. Since 1990, the federal government and the World Bank (through the Ministry of Social Action, where technicians from São Paulo used to work) have come a long way in structuring integrated intervention programs in low-income urban areas. The length of time between the innovative conception of the Guarapiranga Program and the end of its activities was nine years. The length of time between the design of the Mananciais Program and the end of the LAs was 16–17 years. The time has come to reflect upon the strengths and weaknesses of these efforts and ponder future prospects.

19. Progress has been made. In summary, the following points should be noted.

- The Guarapiranga Program broke with the inertia that used to permeate public action, which used to be sterilized between the urban demands of rapidly growing land occupations and inflexible laws ill-equipped to address the widespread phenomenon of urban informality. Innovative amendments were made to the legislation, thus facilitating the expansion of public infrastructure; this elevated the complex issue of ‘land occupation vs. environmental protection’ to a regional (metropolitan) level. The program fostered a ‘culture of cooperation’ involving technical personnel from different organizations and levels of government. This culture remains in place to this day and has strongly influenced the enactment of other cooperative policies (regardless of successive changes to the policy framework).

- The topic of ‘Headwaters’ has made it into the public agenda as a priority. During the Guarapiranga Program, there was a permanent effort, mostly by the Project Management Unit, to raise awareness of (and persuade others about) the need for large-scale actions in basin areas and how these were essential to metropolitan

sustainability. These initiatives proliferated throughout the following decade. The Mananciais Program itself, while still important, accounted for a smaller share of the activities put in place.

- In the 2000s and 2010s, efforts to amend the so-called 'specific laws' from the 1990s remained steadfast as a result of significant discussions held in every region of interest.

- Initiatives to urbanize slums and expand public infrastructure coverage—especially sanitation systems—were important.

- An integrated intervention model was consolidated for low-income and/or informal urban areas, which ultimately influenced other programs (such as Córrego Limpo) and relevant documents (the concession contract between the PMSP and the state government with the SABESP for the provision of water supply and sewage services). This was a decisive contribution to formal land registration ('formalization'), focusing not only on infrastructure but also on land titling as well.

20. There are, however, certain factors that warrant concern.

- Interventions under the Mananciais/PMSP Program were suspended before the onset of the Brazilian financial crisis. The same happened with the Córrego Limpo Program and the Defesa das Águas Operation. Although this can—and should—be attributed to managerial and administrative (and not necessarily financial) factors and even though policy and process discontinuities are an inherent part of public management, such a retreat by the municipal government—for four years and without much in the way of opposition or debate—is a sign that commitment to the policy put in place with Guarapiranga Program is not as unwavering as expected.
- Along the same lines and despite the positive amendments to the legislation, there was no progress in formally establishing a system for managing headwater areas. A committee was formed for the Upper Tietê basin, though at the moment it lacks the organizational strength and political legitimacy required. Such requirements would, in any case, be based on political engineering, technical knowledge, and initiative, rather than on a hierarchical imperative.
- The fiscal crisis in the public sector has reduced/stifled important public investments. As far as this paper is concerned, there is currently no sign of new investment programs of a certain scale on the horizon for headwater areas. This is compounded by a political framework that is becoming increasingly radicalized and entrenched because of weakened political party alliances. Both factors contribute to the weakening of more ambitious and cooperative public policies—both in terms of politics and public demand.
- A less tangible factor is the fact that the environment has become less conducive to innovative public policies as of the middle of the last decade. In a way, the growth of the Brazilian economy at higher rates over several years seems to have cemented the quantitative primacy of investments—or, in other words, the 'investment rush'—with little space or patience for more sophisticated conceptions to guide urban interventions. From a realistic assessment perspective, the Mananciais Program under the PMSP was

an exception, perhaps because it still benefited (albeit belatedly) from the positive results of the Guarapiranga Program.

21. Finally, there are positive and less-than-positive factors directly associated with the performance of the Mananciais Program that should be highlighted.

- There was a clear contradiction between the program's initial public policy ambition—to cover all headwaters and many municipalities and government organizations (naturally), and to expand its scope—and its final budget as set forth in the LAs. Seen in retrospect and given the fact that the budget was far lower than expected, it would have been advisable to restrict the intervention area—to Guarapiranga and Billings, for example—when the budget was cut. The previous attempt to bring municipalities into the program, however, should not be disregarded. In any case, back when the Mananciais Program was first implemented by the PMSP and (rightfully) attracted a lot of attention, this was not a problem. Once the municipal government halted its actions, however, it became clear—or it should have become clear—that the scope and budget of the two programs—GESP and SABESP—would not allow for comprehensive urban and environmental impacts.
- The land titling issue was included in the Mananciais/PMSP Program and in the World Bank LAs and in the Mananciais/São Bernardo do Campo Project financed by the World Bank. This is a new topic, one that is missing from the Guarapiranga Project—though it was mentioned in passing, it was not subsequently built on. New topics, duly worked out, could draw attention to the program. The topic of social (and similar) actions in areas with high juvenile delinquency rates (and later, high organized crime rates) was raised during the program preparation and execution stages, but no further progress was made on that front. There was no institutional support behind it.
- In the specific case of the Mananciais/SABESP Program, there were clear organizational flaws—not in program management per se but in program management support. Lack of management support was a determining factor that resulted in sub-par technical documents (especially the ToR) and ultimately delayed or even prompted the cancellation of several actions and initiatives—especially technical studies on water quality.

Comments on draft ICR

Part I - Letter from GESP and SABESP commenting on the ICR and the Program

Sao Paulo, September 22, 2017[33]
Letter SSRH GSA no. 019/2017

Dear Sir,

We would like to thank you for sending the document ***Implementation Completion and Results Report*** to this Secretariat of Sanitation and Water Resources and to the Basic Sanitation Company of the State of São Paulo (Sabesp); the document contains the final evaluation of Programa Mananciais - the object of Loan Agreements 7661-BR and 7662-BR, respectively. In this letter, we have included general considerations about the most important features of the Program, the circumstances and primary results of the implementation process and issues regarding the future of public initiatives (and their financing) in water-producing territories that contribute to public water supply in the Metropolitan Region of São Paulo.

It should be noted that Programa Mananciais was an extension of its predecessor, Programa Guarapiranga, which was conceived and executed in the 1990s. The two programs had significant differences, however. In the former Program, the paramount necessity was to alter the State's strategy in addressing a scenario affected by growing and opposing pressures - the urban occupation of the reservoir's drainage basin versus the conservation of water quality. This strategy was changed through efforts to amend the legislation and put together a wide range of comprehensive interventions, to be carried out by different agencies from various levels of government. This Program received significant support from the World Bank; its ample budget enabled, among others, wide-scale (and, to a large extent, pioneering) actions to improve urban conditions, with a special focus on deploying public infrastructure in low- and very low-income settlements and urbanizing unregulated settlements known as slums. The Program achieved positive results due to the concentration of resources in a delimited region and the innovative nature of the institutional cooperation between the São Paulo State and local governments, among other factors, and established itself as an alternative worth considering - and studying - in interventions carried out in populationally-dense areas of great urban and social complexity in metropolitan peripheries.

In the case of Programa Mananciais, changes to public policies aimed at headwater areas - not only for the Guarapiranga basin, but also for the Billings reservoir basin and other water-producing territories - had already been achieved. It was then a matter of extending the intervention strategy under the Program to the other metropolitan river basins. Nevertheless, unpredictable circumstances significantly interfered with the Program's preparation and implementation phases. Some of these circumstances were unfavorable; others provided undeniable benefits from the set of actions put in place.

[33] Original letter in Portuguese is archived on project files.

One noteworthy fact was the long gap - of almost a decade - between the start of Program preparations and the signing of the Loan Agreements. These long-term difficulties were caused by varied and successive factors: debt limitations binding the State and municipal governments; technical / fiscal restrictions imposed by the Federal Government; fluctuations in the priority level assigned to the Program by the World Bank. These obstacles have all been circumvented, but not without some "wear and tear": while the geographic coverage of the Program was unaltered, nearly all municipalities withdrew from participating (the exception being São Bernardo do Campo), either for fiscal reasons or because they had access to other funding sources; the Program's limited budget reflected this restrictive scenario - the aggregate budget amount from the State Government and Sabesp projects under the Mananciais Program was considerably lower than that of Programa Guarapiranga, despite the expected coverage of a wider geographic area. In all cases, the initiative lost some of its reach and institutional capacity.

The effect of these limitations was observed during Program preparation. At the time, a large-scale venture was underway by the São Paulo Local Government (PMSP), with a significant budget backed by Federal funds, for large-scale urban interventions in *favelas* and low-income settlements in the Billings and Guarapiranga watersheds. These projects and works were a highly positive development of the Guarapiranga Program, and were also very closely attuned to Programa Mananciais. This scenario demonstrated both initiatives to be complementary, and made it clear that the large-scale impacts expected on those watersheds should derive from urban interventions under the responsibility of the São Paulo local government. In fact, the *Project Agreement Document* mentions a Metropolitan Mananciais Program meant to encompass both initiatives.

The venture spearheaded by the São Paulo local Government fared quite well until 2012. Its subsequent disruption was certainly not encouraging to any current assessment of public investments in the two watersheds most strikingly characteristic of the tension between land occupation and water quality.

We have additional observations regarding the Loan Agreements signed by the São Paulo State Government and Sabesp: in our case (Secretariat of Water Resources and Sanitation), the project was small in scale and was particularly affected by the problems the municipality of São Bernardo do Campo project faced during implementation, given the links between the two projects. Some of the other initiatives focused on technical studies on water quality and land management, and the results were quite satisfactory; other initiatives involved compensations transferred to municipalities with weak fiscal and administrative capacities; these yielded less-favorable results, for several reasons specific to each project which could not be corrected in time.

We have a few in-depth comments about the Loan Agreement with Sabesp - around 90% the loan amount was spent, with a counterpart funds higher than the amount initially predicted. As we see it, the development of the Program has gone through two completely different phases.

The initial phase of Programa Mananciais coincided with a time when Sabesp was making a series of big-budget annual investments. The overall assessment for that period is highly positive. However, the disbursements specific to the Loan Agreement signed with the World Bank were lower than expected. Among the reasons for this mismatch, we feel we must mention, first and foremost, that the departments in charge of implementing Sabesp's investments were burdened

with a very extensive work schedule and routine during that period; in this context, when assigning the actions to specific funding sources and comparing the rules and procedures of each funding entity, there were speedier alternatives available specifically for the bidding phase and the contracting of projects, studies, works and services. This was communicated to - and freely discussed with - technical staff from the World Bank. Two additional - and, to some extent, intertwined - factors are just as important and should also be noted. In hindsight, we know the Program encompassed several actions, some of them quite important (such as water quality studies) despite their low budgets; these actions seem excessive in view of the small number of professionals involved in their implementation. This group, in turn, did not benefit from the assistance of technicians who could have been contracted specifically to provide the necessary technical and administrative support.

The water crisis in the last quarter of 2013 gave rise to a second and completely different phase. The Program was restructured in 2015, redirecting investments into urgent and essential works to shore up the public water supply system in the Metropolitan Region of São Paulo. Along with other institutional and physical actions, these works, executed in record times with highly-efficient results, were crucial in avoiding the collapse of the water supply system. From our perspective, this was a victory for the Program, both for the World Bank - the only multilateral financing agency that fully comprehended the intensity and urgency of the water crisis, and allowed funds to be allocated under exceptional circumstances - and for Sabesp, for its readiness and technical skill in planning and executing the works.

In the second phase, disbursements were expedited and would probably have reached the full amount provided for in the Loan Agreement, had Sabesp not been forced to slow down the pace of the contract to allow the Taiaçupeba reservoir to reach full operating conditions. The problem lies in one of the required environmental licenses - the only one yet to be granted, in fact - that must be issued by a Federal Government agency, even though we believe the regional government would be the more appropriate level to issue such a license.

Having made these comments, we are grateful to the World Bank for its long-standing efforts to cooperate on the issue of headwaters dating back to the early 1990s. Since this is a project evaluation, we would like to take this opportunity to point out that the Guarapiranga reservoir, where we initially focused our attention, and whose continued use was at risk at the time, was key to fighting and overcoming the recent water crisis. The topics that prompted the Program remain on the public agenda of the São Paulo State government and, as such, we reiterate our willingness to once again count on the valuable technical and financial support of the World Bank in future endeavors.

We take this opportunity to reiterate assurances of high esteem and consideration.

Monica Porto
Deputy Secretary

Part II - Letter from PMSBC commenting on the ICR and the Program

Official Letter no. 406/2017 - GSEHAB[34]

São Bernardo do Campo, 31 August 2017.

Ref.: Loan Agreement 8149 - BR Programa Mananciais
Subject: Opinion on the Implementation Completion Report (ICR) prepared by the World Bank

Dear Madam,
In reference to the electronic message sent on 25 August 2017, we hereby issue an opinion on the Implementation Completion Report (ICR) prepared by the World Bank.

Actions under the Programa Mananciais in São Bernardo were structured into two sub-programs:

- Sub-program 1 - Institutional Strengthening and Program Management;
- Sub-program 2 - Integrated Urban Upgrading, Land Regularization and Environmental Recovery of Precarious Settlements

In addition to Program management, Sub-program 2 envisaged two primary actions: (i) preparation of the Environmental Development and Protection Plan (PDPA) for the Billings reservoir area in São Bernardo do Campo, including the establishment of guidelines for sustainable use and management programs in activities compatible with environmental protection; and (ii) preparation of the Municipal Environmental Education Program. Actions under this Subprogram would benefit approximately 200 thousand local inhabitants, residents of the headwater areas of the Billings reservoir, the largest reservoir used for public supply in the São Paulo Metropolitan Region.

Subprogram 2 entails the Integrated Urban Upgrading, Land Regularization and Environmental Recovery of the Precarious Settlements of Areião, Sabesb, Vila dos Estudantes, and Monte Sião, whose occupation directly impacts the Billings Reservoir sub-basin, where SABESP catches water for the Greater ABC region. Approximately 3,000 families living in the four settlements would directly benefit from this action. The action aims to promote the urban and environmental recovery of precarious settlements located in headwater areas, and to improve the quality of life of the low-income communities living in these settlements by providing urban infrastructure, eliminating risk situations, recovering environmentally-degraded areas, and providing adequate housing solutions, social inclusion and land regularization.

The primary problems laid out the Implementation Completion Report prepared by the World Bank were: (i) incompatibility of resettlement criteria with World Bank policies; (ii) delays in completing engineer designs preparation, and (iii) delays in preparing documents for selecting consultants to develop the Environmental Development Plan (PDPA) and the Environmental Education Plan.

[34] The original letter in Portuguese is archived on project files.

GSEHAB Official Letter No. 226/2014, dated 11 December 2014, provided answers to the questions about the Resettlement Plan, and informed the Bank that the Housing Policy of the Municipality of São Bernardo do Campo clashes with the Bank's guidance on indemnification payments in cases of involuntary removal. The local government understands that public funds cannot be used for indemnification payments not provided for in a previously-set legal framework; that is also the understanding of the Brazilian judiciary - thus far, all similar lawsuits (aside from *sub judice* cases) have been dismissed. In other words, the judiciary has denied indemnification for improvements made during the execution of urbanization and / or housing projects.

We also reiterate that when the Housing Policy for the Municipality of São Bernardo do Campo was first developed, it underwent a comprehensive and democratic process involving public participation, based on rules agreed upon with society when putting together the Multiyear Plan - Participatory PPA -, the Participatory Budget, the Municipal Budgetary Council (joint and deliberative) and the Debate Forum on the Local Plan for Social Interest Housing - PLHIS.

As such, investments - including those in housing - are defined and prioritized by means of the Participatory Budget. Resettlements and relocations provided for in the Integrated Urbanization Project are included therein, covering a total of 1,075 properties, 64.5% of which will be demolished exclusively because of their unresolvable risk status and the remaining 35.5%, due to the precariousness of the properties, or the need to authorize work fronts for implementing the infrastructure needed to regularize the settlement - the latter accounting for a much lower share.

According to the same Official Letter, there are only a few cases of lessors with more than two rented properties, and about 65% of the cases where occupants must be removed are due the fact that the properties are at high or very high risk. In the latter cases, the first duty of the local government is to remove the families at risk when they have rented a property in such conditions, to safeguard the lives of the occupants of these units. Brazil's legal system has been steadfast in dismissing any claims for indemnification for improvements when the building is in a risk area or environmental protection area. The legal principle behind these administrative processes prohibits any formulation resulting in indemnification for improvements erected in risk areas or in environmental protection areas, disconnectedly from guaranteed basic rights, under penalty of incurring in impeachable offenses.

The municipal government also understands that instituting a rule to enable the Bank's proposal would signal loss of urban control: instead of finding a housing solution for those who used to occupy a given area to meet their needs, a basic right of individuals and a duty of Public Authorities, the local government would be compensating those who occupied the area to exploit it commercially.

Regarding delays in engineer design completion, as pointed out by the World Bank, these were caused by the need for more funds than the amount stipulated in the Loan Agreement to carry out all the works and services. Complementary studies showed the need for more complex solutions to some of the problems faced in the execution of works, as well as actions more comprehensive than initially expected and increases to the initial targets.

The main reasons behind the need for additional investments were:

- Increased beneficiary populations in intervention areas;
- Need for complex works to resolve risk sectors;
- Increased cost per housing unit, due to new national standards on the sector;
- Increased number of work items;
- Need to diversify resettlement solutions for repossessed properties;
- Need for an access route to connect the intervention area to the city;
- Higher investments in Social Technical Work.

As such, a petition was submitted to the Ministry of Cities in early 2013 for the Project to selected for the PAC, so that additional funds would be available.

On 21 November 2013, Federal Government published an Ordinance with the list of selected urbanization projects for the city of São Bernardo, which included the Integrated Urbanization and Regularization Project of Complexo do Areião / SABESP / Vila dos Estudantes / Monte Sião.

On 27 December 2013, the Municipality of São Bernardo do Campo and the Federal Government signed Contract No. 0426.467-58 / 2013 on the aforementioned project, in an extract published in the Official Federal Gazette on 2 February 2014, with a Resolution Clause associated with the approval of the Projects and issuance of an LAE - an Engineering Analysis Report - by the federal savings bank, Caixa Econômica Federal. The projects, in compliance with the rules laid out by the Financial Agent and the technical projects, and in response to CAIXA's final requests, were sent to that institution in November 2014.

Then, in September 2015, the Municipality proposed extending the terms of the Loan Agreement to the World Bank, to make the Agreement compatible with the effective feasibility period of the works, since the deadline for executing urbanization works that receive funds from the Bank is 36 months as of the start date. Among all items that receive funds from the Bank, this has the longest timeline. The Municipality requested an extension of the Loan Agreement to the Bank, until December 2018. Social Technical Work and Land Regularization - activities that continue for another 12 months after conclusion of the works and receive no investments from the Bank - do not require an extension.

Considering that the proposal formulated by the Municipality could not be accepted by the Bank and the Municipality was unable to meet the requirements of the Institution, operation 8149-BR was ended on 09/30/15 without reaching its objectives. The Integrated Urbanization and Regularization Project of Complexo do Areião in São Bernardo do Campo is, however, underway, with funds from the Federal Government's Growth Acceleration Program (PAC).

We hope to count on the support of the World Bank in other relevant municipal actions, and remain at your disposal for any further clarification. Please accept my highest esteem and consideration.

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JOÃO ABUKATER NETO
Secretary of Housing

Annex 8. Comments of Co-financiers and Other Partners/Stakeholders

Not applicable.

Annex 9. List of Supporting Documents

1. Project Appraisal Document Integrated Water Management in the Metropolitan São Paulo Adaptable Program Lending. Dated July 20, 2007.

2. Project Appraisal Document – Integrated Water Management in the Metropolitan São Paulo Adaptable Program Lending. Dated June 9, 2009.

3. Project Appraisal Document – Integrated Water Management in the Metropolitan São Paulo Adaptable Program Lending. Dated March 1st, 2012.

4. Appraisal Decision Meeting Minutes, July 20, 2007.

5. Loan Agreement between IBRD and State of São Paulo. Loan Number 7661-BR. Dated September 27, 2010.

6. Loan Agreement between IBRD and Companhia de Saneamento Básico do Estado de São Paulo. Loan Number 7662-BR. Dated October 28, 2009.

7. Loan Agreement between IBRD and Municipality of São Bernardo do Campo. Dated October 29, 2012.

8. Amendment Letter to the Loan No 7661-BR. Dated September 30, 2015.

9. Amendment Letter to the Loan No 7662-BR. Dated September 30, 2015.

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11. Aide Memoires

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17. Avaliação de Poluição Proveniente de Fontes Difusas na Área de Influencia do Sistema Produtor Tietê – SPAT – Reservatórios Taiaçupeba, Jundiaí, Biritiba, Ponte Nova e Paraitinga. Consórcio Prime – FCTH. April 2016.

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21. PHRD Funding Proposal. October 10, 2001.

22. Borrowers' Implementation Completion and Results Reports.

23. Oficio 406/2017 – GSEHAB, dated August 31, 2017. Ref: Contrato de Empréstimo 8149-BR Programa Mananciais;

24. Ofício SSRH GSA n. 019/2017, dated September 22, 2017.

Appendix A. State of São Paulo (GESP) Project

IBRD 7661-BR

BR APL Integrated Water Management in Metropolitan São Paulo (Programa de Saneamento Ambiental dos Mananciais do Alto Tietê – Programa Manancias – (P006553)

BRAZIL
BR APL Integrated Water Management in Metropolitan São Paulo
GESP PROJECT

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ABBREVIATIONS AND ACRONYMS

APL	Adaptable Program Lending
CDHU	State of São Paulo Urban Development and Housing Company
CPF	Country Partnership Framework
CPS	Country Partnership Strategy
GESP	Government of the State of São Paulo
GIS	Geographic Information System
IFR	Interim Financial Report
IQVU	Quality of Urban of Life Index (*Indice de Qualidade de Vida Urbana*)
MIS	Management Information System
MRSP	Metropolitan Region of São Paulo
MTR	Midterm Review
PAD	Project Appraisal Document
PDO	Project Development Objective
PDPA	Plan for Environmental Development and Protection
PMBSC	Municipal Government of São Bernardo do Campo (*Prefeitura Municipal de São Bernardo do Campo*)
PMSP	Municipal Government of São Paulo
SABESP	State Water and Sanitation Autonomous Utility State Water and Sanitation Autonomous Utility (*Saneamento Básico Do Estado De São Paulo*)
SCD	Systematic Country Diagnostic
SMA	State Secretariat for the Environment
SPMR	Sao Paulo Metropolitan Region
SSRH	State Secretariat for Water, Sanitation, and Water Resources (*Secretaria de Saneamento e Recursos Hídricos*)
ToR	Terms of Reference
UGL	Local Management Unit
UGP	Program Management Unit
WRM	Water Resources Management
WSS	Water Supply and Sanitation

Results Framework
GESP PROJECT (LOAN # IBRD 7661-BR)

(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: (DROPPED)	(a.1.a.) Pollution loads of relevant water bodies reduced (m g/l BOD) Tanquinho stream / Guarapiranga			
Value (Quantitative or Qualitative)	329	25	Dropped in restructuring	Data not available
Date	2007	09/30/2015	09/30/2015	09/30/2015
Comments (including % achievement)	Indicator dropped in the September 2015 restructuring because it proved difficult to capture too many externalities.			
Indicator 2: (DROPPED)	(a.1.b.) Pollution loads of relevant water bodies reduced (m g/l BOD) - Das Pedras River / Guarapiranga			
Value (Quantitative or Qualitative)	75 mg/l	25 mg/l	Dropped in restructuring	Data not available
Date	2007	09/30/2015	09/30/2015	09/30/2015
Comments (including % achievement)	Indicator dropped in the September 2015 restructuring because it proved difficult to capture too many externalities.			
Indicator 3: (NEW)	(a.1.) Volume of BOD polluting loads removed by the treatment plants and sewage system supported under the project (tons/year)			
Value (Quantitative or Qualitative)	0	—	11 tons/year	0 tons/year
Date	—	—	09/30/2015	03/30/2017
Comments (including % achievement)	**Not achieved.** Included in restructuring. The rationale to include this indicator was that the reduction of pollution loads, combined with the increase in production capacity intends to both assist São Paulo to protect the available water resources. The implementation of the sewage system works for the Marsilac District was not carried out.			
Indicator 4: (DROPPED)	(a.2.) Water bodies' quality maintained, even with population increases (water quality measured using the following water various monitoring points at Billings and Guarapiranga) using IAP, IVA, and IQA indicators			
Value (Quantitative or Qualitative)	Bad	Good/normal	Dropped in restructuring	Data not available
Date	2007	09/30/2015	09/30/2015	09/30/2015
Comments (including % achievement)	Indicator dropped in the September 2015 restructuring because it proved difficult to capture too many externalities.			

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Indicator 5 (NEW)	(a.2.) Studies for monitoring the water quality of key water sources sub-basins (number)			
Value (Quantitative or Qualitative)	—	—	3	3
Date	—	—	09/30/2015	03/30/2017
Comments (including % achievement)	**Achieved: 100%.** Three studies were developed for monitoring the water quality of key water sources sub-basins.			
Indicator 6: (NEW)	(c.3.) Increase in water production capacity due to project intervention (m^3/year)			
Value (Quantitative or Qualitative)	—	—	157,680,000 (m^3/year)	157,680,000 (m^3/year)
Date	—	—	09/30/2015	03/30/2017
Comments (including % achievement)	**Achieved: 100%.** By the time this indicator was included in the September 2015 restructuring, the works were concluded. The activity was retroactively financed by the loan.			
Indicator 7 (DROPPED)	(b) Degree of satisfaction of the population based on			
	(b.1.) Physical, social, and environmental changes due to the program (opinion surveys)			
Value (Quantitative or Qualitative)	Low	High	Dropped in restructuring	Data not available
Date	2007	09/30/2015	09/30/2015	09/30/2015
Comments (including % achievement)	Dropped in restructuring because it was mostly related to the *Prefeitura Municipal de São Bernardo do Campo* (Municipal Government of São Bernardo do Campo, PMSBC) project, which closed on the original closing date (September 30, 2015) without implementing any activity.			
Indicator 8 (DROPPED)	(b) Degree of satisfaction of the population (b.2.) Real estate valuation (market and opinion surveys)			
Value (Quantitative or Qualitative)	BRL 211.00/m^2	BRL 306.00/m^2	Dropped in restructuring	Data not available
Date	2007	09/30/2015	09/30/2015	09/30/2015
Comments (including % achievement)	Dropped in the September 2015 restructuring. It mostly reflected the activities under the PMSBC Project, which closed without implementing any activity.			
Indicator 9 (DROPPED)	(b) Degree of satisfaction of the population (b.3.a.) Proportion of dwellings with adequate WSS services			
Value (Quantitative	55%	65%	Dropped in restructuring	Data not available

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
or Qualitative)				
Date	2007	09/30/2015	09/30/2015	09/30/2015
Comments (including % achievement)	Dropped in the September 2015 restructuring. It mostly reflected the activities under the PMSBC Project, which closed without implementing the activities.			
Indicator 10 (DROPPED)	(b) Degree of satisfaction of the population (b.3.b.) IQVU (Urban Quality of Life Index)			
Value (Quantitative or Qualitative)	—	—	Dropped in restructuring	Data not available
Date	2007	—	09/30/2015	09/30/2015
Comments (including % achievement)	Dropped in the September 2015 restructuring. IQVU proved to be difficult to measure and included too many data with limited influence from the program.			
Indicator 11 (REVISED)	Parks and free public areas urbanized implemented (ha)			
Value (Quantitative or Qualitative)	—	170 ha	60 ha	55 ha
Date	2007	09/30/2015	09/30/2015	03/30/2017
Comments (including % achievement))	**Achieved: 91%**. Original indicator (PAD): Increase in number of leisure and green areas (parks, squares, etc.). The borrower requested that this indicator be revised and targets were reviewed.			
Indicator 12 (NEW)	(b.1.) Direct project beneficiaries (number), of which female (percentage)			
Value (Quantitative or Qualitative)	0	—	431,000 (51.34%)	430,000 (51.34%)
Date	2007	06/30/2015	03/30/2017	03/30/2017
Comments (including % achievement)	**Achieved: 99.8%.**			
Indicator 13 (DROPPED)	(c.1.a.) PDPA in Guarapiranga Basin revised			
Value (Quantitative or Qualitative)	0	1	Dropped in restructuring	PDPA revised
Date	2007	n.a.	03/30/2017	03/30/2017
Comments (including % achievement)	Indicator was both a Project Development Objective (PDO) and an intermediate indicator. It stays as an intermediate indicator. As PDO indicator, it was dropped and			

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
	consolidated into a new indicator in the restructuring: PDPAs prepared or revised for each sub-basin.			
Indicator 14 (DROPPED)	(c.1.b.) PDPA prepared and implementation initiated for each sub-basin			
Value (Quantitative or Qualitative)	0	4	Dropped in restructuring	4
Date	2007	2013	09/30/2015	03/30/2017
Comments (including % achievement)	**Indicator dropped in the restructuring.** Indicator was both a PDO and an intermediate indicator. It stays as an intermediate indicator.			
Indicator 15 (DROPPED)	(c.2.) Drafts of specific laws for each sub-basin prepared and submitted to the State Legislative Assembly.			
Value (Quantitative or Qualitative)	1	4	Dropped in restructuring	Activity not implemented
Date	2007	2013	09/30/2015	09/30/2015
Comments (including % achievement)	Dropped in the September 2015 restructuring.			
Indicator 16 (NEW)	Studies developed to improve institutional capacity for water resources planning			
Value (Quantitative or Qualitative)	0	0	3	1
Date	2007	06/30/2015	09/30/2015	03/30/2017
Comments (including % achievement)	Achieved: 30%. Included in the restructuring to better reflect studies prepared.			
Indicator 17 (DROPPED)	(c.3.) International comparative study on metropolitan governance concluded and discussed.			
Value (Quantitative or Qualitative)	0	Study concluded and discussed	Dropped in restructuring	Not achieved
Date	06/30/2007	09/30/2015	09/30/2015	09/30/2015
Comments (including % achievement)	**Dropped in the September 2015 restructuring.** The borrower requested to drop this indicator in the restructuring; because of the drought emergencies, the development of new dialogue through studies or forums related to metropolitan governance was difficult.			
Indicator 18 (DROPPED)	(c.4.) Discussion Forum established and seminars held on metropolitan governance and water in MRSP with broad stakeholder participation			

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Value (Quantitative or Qualitative)	0	Forum established and 5 seminars held	Dropped in restructuring	Activity not implemented
Date	06/30/2007	09/30/2015	09/30/2015	09/30/2015
Comments (including % achievement)	Dropped in the restructuring because the activity was not implemented.			
Indicator 19 (DROPPED)	(c.5.) Study on water demand profile and scenarios concluded; demand-driven water policy for MRSP prepared			
Value (Quantitative or Qualitative)	0	Study concluded and policy prepared	Dropped in restructuring	Activity not implemented
Date	06/30/2007	09/30/2015	09/30/2015	09/30/2015
Comments (including % achievement)	Dropped in the restructuring.			
Indicator 20 (REVISED)	(c.5.) Macro metropolis water resources master plan revised and improved, including specific technical studies for key interventions			
Value (Quantitative or Qualitative)	—	—	Main aspects of the plan finalized	Activity not implemented
Date	—	—	09/30/2015	03/30/2017
Comments (including % achievement)	Not achieved.			

(b) Intermediate Results Indicators

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Component 1: Institutional Capacity Building				
Indicator 1 (REVISED)	(a.1.) PDPA in Alto Tiete Basin prepared			
Value (Quantitative or Qualitative)	0	1	1	1
Date	06/30/2007	09/30/2015	09/30/2015	03/30/2017
Comments (including % achievement)	**Achieved: 100%.** Original indicator (PAD): PDPA - Plan for Environmental Development and Protection in Guarapiranga Basin revised.			
Indicator 2 (REVISED)	(a.2.) PDPA prepared/revised for each sub-basin			

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Value (Quantitative or Qualitative)	0	0	10	10
Date	2007	2014	09/30/2015	03/30/2017
Comments (including % achievement)	**Achieved: 100%.** Original indicator (PAD): PDPAs prepared and implementation initiated for each sub-basin.			
Indicator 3 (DROPPED)	(b) Drafts of specific laws for each sub-basin prepared and submitted to the State Legislative Assembly			
Value (Quantitative or Qualitative)	1	4	Dropped in restructuring	Data not available
Date	2007	2014	09/30/2015	09/30/2015
Comments (including % achievement)	Dropped in the 2015 restructuring.			
Indicator 4 (DROPPED)	(c) International comparative study on metropolitan governance concluded and discussed			
Value (Quantitative or Qualitative)	0	Study concluded and discussed	1	Data not available
Date	—	—	09/30/2015	03/30/2015
Comments (including % achievement)	Dropped in the restructuring. No justification available.			
Indicator 5 (REVISED)	(d) Seminars or workshops carried out to discuss Water Resources Management and Planning aspects of MRSP.			
Value (Quantitative or Qualitative)	0	2	2 - revised in restructuring	2
Date	2007	09/30/2015	—	03/30/2017
Comments (including % achievement)	**Achieved: 100%.** Original indicator (PAD): Discussion Forum established and seminars held on metropolitan governance and water in MRSP with broad stakeholder participation.			
Indicator 6 (DROPPED)	(e) Study on water demand profile and scenarios concluded; demand-driven water policy for MRSP prepared.			
Value (Quantitative or Qualitative)	0	Study concluded and policy prepared	Dropped in restructuring	Data not available
Date	—	2015	—	09/30/2015
Comments (including % achievement)	Dropped in the restructuring because the scope of the activity was beyond the project limits.			
Indicator 7 (DROPPED)	(f) Environmental and sanitary education program implemented			
Value (Quantitative or Qualitative)	0	60,000 people involved; 20,000 in MSBC	Dropped in restructuring	0

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Date	2007	2015	—	09/30/2015
Comments (including % achievement)	Indicator dropped in the restructuring since this has been a regular activity carried out by SABESP with no loan support.			
Indicator 8 (No change)	Integrated Citizenship Center implemented			
Value (Quantitative or Qualitative)	0	1	Continued	1
Date	2007	2011	—	03/30/2017
Comments (including % achievement)	**Achieved: 100%.** Center facilitates provision of personal identification documents.			
Component 2: Urban Upgrading				
Indicator 10 (DROPPED)	(a) Interventions implemented to adapt infrastructure for settlements, benefitting number of families			
Value (Quantitative or Qualitative)	0	5,800 families	Dropped in restructuring	Not achieved because the activity was not implemented
Date	2007	2015	09/30/2015	09/30/2015
Comments (including % achievement)	The entire Component 2 was excluded due to the closure of the PMSBC with no result.			
Indicator 12 (DROPPED)	(c) Housing unit constructed for family resettlement			
Value (Quantitative or Qualitative)	0	1,350 families	Dropped in restructuring	Not achieved because the activity was not implemented
Date	2007	2015	09/30/2015	09/30/2015
Comments (including % achievement)	The entire Component 2 was excluded due to the closure of the PMSBC with no result.			
Indicator 13 (DROPPED)	(d) Resettlement of families completed			
Value (Quantitative or Qualitative)	0	1,350 families	Dropped in restructuring	Not achieved because the activity was not implemented
Date	2007	2015	09/30/2015	09/30/2015
Comments (including % achievement)	The entire Component 2 was excluded due to the closure of the PMSBC with no result.			
Component 3 (*Component 2 due to the restructuring*): Environmental Protection and Recovery				
Indicator 14 (DROPPED)	Parks and free public areas urbanized implemented (ha)			
Value (Quantitative or Qualitative)	0	170 ha implemented	Dropped in restructuring	
Date	2007	2015	09/30/2015	

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Comments (including % achievement)	Indicator was both a PDO and an intermediate indicator. It remains as a PDO indicator.			
Indicator 15 (REVISED)	Areas restored or re/afforested (ha)			
Value (Quantitative or Qualitative)	0	213 ha restored	213 ha restored	100 ha restored
Date	2007	2015	09/30/2015	03/30/2017
Comments (including % achievement)	**Achieved: 47%.** Original indicator (PAD): Degraded areas recovered. The borrower requested to revise this indicator to a core indicator during restructuring.			
Component 4: (*Component 3 due to the restructuring*) Integrated Water Supply and Sanitation				
Indicator 17 (DROPPED)	(a) Water treatment processes in WTP optimized (number)			
Value (Quantitative or Qualitative)	0	6	Dropped in restructuring	
Date	2007	2015	09/30/2015	09/30/2015
Comments (including % achievement)	Indicator was dropped in the restructuring: project priorities were directed to major sewage systems and later to drought emergency-related interventions.			
Indicator 33 (No change)	Procurement process for solid waste collection equipment concluded and equipment in use			
Value (Quantitative or Qualitative)	0	Equipment in use	Equipment in use	Equipment in use
Date	2007	2015	09/30/2015	03/30/2017
Comments (including % achievement)	**Achieved: 100%**			

Summary and Overview of ICR Findings

1. The Government of the State of São Paulo (GESP) Project, together with the State Water and Sanitation Autonomous Utility (*Saneamento Básico Do Estado De São Paulo*, SABESP) and the Municipal Government of São Bernardo do Campo (*Prefeitura Municipal de São Bernardo do Campo*, PMSBC) Projects, were the three participant projects under the Integrated Water Management in the Metropolitan Region of São Paulo (MRSP) - Adaptable Program Lending (APL). While the loan to support the GESP was US$4 million, the total GESP Project was estimated at US$60.50 million. The project was expected to accomplish a critical role in the APL by undertaking the overall coordination of participant projects and other key players, taking a leading role to improve metropolitan and municipal issues essential for water resources protection, such as metropolitan governance and land use planning and enforcement; bring needed state entities to the APL, such as the State Secretariat for the Environment (SMA); and facilitate the implementation of slum-upgrading interventions by municipal governments through the commitment of the State of São Paulo Urban Development and Housing Company (CDHU) in securing resettlement housing.

2. The GESP Project preparation started in 2002, was appraised in July 2007, and approved in June 2009. It became effective in December 2010. Over this period, there were substantial political, fiscal, and government administration changes that affected the project area (the MRSP), the APL, and the project. During implementation, the State Secretariat for Water, Sanitation, and Water Resources (*Secretaria de Saneamento e Recursos Hídricos*, SSRH) (the GESP Project's leading entity) adopted a selective approach by focusing on the activities directly aligned with the entity's core institutional mandate—the development of technical tools that contribute to improving and implementing the water resources policies in the MRSP. The expected roles of the SMA and the CDHU in the project did not materialized. The CDHU participation was dropped in the 2015 restructuring. The GESP Project and the APL shared the same PDO, which was not consistent with the project components and activities. The disconnect increased as the implementation focused on some of the activities included in the project.

1. Project Context, Development Objectives and Design

1.1. Context at Appraisal

3. **São Paulo's strategic importance.** The sprawling MRSP is emblematic of the urban challenges facing Brazil. Housing almost 20 million people in 39 municipalities covering 8,050 km^2, it is the fourth largest urban area in the world, South America's biggest economic center, and accounts for about 17 percent of the national gross domestic product and 10 percent of the population. The metropolitan area faces a number of challenges, including the ones discussed in this section.

4. **Metropolitan management** is a commonly complex issue in federative countries; in Brazil, the constitutional framework further complicates the picture, given that the municipalities have the same autonomous federative status as the states and are not subordinated to either states or the federal government. Urban planning, land use, and provision of local services are matters of municipal jurisdiction, while state governments are responsible for the creation of metropolitan regions. Nevertheless, there is a lack of experience and adequate institutional frameworks in Brazil,

particularly in the MRSP, in the metropolitan-wide coordination of policies, planning, and service provision.

5. **São Paulo water challenges.** Among the most pressing problems facing the MRSP, the region's water supply and demand balance is a critical issue for the city's economic growth and social and environmental sustainability. The MRSP's extremely low per capita water availability is comparable to that prevailing in the driest areas of the Brazilian Northeast. Half of the city's potable water is imported from neighboring river systems. The other half comes from the headwater reservoirs systems (*mananciais*) within the MRSP itself. The Guarapiranga and Billings reservoirs make crucial contributions, together providing potable water to some 30 percent of the MRSP's population. Should Guarapiranga and Billings be lost as raw water bodies, the next closest sources are distant and could only be brought to the MRSP at multibillion *real* costs.

6. **The land use/environmental nexus.** Some 1.9 million people reside in the Guarapiranga and Billings river basins—the vast majority of whom are poor, having illegally occupied these areas, given their proximity to the city center. The informal/slum settlements cause direct pollution of the reservoirs through wastewater and garbage discharge and storm water runoff and silting, thus threatening their future as water bodies for potable supplies and other uses.

7. **State water resources management (WRM) strategy.** Despite the advances in WRM in the state, many challenges remain. The GESP needs to develop, refine, and implement effective WRM instruments and adopt pragmatic approaches to create political and organization capacity in the sector to promote efficient water use by stakeholders. To tackle the state's most pressing WRM challenges, the GESP's WRM strategy promotes an integrated and collaborative approach and coordinated planning and management that involves local governments and other stakeholders and basin committees.

8. **Joint strategy for improving water quality and land use in the MRSP.** The main challenges of the land use/urban informality/environmental nexus in the MRSP are to (a) improve water quality and guarantee the long-term sustainability of water supply in the region's watersheds and headwaters; (b) improve the quality of life and living conditions of the low-income population living in the region's slums and irregular settlements; (c) implement better urban development and land use planning, management, and control mechanisms; and (d) build a new metropolitan governance model based on cooperation among stakeholders and integration of sectors. The Mananciais APL operation has been designed to respond to the land use, water resources, environmental, and social challenges described herein.

1.2 Original Project Development Objectives (PDO) and Key Indicators (as approved)

9. The original PDO, as defined in the Project Appraisal Document (PAD) for the Integrated Water Management in Metropolitan São Paulo - APL (dated June 9, 2009) was:

(a) To protect and maintain the quality and reliability of MRSP's water resources and potable water sources;

(b) To improve the quality of life of the poor populations residing in key targeted urban river basins in MRSP; and

(c) To strengthen institutional capacity and improve metropolitan management and coordination in MRSP in water resources management, water pollution control, land use policy and basic service provision.

10. As defined in the PAD, the key indicators and the PDO alignment are presented as follows:

(a) To protect and maintain the quality and reliability of MRSP's water resources and potable water sources.

- (a.1.) Reduction of pollution loads to the Guarapiranga water body (measured by using two monitoring points, one located in the Tanquinho Stream and the other in the Pedras River)

- (a.2.) Maintenance of the water quality of Guarapiranga and Billings water bodies, even with projected population increases (measured by using nine monitoring points and the following three analytical methods IAP,[35] IVA,[36] IQA[37])

(b) To improve the quality of life of the poor population residing in key targeted urban basins in MRSP.

- (b.1.) Improvements in the quality of life of the targeted population based on
  - (b.1.1.) Improved physical, social and environmental changes (measured by using public opinion surveys);
  - (b.1.2.) Increase in real estate valuation (measured by using real estate value surveys);
  - (b.1.3.) Increased access to improved water supply, sewerage, drainage, and solid waste services (coverage and quality of services) (measured by using the two following methods: proportion of dwellings with adequate WSS services[38] and IQVU[39]); and
  - (b.1.4.) Increase in number and size of leisure and green areas (parks, squares, other public spaces, etc.) (Hectares).

[35] IAP - *Indice de qualidade de Água bruta para fins de abastecimento Público* (São Paulo State-specific Raw Water Quality Index for Public Water Supply).

[36] IVA - *Indice de qualidade de água para protectão da Vida Aquática* (São Paulo State-specific Water Quality Index for Protection of Aquatic Life).

[37] IQA - *Indice de Qualidade de Água* (National Water Quality Index).

[38] The indicator is currently used by the Brazilian Census Institute; data are available and published at the municipal level with census and defines what 'adequate basic sanitation' means and quantifies it.

[39] The Quality of Urban of Life Index (*Indice de Qualidade de Vida Urbana*, IQVU) is composed of 11 variables: commerce and services, culture, economy, education, housing (housing conditions and water supply and sanitation [WSS]), health, urban management instruments, socio-political participation and organization, urban environment, public safety, and transport). The calculation of the index uses a mathematical model that considers the weighted impact of a total of 49 variables.

(c) To strengthen institutional capacity and improve metropolitan management and coordination in MRSP in water resources management, water pollution control, land use policy and basic service provision.

- (c.1.a.) PDPA - Plans for Environmental Development and Protection in Guarapiranga basin (Number)
- (c.1.b) PDPA - Plans for Environmental Development and Protection prepared and implementation initiated for each sub-basin (Number)

- (c.2.) Drafts of specific laws for each sub-basin prepared and submitted to the State Legislative Assembly (Number)
- (c.3.) International comparative study on Metropolitan Governance concluded and discussed (5^{th} seminar carried out)
- (c.4.) Discussion Forum established and seminars held on Metropolitan Governance and Water in MRSP with broad stakeholder participation (Policy discussed)

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

11. The PDO was not revised. The World Bank task team used a full Restructuring Paper version and saw the need to adjust only the indicators. The Level II Restructuring revised the PDO indicators as indicated below:

(a) To protect and maintain the quality and reliability of MRSP's water resources and potable water sources.

- New: Studies for monitoring the water quality of key water sources sub-basins (Number)
- New: Volume (mass) of BOD pollution load removed by the treatment plants under the project (tons/year)
- New: Increase in water production capacity due to the projects intervention (Opinion survey)

(b) To improve the quality of life of the poor populations residing in key targeted urban river basins in MRSP.

- Revised to parks and free public areas urbanized implemented (hectares)
- New: Direct project beneficiaries (number), of which female (percentage)

(c) To strengthen institutional capacity and improve metropolitan management and coordination in MRSP in water resources management, water pollution control, land use policy and basic service provision.

- New: Studies developed to improve institutional capacity for water resources planning

- New: Macro metropolis water resources master plan revised and improved, including specific technical studies for key interventions

12. **Reasons and justifications for the change in key indicators.** The Restructuring Paper (September 30, 2015) explains the change in key indicators as follows: (a) indicators were mainstreamed in a more strategic, consolidated manner, reflecting direct program-expected results; (b) indicators were changed to reflect the project's changes of scope and activities in the context of the ongoing water crisis; for example, indicators referring to the Urban Upgrading Component, which was dropped from the project, were marked for deletion; (c) new indicators for the new activities in response to the water crisis were included; (d) whenever possible, indicators were adjusted to include the World Bank's corporate core indicators; and (e) indicators were adjusted to account for the new closing date.

13. The Restructuring Paper also includes numerous changes to the intermediate indicators. These changes are shown in the Results Framework.

1.4 Main Beneficiaries

14. Neither the APL PAD nor the abbreviated/mini PAD for the GESP Project provides information on the specific beneficiaries from the GESP Project. The core indicator 'Direct project beneficiaries (number), of which female (percentage)' was included in the Results Framework in the September 30, 2015 restructuring. The targeted direct project beneficiaries was 431,000 people, of which 51 percent were female.

1.5 Original Components (as approved)

15. The original components, as defined in the Loan Agreement between the World Bank and the GESP (dated September 27, 2010) were the following:

Component 1: Institutional Capacity Building

16. Improvement of the institutional capacity in water resources and land use management, water pollution control, and basic service provision of stakeholder entities engaged on these issues in the sub-basins of the program area, including among others, the following subcomponents.

Subcomponent 1.1: Integrated Land-Use and Water Resources Management

(a) (i) Carrying out of studies on, among others, water demand profiles, scenarios, policies, and strategies; (ii) evaluation and control of point and nonpoint source water pollution; and (iii) preparation of engineering designs for investments to be made and financed by the borrower and/or its agencies for the protection, recovery, and sustainable development of the sub-basins in the program area

(b) Provision of technical assistance to strengthen the borrower's WSS and water resource management policies and strategies, with emphasis on, among others, planning and

financing mechanisms, as well as development, regulation, and enforcement activities regarding surface water and groundwater extraction/use, with a focus on the challenges regarding these issues in the program area

(c) (i) Preparation, updating, and implementation of environmental development and protection plans for the sub-basins and of their corresponding specific land use laws and (ii) development and implementation of an integrated land use supervision and control system for the program executing agencies and other stakeholders

(d) Provision of technical assistance and capacity building to the program executing agencies, the Alto Tietê River Basin Committee, its subcommittees, and associated agency, municipalities, and other stakeholders, on issues related to, among others, (i) WRM; (ii) master and land-use planning and legislation; (iii) environmental protection development plans; (iv) service delivery; and (v) implementation, operation, integration, and updating of management and planning instruments such as geographic information system (GIS)

(e) Development of local economic development plans, including house and land markets analyses, for promoting appropriate economic activities and land-use patterns with a view to generating income and jobs that focus on environmental protection in the program area

(f) Development of strategies for metropolitan governance and water management in the MRSP through, among others, (i) studies, analyses, seminars, study tours, and publications and (ii) setting up of a forum for discussion of related issues with program executing agencies and other stakeholders

Subcomponent 1.2: Environmental and Water Quality Monitoring

(a) Preparation and implementation of environmental monitoring, evaluation, and supervision plans and systems for the program's activities and provision of related technical assistance and capacity building in a coordinated manner with the program executing agencies and the Municipal Government of São Paulo (PMSP)

Subcomponent 1.3: Environmental Education and Social Outreach

(a) Carrying out of capacity-building activities for environmental and other outreach agents

(b) Diagnoses, preparation of programs and materials, and implementation of environmental and sanitary awareness raising programs and social inclusion programs for different target groups

(c) Carrying out of social inclusion subprojects and environmental and sanitary education subprojects

(d) (i) Provision of support to civil society initiatives related to the objectives of the program; (ii) construction and equipping of an Integrated Citizenship Center; and (iii)

construction, rehabilitation, and equipping of environmental education centers in selected municipalities

(e) Monitoring and evaluation (M&E) of the social and environmental sustainability of all construction carried out under the program

Subcomponent 1.4: Program Management, Monitoring, Evaluation, and Dissemination

(a) Development of a Management Information System (MIS) for M&E and control of the program's implementation and training of the program executing agencies' and PMSP's staff in its use

(b) Carrying out of learning and dissemination activities, including the organization of national and international seminars and workshops to exchange experiences on the key issues addressed under the program

(c) Development of integrated communication strategies for the program to be used by all program executing agencies

(d) Provision of technical assistance and equipment to improve the borrower's capacity, and that of the other program executing agencies, for overall program and project management and implementation, including for the Program Management Unit (UGP) and the Local Management Units (UGLs)

(e) Evaluation and dissemination of the results and impact of the project and the program, including the carrying out of ex ante and ex post beneficiary surveys and the definition and review of baseline, midterm, and program-end monitoring indicators

(f) Carrying out of the financial auditing of the project

Component 2: Urban Upgrading

17. Urban renewal and urban upgrading in slums and irregular settlements in selected municipalities, including social services, construction of housing units for resettlement, housing improvements, and recovery of degraded areas.

Component 3: Environmental Protection and Recovery

(a) Protection and improvement of vegetation and other environmental characteristics of the sub-basin headwater areas with a view to improving the reservoirs, tributaries, creeks, and other physical water bodies' operational conditions and sustainability in the program area

(b) Creation of public gardens and squares and recovery of degraded areas, including the undertaking of revegetation and slope stability action in the program area

Component 4: Integrated Water Supply and Sanitation

(a) Rehabilitation of the dumpsites and construction of a sanitary landfill in the Municipality of Embu-Guaçu, assessment of the operational capacity of the landfills located in the Guarapiranga sub-basin, and studies and diagnosis of solid waste illegal disposal and alternative approaches to solid waste management in the program area

(b) Acquisition and maintenance of urban cleansing equipment for assisting the collection of solid wastes in selected municipalities

1.6 Revised Components

18. The components were revised in the September 30, 2015 restructuring. The revised components' description, as defined in the Amendment to the Loan Agreement, dated September 30, 2015, are described in this section.

Component 1: Institutional Capacity Building

19. Improvement of the institutional capacity in water resources and land use management, water pollution control, and basic service provision of stakeholder entities engaged on these issues in the sub-basins of the program area, including among others, the following:

Subcomponent 1.1: Integrated Land-Use and Water Resources Management

(a) (i) Carrying out of studies on, among others, water demand profiles, scenarios, policies and strategies; (ii) evaluation and control of point and nonpoint source water pollution; and (iii) preparation of engineering designs for investments to be made and financed by the borrower and/or its agencies for the protection, recovery, and sustainable development of the sub-basins in the program area

(b) (i) Preparation, updating, and implementation of environmental development and protection plans for the sub-basins and of their corresponding specific land-use laws and (ii) development and implementation of an integrated land-use supervision and control system for the program executing agencies and other stakeholders

(c) Development of strategies for metropolitan governance and water management in the MRSP through, among others, (i) studies, analyses, seminars, study tours, and publications and (ii) setting up of a forum for discussion of related issues with program executing agencies and other stakeholders.

Subcomponent 1.2: Environmental and Water Quality Monitoring

20. Preparation and implementation of environmental monitoring, evaluation, and supervision plans and systems for the program's activities and provision of related technical assistance and capacity building in a coordinated manner with the program executing agencies and the PMSP.

Subcomponent 1.3: Environmental Education and Social Outreach

21. Construction of an Integrated Citizenship Center.

(a) Development of an MIS for the monitoring, evaluation, and control of the program's implementation and training of the program executing agencies' and PMSP's staff in its use

(b) Carrying out of learning and dissemination activities, including the organization of national and international seminars and workshops to exchange experiences on the key issues addressed under the program

(c) Provision of technical assistance and equipment to improve the borrower's capacity, and that of the other program executing agencies, for overall program and project management and implementation including for the UGP and the UGLs

(d) Carrying out of the financial auditing of the project

Component 3: Environmental Protection and Recovery

(a) Replaced to: Creation of public gardens and squares, namely Parque Nove de Julho and Caminho Atlântica - phases I and II.

Component 4: Integrated Water Supply and Sanitation

(a) Replaced to: Construction of a sanitary landfill in the Municipality of Embu-Guaçu and preparation of the operational plan for the landfill

(b) Acquisition and maintenance of urban cleansing equipment for assisting the collection of solid wastes in selected municipalities

(c) New: Carrying out of sewage system works for the Marsilac District

1.7 Other Significant Changes

22. The implementation arrangement under the loan to the GESP was simplified: (a) the Committee of Coordinators was eliminated and (b) the CDHU, as one of the program executing agencies, was eliminated.

2. Key Factors Affecting Implementation and Outcomes

2.1 Project Preparation, Design, and Quality at Entry

23. The comments in the following paragraphs are pertinent to both the SABESP and the GESP Projects because they share similar relevant issues regarding preparation, design, and quality at entry.

24. **Project's/borrower's alignment.** During implementation, both the GESP and the SABESP focused their attention on some activities among the several included in their respective projects. The reasons were not clarified in the project supervision records. Accordingly, with interviews held with the client's project team, both entities were more inclined to implement activities that were clearly aligned with their line of business or clearly consistent with their

acknowledged institution mandate. The other activities required capabilities seen as exceeding the entities' technical and institutional boundaries. Although the projects were clearly very innovative from an institutional perspective, this aspect was not discussed in the GESP and SABESP PADs, possibly because the abbreviated PAD does not offer room for discussing that sort of issue. The alignment between the projects' content and their respective borrower's institutional mandate or priorities was a needed discussion given the peculiarity of many of the topics under the projects. The implementation of both projects, as they were designed, would have required many specialists from multiple sectors working for the GESP and the SABESP as well. These institutions do not have such specialists because their profiles far exceed the institutions' focus. A clear example is the institutional capacity component under the GESP Project. Moreover, in addition to the technical challenges involving the development of these activities, the actual implementation of the activities and expected outputs would have required that the clients adopt a different, bolder role in the MRSP context. In short, the SABESP and the GESP Projects included challenging technical issues consistent with the APL approach, however, not clearly consistent with the SABESP and the GESP institutional priorities.

25. **Project needed some update when implementation started.** The program and projects were under preparation over many years (2002–2009).[40] During these years, significant economic, fiscal, and political changes occurred, while the APL approach and the activities under the projects remained unchanged. The APL and the projects might have been better aligned at some point of the preparation phase, but that changed over the long time frame for preparation and implementation, in which several state and municipal elections were held and substantial changes occurred on the Government investment programs.

26. **Readiness for implementation and framework style.** The generic description of the project activities was not conducive to a quick implementation. Given their complexity, it would have required a large team of senior specialists from multiple sectors working on activities to define its content and preparing it for implementation. Also, the list of activities under the projects was quite extensive, in particular under the GESP Project. The project amount was not a limitation because the counterpart funds were enormous (some 12 times the loan amount in the GESP Project) and apparently, flexible. Readiness for implementation was practically nonexistent. Despite the long preparation period and the support from a US$1 million grant, no activities had been defined and/or developed at the level required to start the implementation.

2.2 Implementation

27. The implementation focused on (a) development of complex and large studies to improve the institutional capacity for WRM and (b) some specific construction works supporting environmental and social improvement in the targeted river basins, which was mostly 100 percent counterpart financed. The issues faced are summarized in this section.

28. **Challenges of complex studies.** The activities to develop the scope of the studies up to the level of definition and detail required to initiate the procurement selection process, which took a long time. By the Midterm Review (MTR) in May 2013, only one contract financed by the loan

[40] Project preparation period: The lending phase started in FY2002. The program, including the SABESP and GESP Projects, were appraised in July 2007, while the Board approval date was in July 2009. The Loan Agreement with the SABESP is dated October 2009, while the Loan Agreement with the GESP is dated September 2010.

had been signed—a US$2.5 million consultant contract to assist in the implementation of both the APL and the projects. Until the MTR, the implementation focused on two other major contracts—the development of a GIS for monitoring the river basins' land use and a study to monitor the quality of the reservoirs, which was implemented. With regard to the GIS, after significant effort involving many stakeholders, the idea was dropped because no institution could host the system and ensure its operation. Two other studies went through the selection process, the consulting firms were hired, and the studies developed, requiring extending the project closing date. The three studies are extremely relevant tools for the water resources policies in the MRSP, but they also illustrate the difficulties the project faced to implement the activities.

29. **Large number of activities.** The GESP Project included a large number of activities, mostly studies, addressing complex issues from multiple sectors. In the project description, these activities were described in very general terms. Confirming the merit of each listed activity required long and complex technical efforts, which was not verified during the project preparation. The activities developed were those in close harmony with the SSRH, the GESP Project executing agency, technical experience, and institutional expertise. The studies developed constitute the continuance of the SSRH's contribution to water resources policies implementation and improvements. The other several activities included in the project, which were not implemented, addressed relevant issues associated with the water resources agenda but were not intrinsically connected with the SSRH institutional expertise as the studies that were implemented.

30. **Challenging works.** The SSRH tried to implement some works that were locally relevant. These included a sanitary landfill and a sanitation system in a small community. Despite the efforts made, the SSRH could not overcome difficulties such as updating agreements between governments, obtaining the required licenses, and issues blocking the procurement processes, among others.

31. **Constraints from fiscal crisis.** The GESP's overall budget suffered severe constraints as a result of the fiscal crisis over the recent years. This affected the project implementation, given that the loan proceeds financed only 25 percent of the project expenditures. Moreover, the GESP declared that the development of consultant work was not a priority under the fiscal restrictions' context. These constraints contributed to the low level of loan disbursement.

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

32. **M&E design.** The M&E was designed to reflect (a) the APL objectives through the PDO-level outcome indicators and (b) the participant projects outputs through the intermediate outcome indicators. Thus, each participant project assumed its share of the intermediate outcome indicators and adjusted it by reducing it to the indicators that reflected the activities they selected to implement. The PDO-level outcome indicators did not reflect any of the projects individually; they were designed to reflect the outcomes to be achieved through an integrated and coordinated implementation of several project activities. In consequence, none of participant projects associated the PDO-level outcome indicators to their specific project. The GESP Project was structured to report on the PDO-level outcome indicator. However, the Project Coordination Unit understood that because only two projects were being implemented, the PDO-level outcome indicators could not be pursued and, subsequently, could not be monitored. Nevertheless, the

complex, long, and costly studies and surveys required to report on the PDO-level indicators were indicated as too demanding monitoring tools.

33. **M&E implementation.** As the participant projects assumed their share of the M&E and simplified it to reflect the activities they selected to implement, the M&E was kept updated. However, it was not used effectively as a tool to guide implementation but rather as a tool to consolidate the project achieved targets. Also, the intermediate outcome indicators reflected the participant projects' outputs and did not require the undertaking of studies and surveys.

34. **M&E utilization.** The simplified M&E version was utilized to register the project-achieved targets and few indicators will continue to be monitored by the client.

2.4 Safeguards and Fiduciary Compliance

35. The APL received a World Bank Environmental Category A rating and triggered the following safeguards: OP 4.01 (Environmental Assessment), OP 4.04 (Natural Habitats), OP 4.11 (Physical Cultural Resources), OP 4.12 (Involuntary Resettlement), and OP 4.37 (Safety of Dams). The APL environmental category and safeguards triggered applied to all participating projects. The GESP Project mostly financed studies and few investments; both were reviewed and monitored by the World Bank safeguards team. The World Bank safeguards team members participated in the APL preparation and implementation joining all the preparation and supervision missions. Moreover, the same safeguards specialists provided support to most of the project preparation phase and to the entire implementation phase.

Safeguards Compliance under the GESP Project

36. The GESP Project implemented a park and the construction of a building where a Civic Center operates, 100 percent financed from Government's -own funds. The World Bank safeguards specialists reviewed the technical and environmental studies prepared for both investments and found them in compliance with the World Bank's safeguards policies. Also, the World Bank safeguards specialists visited the sites and found that the investments met the safeguards requirements.

Financial Management

37. **Loan 76610 - GESP.** All financial management (FM) supervision missions were rated Satisfactory or Moderately Satisfactory. Initially, there were delays in adjusting the state's administrative system to generate consolidated interim financial reports (IFRs) at the program and project level, and there was also a need to strengthen the internal control arrangements further. These aspects improved during implementation. The Project Implementation Unit and the *Gerenciadora's* experience were also important factors to ensure that acceptable FM arrangements prevailed throughout project implementation. Agreed action plans were generally implemented, but were, however, not sufficient to improve the disbursement rate, especially during the last years of the project because of the devaluation of the *real* since CY15 and fiscal constraints imposed by the federal and state governments. The FM risk rating was considered Low throughout the project's life. Audit reports were generally received on time (with the exception of the 2014 report). All audit reports expressed unqualified/unmodified audit opinions. All IFRs received during the life

of the project were considered acceptable and were received on a timely basis as well. There were no instances of ineligible expenditures identified.

Procurement

38. During the project execution, in terms of procurement, the GESP intercalated several phases; sometimes the processes were well done and quick, sometimes very confusing and slow. Clearly, the technical and political aspects influenced the processes, the Procurement Plan was changed several times, and often the quality of the terms of reference (ToRs) was questionable. These issues with the ToRs had a direct impact on the length of the processes because the technical discussions to improve the ToRs were long and time-consuming. The resistance of the GESP team to use the standardized World Bank procurement documents was another issue to be overcome; sometimes the same resistance appeared again in different processes. The limited experience of the GESP's team with the World Bank's rules was an issue at the beginning, but after sometime, the issues were more related to the administrative aspects and quality of technical documents. Despite these problems from the procurement point of view, the GESP's work was acceptable, without any major issue such as misprocurement.

2.5 Post-completion Operation/Next Phase

39. Under the GESP Project, two parks were built. The operation of these parks fall under the responsibility of the PMSP. The GESP and the PMSP signed an agreement concerning the parks' operation and maintenance responsibilities.

3. Assessment of Outcomes

3.1 Relevance of Objectives, Design and Implementation (Pre- and Post-restructuring)

Relevance of Objectives **Rating: Substantial**

40. The objectives of the Program and participating Projects were consistent with the development priorities and circumstances at the time of project preparation and implementation. The FY08-FY11 Country Partnership Strategy (CPS), dated May 1, 2008, laid out a program of continued support to Brazil through four pillars of engagement: equity, sustainability, competitiveness, and sound macroeconomic management. The CPS asserted that Brazil continued to falter in the area of environmental sustainability, and that water scarcity and environmental degradation were urgent problems hindering the country's sustainable growth. The FY12-FY15 CPS (CPS 89496)[41], valid by the project closure, was also structured around four strategic objectives: increase the efficiency of public and private investments, improve quality and expand provision of public services for low-income households, promote regional economic development through strategic investments and policies, and improve sustainable natural resources management and climate resilience. The third and fourth strategic objectives were highly relevant to the Program and participating Projects' rational and objectives. The results areas under these strategic objectives were also closely aligned with the Program; namely, improved policy coordination at

[41] In 2016, the World Bank launched the Brazil Systematic Country Diagnostic (SCD) to inform the preparation of a new Country Partnership Strategy.

territorial level, expanded access to improved basic sanitation, integrated water resources management, and improved environmental management.

41. In addition, the project objective's relevance to the current situation of the country still remains high. It is consistent with Brazil's Country Partnership Framework (CPF)[42]for the period of FY18–FY23. The CPF presents three areas of priorities, being number 3 the one that focus on inclusive and sustainable development with the objective, among others, to increase urban resilience and provide more sustainable and inclusive urban services. Promoting the improvement of the quality of urban infrastructure, improving the efficiency of service delivery, and building resilience of populations against the variability of water supply are among the key activities proposed. In conclusion, the project's objectives are still closely aligned with the CPS in place by the project closure and the CPF valid for the coming years.

42. The protection of the MRSP headwater continues to be a high priority for the state and municipal governments as well, as confirmed during a stakeholder workshop carried out as part of the ICR preparation. Working in complex urban upgrading environment is seen by municipal government as a key role that the Bank should continue to support. Moreover, the implementation and monitoring of the action plan ensuring water security in the MRSP continues as a top priority for state and municipal governments as demonstrated by several comprehensive plans and measures.

Relevance of Design and Implementation **Rating: Modest**

43. Some of the weakness of the project design included the following: (a) it included activities to complement other activities under a different loan, thus establishing interdependence between two loans taken by two different, autonomous governments, whose priorities were not always aligned; (b) it included a large number of activities that were 100 percent counterpart- financed, where implementation depended on executing agencies other than the main executing agency under the project, which were not implemented given their extreme complexity and/or their relevance became questionable during implementation; and (c) most important, the projects' PDO and components/activities were inconsistent. The projects' implementation focused on producing studies that are key tools for implementing the water resources policies in the MRSP. This was an appropriate focus; however, it represents just a fraction of the activities included in the project. During the 2015 restructuring, most of the excess, idle activities were removed, as appropriate.

3.2 Achievement of Project Development Objectives

44. According to the Loan Agreement dated September 27, 2009, and amended on September 30, 2015, the GESP Project committed to achieve the three objectives under the APL PDO:

(a) To protect and maintain the quality and reliability of MRSP's water resources and potable water sources

(b) To improve the quality of life of the poor populations residing in key targeted urban river basins

[42] CPF report number 113259-BR for FY2018-2023 was approved by the Board in June 2017.

(c) To strengthen institutional capacity and improve metropolitan management and coordination in MRSP in water resources management, water pollution control, land use policy, and basic service provision

45. The following assessment breaks the PDO down into its three objectives and aligns available evidence for achievement on the Results Framework and other information. Although the project's PDO remained unchanged over the life of the project, most of the PDO and intermediate outcome indicators were amended during the September 30, 2015 restructuring. For that reason, the APL's efficacy is judged related to both the pre- and post-restructuring PDO indicators. In addition, as there were three parts to the PDO, efficacy is rated separately for each part, pre- and post-restructuring.

Pre-Restructuring

Objective 1: To protect and maintain the quality and reliability of MRSP's water resources and potable water source **Rating: Negligible**

46. Although the GESP Project was formally committed to achieve Objective 1 of the PDO, the GESP Project did not include activities that would have a direct impact on the outcome indicators associated with Objective 1. The GESP Project did include the provision of resettlement housing units, which was an activity that the PMSBC Project demanded to undertake the slum-upgrading intervention planned under that project. The slum-upgrading intervention would have had some impact on some of the outcome indicators associated with Objective 1. However, the slum-upgrading intervention was not implemented and the need of resettlement housing units dropped.

Objective 2: To improve the quality of life of the poor populations residing in key targeted urban river basins in MRSP **Rating: Negligible**

47. The provision of resettlement housing units under the GESP Project would have contributed to the PMSBC Project to implement a planned slum-upgrading intervention. However, the PMSBC Project closed without any activity implemented. Thus, the contribution from the GESP Project to achieve the outcome indicators associated with Objective 2 was revised. In the September 30, 2015 restructuring, almost all activities associated with Objective 2 were dropped. Regarding Indicator 5 under Objective 2 (Increase in number of leisure and green areas (parks, squares, and so on [hectares]), the GESP Project built two parks/green areas: the 9 July Park and the "Caminho Atlantica" Park. The target set for the project closing (September 30, 2015) was 170 ha. By the targeted date, the achieved target was 55 ha. Thus, less than 30 percent of the target was achieved. The indicator was revised in the September 30, 2015 restructuring.

Objective 3: To strengthen institutional capacity and improve metropolitan management and coordination in MRSP in water resources management, water pollution control, land-use policy, and basic service provision **Rating: Modest**

48. Under the GESP Project, the revision of the Guarapiranga Plan for Environmental Development and Protection (PDPA) was initiated. The target set (one PDPA revised) was partially achieved because the study had been recently initiated by the targeted date (September

30, 2015). However, as the project closing date was extended to March 30, 2017, the probability of conclusion of the PDPA's revision by then was strong. Also, the PDPA's preparation was initiated for four sub-basins. The target set (four PDPAs prepared) was partially achieved because the study preparation had been initiated by the targeted date (September 30, 2015). However, no draft of specific laws was prepared. Also, no International Comparative Study on Metropolitan Governance was prepared. The Discussion Forum on Metropolitan Governance was not held. Also, the study on demand profile and scenarios was concluded and no demand-driven water policy for the MRSP was prepared. The related indicators were dropped in the September 30, 2015 restructuring.

Post -Restructuring

Objective 1: To protect and maintain the quality and reliability of MRSP's water resources and potable water sources **Rating: Negligible**

49. The GESP Project financed the preparation of the three studies for monitoring the water quality of key water sub-basins, achieving the target set for Outcome Indicator 1 under Objective 1. The studies are (a) Nonpoint Source Water Pollution Study prepared for the Alto Tietê water production system (reservoirs: Taiaçupeba, Jundiaí, Biritiba, Ponte Nova, and Paraitinga); (b) Monitoring the Water Quality - Guarapiranga reservoir; and (c) Monitoring the Water Quality - Billings reservoir. These studies are relevant tools for the Water Resources Policy implementation and improvement. However, the indicator reflects an output from the GESP Project. It does not reflect achievements toward the quality of the reservoirs. With regard to Outcome Indicators 1 and 2 under Objective 1, although the GESP Project was formally committed to achieving these indicators, according to the Loan Agreement dated September 27, 2010, and amended on September 30, 2015, the GESP Project did not include activities associated with these indicators.

Objective 2: To improve the quality of life of the poor populations residing in key targeted urban river basins in MRSP **Rating: Substantial**

50. The GESP Project financed the construction of 55 ha of parks and free public areas, closely achieving the target of 60 ha established in the September 30, 2015 restructuring. The target was 91 percent achieved. Also, it has been estimated that 430,000 people benefited from the activities the GESP Project implemented. Thus, 99 percent of the target (431,000 people) has been achieved.

Objective 3: To strengthen institutional capacity and improve metropolitan management and coordination in MRSP in water resources management, water pollution control, land-use policy, and basic service provision **Rating: Modest**

51. The GESP Project financed the development of one of the two studies that were the outcome indicators under Objective 3. The two studies were the PDPAs prepared for four sub-basins and the development of an information system. The PDPAs were prepared, while the information system was not, given that no institutional solution was found for the system operation. Fifty percent of the target was achieved. The study associated with Outcome Indicator 2 under Objective 3 was not prepared.

3.3 Efficiency Rating: Modest

52. No specific economic analysis for the GESP Project was prepared at appraisal. Moreover, the economic analysis prepared for the APL as a whole does not include actions pertaining to the GESP Project. GESP main fields of intervention were on capacity building (including raising awareness) and environmental protection. At Project completion most significant outcomes included environmental studies for planning (PDPAs) and pollution measurement and control; the construction of two parks; the construction of an Integrated Citizenship Center; and the purchase of equipment for solid waste collection.

53. Considering the environmental aspect, the more emblematic measures carried out were likely the creation of the 9 July Park designs and the works executed (54 ha located in the Guarapiranga left bank) and the 'Caminho Atlântica.' (1ha). In terms of impacts, the park has both an environmental and a social dimension. From an environmental point of view, the park is functioning like a 'green belt' protecting the reservoir from direct discharge and avoiding illegal settlements along the banks. At the same time, the park is providing leisure to approximately 20,000 people per year.

54. In terms of capacity building, improving knowledge, and raising awareness, the GESP has initiated several actions within the program such as the creation of the Integrated Citizenship Center, study, and service to monitor the environmental quality of the Guarapiranga and Billings reservoirs. In terms of impacts, the Integrated Citizenship Center is key as it provides quality and quick services to the approximately 350,000 low-income people living in Guarapiranga river basin's right bank.

55. The benefits of the parks were calculated as savings in travel for the neighboring beneficiary communities that seek leisure. These benefits are accounted for in the overall economic analysis of the Program, which is presented in section 3.3 – Efficiency-, and in annex 3 -Economic and Financial Analysis for the Mananciais Program.

3.4 Justification of Overall Outcome Rating Rating: Unsatisfactory

56. The overall outcome rating for the project is Unsatisfactory, taking into account the split evaluation given in table A.1.

Table A.1. Split Evaluation

	Against Original PDO-Level Outcome Indicators	Against Revised PDO-Level Outcome Indicators (September 30, 2015 restructuring)	Overall
Relevance			—
Relevance of Objectives	Substantial		—
Relevance of Design and Implementation	Modest		—
Efficacy			—

	Against Original PDO-Level Outcome Indicators	Against Revised PDO-Level Outcome Indicators (September 30, 2015 restructuring)	Overall
PDO 1: To protect and maintain the quality and reliability of MRSP water resources and potable water sources	Negligible	Negligible	—
PDO 2: To improve the quality of life of the poor populations residing in key targeted urban river basins in MRSP	Negligible	Substantial	—
PDO 3: To strengthen institutional capacity and improve management and coordination in MRSP in water resources management, water pollution control, land-use policy, and basic service provision	Modest	Modest	—
Efficiency	Modest		—
Rating	Highly Unsatisfactory	Moderately Unsatisfactory	**Unsatisfactory**
Rating value	1.0	3.0	—
Weight (% loan disbursed before/after PDO change)	46.2	53.7	—
Weighted value	0.46	1.61	**2.07**
Final rating (rounded)	—	—	**2**

3.5 Overarching Themes, Other Outcomes and Impacts

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

57. The parks associated with the GESP Project contribute to protect water bodies and provide leisure alternatives to the population living in the nearby neighborhoods. The population living in these neighborhoods is predominantly low income. The Citizenship Center associated with the GESP Project also provides services primarily to low-income population living in the surrounding areas. It contributes to facilitate access to personal documentation needed for any purpose, including access to job opportunities.

(b) Institutional Change/Strengthening

58. The GESP Project has strengthened the SSRH role in supporting the implementation and improvement of the water resources policies in the MRSP. This has been achieved through the development of studies on the Guarapiranga and Billings reservoirs, quality of water, and the PDPAs for several sub-basins.

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

Not applicable.

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

59. The summary and the full text of the Stakeholder Workshop are included in the APL ICR in section 3.6 and in annex 6, respectively.

4. Assessment of Risk to Development Outcome

Rating: Moderate

60. The risk to development outcomes is Moderate, based on risks related to each area of project intervention. The risks to the project outcomes related to institutional strengthening are considered to be Moderate. The studies developed supporting the implementation and strengthening of the water resource policies in the MRSP are part of core activities undertaken by the SSRH. The risks to the project outcomes related to creation of two parks are considered to be Moderate. The two parks, which offer environmental improvements and leisure opportunities, are maintained by the PMSP following the signature of an agreement signed by both institutions.

5. Assessment of Bank and Borrower Performance

5.1 Bank Performance

(a) Bank Performance in Ensuring Quality at Entry **Rating: Unsatisfactory**

61. The APL was under preparation for seven years, from 2002 to 2009. The long preparation is basically explained by the thorough preparation of the studies supporting the APL rationale and scope, as well as the substantial effort made in bringing participants to the APL. A large number of participant projects/borrowers was necessary to achieve a critical mass of interventions compatible with the APL rationale and approach. By mid-preparation period, there were a dozen borrowers willing to join the APL, but gradually this number reduced significantly. The PMSP participation did not materialize as well. The APL was approved and included four potential participant projects, of which only two came to completion. Despite the significant changes in the number of participants, the APL was not adjusted to a context including fewer participants. Its PDO, Results Framework, and other key elements were kept in line with a massive arrangement, reflecting actions and actors broader than those that indeed participated in the operation. The uncertainty regarding possible participation of additional actors probably led to avoidance of adjusting the APL to the few confirmed borrowers. Additional borrowers depended on multiple and ever changing variables such as borrowing capacity, willingness to borrow, and the World Bank lending priorities. In addition, the APL structure allowed borrowers to join the operation after implementation started, increasing the uncertainty on the final size of the operation. However, the operation size did not expand, it shrank. As a result, the APL PDO and the design of participant projects were not consistent. Although the APL and participant projects share the same PDO, this could not be achieved through the implementation of the activities in participant projects.

62. Other aspects that substantially affected quality of entry include the following:

(a) None of the activities included in the participant projects benefited from any preparation to achieve some level of readiness for implementation. As a result, the information on the projects' activities was limited to the content in the activities headings. During project implementation, the activity feasibility would be verified. Most of those activities in the participant projects were not addressed during the implementation. Counterpart representatives explained that some were extremely

ambitious, others did not properly fall under the institution mandate and that the feasibility could not be confirmed for some, although the technical effort was made.

(b) To allow flexibility during implementation, the activity description in the projects was kept in very general terms. This choice might have been appropriate given the long life of the APL and its projects, during which many political, economic, and institutional changes occurred. However, the projects were left without a clear direction to achieving the APL and project objectives. Anyway, this flexibility allowed the borrowers to implement the activities that were aligned with their priorities. For these reasons, the World Bank's performance in ensuring quality at entry has been rated Unsatisfactory.

(b) Quality of Supervision **Rating: Moderately Unsatisfactory**

63. The World Bank's supervision of the project is rated Moderately Unsatisfactory. The World Bank team provided strong supervision in many respects, including consistently providing overall guidance with respect to project implementation, responding on time to questions from counterparts, and identifying constraints and weaknesses and designing solutions. During the seven-year implementation period, there was strong continuity among staff members and team leaders, with both participating over many years. There was continuity regarding key aspects of implementation support, particularly in fiduciary areas and safeguards.

64. Despite these strengths, however, the World Bank team did not identify inconsistencies between the PDO, project activities, and the M&E framework and, related to that, did not focus on the ultimate development impact of the project as part of project supervision. Similarly, project supervisory reporting focused primarily on implementation progress, rather than on development impact. World Bank missions, while undertaken on a semiannual basis, focused mostly on contract implementation. The restructuring of project outcome and output indicators occurred at too late a stage—on the original closing day, after five years of implementation. Nevertheless, the restructuring demonstrated the World Bank's eagerness to support the clients in responding to the critical water crisis the MRSP was facing. Also, it demonstrated the World Bank team's readiness to timely and efficiently process the restructuring.

(c) Justification of Rating for Overall Bank Performance **Rating: Unsatisfactory**

65. The overall assessment of the World Bank's performance has been rated Unsatisfactory, reflecting the ratings for the World Bank performance in ensuring quality at entry and for the quality of supervision.

5.2 Borrower Performance

(a) Government Performance **Rating: Moderately Unsatisfactory**

66. The borrower, the GESP, was represented in the project by three executing agencies: the SSRH, SMA, and CDHU. The first had the leading role in the project, while the other two played

specific roles. The US$4 million loan was initially shared by the SSRH (US$3 million) and the SMA (US$1 million), however, the latter opted for not accessing the available loan. In the 2015 restructuring, the CDHU dropped out of the project.

67. The SSRH properly performed the project implementation tasks. The counterpart's funds were made available as planned and ensured juridical and technical actions needed for properly carrying out FM and procurement. For decision making regarding the entity's priorities, the SSRH adopted a selective approach by focusing attention exclusively on the activities included in the project that were clearly consistent with its technical priorities. As a result, the technical and financial resources available were focused on the development of the technical tools that support the implementation and improvement of the water resources policies in the MRSP. It is possible that when the project was prepared, the institutional vision was different or the broad institutional ambiance seemed more favorable to bold institutional actions. That said, the project shortcomings may mostly reflect an institutional pragmatism consistent with the political and fiscal constraints that affected most of the project implementation.

(b) Implementing Agency or Agencies Performance **Rating: Moderately Unsatisfactory**

68. The implementing agency—the UGP—was supported by a consulting company holding expertise in carrying out technical, financial, and procurements tasks in World Bank-financed projects. The quality of tasks performed was high and timely. Its contribution to the project was outstanding, given the limited number of staff allocated to the SSRH.

(c) Justification of Rating for Overall Borrower Performance **Rating: Moderately Unsatisfactory**

69. The overall performance of the borrower and the implementing agency is rated Moderately Unsatisfactory, taking into account the implementation strengths discussed earlier and compliance with safeguard and fiduciary controls.

6. Lessons Learned

70. **Successful studies but difficult to implement.** Although the project was successful in financing the development of key studies and data that are relevant tools supporting improvements to the water resources policies in the MRSP, the efforts made to ensure that the entities involved would implement and update the tools were less successful.

71. **Avoid broad focus.** The dispersion of activities and lack of focus seemed a recurrent problem faced by operations like the APL that had too broad a focus. Operations of such nature are also deeply affected by the difficulties in ensuring an integrated and coordinated intergovernmental action to support the operation, given the large number of actors involved.

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

(a) Borrower/implementing agencies

72. SSRH has sent minor suggestions for revision to the draft ICR which have been incorporated in the document. A letter was also received from SSRH where comments were made to the overall document and program results (see Annex 7 of the Program ICR for full letter translated to English).

(b) Cofinanciers

Not applicable.

(c) Other partners and stakeholders

Not applicable.

Annex 1. GESP Project Costs and Financing

(a) Project Cost by Component (in US$, millions equivalent)

Components	Appraisal Estimate (US$, millions) (a) [43]	Disbursed by September 30, 2015 Restructuring (US$, millions) (b)	September 30, 2015 Restructuring (US$, millions) [a] (c)	Percentage of Appraisal (d/a)	Actual (US$, millions) (August 31, 2017) (d)
1. Institutional Capacity Building	**20.81**	**6.50**	**14.37**	**42**	**8.78**
GESP	17.01	5.57	10.89	—	6.64
IBRD	3.80	0.93	3.48	—	2.14
2. Urban Upgrading	**30.22**	—	—	—	—
GESP	30.22	—	—	—	—
IBRD	—	—	—	—	—
3. Environmental Recovery and Protection	**5.24**	**4.06**	**7.87**	**81**	**4.26**
GESP	5.18	4.06	7.87	—	4.26
IBRD	0.06	0.00	0.00	—	0.00
4. Integrated Water Supply and Sanitation	**4.18**	**4.70**	**6.25**	**113**	**4.71**
GESP	4.04	4.70	5.73	—	4.71
IBRD	0.14	0.00	0.52	—	—
Unallocated	**0.04**	**0.00**	**1.40**	**—**	—
Front-end fee	**0.01**	**0.01**	**0.01**	**—**	**0.01**
Total Project Costs	**60.50**	**15.27**	**29.90**	**29**	**17.76**
GESP	56.50	14.33	25.90	—	15.61
IBRD	4.00	0.94	4.00	—	2.15

(b) Financing

Source of Funds	Appraisal Estimate (US$, millions)	September 30, 2015 Restructuring (US$, millions)	Percentage of Appraisal	Actual (US$, millions) (August 31, 2017)
Borrower	56.50	25.90	28	15.61
IBRD	4.00	4.00	54	2.15

[43] PAD Report No. 47493-BR – page 113.

Annex 2. Outputs by Component

(a) GESP Project

GESP - *From Loan Signing (September 27, 2010) to Restructuring (September 30, 2015)* Components, Subcomponents, and Activities[44]	Executive Agencies [45]	Financing		Costs (US$, millions)[46]	Output
		CP 100%	Loan + CP		
Component 1: Institutional Capacity Building					
Subcomponent 1.1: Integrated Land-Use and Water Resources Management					
(a)(i) Carrying out of studies on, among others water demand profiles, scenarios, policies, and strategies	—	—	—	—	Not implemented
(a)(ii) Evaluation and control of point and nonpoint source water pollution	SSRH	—	X	0.87	Nonpoint Source Water Pollution Study prepared for the Alto Tietê water production systems (reservoirs: Taiaçupeba, Jundiaí, Biritiba, Ponte Nova, and Paraitinga)
(a)(iii) Preparation of engineering designs for investments to be made or financed by the borrower and/or its agencies for the protection, recovery, and sustainable development of the sub-basins in the program area	SSRH	—	X	0.12	Marsilac District Sewerage System Concept Study revised and engineering designs developed
(b) Provision of technical assistance to strengthen the borrower's WSS and WRM policies and strategies, with emphasis on, among others, planning and financing mechanisms, as well as development, regulation, and enforcement activities regarding surface water and groundwater extraction/use, with focus on the particular challenges of these issues in the program area					
(c)(i) Preparation, updating, and implementation of environmental development and protection plans (PDPAs) for the sub-basins and of their corresponding land use laws	SSRH	—	X	2.05	PDPAs prepared and/or revised for the sub-basins: Alto Juqueri, Alto Juquiá, Guaió, Cotia, Jaguari, Billings, Guarapiranga, Alto-Tietê-Cabeceiras, Cabuçu and Tanque Grande, Capivari-Monos. Conclusion date: August 30, 2017.
(c)(2) Development and implementation of an integrated land use supervision and control system	SSRH	—	X	0.17	Technical specifications for the integrated information system developed

[44] Components, subcomponents, and activities as stated in the Loan Agreement and the Amendment to the Loan Agreement (September 2015 restructuring).

[45] Secretaria de Saneamento e Energia (SSE) (updated to the SSRH in the September 2015 restructuring), SMA, and CDHU.

[46] Estimate financial amount (counterpart and loan) executed under the GESP Project.

GESP - *From Loan Signing (September 27, 2010) to Restructuring (September 30, 2015)* Components, Subcomponents, and Activities[44]		Executive Agencies [45]	Financing		Costs (US$, millions)[46]	Output
			CP 100%	Loan + CP		
for the program executing agencies and other stakeholders						
(d) Provision of technical assistance and capacity building to the program executing agencies, the Alto Tietê River Basin Committee, its subcommittees, and associated agency, municipalities and other stakeholders, on issues related to, among others,	(i) WRM	—	—	—	—	Not implemented
	(ii) Master and land-use planning and legislation	—	—	—	—	Not implemented
	(iii) Environmental protection development plans	—	—	—	—	Not implemented
	(iv) Service delivery	—	—	—	—	Not implemented
	(v) Implementation, operation, integration, and updating of management and planning instruments such as GIS	—	—	—	—	Not implemented
(e) Development of local economic development plans, including house and land market analyses, for promoting appropriate economic activities and land-use patterns with a view to generating income and jobs that focus on environmental protection in the program area		—	—	—	—	Not implemented
(f) Development of strategies for metropolitan governance and water management in the MRSP through, among others,	(i) Studies, analyses, seminars, study tours, and publications	SSRH	—	—	n.a.	International Seminar 'Each Water Drop Counts - Integrated Urban Water Management' carried out. Planning for WRM in the MRSP discussed.
	(ii) Setting up of a forum for discussion of related issues with program executing agencies and other stakeholders	SSRH	—	—	n.a.	Workshop carried out on the 'Effectiveness of the Headwater Protection and Recovery Legislation.' Planning for WRM in the MRSP discussed.
Subcomponent 1.2: Environmental and Water Quality Monitoring						
(a) Preparation and implementation of environmental monitoring, evaluation, and supervision plans and systems for the program's activities,		SSRH	—	X	0.90	Study and service to monitor the environmental quality of Guarapiranga and Billings reservoirs

GESP - *From Loan Signing (September 27, 2010) to Restructuring (September 30, 2015)* Components, Subcomponents, and Activities[44]	Executive Agencies [45]	Financing		Costs (US$, millions)[46]	Output
		CP 100%	Loan + CP		
and provision of related technical assistance and capacity building, in a coordinated manner with the program executing agencies and the PMSP					(including tributaries) carried out
	SSRH	X	—	0.39	Hydrology study of rivers (under the influence of the Billings reservoir) in the Baixada Santista carried out
Subcomponent 1.3: Environmental Education and Social Outreach					
(a) Carrying out of capacity building activities for environmental and other agents	—	—	—	—	Not implemented
(b) Diagnoses, preparation of programs and materials, and implementation of environmental and sanitary awareness raising programs and social inclusion program for different target groups	—	—	—	—	Not implemented
(c) Carrying out of social inclusion subprojects and environmental and sanitary education subprojects	—	—	—	—	Not implemented
(d)(i) Provision of support to civil society initiatives related to the objectives of the program	—	—	—	—	Not implemented
(d)(ii) Construction and equipping of an Integrated Citizenship Center	SSRH	X	—	2.41	Integrated Citizenship Center built. It provides quick and quality services to the approximately 350,000 low-income people living in Guarapiranga river basin right bank.
(d)(iii) Construction, rehabilitation, and equipping of environmental education centers in selected municipalities	—	—	—	—	Not implemented
(e) M&E of the social and environmental sustainability of all construction carried out under the program	—	—	—	—	Not implemented
Subcomponent 1.4: Program Management, Monitoring, Evaluation and Dissemination					
(a) Development of an MIS for the M&E and control of the program's implementation and training of the program executing agencies' and PMSP's staff in its use	—	—	—	—	Not implemented
(b) Carrying out of learning and dissemination activities, including the organization of national and international seminars and workshops to exchange experiences on the key issues addressed under the program	SSRH	—	X	0.03	Technical specifications for the workshop assessment of the effectiveness of the Headwater Protection and Recovery Legislation carried out

GESP - *From Loan Signing (September 27, 2010) to Restructuring (September 30, 2015)* Components, Subcomponents, and Activities[44]	Executive Agencies [45]	Financing		Costs (US$, millions)[46]	Output
		CP 100%	Loan + CP		
(c) Development of integrated communication strategies for the program to be used by all program executing agencies.	—	—	—	—	Not implemented
(d) Provision of technical assistance and equipment to improve the borrower's capacity, and that of the other program executing agencies, for overall program and project management and implementation including for the UGP and the UGLs	SSRH	—	X	2.50	Support to program and projects implementation management provided. Concluded: September 5, 2017
(e) Evaluation and dissemination of the results and impact of the project and the program, including the carrying out of ex ante and ex post beneficiary surveys, and the definition and review of baseline, midterm, and program-end monitoring indicators	—	—	—	—	Not implemented
(f) Carrying out of the financial auditing of the project	SSRH	—	X	0.05	Financial audits carried out
Component 2: Urban Upgrading					
(a) Urban renewal and urban upgrading in slums and irregular settlements in selected municipalities, including social services, construction of housing units for resettlement, housing improvements, and recovery of degraded areas	—	—	—	—	Not implemented
Component 3: Environmental Protection and Recovery					
(a) Protection and improvement of vegetation and other environmental characteristics of the sub-basin headwater areas with a view to improving the reservoirs, tributaries, creeks, and other physical water bodies' operational conditions and sustainability in the program area	—	—	—	—	Not implemented
(b) Creation of public gardens and squares and recovery of degraded areas, including the undertaking of vegetation and slope stability action in the program area	SSRH	X	—	2.74	Nove de Julho Park designs and works executed. Located in the Guarapiranga left bank, this 54 ha park was conceived to protect the reservoir while also providing leisure to approximately 20,000 people per year.
	SSRH	X	—	1.52	'Caminho Atlântica' Park designs and works executed

GESP - *From Loan Signing (September 27, 2010) to Restructuring (September 30, 2015)* Components, Subcomponents, and Activities[44]	Executive Agencies [45]	Financing		Costs (US$, millions)[46]	Output
		CP 100%	Loan + CP		
Component 4: Integrated Water Supply and Sanitation					
(a) Rehabilitation of the dumpsites and construction of a sanitary landfill in the Municipality of Embu-Guaçu, assessment of the operational capacity of the landfills located in the Guarapiranga sub-basin, and studies and diagnosis of solid waste illegal disposal and alternative approaches to solid waste management in the program area	—	—	—	—	Not implemented
(b) Acquisition and maintenance of urban cleansing equipment for assisting the collection of solid wastes in selected municipalities	SSRH	X	—	4.70	Urban cleansing equipment purchased and provided to 11 municipalities (Embu-Guaçu, Rio Grande da Serra, Ribeirão Pires, São Lourenço da Serra, Salesópolis, Mairiporã, Itapecerica da Serra, Biritiba Mirim, Embu das Artes, Cotia, and Juquitiba) in the MRSP, aiming at improving solid waste collection and the protection of water bodies

(b) Outputs by Components: GESP - from Restructuring (September 2015) to Extended Closing Date (March 2017)

GESP - *from Restructuring (September 2015) to Extended Closing Date (March 2017)* Component, Subcomponents, and Activities[47]	Executive Agencies [48]	Financing		Costs (US$, millions) [49]	Output
		CP 100 %	Loan + CP		
Component 1: Institutional Capacity Building					
Subcomponent 1.1: Integrated Land-Use and Water Resources Management					
(a)(i) Carrying out of studies on, among others, water demand profiles, scenarios, policies and strategies	—	—	—	—	Not implemented
(a)(ii) Evaluation and control of point and nonpoint source water pollution	SSRH	—	X	0.87	Nonpoint Source Water Pollution Study prepared for the Alto Tietê water production systems (reservoirs: Taiaçupeba,

[47] Components, subcomponents, and activities as stated in the Loan Agreement and the Amendment to the Loan Agreement (Restructuring September 2015).
[48] SSE (updated to the SSRH by the September 2015 restructuring), SMA, and CDHU.
[49] Estimate financial amount (counterpart and loan) executed under the GESP Project.

GESP - *from Restructuring (September 2015) to Extended Closing Date (March 2017)* **Component, Subcomponents, and Activities**[47]		**Executive Agencies** [48]	**Financing**		**Costs (US$, millions)** [49]	**Output**
			CP 100 %	**Loan + CP**		
						Jundiaí, Biritiba, Ponte Nova, and Paraitinga)
(a)(iii) Preparation of engineering designs for investments for the protection, recovery, and sustainable development of the sub-basins in the program area		SSRH	—	X	0.12	Marsilac District Sewerage System Concept Study revised and engineering designs developed
(b)(i) Preparation, updating, and implementation of environmental development and protection plans (PDPAs) for the sub-basins and of their corresponding land-use laws		SSRH	—	X	2.05	PDPAs prepared or revised for the sub-basins: Alto Juqueri, Alto Juquiá, Guaió, Cotia, Jaguari, Billings, Guarapiranga, Alto-Tietê-Cabeceiras, Cabuçu and Tanque Grande, Capivari-Monos
(b)(ii) Development and implementation of an integrated land-use supervision and control system for the program executing agencies and other stakeholders		SSRH	—	X	0.17	Technical specifications for the integrated information system developed
(c) Development of strategies for metropolitan governance and water management in the MRSP through, among others,	(i) Studies, analyses, seminars, study tours, and publications	SSRH	—	X	0.17	International Seminar 'Each Water Drop Counts - Integrated Urban Water Management' carried out. WRM plan in the MRSP discussed
	(ii) Setting up of a forum for discussion of related issues with program executing agencies and other stakeholders	SSRH	—	—	n.a.	Workshop carried out on the 'Effectiveness of the Headwater Protection and Recovery Legislation.' WRM plan in the MRSP discussed.
Subcomponent 1.2: Environmental and Quality Monitoring						
Preparation and implementation of environmental monitoring, evaluation, and supervision plans and systems for the program's activities and provision of related technical assistance and capacity building, in a coordinated manner with the program executing agencies and the PMSP		SSRH	—	X	0.90	Monitoring of the environmental quality of Guarapiranga and Billings reservoirs (including tributaries) carried out
		SSRH	X	—	0.39	Hydrology study of rivers (under the influence of the Billings reservoir) in the Baixada Santista carried out
Subcomponent 1.3: Environmental Education and Social Outreach						
Construction of an Integrated Citizenship Center		SSRH	X	—	2.41	Integrated Citizenship Center built. It provides quick and quality services to the approximately 350,000 people living in Guarapiranga river basin right bank.
Subcomponent 1.4: Program Management, Monitoring, Evaluation and Dissemination						

GESP - *from Restructuring (September 2015) to Extended Closing Date (March 2017)* **Component, Subcomponents, and Activities**[47]	**Executive Agencies** [48]	**Financing**		**Costs (US$, millions)** [49]	**Output**
		CP 100 %	**Loan + CP**		
(a) Development of an MIS for the monitoring, evaluation, and control of the program's implementation, and training of the program executing agencies' and PMSP's staff in its use	—	—	—	—	Not implemented
(b) Carrying out of learning and dissemination activities, including the organization of national and international seminars and workshops to exchange experiences on the key issues addressed under the program	SSRH	—	X	0.03	Technical specifications for the workshop assessment of the effectiveness of the Headwater Protection and Recovery Legislation carried out
(c) Provision of technical assistance and equipment to improve the borrower's capacity and that of the other program executing agencies, for overall program and project management and implementation including for the UGP and the UGLs	SSRH	—	X	2.5	Program and projects implementation management support provided
(d) Carrying out of the financial auditing of the project	SSRH	—	X	0.05	Financial audits carried out
Component 3: Environmental Protection and Recovery					
(a) Creation of public gardens and squares, namely Parque Nove de Julho and Caminho Atlântica - phases I and II	SSRH	X	—	2.74	9 July Park designs and works executed. Located in the Guarapiranga left bank, this 54 ha park was conceived to protect the reservoir while also providing leisure to approximately 20,000 people per year.
	SSRH	X	—	1.52	'Caminho Atlântica' Park designs and works executed
Component 4: Integrated Water Supply and Sanitation					
(a) Construction of a sanitary landfill in the Municipality of Embu-Guaçu and preparation of the operational plan for the landfill	—	—	—	—	Not implemented
(b) Acquisition and maintenance of urban cleansing equipment for assisting the collection of solid wastes in selected municipalities	SSRH	X	—	4.70	Urban cleansing equipment purchased and provided to 11 municipalities (Embu-Guaçu, Rio Grande da Serra, Ribeirão Pires, São Lourenço da Serra, Salesópolis, Mairiporã, Itapecerica da Serra, Biritiba Mirim, Embu das Artes, Cotia, and Juquitiba) in the MRSP, aiming at improving solid waste collection and

GESP - *from Restructuring (September 2015) to Extended Closing Date (March 2017)* Component, Subcomponents, and Activities[47]	**Executive Agencies** [48]	**Financing**		**Costs (US$, millions)** [49]	**Output**
		CP 100 %	**Loan + CP**		
					the protection of water bodies
(c) Carrying out of the sewage system works for the Marsilac District	—	—	—	—	Not implemented under the project

Annex 3. Economic and Financial Analysis

1. A post-implementation Economic and Financial Analysis was carried out. Both the summary and full text are included in the respective sections of the ICR main text, which is the APL ICR section.

Appendix B. Companhia de Saneamento Básico de São Paulo (SABESP) Project

IBRD 7662-BR

BR APL Integrated Water Management in Metropolitan São Paulo - *Programa de Saneamento Ambiental dos Mananciais do Alto Tietê - Programa Mananciais* - (P006553)

BRAZIL
BR APL Integrated Water Management in Metropolitan São Paulo - SABESP PROJECT

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ABBREVIATIONS AND ACRONYMS

APL	Adaptable Program Lending
CPF	Country Partnership Framework
CPS	Country Partnership Strategy
GDP	Gross Domestic Product
GESP	São Paulo State Government
IAP	São Paulo State specific Raw Water Quality Index for Public Water Supply (*Indice de qualidade de Água bruta para fins de abastecimento Público*)
IBGE	Brazilian Institute of Geography and Statistic
ICR	Implementation Completion and Results Report
IFR	Interim Financial Report
IQA	National Water Quality Index (*Indice de Qualidade de Água*)
IQCU	Quality of Urban Life Index *(Indice de Qualidade de Vida Urbana*)
IVA	São Paulo State specific Water Quality Index for Protection of Aquatic Life (*Indice de Qualidade de Água para Proteção da Vida Aquática*).
M&E	Monitoring and Evaluation
PAD	Project Appraisal Document
PDO	Project Development Objective
PMSP	Municipal Government of São Paulo
RF	Resettlement Framework
SABESP	State Water and Sanitation Autonomous Utility
SCD	Systematic Country Diagnostic
UGL	Local Management Unit
WRM	Water Resources Management
WSS	Water Supply and Sanitation
WWTP	Wastewater Treatment Plant

Results Framework

SABESP PROJECT (LOAN # IBRD 7662-BR)

(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: (DROPPED)	(a.1.a) Pollution loads of relevant water bodies reduced (mg/l BOD) - Córrego Tanquinho/Guarapiranga			
Value (Quantitative or Qualitative)	329	25	Dropped in Restructuring	Data Not Available
Date	2007	09/30/2015	09/30/2015	09/30/2015
Comments (including % achievement)	Indicator was dropped in the September 2015 restructuring because it proved to capture too many externalities.			
Indicator 2: (DROPPED)	(a.1.b) Pollution loads of relevant water bodies reduced (mg/l BOD) - Rio das Pedras/Guarapiranga			
Value (Quantitative or Qualitative)	75	25	Dropped in Restructuring	Data Not Available
Date	2007	09/30/2015	09/30/2015	09/30/2015
Comments (including % achievement)	Indicator was dropped in the September 2015 restructuring because it proved to capture too many externalities.			
Indicator 3: (NEW)	(a.1) Volume of BOD polluting loads removed by the treatment plants and sewage system supported under the Project (tons/year)			
Value (Quantitative or Qualitative)	0		2,938	2,574
Date			09/30/2015	03/30/2017
Comments (including % achievement)	Achieved 88%. Included in the restructuring. The rationale proposed by the borrower to include this indicator was that the reduction of pollution loads, combined with the increase in production capacity intends to both assist São Paulo in protecting the quality of the water and increase the reliability of the water system.			
Indicator 4: (DROPPED)	(a.2) Water bodies' quality maintained, even with population increases (water quality measured using the following water various monitoring points at Billings and Guarapiranga) using IAP, IVA and IQA indicators			
Value (Quantitative or Qualitative)	Bad	Good/normal	Dropped in Restructuring	Data not available
Date	2007	09/30/2015	09/30/2015	09/30/2015
Comments (including % achievement)	Indicator was dropped in the September 2015 restructuring because it proved to capture too many externalities.			
Indicator 5 (NEW)	(a.2) Studies for monitoring the water quality of key water sources sub-basins (number)			

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Value (Quantitative or Qualitative)	0		3	3
Date	2007	06/30/2015	09/30/2015	03/30/2017
Comments (including % achievement)	Achieved 100%. Three studies were developed for monitoring the water quality of key water sources sub-basins.			
Indicator 6: (NEW)	(c.3) Increase in water production capacity due to project intervention (m^3/year)			
Value (Quantitative or Qualitative)	0		157,680,000	157,680,000
Date	2007	12/30/2015	09/30/2015	03/30/2017
Comments (including % achievement)	Achieved 100%. By the time this indicator was included in the September 2015 restructuring, the works had concluded. The activity was retroactively financed by the loan.			
Indicator 7 (DROPPED)	(b) Degree of satisfaction of the population based on:			
	(b.1) Physical, social and environmental changes due to the Program (opinion surveys)			
Value (Quantitative or Qualitative)	Low	High	Dropped by restructuring	Data not available
Date	2007	09/30/2015	09/30/2015	09/30/2015
Comments (including % achievement)	Dropped in the restructuring because it was mostly related to the PMSBC Project, which closed at the original closing date (September 30, 2015) without achieving to implement any activity.			
Indicator 8 (DROPPED)	(b) Degree of satisfaction of the population: (b.2) Real estate valuation (market and opinion surveys)			
Value (Quantitative or Qualitative)	BRL 211,00/m^2	BRL 306,00/m^2	Dropped by restructuring	Data not available
Date	2007	09/30/2015	09/30/2015	09/30/2015
Comments (including % achievement)	Dropped in the September 2015 restructuring. It mostly reflected the activities under the PMSBC project, which closed without implementing any activity.			
Indicator 9 (DROPPED)	(b) Degree of satisfaction of the population: (b.3.a) Proportion of dwellings with adequate WSS services			
Value (Quantitative or Qualitative)	55%	65%	Dropped by restructuring	Data not available
Date	2007	09/30/2015	09/30/2015	09/30/2015
Comments (including % achievement)	Dropped in the September 2015 restructuring. It mostly reflected the activities under the PMSBC project, which closed without implementing the activities.			
Indicator 10 (DROPPED)	(b) Degree of satisfaction of the population: (b.3.b) IQVU (Urban Quality of Life Index)			

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Value (Quantitative or Qualitative)	TBD	TBD	Dropped in restructuring	Data not available
Date	2007	—	09/30/2015	09/30/2015
Comments (including % achievement)	Dropped in September 2015 restructuring. IQVU index proved to be difficult to measure and included too many data with limited influence from the program.			
Indicator 12 (NEW)	(b.1) Direct project beneficiaries (number), of which female (percentage)			
Value (Quantitative or Qualitative)	0		1,686,000 (51% female)	2,093,250 (51% female)
Date			09/30/2015	03/30/2017
Comments (including % achievement)	Achieved 158%.			

(b) Intermediate Results Indicators

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Component 1: Institutional Capacity Building				
Indicator 9 (REVISED)	Hydrodynamic monitoring models of reservoirs developed			
Value (Quantitative or Qualitative)	0	5	4	4
Date	2007	2015	09/30/2015	03/30/2017
Comments (including % achievement)	Achieved 100%.			
Component 2: Urban Integration				
Indicator 16 (DROPPED)	(c) Pollution load removal plants implemented			
Value (Quantitative or Qualitative)	1	3 stations	Dropped in restructuring	2 stations
Date	2007	2015	09/30/2015	06/30/2014
Comments (including % achievement)	Indicator was dropped in the restructuring.			
Indicator 15 (REVISED)	Areas restored or re/afforested (ha)			
Value (Quantitative or Qualitative)	0	-	213 ha	100 ha
Date	6/30/2007		6/30/2007	03/30/2017

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Comments (including % achievement)	Achieved 47%. This indicator was revised during restructuring to a core indicator. Original: Degraded areas recovered.			
Component 4: (*Component 3 due to the Restructuring*) Integrated Water Supply and Sanitation				
Indicator 18 (DROPPED)	(a.1) Reduction of chemical products used for water treatment in ABV ETA (Kg/1000 m^3)			
Value (Quantitative or Qualitative)	94.5	92.0	Dropped in restructuring	Data not available
Date	2007	2015	09/30/2015	09/30/2015
Comments (including % achievement)	Indicator was dropped in the restructuring.			
Indicator 19 (DROPPED)	(a.2) Reduction of chemical products used for water treatment in Rio Grande ETA (kg/1000 m^3)			
Value (Quantitative or Qualitative)	86.5	79.0	Dropped in restructuring	Data not available
Date	2007	2015	09/30/2015	09/30/2015
Comments (including % achievement)	Indicator was dropped in the restructuring: Project priorities were directed to major sewage systems and later to drought emergency-related interventions.			
Indicator 20 (DROPPED)	(a.3) Mean reduction of chemical products used for water treatment in all ETAs with program support (kg/1000 m^3)			
Value (Quantitative or Qualitative)	68.8	60.0	Dropped in restructuring	Data not available
Date	2007	2015	09/30/2015	09/30/2015
Comments (including % achievement)	Indicator was dropped in the restructuring: Project priorities were directed to major sewage systems and later to drought emergency-related interventions.			
Indicator 21 (REVISED)	(b) People provided with access to “Improved Water Source” under the project (number)			
Value (Quantitative or Qualitative)	0	130,000	1,500,000	1,500,000
Date	2007	2015	09/30/2015	03/30/2017
Comments (including % achievement)	Achieved 100%. Original indicator (PAD): Households benefiting from the expansion of water supply systems. This indicator was improved to a core indicator.			
Indicator 22 (REVISED)	People provided with access to improved sanitation facilities			
Value (Quantitative or Qualitative)	0	20,110	50,700	33,250
Date	2007	2015	09/30/2015	03/30/2017
Comments (including % achievement)	Achieved 66%. Original Indicator (PAD): Households benefiting from the expansion of sewage systems. This indicator was improved to a core indicator.			

Summary and Overview of ICR findings

1. The State Water and Sanitation Autonomous Utility (SABESP) Project became effective in December 2010, after a preparation process that started in 2002, as for the São Paulo State Government (GESP) Project. Together, these were the two participant projects implemented under the Integrated Water Management in the Metropolitan Region of São Paulo Adaptable Program Lending (APL). Largely, the project focused on the development of elaborate studies aiming at efficiency of water and sanitation systems in the headwater basins, the undertaking of environmental protection interventions in those basins, and the execution of water and sanitation investments in the APL area, the Metropolitan Region of São Paulo (MRSP).

2. The SABESP adopted a selective approach during implementation by focusing on the activities that were closely aligned with the corporation core mandate: the expansion and improvement of water and sanitation infrastructure. The project suffered from the lack of activities ready for implementation, driving the SABESP to implement those that had the required technical information available. Also, the project's broad focus and general description of the activities did not clearly guide investment or site priorities. The project's outputs are scattered in the APL broad area, the impact of which at the local level is relevant but they do not have the broad impacts the APL and the project sought. The project and SABESP's organizational structure and priorities were not fully aligned: the project included activities whose costs are not considered in the tariff equation, creating blockages to enter in the implementation priorities, as well as activities that were not compatible with the departments' agreed investments plans. These, together with the difficulties in obtaining the multiple permits and licenses required to procure and execute an investment, as well as preference for the mainstreamed procurement processing and financing, which did not include the World Bank's financing, slowed down the project implementation. From 2014 to 2016, the SABESP's exclusive priority was responding to the critical drought affecting the São Paulo state and metropolitan region. The project was restructured to support the SABESP response to the water crisis. This support is highly commended by the SABESP's authorities.

1. Project Context, Development Objectives, and Design

1.1. Context at Appraisal

3. **São Paulo's strategic importance.**[50] The sprawling MRSP is emblematic of the urban challenges facing Brazil. Housing almost 20 million people in 39 municipalities covering 8,050 km^2, it is the fourth largest urban area in the world, is South America's biggest economic center, and accounts for about 17 percent of national gross domestic product (GDP) and 10 percent of the population. The metropolitan area faces a number of challenges, including the following:

- **Metropolitan management.** It is a commonly complex issue in federative countries; in Brazil, the constitutional framework further complicates the picture, given that the municipalities have the same autonomous federative status as the states and are not subordinated to either states or the federal government. Urban planning, land use, and provision of local services are matters of municipal jurisdiction, while state governments are responsible for the creation of metropolitan regions. Nevertheless,

[50] Text under section 1.1 Context at Appraisal is a summary of the APL Project Appraisal Document (PAD) (dated June 9, 2009), Annex 1: Country and Sector or Program Background (page 22).

there is a lack of experience and adequate institutional frameworks in Brazil, particularly in the MRSP, in the metropolitan-wide coordination of policies, planning, and service provision.

- **São Paulo water challenges.** Among the most pressing problems facing the MRSP, the region's water supply and demand balance is a critical issue for the city's economic growth and social and environmental sustainability. The MRSP's extremely low per capita water availability is comparable to that prevailing in the driest areas of the Brazilian Northeast. Half of the city's potable water is imported from neighboring river systems. The other half comes from the headwater reservoirs systems ('*mananciais*') within the MRSP itself. The Guarapiranga and Billings reservoirs make crucial contributions, together providing potable water to some 28 percent of the MRSP's population. Should Guarapiranga and Billings be lost as raw water bodies, the next closest sources are distant and could only be brought to the MRSP at multibillion *real* costs.

- **The land use/environmental nexus.** Some 1.9 million people reside in the Guarapiranga and Billings river basins—the vast majority of whom are poor, having illegally occupied these areas given their proximity to the city center. The informal/slum settlements cause direct pollution of the reservoirs through wastewater and garbage discharge and storm water runoff and silting, thus threatening their future as water bodies for potable supplies and other uses.

- **State WRM strategy:** Despite the advances in water resources management (WRM) in the state, many challenges remain. The GESP needs to develop, refine, and implement effective WRM instruments and adopt pragmatic approaches to create political and organization capacity in the sector to promote efficient water use by stakeholders. To tackle the state's most pressing WRM challenges, the GESP's WRM strategy promotes an integrated approach and collaborative, coordinated planning and management that involve local governments and other stakeholders as well as basin committees.

4. **Joint strategy for improving water quality and land use in the MRSP.** The main challenges of the land use/urban informality/environmental nexus in the MRSP are to (a) improve water quality and guarantee the long-term sustainability of water supply in the region's watersheds and headwaters; (b) improve the quality of life and living conditions of the low-income population living in the region's slums and irregular settlements; (c) implement better urban development and land use planning, management, and control mechanisms; and (d) build a new metropolitan governance model based on cooperation among stakeholders and integration of sectors. The Mananciais APL operation has been designed to respond to the land use, water resources, environmental, and social challenges described herein.

Rationale for World Bank Assistance

5. The Mananciais Program Horizontal APL has been developed in support of the vision for a more equitable, sustainable, and competitive Brazil outlined in the federal government's pluri-annual development plan (PPA). The program is emblematic of the challenges facing metropolitan

regions and large cities in Brazil as they grapple with constraints to growth, social inclusion, environmental degradation, and the appropriate planning and management of services. A new Country Partnership Strategy (CPS 42677, dated May 1, 2008) lays out a program of continued support to Brazil through four pillars: equity, sustainability, competitiveness, and sound macroeconomic management. The CPS asserts that Brazil continues to falter in the area of environmental sustainability, and water scarcity and environmental degradation are urgent problems hindering the country sustainable growth.

1.2 Original Project Development Objectives (PDO) and Key Indicators

6. The original PDO, as defined in the PAD for the Integrated Water Management in Metropolitan São Paulo APL, was

(a) To protect and maintain the quality and reliability of MRSP's water resources and potable water sources; and

(b) To improve the quality of life of the poor populations residing in key targeted urban river basins in MRSP

7. As defined in the PAD, the key indicators and the PDO alignment are as follows:

(a) To protect and maintain the quality and reliability of MRSP's water resources and potable water sources

- (a.1.) Reduction of pollution loads to the Guarapiranga water body (measured by using two monitoring points, one located in the Tanquinho Stream and the other in the Pedras River)

- (a.2.) Maintenance of the water quality of Guarapiranga and Billings water bodies, even with projected population increases (measured by using nine monitoring points and the following three analytical methods: IAP,[51] IVA,[52] and IQA[53])

(b) To improve the quality of life of the poor population residing in key targeted urban basins in MRSP

- (b.1.) Improvements in the quality of life of the targeted population based on

    - (b.1.1.) Improved physical, social and environmental changes (measured by using public opinion surveys)

[51] IAP - São Paulo State specific Raw Water Quality Index for Public Water Supply *(Indice de qualidade de Água bruta para fins de abastecimento Público*).
[52] IVA - São Paulo State specific Water Quality Index for Protection of Aquatic Life (*Indice de qualidade de água para protectão da Vida Aquática*).
[53] IQA - National Water Quality Index (*Indice de Qualidade de Água*).

- (b.1.2.) Increase in real estate valuation (measured by using real estate value surveys)

- (b.1.3.) Increased access to improved water supply, sewerage, drainage and solid waste services (coverage and quality of services) (measured by using the following the two following methods: proportion of dwellings with adequate water supply and sanitation [WSS] services[54] and IQVU[55])

- (b.1.4.) Increase in number and size of leisure and green areas (parks, squares, other public spaces, etc.) (hectares)

1.3 Revised PDO and Key Indicators, and reasons/justification

8. The PDO was not revised. The World Bank task team used a full Restructuring Paper version and saw the need to adjust only the indicators. The Level II Restructuring revised the PDO indicators as follows:

a. To protect and maintain the quality and reliability of MRSP's water resources and potable water sources

- New: Studies for monitoring the water quality of key water sources sub-basins (number)

- New: Volume (mass) of BOD pollution load removed by the treatment plants under the project (tons/year)

- New: Increase in water production capacity due to the project intervention (opinion survey)

b. To improve the quality of life of the poor populations residing in key targeted urban river basins in MRSP

- Revised to parks and free public areas urbanized implemented (hectares)

- New: Direct project beneficiaries (number), of which female (percentage)

9. **Reasons and justifications for the change in key indicators.** The Restructuring Paper (September 30, 2015) explains the change in key indicators as follows: (a) mainstream indicators, in a more strategic and consolidated manner, reflecting direct program expected results; (b) reflect the project's changes of scope and activities in the context of the ongoing water crisis (for example,

[54] The indicator is currently used by the Brazilian Census Institute (Brazilian Institute of Geography and Statistic [IBGE]); data are available and published at the municipal level with census and defines what 'adequate basic sanitation' means and quantifies it.

[55] The Quality of Urban Life Index (*Indice de Qualidade de Vida Urbana*, IQVU) is composed of 11 variables: commerce and services, culture, economy, education, housing (housing conditions and WSS), health, urban management instruments, sociopolitical participation and organization, urban environment, and public safety and transport). The calculation of the index uses a mathematical model that considers the weighted impact of a total of 49 variables.

indicators referring to the Urban Upgrading component, which was dropped from the project, were marked for deletion, and new indicators for the new activities in response to the water crisis were included); (c) whenever possible, indicators were adjusted to include the World Bank's corporate core indicators; and (d) account for the new closing date. The Restructuring Paper also includes numerous changes in the intermediate indicators, which are presented in the complete Results Framework.

1.4 Main Beneficiaries

10. **Beneficiaries before September 30, 2015 restructuring.** The APL PAD and the SABESP do not inform on the SABESP project beneficiaries specifically.

11. **Beneficiaries after September 30, 2015 restructuring.** In the September 30, 2015 restructuring, a new PDO-level outcome indicator (direct project beneficiaries of which 51% female) was added targeting 1,686,000 beneficiaries in total for the SABESP project.

1.5 Original Components

12. The original components, as defined in the Loan Agreement between the World Bank and the SABESP (dated October 28, 2009), were as follows:

Component 1: Institutional Development

13. Expansion and improvement of the borrower's operational and management capacity in the program area to supervise and control water quality and the hydrodynamic conditions of the reservoirs under its jurisdiction and to improve the operation of the borrower's various potable water systems, including, among others, the following:

(a) Carrying out of studies and diagnoses and acquisition of equipment, to develop and implement (i) water resources monitoring systems, including a decision support system for the operation of reservoirs, automated systems for raw water pumping stations, plans of contingency for reservoirs, silting control, and limnology analysis and (ii) an improved software system to be used in the management of the borrower's laboratories for analyzing, controlling, and organizing the results of water quality monitoring exercises

(b) Design and implementation of hydrodynamic models and related activities for the Guarapiranga, Rio Grande, Taiaçupeba, Jundiaí, Biritiba, Paiva Castro, and Atibainha reservoirs to enable preventive and remedial action to be undertaken to ensure their continued operation through modeling, simulating, measuring, and monitoring, among others, the reservoirs' eutrophication episodes, the behavior of their sludge layers, and their silting tendencies; undertaking of limnological and other specialist laboratory analyses; and carrying out of limnological and silting control studies

(c) Carrying out of environmental and sanitary education programs for different target groups in the program area

(d) Publishing of materials on the project's and the program's accomplishments and findings

(e) Provision of technical assistance and acquisition of equipment to improve the capacity of the Local Management Unit (UGL) for project management including administration, procurement, financial management (FM), safeguards, and monitoring and evaluation (M&E) of the project and undertaking of project audits

(f) Final evaluation of project and program results and impact

Component 2: Environmental Protection and Recovery.

14. Rehabilitation and protection of reservoirs and water production systems in the program area including, among others, the following:

(a) Conservation of headwater protection areas and other environmentally sensitive regions under SABESP responsibility

(b) Reduction of pollution loads and other environmental degradation in the tributaries and reservoirs that feed the public water supply systems

(c) Expansion of green areas and protection of vegetation cover in existing green areas

(d) Preparation of management plans for the following environmentally protected areas: Capivari, Rio Claro, and Morro Grande

(e) Optimization and/or improvement of the capacity of the Paiva Castro and Isolina reservoirs through desilting and dredging

Component 3: Integrated Water Supply and Sanitation

Subcomponent 3.1: Wastewater Management System Improvements

(a) Improvements to the wastewater management systems in the program area including, among others, construction, extension, and/or improvement of (i) wastewater lifting and pumping stations, (ii) gravity and pumped collector trunk mains and sewerage networks, and (iii) wastewater treatment plants (WWTPs)

(b) Carrying out of operational improvements to the borrower's wastewater management systems in the program area, including, among others, (i) installation of operational equipment, automated monitoring systems, and software, to enhance the operation, control, and efficiency of the existing wastewater systems and (ii) construction, expansion, and/or improvement of installations in the wastewater systems to eliminate sewage overflows.

Subcomponent 3.2: Water Supply System Improvements

15. Improvements to the water supply systems in the program area include, among others, the following:

(a) Construction, extension, and/or improvement of (i) water supply systems, including household supplies in low-income areas, and (ii) water treatment works to improve their efficiency and reduce the pollution loads emanating from them including system design, operation, maintenance, automation, and M&E improvements

(b) Carrying out of studies and analyses on the use of alternative water treatment technologies to reduce the chemical products used and to minimize sludge production

1.6 Revised Components

16. The revised components, as defined in the Amendment to the Loan Agreement (dated September 30, 2009), were as follows:

Component 1: Institutional Development.

17. Expansion and improvement of the borrower's operational and management capacity in the program area to supervise and control water quality and the hydrodynamic conditions of the reservoirs under its jurisdiction and to improve the operation of the borrower's various potable water systems, including, among others, the following:

(a) Design and implementation of hydrodynamic models and related activities for the Guarapiranga, Rio Grande, Taiaçupeba, Jundiaí, Biritiba, Paiva Castro, and the Atibainha reservoirs to enable preventive and remedial action to be undertaken to ensure their continued operation through modeling, simulating, measuring, and monitoring, among others, the reservoirs' eutrophication episodes, the behavior of their sludge layers, and their silting tendencies; undertaking of limnological and other specialist laboratory analyses; and carrying out of limnological and silting control studies; (b) publishing of materials on the project's and the program's accomplishments and findings; (c) provision of technical assistance and acquisition of equipment to improve the capacity of the UGL for project management including administration, procurement, FM, safeguards, and M&E of the project and undertaking of project audits; and (d) final evaluation of project and program results and impact

Component 2: Environmental Protection and Recovery

- Revised to: Recovery of environmental protection areas; management of wildlife; suppression of vegetation, stump removal, and cleaning of the flooded area for the Taiaçupeba reservoir

Component 3: Integrated Water Supply and Sanitation

Subcomponent 3.1: Wastewater System Improvements

- Improvements to the wastewater management systems in the program area including, among others, studies and engineering designs, construction, extension, and/or improvement of (i) wastewater lifting and pumping stations, (ii) gravity and pumped collector trunk mains and sewerage networks, and (iii) WWTPs

Subcomponent 3.2: Water Supply System Improvements

- Revised to: Improvements to the water supply systems in the program area including, among others, construction, extension, and/or improvement of (i) water supply systems, including household supplies in low-income areas, and (ii) execution of emergency works to increase resilience, integration, and production capacity of the water supply system in the MRSP, including, among others, interventions in water treatment plants and the pipeline systems.

1.7 Other significant changes

18. The SABESP Project closing date was extended to March 30, 2017.

2. Key Factors Affecting Implementation and Outcomes

2.1 Project Preparation, Design, and Quality at Entry

19. The comments in the following paragraphs are pertinent to both the SABESP and GESP Projects. The two projects share common preparation, design, and quality at entry issues.

20. **Projects'/borrowers' unclear alignment.** The activities included in the GESP and SABESP Projects fall in two groups: the activities aligned with the SABESP's and the GESP's regular institutional priorities and the activities aligned with priorities associated with the APL rational and approach. During implementation, both the SABESP and GESP focused on the activities that were clearly aligned with their regular institutional priorities. According to the preparation documents, the APL raised the need for the undertaking of a broad range of activities that were mostly of an innovative nature, considering the MRSP context. They addressed challenging issues such as metropolitan governance within the MRSP, improving laws and policies on land use and services provision, as well as complex technical studies, whose results would support intergovernmental decisions and new laws and policies development. Given the selective approach the borrowers adopted, alignment of the innovative activities with their priorities was probably unclear.

21. **Project update.** The APL and participant projects were under preparation over many years (2002–2009).[56] During these years, significant economic, fiscal, and political changes occurred,

[56] Project preparation period: The lending phase started in FY2002. The program, including the SABESP and GESP Projects, was appraised in July 2007, while the Board approval date was in July 2009. The LA with the SABESP is dated October 2009, while the LA with the GESP is dated September 2010.

while the APL approach, as well as the activities under the projects, remained unchanged. The APL and the projects might have been better aligned at some point of the preparation phase, but that changed over the long preparation and implementation time frame, in which several state and municipal elections were held and substantial changes occurred in the government investment programs.

22. **Readiness for implementation and framework style.** The generic description of the project activities was not conducive to quick implementation. Given the complexity of the activities, it would have required a large team of senior specialists from multiple sectors working on activities to prepare for implementation and, first of all, assess their feasibility. Lack of readiness for implementation was identified by a SABESP authority as a major constraint the project faced.

23. **Unconventional nature of the project.** In meetings held with project team members for gathering information for the Implementation Completion and Results Report (ICR) preparation, the unconventional nature of the SABESP Project was a major issue raised. According to the participants, the SABESP has implemented numerous sizeable projects which, they believe, had clearer objectives and higher implementation readiness. A clear alignment with the corporation priorities was also identified as a major issue. Also, it was highlighted that given the SABESP corporation rules, activities whose costs are excluded from the tariff equation face severe difficulties in implementation.

2.2 Implementation

24. **Issues holding back implementation.** The World Bank loan to the SABESP Project became effective on March 24, 2010, and the project closed on the extended closing date (March 30, 2017). When implementation started, there were several activities under execution, all entirely financed from counterpart funds. According to supervision records, the project implementation was expected to move fast. However, the implementation slowed down due to issues such as continuous changes in the list of activities financed under the project, dissatisfaction in following the World Bank procurement rules, lack of an implementation unit specific to the project, difficulties in obtaining the numerous permits required to initiate the execution of a civil works, and small portfolio of technical studies ready to initiate procurement. The World Bank team's recurrent concerns regarding the continuous changes in the list of activities to be financed by the loan were registered in the project records. Also, the World Bank team expressed concerns regarding the implementation focused essentially on the component addressing improvements on water and sanitation systems. The September 2015 restructuring included activities addressing the MRSP water crisis by retroactive financing and dropped an extensive list of activities that had not been implemented. However, the difficulties associated with procurement and the issuing of the numerous licenses required for works persisted. Implementation issues were basically the same pre- and post-restructuring and are detailed in the following paragraphs.

25. **Constant changes on the list of activities to be implemented by the project.** The supervision mission records pointed out the problem of recurrent changes in the list of activities under the project and requested a definitive list. The SABESP's access to other financing sources, including own funds, probably explains most of the changes. The other financing sources' procurement processing was said to be quicker. Obstacles to obtain permits and licenses linked to

construction also generated changes in the list of activities. Therefore, activities stuck in the licensing process (some related to environmental procedures) were replaced by those with potential to move forward.

26. **Dissatisfaction in following the World Bank procurement rules.** The SABESP's annual investments plan is huge, in the range of US$1–3 billion. The national procurement rules are the norm and carried out by a robust unit. The processing of the World Bank procurement rules required separate procedures, which were seen as disruptive, time-consuming, and generating disturbance to the workflow. In particular, the consultant selection rules were not conducive to appropriate results, especially for relatively small contracts (around US$2 million), given the requirement of two firms per country. This number was not considered attractive for international companies, and the restriction in the number of participants by countries was seen as inappropriate.

27. Lack of an implementation unit specific to the project. The project implementation records registered World Bank team requests for the reestablishment of an implementation unit specific to the project, which was in place when the implementation started but gradually the members moved to another unit. The lack of an implementation unit was seen as a reason for the delays in implementation, since the project activities belonged to different departments where they were put together with other many activities and were not object of a special dedication. The SABESP explained that the project was part of its overall investment plan and, as such, was one of its priorities. Eventually, a unit was created, including representatives in each of the departments involved with the implementation.

28. Difficulties in obtaining required licenses and permits. The implementation of SABESP investments typically requires obtaining several permits, such as the sequence of environmental licenses (usually very challenging) and all type of permits involving several actors (electricity, telecommunication companies, road systems and transportation investments, services run by municipal or state entities, and so on). Obtaining these licenses and permits can prove to be convoluted and time-consuming and affects the entire implementation. In addition, these permits have different time frames for expiration; while some are valid others have expired. Therefore, it is difficult to resolve all the issues required to start the implementation, such as valid permits, budgetary and financial availability, authorizations on the bidding processes and the awards, and so on.

29. Small portfolio ready for implementation. No technical studies that were required to prepare the activities for implementation were prepared. Thus, to start implementation, the SABESP used the available studies and started the development of new studies. At some point in the implementation, the SABESP highlighted that its stock of technical studies was short, so the implementation options were limited.

30. Main implementation issues raised in the Stakeholder Workshop. (a) Too long preparation, broad objectives, complex structure, and scattered activities in a large territory were identified as the perfect equation leading to insufficient project results, and (b) the project's scattered activities to be implemented in a very large territory make it impossible to measure impacts.

31. Midterm review. Delays in implementation were among the main concerns discussed. The establishment of a specific unit to implement the project was raised as an alternative to speed up the implementation pace. The SABESP highlighted that fast-track procedures to review documentation and contracts would contribute to reducing delays.

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

32. **M&E design.** The M&E was designed to reflect (a) the APL objectives through the PDO-level outcome indicators and (b) the participant projects' outputs through the intermediate outcome indicators. Thus, each participant project assumed its share of the intermediate outcome indicators and adjusted it by reducing it to the indicators that reflected the activities they selected to implement. The PDO-level outcome indicators did not reflect any of the projects individually; they were designed to reflect the outcomes to be achieved through an integrated and coordinated implementation of several projects activities. In consequence, none of participant projects associated the PDO-level outcome indicators with their specific project. The GESP Project was structured to report on the PDO-level outcome indicators. However, the Project Coordination Unit understood that since only two projects were being implemented, the PDO-level outcome indicators could not be pursued and subsequently could not be monitored. Nevertheless, the complex, long, and costly studies and surveys required to report on the PDO-level indicators were indicated as too demanding monitoring tools.

33. **M&E implementation.** As the participant projects assumed their share of the M&E and simplified it to reflect the activities they select to implement, the M&E was kept updated. However, it was not used as a tool to guide implementation, but rather a tool to consolidate the projects' achieved targets. Also, the intermediate outcome indicators reflected the participant projects' outputs and did not require the undertaking of studies and surveys.

34. **M&E utilization.** The simplified M&E version was utilized to register the targets achieved.

2.4 Safeguards and Fiduciary Compliance

35. The APL received a World Bank Environmental Category A rating and triggered the following safeguards: OP 4.01 (Environmental Assessment), OP 4.04 (Natural Habitats), OP 4.11 (Physical Cultural Resources), OP 4.12 (Involuntary Resettlement), and OP 4.37 (Safety of Dams). The activities under the APL, both consultancies and physical investments, were reviewed by the World Bank safeguards specialists—social and environmental—during the preparation and implementation phases of the APL and the participant projects.

Safeguards Compliance under the SABESP Project

36. **OP 4.12 - Involuntary Resettlement.** A Resettlement Framework (RF) was part of the APL package the Board approved on June 9, 2009. It was disseminated, discussed with stakeholders, and disclosed as required. The framework provided for the overall potential impact associated with the OP 4.12, in particular with respect to the involuntary resettlement related to slum-upgrading interventions. The RF incorporated the lessons learned from several slum-upgrading interventions implemented under the antecessor project (the Guarapiranga Program). These lessons were of great relevance for guiding resettlement solutions under slum-upgrading interventions, since they had been tested and achieved proven positive results. In addition, the RF demonstrated that the

resettlement solutions are an integral part of the slum-upgrading intervention, whose designs can ensure that the entire population living in the targeted area benefits, including the population resettled. The RF was incorporated in the Operations Manual guiding the three loans under the APL and complied with as described in the following paragraphs.

37. **OP 4.12 - Involuntary Resettlement.** The investments carried out under the SABESP Project were screened to address OP 4.12 both in the preparation and implementation phases. Also, the World Bank social safeguard specialist undertook supervision missions to the sites during the works execution phase. Only the construction of the Bragança Paulista WWTP raised questions related to OP 4.12. During the construction, the precise location of a road to access the WWTP, as well as of a pumping station, raised concerns from landowners in the vicinity. They contacted the state environmental agency as well as the World Bank. Information was provided clarifying that the changes in location did not cause the impacts they were concerned about. Subsequently, the works resumed.

38. **OP 4.01 - Environmental Assessment.** A Regional Environmental Assessment was prepared in accordance with the requirements for an Environmental Category A operation. It was disseminated, discussed, and disclosed following the procedures required under OP 4.01. During the project implementation, specific environmental assessments were prepared for each intervention. Also, specific environmental studies were undertaken as required by the Brazilian environmental licensing procedures. In addition, the assessment and studies were disseminated, discussed, and disclosed as required both by OP 4.01 and the Brazilian environmental legislation.

39. **OP 4.04 - Natural Habitats.** In the preparation phase, interventions in environmentally protected areas were considered under the APL. However, during implementation, the activities planned under the SABESP Project that triggered that operational policy were no implemented.

40. **OP 4.11 - Physical Cultural Resources.** Procedures in agreement with OP 4.11 were incorporated, as appropriate, in the Operations Manual, as well as in the Construction Manual. During implementation, the specific environmental assessment prepared for each intervention also carried out an assessment following the OP 4.11 directives. Elements associated with OP 4.11 were not found in the intervention areas.

41. **OP 4.37 - Safety of Dams.** In addition to the other OPs, appropriated procedures were undertaken during the APL preparation to comply with the World Bank safeguard policies. Several interventions triggering OP 4.37 were planned in the APL preparation phase. However, these interventions were not carried out. During implementation, a new intervention was included under the SABESP Project that triggered OP 4.37. This new intervention, the Recovery of the Taiaçupeba Dam Hydraulic Basin Capacity, included the removal of vegetation that had grown in the basin and activities to enhance and protect the green area buffer zone around the reservoir. To finance this activity, the World Bank asked for review from a panel of experts to further confirm that the existing dam would properly respond to the use of the reservoir's full capacity. The Dam Safety Panel Report was concluded in August 2017. It was presented and discussed on a workshop held on September 6, 2017. The report main conclusions are: (a) The dam's structures have been properly operated and maintained and they comply with the safety criteria concerning the hydrological, hydraulic, concrete structures and geochemical requirements. Moreover, the reservoir presents appropriate safety conditions for its filling. (b) There are concerns regarding

eventual social impacts associated with future reservoir operation under regular and extreme events that could affect an unregulated settlement that is gradually encroaching an area downstream the reservoir. The Panel's recommendations are to: (i) prepare and implement a "reservoir filling monitoring program" taking into account the measures the Panel recommended; (ii) undertake a study simulating downstream social impacts scenarios associated with future reservoir operation under regular and critical events; (iii) update the existent Dam Emergency Plan taking into account the recommendations from study recommended in item (ii); (iv) update the existent Dam Safety Plan taking into account the recommendations from the Panel's report; and (v) prepare a consolidated version of the Panel's report. It was agreed that an Action Plan (programs, timetable and budget) for the recommendation provided for in (i), (ii) and (iii), as well as the report mentioned in (iv) will be sent to the World Bank until October 16, 2017.

Financial Management

42. **Loan 76220 - SABESP**. All FM supervision missions were rated Satisfactory. Initially, there were delays in adjusting the SABESP's corporate system to generate interim financial reports (IFRs), which improved during implementation. The SABESP's experience and corporate internal control arrangements were essential to ensure that good FM arrangements prevailed throughout project implementation. Agreed action plans were implemented. During project implementation, the SABESP was financially affected by the state water shortage crisis and the devaluation of the *real* since CY15, with some impact on the project disbursement rate. The FM risk rating was considered Low throughout the project's life. All audit reports were received on time and expressed unqualified/unmodified audit opinions. All IFRs received during the life of the project were considered acceptable and were received on time. No instances of ineligible expenditures were identified.

Procurement

43. From the procurement point of view, the SABESP always was an agency of excellence and was well organized, with several standardized procedures and documents. Of course, the use of the World Bank procurement rules required a greater learning time for the SABESP's procurement team. There were some delays in the execution due to the development of documents acceptable to the World Bank and SABESP. As the SABESP is an agency with several sectors (legal, technical, procurement, control, and so on), the discussions for this new standardization were long, often on account of the World Bank itself because of the difficulties in accepting administrative and legal requirements from the SABESP. However, after the preparation of the bidding documents, the procedures were conducted satisfactorily. The decisions made on the basis of the water crisis that hit the state of São Paulo during the execution of the project also influenced the bidding procedures, since many initiated proceedings were suspended, canceled, and eventually relaunched, which generated a series of changes in the Procurement Plan and in the processes progress. Even with these issues, there is no doubt that of the three executors, the SABESP has always been the agency with the best technical capacity in conducting the bidding and selection of consultants in the scope of the project.

2.5 Post-completion Operation/Next Phase

44. Under the project, the SABESP made investments on sewerage systems and on water supply systems. Table 1 summarizes the post-completion status of those investments.

Table 9. Investment and Post-completion Operation

Investment	Post-completion Operation
Works on the Cocaia-Lagoinha (Grajaú District - Billings Basin) sewerage system executed. It included primary and secondary networks, pumping stations, and main ducts connecting to the existing WWTP (outside the basin). It benefits approximately 25,000 people, abating 392 tons per year biochemical oxygen demand (BOD). Works concluded in 2014.	The investment is operational from late 2014. The number of householders connected to the system is estimated at 70–80%. This is the average connection rate achieved in low-income settlements of similar socioeconomic characteristics.
Works on Mombaça and Crispim sewerage secondary and main pipelines, pumping stations, and interceptors connecting to the existing WWTP (outside the basin) (Itapecerica da Serra - Guarapiranga Basin) executed. It benefits approximately 16,000 people, abating an estimated 248 ton/year BOD. Works execution is expected to conclude later in 2017.	The execution of the works was almost concluded by March 30, 2017, when the loan closed. The SABESP informed that the system would become operational as soon as the works conclude and that the household connection rate would reach between 70% and 80% in 3 years. This performance is based on the SABESP's experience in working in low-income settlements of similar characteristics.
Works on Branca Flor sewerage interceptors system executed (Itapecerica da Serra municipality, Guarapiranga reservoir). System benefits approximately 5,600 people, abating 88 tons per year BOD. Works execution concluded in July 2017.	The execution of the works was close to conclusion by March 30, 2017, when the loan closed. The investment financed the construction of sewerage interceptors. The secondary pipeline existed already and the number of households connected is higher (close to 90%) given that the secondary sewerage pipeline is in place for many years and the income level in the area is a bit higher.
Works on the TO-13 sewerage primary and secondary pipeline connecting Carapicuíba and Cotia municipalities (Upper and Lower Cotia Basins) executed. It benefits approximately 2,800 people, abating 44 tons per year BOD. Works are at the final execution stage.	The execution of the works was close to conclusion by March 30, 2017, when the loan closed. The investment financed the construction of sewerage interceptors. The secondary pipeline existed already and the number of households connected is much higher (close to 100%) given that the secondary sewerage pipeline is in place for many years and the income level in the area is a higher.
Works on the Bragança Paulista WWTP executed, benefiting approximately 130,000 people and abating 2.050 tons per year BOD (Juqueri-Cantareira Basin). Concluded in 2015.	The WWTP is fully operational since 2014.
Works on the Grajaú Water Treatment Plant pumping station, benefiting approximately 130,000 people. Concluded in 2014.	Operational since 2014
Services for reducing water leakage carried out.	Operational
Works and equipment for Boa Vista water treatment plant filtering membranes system, increasing water production to 1 m^3 per second, benefiting approximately 300,000 million people	Operational since 2015
Works on 4 m^3 per second water transfer from Rio Grande to Taiaçupeba Dam, benefiting some 1.5 million people (together with the transfer from Rio Pequeno to Rio Grande)	Operational since 2015

Investment	Post-completion Operation
Works on 4 m^3 per second water intake from the Rio Pequeno to Rio Grande (Billings reservoir), benefiting some 1.5 million people (together with the transfer from Rio Grande to Taicaçupeba Dam)	Operational since 2015

3. Assessment of Outcomes

3.1 Relevance of Objectives, Design, and Implementation (Pre- and Post-restructuring)

45. **Relevance of Objectives: Substantial**. The objectives of the APL and participating projects were consistent with the development priorities and circumstances at the time of project preparation. The 2008 CPS (dated May 1, 2008) laid out a program of continued support to Brazil through four pillars of engagement: equity, sustainability, competitiveness, and sound macroeconomic management. The CPS asserted that Brazil continued to falter in the area of environmental sustainability, and the water scarcity and environmental degradation are urgent problems hindering the country's sustainable growth. The World Bank's CPS for Brazil (CPS 89496, FY2012–2015)57 valid by the project closure is structured around four strategic objectives: (1) increase the efficiency of public and private investments, (2) improve quality and expand provision of public services for low-income households, (3) promote regional economic development through strategic investments and policies, and (4) improve sustainable natural resources management and climate resilience. The strategic objectives 3 and 4 are highly relevant to the APL and to participating projects' rationale and objectives. In addition, the results areas under strategic objectives 3 and 4 and the APL are closely aligned. The results areas under strategic objective 3 include improved policy coordination at the territorial level and expanded access to improved basic sanitation. The results areas under strategic objective 4 include integrated WRM and improved environmental management. Specifically, results area 'expanded access to basic sanitation would be supported through helping develop an integrated approach to WRM and WSS, involving actions in the areas of basin management, urban development and upgrading, housing, disaster risk management, and poverty alleviation.

46. In addition, the project objective's relevance to the current situation of the country still remains high. It is consistent with Brazil's Country Partnership Framework (CPF)58 for the period of FY18–FY23. The CPF presents three areas of priorities, being number 3 the one that focus on inclusive and sustainable development with the objective, among others, to increase urban resilience and provide more sustainable and inclusive urban services. Promoting the improvement of the quality of urban infrastructure, improving the efficiency of service delivery, and building resilience of populations against the variability of water supply are among the key activities proposed. In conclusion, the project's objectives are still closely aligned with the CPS in place by the project closure and the CPF valid for the coming years.

47. The protection of the MRSP headwater continues to be a high priority for the state and municipal governments as well, as confirmed during a stakeholder workshop carried out as part of the ICR preparation. Working in complex urban upgrading environment is seen by municipal government as a key role that the Bank should continue to support. Moreover, the implementation

[57] In 2016, the World Bank launched the Brazil Systematic Country Diagnostic (SCD) to inform the preparation of a Country Partnership Framework (CPF).
[58] CPF report number 113259-BR for FY2018-2023 was approved by the Board in June 2017.

and monitoring of the action plan ensuring water security in the MRSP continues as a top priority for state and municipal governments as demonstrated by several comprehensive plans and measures.

48. **Relevance of designs and implementation: Modest.** The focus of the components in the SABESP Project was of critical importance, both the component financing studies and those financing expansion of water and sanitation systems as well as environmental recovery and protection investments. The component financing studies, however, did not properly fit in the SABESP organizational structure or in the corporation priorities. The activities under the component were not addressed during implementation. The components financing water and sanitation investments well matched the SABESP organizational and investments plans priorities. The SABESP focused the implementation on these components. However, the activities under all project components were described on general terms, requiring further activities to define the exact content, location, costs, and so on. Thus, the SABESP opted to implement activities for which detailed technical designs were available. Given the large geographical area covered by the project, the activities implemented were scattered in a large territory. As a result, their impact is also scattered and has no effect on the project objectives. The importance of ensuring consistence between a project design and a corporation as SABESP priorities was a main lesson raised in the ICR Stakeholder Workshop. As mentioned earlier, the SABESP adopted a selective focus during implementation. The activities implemented were those consistent with the corporation priorities and investments plans, as well as the activities for which there were detailed technical information available in the corporation pipeline. Through the 2015 restructuring, the project assisted the SABESP in responding to the severe water crisis that affected the São Paulo State and the MRSP. The project support was highly appreciated by the SABESP.

3.2 Achievement of Project Development Objectives

49. The following assessment breaks the PDO down into its two objectives and aligns available evidence for achievement on the Results Framework and other information. Although the project's PDO remained unchanged over the life of the project, most of the PDO and intermediate outcome indicators were amended during the September 30, 2015 restructuring. For that reason, the APL's efficacy is judged related to both the pre- and post-restructuring PDO indicators. In addition, as there were two parts to the PDO, efficacy is rated separately for each part, pre- and post-restructuring.

Pre-restructuring.

Objective 1: To protect and maintain the quality and reliability of MRSP's water resources and potable water sources Rating: Negligible

50. Ten outcome indicators were associated with Objective 1: two indicators measured pollution loads in two tributaries and the other eight measured the overall quality of the Guarapiranga and Billings reservoirs. These two tributaries (Bonito and Pedras) measured drain sub-basins densely occupied, in which a large number of the people live in slums where the provision of basic services, such as wastewater and solid waste collection, is precarious or nonexistent. In consequence, these tributaries are heavily polluted and they were used as a proxy for tributaries draining other sub-basins with similar urban standard. The SABESP Project did not

implement activities to reduce the pollution loads that would have been captured by Indicators 1 and 2 under Objective 1. However, the intermediate outcome indicators include an indicator on 'pollution removal plants' built. The construction of these plants, if located in these two tributaries, would have somehow contributed to the achievement of Indicators 1 and 2 under Objective 1. These plants were not built and the decision not explained on the project implementation records. Indicators 1 and 2 were dropped in the September 2015 restructuring based on the justification that they captured too many externalities to the project.[59]

51. The study 'Monitoring the Water Quality (Guarapiranga and Billings reservoirs)' [60] concluded in 2014 and 2015 and executed under the GESP Project, assessed the quality of the two reservoirs through several monitoring points. These included the monitoring points Rio Bonito (G01) and Rio Pedras (G02) considered in the RF. The study found that the Indicator 1 target was not achieved, while it was achieved for Indicator 2. The GESP Project Coordination Unit attributes the achievement of the target for Indicator 2 under Objective 1 to the works on urban upgrading carried out by the Municipal Government of São Paulo (Prefeitura Municipal de São Paulo - PMSP) in the sub-basin where the G02 monitoring point is located.

52. The indicators reflecting the overall water quality of the Guarapiranga and Billings reservoirs were measured through three monitoring points, two in the Billings reservoir and one in the Guarapiranga reservoir, but based on three different methodologies, [61] resulting in nine monitoring measurement. The SABESP Project did not implement activities that would have produced impact on these outcome indicators. The September 30, 2015 restructuring dropped this indicator based on the justification that it captured too many externalities to the project.

Objective 2: To improve the quality of life of the poor populations residing in key targeted urban river basins in MRSP **Rating: Negligible**

53. The SABEP Project did not implement any activity associated with Objective 2. During preparation, the association with this objective is probably explained by the expectation that the SABESP Project would finance water and/or sanitation infrastructure required to complement slum-upgrading interventions. Given that the slum-upgrading intervention under the APL was not implemented and that the governmental slum-upgrading interventions (outside the APL) did not progress as expected, the SABESP Project did not implement investment associated with slum upgrading. However, the SABESP Project financed the construction of four sanitation systems in low-income areas. Nevertheless, the outcome indicators associated with Objective 2 were appropriate to capture these investments. Also, the construction of three of the four systems was about to conclude by the project closure. Their impact will appear later.

54. The target (60 percent) of Indicator 3 under Objective 2 was achieved: degree of satisfaction of the population - proportion of dwellings with adequate WSS services. According to the information provided by the SABESP, the proportion of dwellings with adequate WSS services

[59] Restructuring Paper on a Proposed Project Restructuring of First and Second Phases of the Integrated Water Management in the Metropolitan São Paulo APL. IBRD-17661-BR and IBRD-7662-BR. June 9, 2009. Page 44.
[60] Monitoramento da Qualidade das Águas - APRM Guarapiranga e Billings. Relatório Final de Monitoramento da Bacia do Guarapiranga. Consórcio Prime Engenharia e Ecolabor.
[61] The methodologies are classified as IAP. IVA, and IQA. Information on the monitoring points and methodology is found in the APL PAD, dated June 9, 2015, section Arrangements for Results Monitoring, page 33.

in the Guarapiranga basin reached 70 percent. The 30 percent not covered refers to the slum areas that remain without service because upgrading interventions have not been carried out.

Post - Restructuring

Objective 1: To protect and maintain the quality and reliability of MRSP's water resources and potable water sources **Rating: Substantial**

55. Three outcome indicators under Objective 1 were added in the September 30, 2015 restructuring. The previous outcome indicators were dropped. Although the SABESP Project was committed to achieving the outcome indicators associated with Objective 1, the project activities were associated with two of the three indicators. The SABESP Project achieved Outcome Indicators 1 (volume [mass] of BOD pollution load removed by the treatment plants under the project and sewerage systems supported under the project [tons per year]) and 2 (increase in water production capacity due to project interventions (m^3 per year]). Through the interventions to rehabilitate and expand sanitation infrastructure, the SABESP Project will remove 2,820 tons per year of BOD, reaching 95 percent of the target. About 71 percent of the load amount is removed by a WWTP located in the Juqueri-Cantareira River Basin and is already under full operation. Two of the sewerage systems (Crispim/Mombaça and Lagoinha/Grajaú) will have impact on the sub-basins where they are located, as shown in table 2.[62] By the project closure, Crispin/Mombaça was still under construction, which was expected to conclude by late 2017.

Table 2. BOD Removal Impact

Sewerage Systems	**Population Served**	**Potential BOD Load Removal[a] (tons/year)**	**Status on Project Closure (March 30, 2017)**	**Expected Connections Rate[b] (%)**	**Expected BOD Removed[c] (tons/year)**	**Sub-basin Total BOD Estimated (tons/year)**	**Estimated Impact on the Sub-basine (%)**	**Sub-basin Share/Total Reservoir BOD Load (%)**
Crispim/Mombaça (Guarapiranga)	16,000	248	Final works stage	70–80%, after 3 years in operation	186	255	72	8.3
Lagoinha/ Grajaú (Billings)	25,000	392	Operational since 2014		294	693	2	27.0

Note: a. Estimate based on 100 percent connection; b. Expected connection based on the historic connection rate in similar settlements; c. Expected BOD removed based on the expected final connection rate; d. BOD load estimate at monitoring point G17 (baseline year: 2014); e. BOD load estimate at monitoring point B01 (baseline year: 2015).

56. Under the SABESP Project, activities to face the water crisis in São Paulo were included in the September 30, 2015 restructuring, supported by the retroactive financing mechanism. The activities included in the APL allowed the SABESP to continue to provide water to 2.3 million people through the June–September low water inflow period. Specifically, it allowed supply of

[62] Monitoramento da Qualidade das Águas - Guarapiranga. Consórcio PRIME Engenharia, ECOLABOR. 2014.

additional 4 m^3 per second to the Alto Tietê water system, reducing the pressure to the highly stressed Cantareira water system and allowing it to maintain its Technical Reserve II capacity through dry season. The investments targeted increasing the water production in 157,680,000 m^3 per year. The target of the outcome indicator 'increase in water production capacity due to project interventions' was 100 percent achieved.

Objective 2: To improve the quality of life of the poor populations residing in key targeted urban river basins in MRSP **Rating: Substantial**

57. The SABEP Project contributed to Objective 2 by financing investments to expand sanitation services in low-income neighborhoods. Through the activities included in the September 30, 2015 restructuring, the project significantly contributed to the response to the droughts that affected water supply in the MRSP. The low-income population living the metropolitan area fringes were the most affected by the water supply difficulties the MRSP faced. In consequence, the SABESP Project interventions contributed to improving the quality of life of the poor populations. The project almost achieved the number of direct beneficiaries. The project targeted 1,686,000 people, while it is estimated that it has benefited approximately 2,093,250 people.

3.3 Efficiency

Project Efficiency **Rating: Modest**

58. The SABESP Project had two fields of intervention: sanitation and water security. These two types of actions had significant impacts on the metropolitan region of São Paulo. The ex-ante and ex-post analysis of the Project are not comparable as the analysis in the first stage focused on urban upgrading interventions which didn't materialized in the Program. The SABESP project carried out a set of activities that focused on environmental sanitation improvements and after the September 2015 restructuring, activities on water security were added.

59. The SABESP project carried out a set of activities including water supply, sewerage and wastewater treatment that contributed to improve sanitary conditions of beneficiaries and avoided pollution that was deteriorating the water quality of the source reservoirs and water bodies. Sanitation activities contributed to health improvements by potential reduction of diarrhea and parasitic diseases in Sao Paulo metropolitan region. In addition, the above-mentioned restructuring was significant and focused on helping respond to the water crisis in the MRSP by improving water security by increasing water availability by 5 m^3/sec to the region and benefitting about 1.5 million users.

60. Several of the benefits of the above mentioned activities were monetized, including avoiding pollution (BOD and COD); additional water availability; improved water supply and sanitation services; and health improvements. A cost benefit economic analysis for the Program was carried out and is presented in section 3.3 and annex 3 of the Program ICR. Results from this analysis suggest that the contribution of SABESP Project to the Program was significant, and that it brought positive returns, particularly the water security activities.

3.4 Justification of Overall Outcome Rating — Rating: Unsatisfactory

61. The overall outcome rating for the project is Unsatisfactory, considering the calculation given in table 3.

Table 3. Split Evaluation

	Against Original PDO-Level Outcome Indicators	Against Revised PDO-Level Outcome Indicators (September 30, 2015 Restructuring)	Overall
Relevance			—
Relevance of objectives	Substantial		—
Relevance of design and implementation	Modest		—
Efficacy			—
Objective 1: To protect and maintain the quality and reliability of MRSP water resources and potable water sources	Negligible	Substantial	—
Objective 2: To improve the quality of life of the poor populations residing in key targeted urban river basins in MRSP	Negligible	Substantial	—
Efficiency	Modest		—
Rating	Highly Unsatisfactory	Moderately Satisfactory	**Unsatisfactory**
Rating value	1.0	4.0	—
Weight (% loan disbursed before/after PDO change)	73.5	26.6	—
Weighted value	0.74	1.06	**1.80**
Final rating (rounded)			**2**

3.5 Overarching Themes, Other Outcomes and Impacts

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

62. Although not captured through the PDO outcome indicators, the majority of the improvements and expansions in sewerage systems the project financed were carried out in low-income urban settlements. Also, during the water crisis, the water production increase that the project financed improved the water services in low-income areas located in the urban periphery, where the water pressure was most affected by reductions due to the water supply restrictions that resulted from the water crisis.

(b) Institutional Change/Strengthening

Not applicable.

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

Not applicable.

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

63. The Stakeholder Workshop summary and full text is presented in the APL ICR main text, section 3.6 and annex 6, respectively.

4. Assessment of Risk to Development Outcome

Rating: Moderate

64. The risk to development outcomes is Moderate, based on risks related to each area of the SABESP Project intervention. The risks to the projects' outcomes related to sewerage investments are considered to be Moderate. The risk to the projects' outcomes related to the water production investments is also considered to be Moderate. The SABESP's operational and maintenance procedures both in water supply and sanitation are classified as appropriate in the ranking of WSS companies in Brazil. Moreover, both investments are an integral part of the water and sanitation infrastructure managed by the SABESP in the MRSP serving about 20 million people. The quality and reliability of services are satisfactory.

5. Assessment of Bank and Borrower Performance

5.1 Bank Performance

(a) Bank Performance in Ensuring Quality at Entry **Rating: Unsatisfactory**

65. The APL was under preparation from 2002 to 2009. The long preparation is basically explained by the thorough preparation of the studies supporting the APL rationale and scope, as well as the substantial effort made in bringing participants to the APL. The large number of participant projects/borrowers was necessary to achieve a critical mass of interventions compatible with the APL rationale and approach. By mid-preparation period, there were a dozen borrowers willing to join the APL, but gradually this number significantly reduced. The PMSP participation did not materialize as well. The APL was approved for four potential participant projects, of which only two came to completion. Despite the significant changes in the number of participants, the APL was not adjusted to fewer participants. Its PDO, RF, and other key elements were kept in line with a vast arrangement, reflecting actions and actors broader than those that indeed participated in the operation. The uncertainty regarding possible participation of additional actors probably led to avoiding adjusting the APL to the few confirmed borrowers. Additional borrowers depended on multiple and ever changing variables such as borrowing capacity, willingness to borrow, and the World Bank's lending priorities. In addition, the APL structure allowed borrowers to join the operation after implementation started, increasing the uncertainty on the final size of the operation. However, the operation size did not expand but shrank. As a result, the APL PDO and the design of participant projects are not consistent. Although the APL and participant projects share the same PDO, this cannot be achieved through the implementation of the activities in participant projects.

66. Other aspects that substantially affected quality of entry include the following:

(a) None of the activities included in the participant projects benefited from any preparation to achieve some level of readiness for implementation. As a result, the information on the projects' activities was limited to the content explain in the activities' headings. During the project implementation, the activity feasibility would be verified. Most of the activities in the participant projects were not addressed during the implementation. Counterpart representatives explained that some were extremely ambitious and others did not properly fall under the institutional mandate and that the feasibility could not be confirmed for some, although the technical effort was made.

(b) To allow flexibility during implementation, the activity description in the projects was kept in very general terms. This choice might have been appropriate given the long life of the APL and its projects, during which many political, economic, and institutional changes occurred. However, the projects were left without a clear direction to achieving the APL and projects objectives. Anyway, this flexibility allowed the borrowers to implement the activities that were aligned with their priorities. For these reasons, the World Bank's performance in ensuring quality at entry has been rated Unsatisfactory.

(b) Quality of Supervision **Rating: Moderately Unsatisfactory**

67. The World Bank's supervision of the project is rated Moderately Unsatisfactory. The World Bank team provided strong supervision in many respects, including consistently providing overall guidance with respect to project implementation, responding on timely to questions from counterparts, and identifying constraints and weaknesses and designing solutions. During the seven-year implementation period, there was strong continuity among staff members and team leaders, with both participating over many years. There was continuity regarding key aspects of implementation support, particularly in fiduciary areas and safeguards.

68. Despite these strengths, however, the World Bank team did not identify inconsistencies between the PDO, project activities, and the M&E framework and, related to that, did not focus on the ultimate development impact of the project as part of project supervision. Similarly, project supervisory reporting focused primarily on implementation progress, rather than on development impact. World Bank missions, while undertaken on a semiannual basis, focused mostly on contract implementation. The restructuring of project outcome and output indicators occurred at too late a stage—on the original closing day, after five years of implementation. Nevertheless, the restructuring demonstrated the World Bank's eagerness to support the clients in responding to the critical water crisis the MRSP was facing. Also, it demonstrated the World Bank team's readiness to timely and efficiently process the restructuring.

(c) Justification of Rating for Overall Bank Performance **Rating: Unsatisfactory**

69. The overall assessment of the World Bank's performance has been rated Unsatisfactory, reflecting the ratings for World Bank performance in ensuring quality at entry and for the quality of supervision.

5.2 Borrower Performance

(a) Government Performance **Rating: Moderately Unsatisfactory**

70. The SABESP showed consistent commitment to the project throughout implementation. The project was embedded in the SABESP organizational structure and given the same priority as the other activities under the departments' investments plans. Other projects implemented by the SABESP were assigned a unit exclusively in charge of that project. However, the APL had a too broad and diverse focus, in addition to a relatively small financial size. However, as the project was embedded in the SABESP structure, special procedures such as the World Bank procurement rules faced difficulties, since these could not be streamlined jointly with the procurement rules regularly followed by the corporation. As the GESP did, the SABESP also adopted a selective approach by focusing implementation on the activities clearly aligned with the corporation priorities.

(b) Implementing Agency or Agencies Performance **Rating: Moderately Unsatisfactory**

71. The departments in the SABESP responsible for implementing the project actively worked to streamline and systematize procurement processes throughout implementation; however, they faced competition from other financing sources that offered faster procedures. The departments involved successfully supervised the implementation of the project and enabled the restructuring preparation and processing. Excluding the delays in hiring the Dam Safety Panel associated with the Taiaçupeba reservoir, the environmental and resettlement safeguard were properly undertaken. Regular progress reports were produced, incorporating procurement and FM reports, as well as outcome/output monitoring reports.

(c) Justification of Rating for Overall Borrower Performance **Rating: Moderately Unsatisfactory**

72. The overall performance of the borrower and the implementing structure is rated Moderately Unsatisfactory, considering the implementation strengths and weaknesses discussed earlier.

6. Lessons Learned

73. **Activity versus tariff equation.** The attempt to implement an activity where costs cannot be considered in the tariff equation faces severe constraints in a water and sanitation services provider, such as the SABESP. The activity becomes a burden to the department to which it has been assigned. This aspect should be considered when designing a project.

74. **Constraints associated with long preparation.** Many of the problems a project faces during the implementation phase result from a too long preparation phase, given the multiple political, institutional, fiscal, and financial changes, among others, that may occur during a long time frame.

75. **Lack of implementation readiness.** It caused the SABESP to make use of those available in its portfolio, and as a result the interventions financed under the APL are scattered all over the MRSP territory due to which their impact is very difficult to measure.

76. **Project and institutional priorities mismatch.** Large corporations such as the SABESP react against activities, such as those included in the APL, that are not aligned with the corporation priorities, resulting in implementation blockages.

77. **Project and investment plans mismatch.** For an organization such as the SABESP, the lack of alignment of a project, such as the APL, with the investments plans agreed with the organization structure creates severe constraints regarding the implementation of the project finances.

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

(a) Borrower/implementing agencies

78. SABESP has sent minor suggestions for revision to the draft ICR which have been incorporated in the document. A letter was also received as well where comments were made to the overall document and program results (see Annex 7 of the Program ICR for full letter translated to English).

(b) Co-financiers

Not applicable.

(c) Other partners and stakeholders

Not applicable.

Annex 1. SABESP Project Costs and Financing

(a) Project Cost by Component (in US$ Million Equivalent)

Components	Appraisal Estimate[63] (US$, millions) (a)	Disbursed by the 2015 Restructuring (US$, millions) (b)	September 30, 2015, Restructuring (US$, millions) (c)	Percentage of Appraisal (US$M) (d/a)	Actual (US$, millions) (August 31, 2017) (d)
1. Institutional Capacity Building	**7.69**	**—**	**—**	**—**	**—**
SABESP	0.69	—	0.00	—	—
IBRD	7.00	—	0.00	—	—
2. Environmental Recovery and Protection	**11.43**	**—**	**13.71**	**53**	**6.04**
SABESP	1.03	—	2.65	—	0.60
IBRD	10.40	—	11.06	—	5.44
3. Integrated Water Supply and Sanitation	**104.36**	**88.80**	**124.52**	**113**	**118.25**
SABESP	22.01	27.56	35.84	—	32.65
IBRD	82.35	61.24	88.68	—	85.60
Unallocated	1.27	—	—	—	—
Front-end fee	0.25	—	0.25	—	0.25
Total Project Costs	**125.00**	**88.80**	**138.48**	**100**	**124.54**
SABESP	25.00	27.56	38.48	—	33.25
IBRD	100.00	61.24	100.00	—	91.29

(b) Financing

Source of Funds	Appraisal Estimate (US$, millions)	September 30, 2015 Restructuring (US$, millions)	Percentage of Appraisal	Actual (US$, millions) (August 31, 2017)
Borrower	25.00	38.48	133	33.25
IBRD	100.00	100.00	91	91.29

[63] PAD Report No. 47493-BR – page 148.

Annex 2. Outputs by Component

SABESP Project - *From Loan Signing (October 2009) to Restructuring (September 2015)*

Component, Subcomponent, and Activities[64]			Financing		Costs[65] (US$, millions)	Output
			CP 100%	Loan + CP		
Component 1: Institutional Development						
1. Expansion and improvement of the borrower's operational and management capacity in the program area to supervise and control water quality and the hydrodynamic condition of the reservoir under its jurisdiction and to improve the operation of the borrower's various potable water systems, including, among others.	(a) Carrying out of studies and diagnoses, and acquisition of equipment, to develop and implement	(i) Water resources monitoring systems, including decision support system for the operation of reservoirs, automated systems for raw water pumping stations, plans of contingency for reservoirs, silting control, and limnology analysis	—	—	—	Not implemented
		(ii) An improved software system to be used in the management of the borrower's laboratories for analyzing, controlling, and organizing the results of water quality monitoring exercises	—	—	—	Not implemented
	(b) Design and implementation of hydrodynamic models and related activities for the Guarapiranga, Rio Grande, Taiaçupeba, Jundiaí, Biritiba, Paiva Castro, and Atibainha reservoirs to enable preventive and remedial action to be undertaken to ensure their continued operation through modeling, simulating, measuring and monitoring, among others, the reservoirs' eutrophication episodes, the behavior of their sludge layers, and their silting tendencies; undertaking of limnological and other specialist laboratory analysis; and carrying out of limnological and silting control studies		X	—	n.a.	Hydrodynamic modeling developed for the water reservoirs: Guarapiranga, Jacareí, Jaguari, and Billings

[64] SABESP Project description as in the Loan Agreement dated September 2010.
[65] Estimate financial amount executed (counterpart and loan) under the SABESP Project.

Component, Subcomponent, and Activities[64]			Financing		Costs[65] (US$, millions)	Output
			CP 100%	Loan + CP		
	(c) Carrying out of environmental and sanitary education programs for different target groups in the program area		—	—	—	Not implemented
	(d) Publishing of materials on the project's and the program's accomplishments and findings		—	—	—	Not implemented
	(e) Provision of technical assistance and acquisition of equipment to improve the capacity of the UGL for project management including administration, procurement, FM, safeguards, and M&E of the project and undertaking project audits		—	—	—	Not implemented
	(f) Final evaluation of project and program results and impact		—	—	—	Not implemented
Component 2: Environmental Protection and Recovery						
1. Rehabilitation and protection of Reservoirs and water production systems in the program area including, among others,	(a) Conservation of headwater protection areas and other environmentally sensitive regions under SABESP responsibility		—	—	—	Not implemented
	(b) Reduction of pollution loads and other environmental degradation in the tributaries and reservoirs that feed the public water supply system		—	—	—	Not implemented
	(c) Expansion of green areas and protection of existing vegetation cover in green areas		—	—	—	Not implemented
	(d) Preparation management plans for the following environmentally protected areas: Capivari, Rio Claro, and Morro Grande		—	—	—	Not implemented
	(e) Optimization and/or improvement of the capacity of the Paiva Castro and Isolina reservoirs through desilting and dredging		—	—	—	Not implemented
Component 3: Integrated Water Supply and Sanitation						
Subcomponent 3.1: Wastewater Management System Improvements						
(a) Improvements to the wastewater management systems in the program area including, among others, construction, extension, and/or improvement of		(i) Wastewater lifting and pumping stations (ii) Gravity and pumped collector trunk mains and sewerage networks,	—	X	0.82	Alternative studies and designs for exporting sewer from the Guarapiranga right bank developed
			—	X	0.17	Study and designs developed for transferring sludge from Guaraú Water Treatment Plant to Barueri WWTP
			—	X	1.85	Studies to interconnect the Rio Grande da Serra and Ribeirão Pires sewerage systems developed

Component, Subcomponent, and Activities[64]		Financing		Costs[65] (US$, millions)	Output
		CP 100%	Loan + CP		
		—	X	8.75	Works on the Cocaia-Lagoinha (Grajaú District - Billings Basin) sewerage system executed. It included primary and secondary networks, pumping stations, and main ducts connecting to existing WWTP (outside the basin). It benefits approximately 25,000 people, abating 392 tons per year BOD. Works concluded in 2014.
		X	—	16.09	Works on Mombaça and Crispim sewerage secondary and main pipelines, pumping stations, and interceptors connecting to existing WWTP (outside the basin) (Itapecerica da Serra - Guarapiranga Basin) executed. It benefits approximately 16,000 people, abating an estimated 248 tons per year BOD. Works ongoing, expected to conclude in December 2017.
		—	X	3.68	Works on Branca Flor sewerage interceptor system executed (Itapecerica da Serra municipality, Guarapiranga reservoir). System benefits approximately 5,600 people, abating 88 tons per year BOD. Concluded in May 2017.
		X	—	6.94	Works on the TO-13 sewerage primary and secondary pipeline connecting Carapicuíba and Cotia municipalities (Upper and Lower Cotia Basins) executed. It benefits approximately 2,800 people, abating 44 tons per year BOD. Concluded in 2015.
	(iii) WWTPs	—	X	18.91	Works on Bragança Paulista Sewerage Treatment Plan executed,

Component, Subcomponent, and Activities[64]			Financing		Costs[65] (US$, millions)	Output
			CP 100%	Loan + CP		
						benefiting approximately 130,000 people and abating 2.050 tons per year BOD (Juqueri-Cantareira Basin). Concluded in 2015. Fully operational.
(b) Carrying out of operational improvements to the borrower's wastewater management systems in the program area, including among others,		(i) Installation of operational equipment, automated monitoring systems, and software, to enhance the operation, control, and efficiency of the existing wastewater systems	—	—	—	Not implemented
		(ii) Construction, expansion, and/or improvement of installations in the wastewater systems to eliminate sewage overflows	—	—	—	Not implemented
Subcomponent 3.2: Water Supply System Improvements						
Improvements to the water supply system in the program area including, among others,	(a) Construction, extension, and/or improvements of	(i) Water supply systems, including household supplies in low-income areas,	—	X	21.40	Works on pumping station part of the Grajaú-Parelheiros Water Treatment Plant executed, benefiting approximately 130,000 people
		(ii) Water treatment plant works to improve their efficiency and reduce the pollution loads emanating from them including system design, operation, maintenance, automation, and M&E improvements	—	—	—	Not implemented
	(b) Carrying out of studies and analyses on the use of alternative water treatment technologies to reduce the chemical products used to minimize sludge production		—	—	—	Not implemented

Outputs by Components: SABESP - *From Restructuring (September 2015) to Extended Closing Date (March 2017)*

Component, Subcomponent, and Activities[66]		Financing		Costs [67]	Output
		CP 100 %	Loan + CP		
Component 1: Institutional Development					
1. Expansion and improvement of the borrower's operational and management capacity in the program area to supervise and control water quality and the hydrodynamic condition of the reservoir under its jurisdiction and to improve the operation of the borrower's various potable water systems, including, among others,	(a) Design and implementation of hydrodynamic models and related activities for the Guarapiranga, Billings, and Jacareí e Jaguari (Sistema Cantareira) reservoirs to enable preventive and remedial action to be undertaken to ensure their continued operation through modeling, simulating, measuring, and monitoring	X	—	n.a.	Guarapiranga, Billings, Jacareí, and Jaguari Reservoirs modeling developed
	(b) Publishing of materials on the project's and the program's accomplishments and findings	—	—	—	Not implemented
	(c) Provision of technical assistance and acquisition of equipment to improve the capacity of the UGL for project management including administration, procurement, FM, safeguards, and M&E of the project and undertaking project audits	—	—	—	Not implemented
	(d) Final evaluation of project and program results and impact	—	—	—	Not implemented
Component 2: Environmental Protection and Recovery					
Recovery of environmental protection areas, management of wildlife, suppression of vegetation, stump removal, and cleaning of the flooded area for the Taiaçupeba reservoir		—	X	6.04	Taiaçubepa's permanent protected area environmentally recovered through works and services. Including fauna protection and debris removal totaling 213 ha and benefiting approximately 1 million people. Activity not concluded, expecting final environmental license to be issued.

[66] Components, subcomponents, and activities as stated in the Amendment to the Loan Agreement (September 2015 Restructuring).
[67] Estimate financial amount executed (counterpart and loan) under the SABESP Project.

Component, Subcomponent, and Activities[66]		Financing		Costs [67]	Output
		CP 100 %	Loan + CP		
		—	X	0.06	Dam inspection panel conducted. Report not yet issued by project closure.
Component 3: Integrated Water Supply and Sanitation					
Subcomponent 3.1: Wastewater System Improvements					
(a) Improvements to the wastewater management systems in the program area including, among others, studies and engineering designs, construction, extension, and/or improvement of	(i) Wastewater lifting and pumping stations (ii) Gravity and pumped collector trunk mains and sewerage networks	X	—	16.09	Works on sewerage secondary and main pipelines, interceptors, and pumping stations for Mombaça and Crispim sub-basins (Guarapiranga Basin) executed. It benefits approximately 16,000 people, abating an estimated 248 tons per year BOD. Works ongoing, expected to conclude by December 2017.
		—	X	0.82	Study of alternatives and concept designs for exporting sewer from the Guarapiranga right bank carried out
		—	—	—	Itapecerica da Serra designs
		—	X	1.85	Study to interconnect the Rio Grande da Serra and Ribeirão Pires sewerage systems carried out
		—	X	8.75	Works on sewerage pipelines in Cocaia-Lagoinha neighborhood (Billings Basin) executed. It benefits approximately 25,000 people, abating 392 tons per year BOD. Works concluded in 2014.
		—	X	0.17	Study and designs developed to transfer sludge from Guaraú Water Treatment Plant to Barueri WWTP
		X	—	6.94	Works on sewerage primary and secondary pipeline connecting to basin TO-13 built, in municipalities Carapicuíba and Cotia (Alto and Baixo Cotia Basins). It benefits

Component, Subcomponent, and Activities[66]		Financing		Costs [67]	Output
		CP 100 %	Loan + CP		
					approximately 2,800 people, abating 44 tons per year BOD. Works concluded in 2015.
		—	X	0.84	Technical designs for Itapecerica da Serra wastewater system developed
		—	X	2.04	Works on sewerage system - Córrego Limpo II built
	(iii) WWTPs	—	X	18.91	Works on Bragança Paulista Sewerage Treatment Plan executed, benefiting approximately 130,000 people and abating 2.050 tons per year BOD (Juqueri-Cantareira Basin)
Subcomponent 3.2: Water Supply System Improvements					
Improvements to the water supply system in the program area including, among others, construction, extension, and/or improvement of	(i) Water supply systems, including household supplies in low-income areas	—	X	21.40	Works on Grajaú Water Treatment Plant pumping station executed, benefiting approximately 130,000 people
		—	X	25.54	Services for reducing water leakage carried out
	(ii) Execution of emergency works to increase resilience, integration, and production capacity of the water supply system in the MRSP, including, among others, interventions in water treatment plants and the pipeline systems	—	X	13.09	Works and equipment for Boa Vista water treatment plant filtering membranes system executed, increasing water production to 1 m^3 per second, benefiting approximately 300,000 people[a]
		—	X	14.34	Works on 4 m^3 per second water transfer from Rio Grande to Taiaçupeba Dam executed, benefiting some 1.2 million people [a]
		—	X	4.19	Works on 4 m^3 per second water intake from the Rio Pequeno to Rio Grande (Billings reservoir) executed, benefiting some 1.2 million people [a]

Note: a. The three contracts together produced 4 m^3 per second water, benefiting a total of 1.5 million people.

Annex 3. Economic and Financial Analysis

1. The post-completion Economic and Financial Analysis was carried out for the APL. It is included in annex 3 of the ICR main section (the APL ICR).

Appendix C. Municipality of São Bernardo Do Campo (PMSBC) Project

IBRD 8149-BR

BR APL Integrated Water Management in Metropolitan São Paulo – Programa de Saneamento Ambiental dos Mananciais do Alto Tietê – Programa Mananciais – (P006553)

BRAZIL
BR APL Integrated Water Management in Metropolitan São Paulo - PMSBC Project

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ABBREVIATIONS AND ACRONYMS

APL	Adaptable Program Lending
CPF	Country Partnership Framework
CPS	Country Partnership Strategy
FM	Financial Management
ICR	Implementation Completion and Results Report
M&E	Monitoring and Evaluation
MRSP	Metropolitan Region of São Paulo
PAD	Project Appraisal Document
PDO	Project Development Objective
PDPA	Plan for Environmental Development and Protection (*Plano de Desenvolvimento e Proteção Ambiental*)
PMBSC	Municipal Government of São Bernardo do Campo (*Prefeitura Municipal de São Bernardo do Campo*)
PMG	Municipal Government of Guarulhos
RAP	Resettlement Action Plan
RF	Resettlement Framework

Results Framework[68]
Integrated Water Management in Metropolitan São Paulo - PMSBC Project
(IBRD 8149-BR)

(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 4:	(a.2.) Water bodies' quality maintained, even with population increases (water quality measured using the following water various monitoring points at Billings and PMSBC) using IAP, IVA, and IQA indicators			
Value (quantitative or qualitative)	Bad	Good/Normal	—	Data not available
Date	2007	09/30/2015	—	09/30/2015
Comments (including % achievement)	Project closed without implementing any activity.			
Indicator 7	(b) Degree of satisfaction of the population based on:			
	(b.1.) Physical, social and environmental changes due to the program (opinion surveys)			
Value (quantitative or qualitative)	Low	High	—	Data not available
Date	2007	09/30/2015	—	09/30/2015
Comments (including % achievement)	Project closed without implementing any activity.			
Indicator 8	(b) Degree of satisfaction of the population (b.2.) Real estate valuation (market and opinion surveys)			
Value (quantitative or qualitative)	To be defined	To be defined	—	Data not available
Date	2007	09/30/2015	—	09/30/2015
Comments (including % achievement)	Project closed without implementing any activity.			
Indicator 9	(b) Degree of satisfaction of the population (b.3.a.) Proportion of dwellings with adequate WSS services			
Value (quantitative or qualitative)	55%	65%	—	Data not available
Date	2007	09/30/2015	—	09/30/2015
Comments (including % achievement)	Project closed without implementing any activity.			
Indicator 10	(b) Degree of satisfaction of the population (b.3.b.) IQVU (Urban Quality of Life Index)			

[68] PMSBC project was not restructured. Its results framework relates to the original PMSBC PAD only.

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Value (quantitative or qualitative)	To be defined	To be defined.	—	Data not available
Date	2007	—	—	09/30/2015
Comments (including % achievement)	Project closed without implementing any activity.			
Indicator 11	Increase in number of leisure and green areas (parks, squares, etc.).			
Value (quantitative or qualitative)	—	To be defined	—	0
Date	2007	09/30/2015	—	09/30/2015
Comments (including % achievement)	Project closed without implementing any activity.			

(b) Intermediate Results Indicators

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Component 1: Institutional Capacity Building				
Indicator 2	PDPA			
Value (quantitative or qualitative)	0	Prepared	-	Not achieved because the activity was not implemented
Date	2007	2014	-	09/30/2015
Comments (including % achievement)	Project closed without implementing any activity.			
Indicator 7	(f) Environmental and sanitary education program implemented			
Value (quantitative or qualitative)	-	Implemented	-	Not achieved because the activity was not implemented
Date	2007	2015	-	09/30/2015
Comments (including % achievement)	Project closed without implementing any activity.			
Component 2: Urban Integration				
Indicator 11	(b) Interventions implemented to urbanize slums, benefiting # of families			
Value (quantitative or qualitative)	0	3,000 families	-	Not achieved because the activity was not implemented
Date	2007	2015	-	09/30/2015

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Comments (including % achievement)	Project closed without implementing any activity.			
Indicator 12	(c) % house units constructed for family resettlement			
Value (quantitative or qualitative)	0	100%	-	Not achieved because the activity was not implemented
Date	2007	2015	-	09/30/2015
Comments (including % achievement)	Project closed without implementing any activity.			
Indicator 13	(d) Resettlement of % families completed in accordance with appropriate local and Bank safeguards.			
Value (quantitative or qualitative)	0	100%	-	Not achieved because the activity was not implemented
Date	2007	2015	-	09/30/2015
Comments (including % achievement)	Project closed without implementing any activity.			
Component 3: Environmental Protection and Recovery				
Indicator 14	(a) # ha of public parks and leisure facilities planned and implemented;			
Value (quantitative or qualitative)	-	To be defined	-	Not achieved because the activity was not implemented
Date	2007	2015	-	09/30/2015
Comments (including % achievement)	Project closed without implementing any activity.			
Indicator 16	(c) # of seedlings planted on the banks of water bodies included in the Project.			
Value (quantitative or qualitative)	-	To be defined	-	Not achieved because the activity was not implemented
Date	2007	2015	-	09/30/2015
Comments (including % achievement)	Project closed without implementing any activity.			

Summary and Overview of ICR findings

1. The Municipal Government of São Bernardo do Campo (*Prefeitura Municipal de São Bernardo do Campo*, PMSBC) Project was part of the Adaptable Program Lending (APL) 2007 appraisal analyses and review as were the Government of the State of São Paulo (GESP), State Water and Sanitation Autonomous Utility State Water and Sanitation Autonomous Utility (*Saneamento Básico Do Estado De São Paulo*, SABESP), and Municipal Government of Guarulhos (PMG) Projects. While the GESP and the SABESP Projects received Board approval in June 2009, the PMSBC was approved in March 2012 by the Latin America and Caribbean Regional Vice President. The PMG declined to participate. To harmonize with the APL closing date, the PMSBC Project implementation period was limited to two years and nine months. The project's main activity was a relatively large slum-upgrading intervention. It also included development of a complex study on correlating water quality and land use and few other consultancies. The design for the slum-upgrading intervention was in progress by the loan signing.

2. During implementation, none of the project activities was implemented. The needed information on costs, technical specifications, and schedule became gradually available late at implementation, revealing much higher costs and technical complexities than foreseen. The municipal government was successful in negotiating additional funds, increasing three times the slum-upgrading budget, but did not succeed in ensuring the funds availability before the closing date. In addition, no agreement was reached regarding compliance with the World Bank Resettlement Policy on some proposed resettlement solutions. The project closed on the original closing date.

1. Project Context, Development Objectives and Design

1.1. Context at Appraisal

3. In line with the horizontal APL design, which allowed subsequent loans to be presented to the World Bank once they had been given the requisite federal government clearance to negotiate, the PMSBC Project was approved on March 1, 2012, by the Latin America and Caribbean Regional Vice President. The project became effective in October 2012.

4. The project's abbreviated Project Appraisal Document (PAD) was also prepared in 2012 and incorporated as an annex to the APL's PAD, which, when approved by the Board in 2009, had in its annexes the simplified PADs for the GESP and SABESP Projects. The closing date of the two ongoing projects (the GESP and the SABESP) set the closing date (September 2015) for the PMSBC Project, whose implementation period was then limited to two years and nine months.

5. The PMSBC Project was of high relevance to the APL's Project Development Objectives (PDOs). The PMSBC's territory encompasses most of the river basins where the Billings reservoir is located. The project activities directly supported two of the three APL PDOs.

1.2 Original Project Development Objectives (PDO) and Key Indicators

6. The original PDO, as defined in the PAD, dated March 1, 2012, for the Integrated Water Management in Metropolitan São Paulo - APL was

(a) To protect and maintain the quality and reliability of MRSP's water resources and potable water sources; and

(b) To improve the quality of life of the poor populations residing in key targeted urban river basins in MRSP.

7. As defined in the PAD, the key indicators and the PDO alignment are presented below:

(a) To protect and maintain the quality and reliability of MRSP's water resources and potable water sources

- (a.1.) Reduction of pollution loads to the Guarapiranga water body (measured by using two monitoring points, one located in the Tanquinho Stream and the other in the Pedras River)

- (a.2.) Maintenance of the water quality of Guarapiranga and Billings water bodies, even with projected population increases (measured by using nine monitoring points and the following three analytical methods IAP,[69] IVA,[70] IQA[71])

(b) To improve the quality of life of the poor population residing in key targeted urban basins in MRSP

- (b.1.) Improvements in the quality of life of the targeted population based on
  - (b.1.1.) Improved physical, social and environmental changes (measured by using public opinion surveys);
  - (b.1.2.) Increase in real estate valuation (measured by using real estate value surveys);
  - (b.1.3.) Increased access to improved water supply, sewerage, drainage, and solid waste services (coverage and quality of services) (measured by using the two following methods: proportion of dwellings with adequate WSS services[72] and IQVU[73]); and

[69] IAP - *Indice de qualidade de Água bruta para fins de abastecimento Público* (São Paulo State specific Raw Water Quality Index for Public Water Supply).
[70] IVA - *Indice de qualidade de água para protectão da Vida Aquática* (São Paulo State specific Water Quality Index for Protection of Aquatic Life).
[71] IQA - *Indice de Qualidade de Água* (National Water Quality Index).
[72] The indicator is currently used by the Brazilian Census Institute, data is available and published at the municipal level with census, and defines what 'adequate basic sanitation' means and quantifies it.
[73] The Quality of Urban of Life Index (*Indice de Qualidade de Vida Urbana*, IQVU) is composed of 11 variables: commerce and services, culture, economy, education, housing (housing conditions and WSS), health, urban management instruments, socio-political participation and organization, urban environment, public safety, and transport. The calculation of the index uses a mathematical model that considers the weighted impact of a total of 49 variables.

- (b.1.4.) Increase in number and size of leisure and green areas (parks, squares, other public spaces, and so on) (hectares).

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

8. The PDO was not revised.

1.4 Main Beneficiaries

9. The PAD for the PMSBC Project indicates that the project was estimated to benefit around 3,000 families with urban upgrading activities.

1.5 Original Components

10. The original components, as defined in the Loan Agreement between the World Bank and the PMSBC (dated October 29, 2012), are listed in the following paragraphs.

Component 1: Institutional Capacity Building

11. Strengthening of the borrower's planning and programming capacity to preserve and restore headwater areas of those parts of the sub-basin within the borrower's territory, including, among others,

(a) Improved integrated land use and water resources management and coordination, preparation of the borrower's Environmental Development and Protection Plan (*Plano de Desenvolvimento e Proteção Ambiental*, PDPA), including the carrying out of field surveys, studies, and capacity-building events, and the development of information systems and monitoring indicators, all designed to assist in the formulation and implementation of such plan

(b) Environmental education program and social outreach (i) carrying out of an assessment of the current situation of environmental education in the borrower's territory, (ii) development of an environmental education program and materials with skills training for community leaders and other stakeholders, and (iii) implementation of such program in the Selected Irregular and Precarious Settlements being upgraded under Component 2.

(c) Project management, monitoring, evaluation, and dissemination provision of technical assistance as needed for project management, monitoring, evaluation, and dissemination

Component 2: Urban Upgrading

(a) Carrying out of urban upgrading in Selected Irregular and Precarious Settlements including, among others, (i) the carrying out of the respective final engineering designs, (ii) the carrying out of the corresponding civil works for the urbanization of such slums and irregular settlements, (iii) the construction and/or improvements of

houses for the affected families within such slums and irregular settlements, and (iv) the recovery and/or conversion of degraded urban areas into public spaces

(b) Carrying out of rehabilitation activities of high-risk and degraded urban areas in the Selected Irregular and Precarious Settlements, including, among others, (i) the carrying out of the final engineering designs and (ii) the carrying out of the corresponding civil works

(c) Carrying out of the involuntary resettlement of families affected by urban upgrading interventions or living in the high-risk or degraded areas referred to in paragraphs (a) and (b) above, through the (i) preparation of detailed Resettlement Action Plans with the corresponding engineering designs of the associated civil works, (ii) implementation of said Resettlement Plans, (iii) monitoring and evaluation (M&E) of the resettlement process; and (iv) carrying out of social outreach and guidance initiatives before, during, and following the carrying out of the civil works mentioned in paragraphs (a) and (b) in this list

(d) Carrying out of land regularization processes in Selected Irregular and Precarious Settlements in the borrower's territory

(e) Establishment of an ecology and Citizenship Center in the borrower’s territory, including, among others, (i) the preparation of the respective engineering design and (ii) the carrying out of the corresponding civil works

(f) Preparation and implementation of a plan for social work and community participation to support project’s and program's activities in the Selected Irregular and Precarious Settlements

Component 3: Environmental Protection and Recovery

(a) Preparation and implementation of tree-planting programs in Selected Irregular and Precarious Settlements

(b) Carrying out of the urbanization of public areas with green and leisure spaces for common use in the Selected Irregular and Precarious Settlements, including, among others, (i) the preparation of the respective engineering designs and (ii) the carrying out of corresponding civil works

1.6 Revised Components

12. The project components were not revised.

1.7 Other Significant Changes

Not applicable.

2. Key Factors Affecting Implementation and Outcomes

2.1 Project Preparation, Design and Quality at Entry

13. **Lessons learned.** The description of the slum-upgrading component clearly reflects the integration of important lessons generated from the numerous slum-upgrading interventions implemented in the Metropolitan Region of São Paulo (MRSP) since the early 1990s. However, the key elements of the available lessons were not considered—such as costs, implementation timetable, and other relevant technical aspects. These key elements have been tested by the market and are the basis for several comprehensive studies guiding the implementation of slum-upgrading interventions. They are extremely valid in minimizing the uncertainties associated with those interventions.

14. **Readiness for implementation and targeted areas.** The project's components, as presented in the PAD, were developed just up to a concept level. A significant work was still needed to get to the definition level required for implementation. Further, the PAD does not discuss any sequencing of the activities; it seems the project was to advance on all fronts simultaneously. Readiness for implementation would have been higher, if during preparation, a pre-feasibility study had been carried out for the slum-upgrading works, which absorbed some 80 percent of the project total funds. No justification was found regarding the selection of the specific slum targeted by project, since there were other slums areas with similar characteristics in the municipal territory.

15. **Unrealistic project implementation extent.** The closing date of the PMSBC Project was apparently fixed by the closing date of the two other projects under the APL. As a result, the PMSBC Project's implementation length was limited to two years and nine months, which was not at all compatible with the technical nature of the activities financed under the project.

16. **Government commitment.** The efforts the PMSBC undertook to overcome the extensive process to obtain clearance to negotiate with the World Bank and the follow-up steps to the loan signature constituted sound indications of a high level of commitment. In addition, project implementation and the mayor's second four-year term started simultaneously, which proved to be beneficial to the project. Also, slum-upgrading interventions were a priority for municipalities in the MRSP; these were very likely a priority for the PMSBC too, given the associated poverty alleviation results. The slum-upgrading intervention financed under the project was probably the largest to be undertaken by the PMSBC, but not the first.

17. **Risks and mitigations.** Critical risks and mitigations identified in the PAD did not include the real elements likely to cause the major difficulties such as the unrealistic implementation length and the lack of technical information supporting basic design aspects, for example, budget allocation.

2.2 Implementation

18. During the implementation period of two years and nine months, the only contract implemented under the project was for an individual consultant to prepare a selection process following the World Bank's procurement procedures. That, together with the loan front-end fee, amounted to a disbursement of approximately 1 percent of the loan. During the implementation, the slum-upgrading component, the largest in the project, faced numerous problems, most of them

quite complex and those constituted the critical pillars of the intervention. A solution to many of these problems was found, but the process involved depleted the time allocated for project implementation. Some of the most relevant problems are summarized in this section.[74]

19. **Delays in the preparation of the engineering designs.** Although these studies were initiated almost one year before the World Bank signed the loan, their conclusion took almost two years longer than originally expected, three years in total. In consequence, inputs such as the cost of the works, the multiple technical and legal interferences to be addressed and the resettlement implications, among other critical elements, became available by mid-2014, about one year before the project closing date.

20. **Costs of the slum-upgrading works.** As the preparation of the engineering designs evolved and produced accurate and in-depth technical information, the estimated costs of the works increased exponentially. An estimate discussed with the World Bank in December 2012 indicated that the total estimated costs of the slum-upgrading component was then approximately US$108 million[75], more than twice the amount in the project PAD. To face the increase in cost estimates for the slum-upgrading works, the municipal team requested financing to the federal government and obtained it by the end of the project's first year. However, the financing required a long and detailed review of the technical information before the funds were made available, which also counted against the project implementation time frame. The decision of the federal government to provide financing triggered the need to address an important impasse: the works would be co-financed by the federal government and World Bank, so the World Bank's procurement rules had to be used, while the federal government funds required the use of the national procurement rules. After complicated and time-consuming procedures, the federal government agreed to use the World Bank procurement rules, which might have benefited many other operations as well.

21. **Severe delays in producing needed technical information.** The accurate technical information made available by the engineering designs also made it clear that the time frame to execute the slum-upgrading works was much longer than originally conceived. A few months before the project closing date, the municipal team estimated that it required an additional three years and six months to procure and execute the works.

22. **Changes in resettlement housing financing.** The municipal team opted to change the financing arrangement available under the APL Program to finance the resettlement housing to offer better financing terms to the population to be resettled. They succeeded and also obtained an upper limit to the cost of the housing unit.

23. **Proposed resettlement solutions found in disagreement with OP 4.12.** Together with the engineering designs, a Resettlement Plan was prepared. Both became available just a few months before the project closing date. It revealed that there were 29 rental houses that needed to be demolished. The houses had 12 different owners (mostly 2 rental houses per owner) and the

[74] The information presented was obtained on the project records, mainly the mission Aide Memoires from 2010 to 2015.

[75] Aide Memoire from 7, December 13–14, 2012. Costs in *real* presented in annex 5, the amount in U.S. dollars in the Implementation Completion and Results Report (ICR) was calculated based on currency exchange rate effective on January 2012, which is the information provided in the Project PAD dated March 1, 2012.

municipality proposed to provide to each owner, according to compensation, just one new resettlement house. The municipality also stressed that providing more than one resettlement house to each owner, as compensation for a rental house, would constitute an incentive to the unregulated settlement practice and in non-agreement with the municipality policies in place. The World Bank team considered this solution in disagreement with the World's Bank Resettlement Policy.

24. **Cash compensation financing constraints.** The Resettlement Plan also revealed the large cash compensation amount required, given the significant number of population to be resettled that had chosen this alternative and the affected houses' costs. The municipality preferred to offer a resettlement housing solution, which it considered a more an appropriate solution for low-income households living in areas under critical risk. Moreover, the municipality did not found appropriate to use own funds to finance cash compensation solution, which was also not usually accepted by the Brazilian juridical system as an appropriate solution. In order the fulfill the cash compensation requirements consistent with the World Bank resettlement policies, the municipality inquired the World Bank if the loan could be used for that purpose. The World Bank replied that the authorization required was extremely difficult to obtain.

25. **Intervention size and available financing.** On the supervision records, there are no clear indications that discussions were held envisaging adjusting the intervention size to the available financing. Also, there is no clear information on the tentative changes on the slum-upgrading designs to minimize the resettlement needs. As it is known, the designs of a slum-upgrading intervention are quite flexible because they are not required to follow a regular urban standard or norms. In consequence, many changes can be introduced for different reasons such as to reduce costs, avoid undesirable impacts, shorten implementation timetable, reduce the number of households to be resettled, and so on.

26. **Additional project activities.** In parallel to the activities dedicated to the slum-upgrading component, the municipal team focused their attention on preparing the documentation to launch three large consultant contracts. The following progress was achieved: (a) the PDPA (linking urban water pollution and poverty land use): Selection documents sent to the World Bank for review; (b) Request for Expression of Interest published—few firms manifested interest; (c) Environmental Education Plan: terms of reference sent to the World Bank for review, Request for Expression of Interest published—few firms manifested interest; and (d) project management support: terms of reference sent to the World Bank for review.

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

27. The M&E was designed to reflect (a) the APL objectives through the PDO-level outcome indicators and (b) the participant projects' outputs through the intermediate outcome indicators. Thus, each participant project assumed its share of the intermediate outcome indicators and adjusted it by reducing it to the indicators that reflected the activities they selected to implement. The PDO-level outcome indicators did not reflect any of the projects individually; they were designed to reflect the outcomes to be achieved through an integrated and coordinated implementation of several projects activities. In consequence, none of participant projects associated the PDO-level outcome indicators with their specific project. As the PMSBC project did not implement any of its planned activities, no data were produced that could support M&E implementation and utilization.

2.4 Safeguard and Fiduciary Compliance

28. The APL received a World Bank Environmental Category A rating and triggered the following safeguards: OP 4.01 (Environmental Assessment), OP 4.04 (Natural Habitats), OP 4.11 (Physical Cultural Resources), OP 4.12 (Involuntary Resettlement), and OP 4.37 (Safety of Dams). The activities under the APL, both consultancies and physical investments, were reviewed by the World Bank safeguard specialists—social and environmental—during the preparation and implementation phases of the APL and the participant projects.

OP 4.12 - Involuntary Resettlement

29. A Resettlement Framework (RF) was part of the APL package the Board approved on June 9, 2009. It was disseminated, discussed with stakeholders, and disclosed as required. The framework provided for the overall potential impact associated with the OP 4.12 and, in particular, with respect to the involuntary resettlement related to slum-upgrading interventions. The RF incorporated the lessons learned from several slum-upgrading interventions implemented under the antecessor project (the Guarapiranga Program). These lessons were of great relevance for guiding resettlement solutions under slum-upgrading interventions because they had been tested and achieved proven positive results. In addition, the RF demonstrated that the resettlement solutions are an integral part of the slum-upgrading intervention, which can ensure that the entire population living in the targeted area benefits, including the population resettled. The RF was incorporated in the Operations Manual guiding the three loans under the APL and complied with the APL as described in this section.

30. **OP 4.12/PMSBC Project.** The main activity of this project was the undertaking of a slum-upgrading intervention benefiting approximately 3,000 low-income families. Large segments of the area were under constant risks of erosion causing the precarious houses to slide on the slopes; in addition, the entire area was deprived of basic infrastructure and services generating serious health risks to the population and also, pollution loads to the Billings reservoir. During the implementation of the PMSBC Project, a Resettlement Action Plan (RAP) was prepared along with the development of the slum-upgrading engineering designs. According to the RAP, a total of 976 families are to be resettled, of which 276 families are to benefit from an in-slum resettlement and the remaining to be resettled in an adjacent land area. Following several discussions held with the client, the World Bank team stated that the solutions in the RAP offered to the renters and commercial units were in disagreement with the World Bank OP 4.12. In addition, the option of cash compensation resulted in a significant amount of resources, which the PMSBC was not ready to finance. The PMSBC consulted the World Bank whether cash compensation could be financed by the loan, and the World Bank clarified that it was not possible.

31. The project documents do not clarify if discussions were held to adjust the slum-upgrading designs to reduce population resettlement or avoid resettlement, which solutions had proven difficult to achieve. Nevertheless, given that (a) the detailed information on resettlement was made available too close to the project closing date, (b) the activities were still being prepared for implementation although the implementation period had already elapsed, and (c) the unsolved issues related to resettlement, the World Bank opted to close the project on the original closing date. Thus, none of the activities planned under the PMSBC Project was implemented. More

specifically, no activity related to the implementation of the population resettlement was carried out under the PMSBC Project.

Specific information on resettlement under the PMSBC Project

32. **Resettlement instruments.** An RF was prepared as part of the APL Program. Simultaneous to the preparation of the engineering designs, a Resettlement Plan was prepared for the project investments in works, which consisted of investments to upgrade four selected slums within the project area. The estimated population in the area and those affected by resettlement included the following:

- 3,200 families (approximately 10,000 people) living in the four selected slum areas
- 976 families to be resettled; of those, 276 families to be resettled within the slums area and the remaining to be resettled in a terrain adjacent to the one of the four slums

33. **Land and financing to build the resettlement units.** The funds to finance the resettlement housing construction were available and financed by a state-housing agency. Seeking better financing terms in benefit of the families to be resettled, the municipal team was successful in negotiating with a different housing agency than the one originally included in the program.

34. **Compliance with the Resettlement Policy.** Once the Resettlement Plan was available, it was revealed that a resettlement compensation solution did not comply with the World Bank Resettlement Policy, as follows: among the 976 constructions affected by the slum-upgrading works, there were 29 rental houses, owned by 12 different owners (2–4 houses per owner). The municipality proposed to compensate by providing one resettlement house per owner. The World Bank considered that the solution was not in compliance with the Resettlement Policy. The project closed before further discussions took place.

35. **Funds for the cash compensation.** Once the Resettlement Plan was prepared and the number of affected people who opted for cash compensation was known, the municipality realized that there were no municipal funds to pay for the amount of cash compensation requested. Then, the municipality inquired whether the World Bank loan could finance the cash compensation. The World Bank replied that the authorization required was extremely difficult to obtain.

OP 4.01 - Environmental Assessment

36. A regional Environmental Assessment was prepared in accordance with the requirements for an Environmental Category A operation. It was disseminated, discussed, and disclosed following the procedures required under OP 4.01. During the project implementation, specific Environmental Assessments were prepared for each intervention. Also, specific environmental studies were undertaken as required by the Brazilian environmental licensing procedures. In addition, the assessment and studies were disseminated, discussed, and disclosed as required both by the OP 4.01 and the Brazilian environmental legislation.

OP 4.04 - Natural Habitats

37. In the preparation phase, interventions in environmentally protected areas were considered under the APL. However, during implementation, the sole intervention that triggered OP 4.04 was the slum-upgrading investments under the PMSBC Project. The preparation of the slum-upgrading designs fully complied with the OP 4.04 requirements. Nevertheless, the implementation of the slum-upgrading intervention did not take place. The PMSBC Project closed on the original closing date without implementing any activity.

OP 4.11 - Cultural Property

38. Procedures in agreement with the OP 4.11 were incorporated as appropriate in the Operations Manual, as well as in the Construction Manual. During implementation, the specific Environmental Assessment prepared for each intervention also carried out an assessment following the OP 4.11 directives. Elements associated with the OP 4.11 were not found in the interventions areas.

Financial Management

39. **Loan 81490 - PMSBC.** The loan was not implemented (99.54 percent of the loan funds were cancelled) and had a very low disbursement rate. All financial management (FM) supervision missions were rated as Moderately Satisfactory. The FM risk rating was considered Low throughout the loan's life. Due to the low disbursement rate/lack of project activities, no formal audit was undertaken for the loan. Instead, the FM Specialist performed alternative procedures (transaction review) to assure the eligibility of expenditures. All interim financial reports received during the life of the project were considered acceptable and were received on time. There were no instances of ineligible expenditures identified.

Procurement

40. Unfortunately, the PMSBC had a lot of difficulties in conducting the procurement processes defined in the Procurement Plan. The low capacity of the team in terms of World Bank's rules and to handle international consulting services is justified as the PMSBC has little experience with multilateral agencies. From a procurement perspective, the PMSBC only undertook one process; the PMBSC hired an individual consultant to help it prepare other procurement processes, and this process took almost nine months to be completed. Other technical and political uncertainties influenced the procurement work, and either because of the technical issues or low capacity, the procurement from the PMSBC was unsatisfactory for the entire life of the project.

2.5 Post-completion Operation/Next Phase

41. Not applicable.

3. Assessment of Outcomes

3.1 Relevance of Objectives, Design and Implementation

Relevance of Objectives **Rating: Substantial**

42. The project objectives, as stated under the APL objectives continue to be relevant both for the country, the global priorities, and the World Bank Group's Country Partnership Strategy (CPS) 2012–2015)[76] valid by the project closure. The CPS supports Brazil through four pillars of engagement: equity, sustainability, competitiveness, and sound macroeconomic management. The CPS asserted that Brazil continued to falter in environmental sustainability and that water scarcity and environmental degradation were urgent problems hindering the country's sustainable growth.

43. In addition, the project objective's relevance to the current situation of the country still remains high. It is consistent with Brazil's Country Partnership Framework (CPF)[77]for the period of FY18–FY23. The CPF presents three areas of priorities, being number 3 the one that focus on inclusive and sustainable development with the objective, among others, to increase urban resilience and provide more sustainable and inclusive urban services. Promoting the improvement of the quality of urban infrastructure, improving the efficiency of service delivery, and building resilience of populations against the variability of water supply are among the key activities proposed. In conclusion, the project's objectives are still closely aligned with the CPS in place by the project closure and the CPF valid for the coming years.

44. The protection of the MRSP headwater continues to be a high priority for the state and municipal governments as well, as confirmed during a stakeholder workshop carried out as part of the ICR preparation. Working in complex urban upgrading environment is seen by municipal government as a key role that the Bank should continue to support. Moreover, the implementation and monitoring of the action plan ensuring water security in the MRSP continues as a top priority for state and municipal governments as demonstrated by several comprehensive plans and measures.

Relevance of Designs and Implementation **Rating: Negligible**

45. Since the activities were not implemented, the relevance of design and implementation has not been assessed. Despite the World Bank's and the client teams' effort, severe delays in producing crucial inputs needed for project implementation impeded the start of implementation before the closing date deadline.

3.2 Achievement of Project Development Objectives

46. According to the Loan Agreement dated October 29, 2012, the PMSBC Project committed to achieve two (Objectives 1 and 2) objectives under the APL:

(a) To protect and maintain the quality and reliability of MRSP's water resources and potable water sources

[76] CPS 89496. In 2016, the World Bank launched the Brazil Systematic Country Diagnostic (SCD) to inform the preparation of a new Country Partnership Framework (CPF).
[77] CPF report number 113259-BR for FY2018-2023 was approved by the Board in June 2017.

(b) To improve the quality of life of the poor population residing in key targeted urban river basins

Objective 1: To protect and maintain the quality and reliability of MRSP's water resources and potable water sources **Rated: Negligible**

47. The project closed without having implemented any activity. Thus, Objective 1 was not achieved.

Objective 2: To improve the quality of life of the poor populations residing in key targeted urban river basins in MRSP **Rated: Negligible**

48. The project closed without having implemented any activity. Thus, Objective 2 was not achieved.

3.3 Efficiency **Rated: Negligible**

49. The project activities were not implemented; thus, no efficiency parameter can be measured.

3.4 Justification of Overall Outcome Rating (combining relevance, achievement of PDOs, and efficiency) **Rated: Highly Unsatisfactory**

50. Although the project relevance of objectives continues to be substantial, the project activities were not implemented. In consequence, the PDOs were not achieved and the efficiency cannot be measured.

3.5 Overarching Themes, Other Outcomes and Impacts

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

51. There are no other outcomes and impacts because the project activities were not implemented.

(b) Institutional Change/Strengthening

52. Although the project activities were not implemented, it is plausible to conclude that the municipal institutions involved with the project went through an intense learning exercise while working on the numerous issues that emerged during the project implementation. Despite not having implemented the project, the municipal team's capacity was undoubtedly higher by the project closure than it was when the project started.

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

Not applicable.

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

Not applicable.

4. Assessment of Risk to Development Outcome Rating

Rating: Not applicable.

53. As the project activities were not implemented, and in consequence, the PDO was not achieved, the risk to development outcome cannot be assessed.

5. Assessment of Bank and Borrower Performance

5.1 Bank Performance

(a) Bank Performance in Ensuring Quality at Entry **Rated: Unsatisfactory**

54. Although the project was appraised in 2007 and re-appraised in 2012, the lack of relevant technical information concerning key designs elements such as costs, size of the interventions, and implementation time frame created conditions that led to an erratic, unpredictable project implementation.

(b) Quality of Supervision **Rated: Unsatisfactory**

55. In general, the missions were organized to ensure that the supervision of the three projects was carried out under each mission. This arrangement might have contributed to weaken the quality of the supervision given that each project had a different technical nature, requiring, in consequence, specific technical support. In the case of the PMSBC Project, the inclusion of an expert in slum-upgrading works would have most likely contributed to enhance the guidance provided during supervision. Also, as the technical information became gradually available during the implementation, indicating the intervention limitations regarding costs, timetables, and resettlement issues, there was room for adjusting the project size, location, and schedule according to these limitations. This would be a plausible measure considering the complexity of a slum-upgrading intervention. However, no discussion on this regard has been found on the implementation records.

(c) Justification of Rating for Overall Bank Performance **Rated: Unsatisfactory**

56. The rating is based on the insufficiencies related to the quality at entry and the absence of recorded actions during supervision to align the project with essential elements such as financial resources and implementation timeframe.

5.2 Borrower Performance

(a) Government Performance **Rated: Unsatisfactory**

57. The Government of the Municipality of São Bernardo do Campo was successful in finding solutions to critical elements of the project such as the strong push to overcome the extensive process to obtain clearances to appraise and negotiate the project. In addition to its efforts to identify additional sources of fund once the project increased costs, although the additional funds were not still available by the project closing date. The government of PMSBC had prioritized slum-upgrading interventions and had implemented several during the project lifetime with

support from the Federal and State Governments. Given the several problems the project faced, it is plausible to infer that the Government actions and projections did not translate into a realistic approach.

(b) Implementing Agency or Agencies Performance **Rating: Unsatisfactory**

58. The implementing agency failed in providing the basic technical support required in implementing the project activities.

(c) Justification of Rating for Overall Borrower Performance **Rated: Unsatisfactory**

59. The Unsatisfactory rating has been provided for the overall borrower performance given the insufficiencies on realism and technical capacity to prepare and implement the project according to its design, in particular, funds and time frame.

6. Lessons Learned

60. **Need for implementation readiness':** Ensuring implementation readiness is important for successful implementation of the Project. The lack of relevant technical information concerning key designs elements such as costs, size of the interventions, and implementation time frame created conditions that led to an erratic, unpredictable project implementation. Readiness for implementation would have been higher, if during preparation, a pre-feasibility study had been carried out for the slum-upgrading works, which absorbed some 80 percent of the project total funds.

61. **The integrated approach to tackle urban water pollution continues to be relevant and up to date.** Despite the complex and difficult challenges as well as the extensive time frame required, the stakeholders reiterated that the integrated approach continues to be valid as the foremost solution to effectively address the numerous multi-sectoral issues. Also, they reiterated that the World Bank's decisive support to the approach was critical and conducive to its consolidation as a valid, tested approach and widespread acceptance. However, they also pondered that a loan has its limitations, which might create difficulties to address the integrated approach in its totality. In conclusion, the choice of supporting strategic elements of the approach with a realistic timeframe might be more consistent with the limitations of a loan and, as such, more effective.

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

(a) Borrower/implementing agencies

62. The borrower raised some comments on specific issues in a meeting held in April 2016. In this meeting, participants of the municipal team were present as well as a World Bank team member, who took note of the points described in this section.

63. **Program relevance.** The municipal team pointed out that the program was innovative, complex, and ambitious. It addressed one of the challenges of the MRSP—the need for a coordinated action, involving state and municipal agencies, to handle issues related to urban water pollution and poverty/land use. The municipal team also stressed that they believed the resources and tools made available to the program were not sufficient to respond to the magnitude of the problems requiring solutions.

64. **Program limitation.** The municipal team believed that they have clearly understood that the program objectives, design, and financial resources were not compatible. To achieve the intergovernmental coordination sought by the program, it would have required more flexible funding mechanisms, larger financial resources, and a stronger World Bank commitment (the World Bank acting as an 'honest broker'). The municipal team also acknowledged that the program's strength diminished because of the political and fiscal constraints the country has faced.

65. **Communication with the World Bank.** The municipal team mentioned that the communication with the World Bank was difficult, sometimes ambiguous. In addition, they suggested that they felt the World Bank wanted to stop participating in the project at an earlier stage. If this was true, the World Bank should have clearly informed its intention, allowing the municipality to seek for an alternative financing source.

66. **World Bank as convening power.** According to the municipal team, the World Bank did not play the role expected by the stakeholders, which required the World Bank to use its convening power to make the stakeholder to work together to move forward the integrated urban water management agenda in the MRSP.

67. In addition to these comments, PMSBC has sent minor suggestions for revision to the draft ICR which have been incorporated in the document. A letter was also received where comments were made to the overall document and program results (see Annex 7 of the Program ICR for full letter translated to English).

(b) Co-financiers

Not applicable.

(c) Other partners and stakeholders

Not applicable.

Annex 1. Project Costs and Financing

(a) Project Cost by Component (in US$, millions equivalent)

Components	Appraisal Estimate (US$, millions) [78]	Actual/Latest Estimate (US$, millions) (August 31, 2017)	Percentage of Appraisal
1. Institutional Capacity Building	**5.74**	**0.01**	**—**
Borrower	0.04	—	—
IBRD	5.70	0.01	—
2. Urban Upgrading	**32.68**	**—**	**—**
Borrower	18.88	—	—
IBRD	13.80	—	—
3. Environmental Protection and Recovery	**2.94**	**—**	**—**
Borrower	1.67	—	—
IBRD	1.27	—	—
Unallocated	—	—	—
Front-end fee IBRD	0.05	0.05	—
Total Financing Required	**41.50**	**0.10***	**0.24**

***** The system rounded it up: includes expenditure of a US$0.01 million for a consultant work and the front-end fee.

(b) Financing

Source of Funds	Type of Cofinancing	Appraisal Estimate (US$, millions)	Actual/Latest Estimate (US$, millions)	Percentage of Appraisal
Borrower	—	20.58	0.00	0.00
IBRD	—	20.82	0.10	0.48

[78] PAD Report No. 66805-BR – page 117.

Annex 2. Outputs by Component

Outputs by Components: PMSBC

From Loan Signing (October 2012) to Original Closing Date (September 2015)

Note: There were no project outputs. Disbursement was less than 1 percent of the loan amount. An individual consultant was paid to prepare bidding documents that were not put for tender.

PMSBC - From Loan Signing (October 2012) to Original Closing Date (September 2015) Components, Subcomponents, Activities[79]		Financing		Costs	Output
		CP 100%	Loan + CP		
Component 1: Institutional Capacity Building					
1. Strengthening of the borrower's planning and programming capacity to preserve and restore headwater areas of those parts of the sub-basin within the borrower's territory, including, among others,		—	—	—	Not Implemented
(a) Improved integrated land use and water resources management and coordination, preparation of the PDPA, including the carrying out of field surveys, studies, and capacity-building events, and the development of information systems and monitoring indicators, all designed to assist in the formulation and implementation of such plan		—	—	—	
(b) Environmental education program and social outreach:	(b)(i) Carrying out of an assessment of the current situation of environmental education in the borrower's territory	—	—	—	
	(b)(ii) Development of an environmental education program and materials with skills training for community leaders and other stakeholders				
	(b)(iii) Implementation of such program in the Selected Irregular and Precarious Settlements being upgraded under Component 2				
(c) Project management, monitoring, evaluation, and dissemination: Provision of technical assistance as needed for project management, monitoring, evaluation, and dissemination.		—	—	—	
Component 2: Urban Upgrading					
(a) Carrying out of urban upgrading in Selected Irregular and Precarious Settlements including, among others,		—	—	—	Not implemented
(a)(i) Carrying out of the respective final engineering designs;		—	—	—	
(a)(iii) Carrying out of the corresponding civil works for the urbanization of such slums and irregular settlements;		—	—	—	
(a)(iii) Construction and/or improvements of houses for the affected families within such slums and irregular settlements; and		—	—	—	
(a)(iv) Recovery and conversion of degraded urban areas into public spaces.		—	—	—	
(b) Carrying out of rehabilitation activities of high-risk and	(b)(i) Carrying out of the final engineering designs; and	—	—	—	Not implemented

[79] Components, subcomponents, activities as in the Project Loan Agreement.

PMSBC - From Loan Signing (October 2012) to Original Closing Date (September 2015) Components, Subcomponents, Activities[79]		Financing		Costs	Output
		CP 100%	Loan + CP		
degraded urban areas in the Selected Irregular and Precarious Settlements, including, among others.	(b)(ii) Carrying out of the corresponding civil works.				
(c) Carrying out of the involuntary resettlement of families affected by urban upgrading interventions or living in the high risk or degraded areas referred to in paragraphs (a) and (b) above, through	(c)(i) Preparation of detailed Resettlement Plans with the corresponding engineering designs of the associated civil works;	—	—	—	
	(c)(ii) Implementation of said Resettlement Plans;	—	—	—	
	(c)(iii) M&E of the resettlement process; and	—	—	—	
	(c)(iv) Carrying out of social outreach and guidance initiates before, during and following the carrying out of the civil works mentioned in paragraphs (a) and (b).	—	—	—	
(d) Carrying out of land regularization processes in Selected Irregular and Precarious Settlements in the borrower's territory.		—	—	—	
(e) Establishment of an ecology and Citizenship Center in the borrower's territory, including, among others:	(e)(i) The preparation of the respective engineering design; and	—	—	—	
	(e)(ii) The carrying out of the corresponding civil works.	—	—	—	
		—	—	—	
(f) Preparation and implementation of a plan for social work and community participation to support the project and the program's activities in the Selected Irregular and Precarious Settlements.		—	—	—	
Component 3: Environmental Protection and Recovery					
(a) Preparation and implementation of tree-planting programs in Selected Irregular and Precarious Settlements.		—	—	—	Not implemented.
(b) Carrying out of the urbanization of public areas with green and leisure spaces for common use in the Selected Irregular and Precarious Settlements, including, among others,	(b)(i) Preparation of the respective engineering designs; and	—	—	—	
	(b)(ii) Carrying out of corresponding civil works.	—	—	—	

I N S E R T -

MAP IBRD 36790 (clearance obtained on Aug.9th, 2017)

H E R E

AFTER APPROVAL BY COUNTRY DIRECTOR

AN ORIGINAL MAP OBTAINED FROM GSD MAP DESIGN UNIT

SHOULD BE INSERTED

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BEFORE SENDING A FINAL ICR TO THE PRINT SHOP.

NOTE: To obtain a map, please contact

the GSD Map Design Unit (Ext. 31482)

A minimum of a one-week turnaround is required