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PERFORMANCE AUDIT REPORT

BRAZIL

**FIRST MINAS GERAIS
WATER QUALITY AND POLLUTION CONTROL PROJECT
(LOAN 3554-BR)**

June 22, 2000

*Sector and Thematic Evaluations Group
Operations Evaluation Department*

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Currency Equivalents (Annual Averages)
Currency Unit = Cz\$ (Cruzado)

1988	US\$1.00	Cz\$263.9
1989	US\$1.00	NCz\$2.86
1990	US\$1.00	NCz\$68.95
1991	US\$1.00	Cz\$403.83
1992	US\$1.00	Cz\$4492.62
1993	US\$1.00	CR\$88.46
1994	US\$1.00	R\$0.93 (Real)
1995	US\$1.00	R\$0.92 (Real)
1996	US\$1.00	R\$1.00 (Real)
1997	US\$1.00	R\$1.1078 (Real)
1998	US\$1.00	R\$1.21 (Real)
1999	US\$1.00	R\$1.66 (Real)
2000	US\$1.00	R\$1.59 (Real)

Abbreviations and Acronyms

BOD	Biological oxygen demand
COPASA	Minas Gerais state water company
ERR	Economic rate of return
FEAM	State Environmental Agency
FRR	Financial rate of return
GMG	Minas Gerais state government
ICR	Implementation Completion Report
IERR	Internal economic rate of return
ILI	Intensive-Learning ICR
NGO	Nongovernmental organization
O&M	Operation and maintenance
OD	Operational Directive
OED	Operations Evaluation Department
PAR	Performance Audit Report
PCU	Project Coordination Unit
SAR	Staff Appraisal Report

Fiscal Year

Government: January 1 – December 31

Director-General, Operations Evaluation	: Mr. Robert Picciotto
Director, Operations Evaluation Department	: Mr. Gregory Ingram
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June 22, 2000

MEMORANDUM TO THE EXECUTIVE DIRECTORS AND THE PRESIDENT**SUBJECT: Performance Audit Report on Brazil
Minas Gerais Water Quality and Pollution Control Project (Loan 3554-BR)**

The Brazil Minas Gerais Water Quality and Pollution Control project (Loan 3554-BR, approved January 5, 1993) attempted to recuperate the environmentally deteriorated urban basins of the Arruda and Onça rivers. The loan was closed on September 30, 1999, two years after the original closing date of September 30, 1997. The final project cost was US\$299.2 million (appraisal estimate, US\$307.7 million). On June 13, 1997, US\$5.0 million was canceled. The final disbursement took place on April 26, 2000. About US\$2.3 million was undisbursed.

The project took a comprehensive approach to water basin management in order to integrate sectoral functions and the federal, state, and municipal governments. Community pollution issues in the region were addressed by supporting critical investments needed to recover the deteriorated environment and to raise standards of living; necessary policy changes with increased reliance on market-based mechanisms to reduce water pollution; and institutional reforms. The project was also expected to promote water quality improvement in the das Velhas river.

The project had two major objectives: developing institutional capabilities to manage the water basin in an environmentally sustainable way through the introduction of modern land use incentives, cost recovery mechanisms, and an efficient legal and regulatory framework; and improving the quality of life of approximately 2.7 million inhabitants through the rehabilitation and expansion of sewers, solid waste collection and disposal and drainage in Belo Horizonte and Contagem. The project components consisted of construction of two sewerage treatment plants on the Arrudas and Onça rivers; basic drainage infrastructure at the water basin and urban levels; flood control; solid waste collection and disposal; a resettlement program for low-income families living in hazard-prone areas; reforestation and slope stabilization; the development of urban parks; and mechanisms for industrial pollution control.

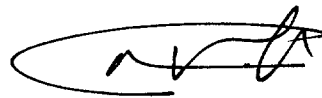
Although the sewage treatment plants were not completed, and the water quality in the Arrudas and Onça basins is actually a bit worse as a result, the two rivers are now less flood-prone, and sewage discharges into them in the metropolitan area are largely intercepted. Parks and streets constructed along the canals reduce riverbank erosion. Industrial wastewater discharges are now better controlled. A new regulatory and institutional framework for the management of water resources in the river basins is now in effect, the Das Velhas River Basin Commission was created, and FEAM is now much more effective in monitoring water pollution and it enforces discharge fees and discharge limits. The quality of life for inhabitants living along the Arrudas and Onça rivers has been improved by the provision of better flood control, paved streets, sewage collection, better solid waste management, and better access to public transportation and recreational facilities. Nearly 3,000 families living on the flood-prone riverbanks were resettled or were compensated to their satisfaction.

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As part of the relatively new intensive-learning approach to project completion reporting, this PAR is prepared based on the findings of a joint PAR/ICR mission which prepared an Intensive-Learning ICR and parallel PAR. Since the joint mission visited the same sites, attended the same meetings, reviewed the same data, discussed the approach to difficult evaluation problems in the field, and arrived at the same conclusions, the PAR largely limits itself to a discussion of the intensive-learning process. OED rates project outcome as satisfactory, institutional development impact as substantial, and sustainability as likely. Bank performance is rated as satisfactory. This is consistent with the ICR ratings.

The main lessons suggested by this project (and reported in the ICR) focus on the creation of the river basin agency. Projects that promote comprehensive river basin management should:

- Make budget provision (in the form of seed money) for the agency, until it can demonstrate its value, credibility, and capacity to collect water use and pollution fees
- Promote creation of a transitional institution or “embryo” unit that would take the lead in the creation of the agency
- Ensure that users and communities are well informed
- Ensure that the legal covenants applicable are realistic and so do not affect the consensus-building process adversely.

A handwritten signature in black ink, consisting of a large, sweeping oval shape followed by several smaller, connected strokes.

Attachment

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<p>This report was prepared by Ronald Parker (Task Manager), who audited the project in March 2000. William Hurlbut edited the report. Helen Phillip provided administrative support.</p>

Principal Ratings

	<i>ICR</i>	<i>ICR review</i>	<i>Audit</i>
Outcome	Satisfactory	Satisfactory	Satisfactory
Sustainability	Likely	Likely	Likely
Institutional Development	Substantial	Substantial	Substantial
Borrower Performance	Satisfactory	Satisfactory	Satisfactory
Bank Performance	Satisfactory	Satisfactory	Satisfactory

Key Staff Responsible

	<i>Task Manager</i>	<i>Division Chief</i>	<i>Country Director</i>
Appraisal	Emilio Rodriguez	Asif Faiz	Armeane M. Choksi
Completion	Yoko Katakura	Danny Leipziger	Gobind Nankani

Preface

This is a Performance Audit Report (PAR) on the Brazil Minas Gerais Water Quality and Pollution Control project (Loan 3554-BR, approved January 5, 1993). The loan was closed on September 30, 1999, two years after the original closing date of September 30, 1997. The final project cost was US\$299.2 million (appraisal estimate, US\$307.7 million). On June 13, 1997, US\$5.0 million was canceled. The final disbursement took place on April 26, 2000. About US\$2.3 million was undisbursed.

This Operations Evaluation Department (OED) report is based on the Staff Appraisal Report, President's Report, sector and economic reports, special studies, Country Assistance Strategy, loan documents, review of the project files, and discussions with Bank staff. An Implementation Completion Report (ICR, Report No. 20329, dated May 5, 2000) was prepared by Water and Sanitation Cluster, Latin America and Caribbean Region (LCSFW). A joint LCSFW-OED mission visited Belo Horizonte during March 20-24, 2000 to prepare an Intensive-Learning ICR (ILI). This PAR is based on the findings of that mission. The ICR mission was led by Yoko Katakura (LCSFW), and consisted of Manuel Marino (ECSIN), Juan Quintero (LCSIN), Joao Neiva (consultant), Eduardo Abbot Linke (consultant), and Paula Dias Pini (LCSEO).

Both the PAR and ICR benefited from various contributions from the borrower and the executing agencies. The joint mission discussed the effectiveness of the Bank's assistance with national, provincial, and local government officials, as well as other stakeholders. An integral part of the joint mission was the stakeholders participatory evaluation workshop that was held in Belo Horizonte on March 22, 2000. OED gratefully acknowledges the kind cooperation and invaluable assistance received from Bank and borrower colleagues during the preparation of this report.

The ICR provides a full account of the project experience and achievements, which have not been reproduced in this document. It covers project design issues and the relationship of the Bank with the borrower. Since the joint mission visited the same sites, attended the same meetings, reviewed the same data, and discussed the approach to difficult evaluation problems in the field, the PAR emphasizes the intensive-learning process and highlights the rewards and limitations of this joint ICR-PAR exercise. Copies of the draft PAR were sent to the relevant government officials and agencies concerned for their review and comments. No comments were received.

1. Introduction

Country Context

Brazil suffers from a variety of pollution problems with serious economic, human health, and ecological consequences. The most serious of these are lack of safe water supply and lack of safe sewage removal at the household and community level, surface water pollution in urban areas, inadequate solid waste collection and improper solid waste disposal, and severe localized pollution. The First Minas Gerais Water Quality and Pollution Control Project (Ln. 3554-BR) addressed all these issues in Belo Horizonte.

The Belo Horizonte metropolitan area, the economic hub of Minas Gerais state, is composed of 18 municipalities—the largest and most important being Belo Horizonte and Contagem. Industrial activities, population growth, and urban expansion in the metropolitan area over the past several decades have led to increasing urban environmental degradation.

Arguably, the most critical environmental issue is the pollution of rivers and reservoirs close to the expanding city. Riverine pollution results from mining and industrial wastes as well as inadequate sanitation infrastructure in lower-income urban areas on steep slopes that drain into the watershed. Additionally, flood control infrastructure was insufficient and collection of municipal wastes deficient, again more so in the lower-income neighborhoods. The project area comprises the upper reaches of the das Velhas river basin, and includes the Arrudas and Onça sub-basins.¹ Riverine pollution is particularly worrisome in that three of the most important rivers in Brazil originate in or near the Belo Horizonte metropolitan area.²

Role of the Bank

For many years, the World Bank has supported Brazilian government efforts to address the country's environmental problems. The Bank has financed numerous projects that support natural resource management and conservation, strengthening of environmental institutions, industrial pollution control, basic sanitation and water pollution management, and urban environmental improvements. The Bank also supports Brazil's effort to address global environmental challenges through projects financed by the Multilateral Fund of the Montreal Protocol and the Global Environment Facility. As administrator of the Rain Forest Trust Fund, the Bank helps Brazil address threats to the Amazon ecosystem.

The Project

The main goal of the Minas Gerais project is to recuperate the environmentally deteriorated urban basins of the Arruda and Onça rivers. The project took a comprehensive approach to water basin management in order to integrate sectoral functions and the initiatives of federal, state, and municipal governments. Community pollution issues in the region were addressed by supporting: (i) critical investments needed to recover the deteriorated environment and to raise standards of

1. The upper das Velhas basin has 3,600 square kilometers of drainage area and an estimated population of 4.5 million. The Arrudas sub-basin, with an area of 200 square kilometers, has a population of 1.5 million. The Onça sub-basin has an area of 212 square kilometers and a population of 1.7 million.

2. The Paraná river, the Doce/Paraíba do Sul rivers, and the São Francisco river (whose watershed includes the das Velhas river basin, and the Arrudas and Onça sub-basins).

living; (ii) necessary policy changes with increased reliance on market-based mechanisms and cost recovery to reduce water pollution; and (iii) institutional reforms based on enhanced cooperation between state agencies and municipalities. The project was also expected to promote water quality improvement in the das Velhas river.

The situation that faced the project appraisal team was daunting: after 20 years of pollution abatement activities and management improvements, many urban environmental problems still remained unsolved. Progress in the Belo Horizonte area was constrained by a lack of sectoral integration in pollution management and limited and/or inconsistent enforcement. Pollution problems at the household and community level caused by lack of safe water supply and lack of safe sewage removal were reflected in the state of the rivers that passed through or near urban areas. The project, therefore, had two main objectives: (i) developing institutional capabilities to manage the water basin in an environmentally sustainable way through the introduction of modern land use incentives, cost recovery mechanisms, and an efficient legal and regulatory framework; and (ii) improving the quality of life of approximately 2.7 million inhabitants through the rehabilitation and expansion of sewers, solid waste collection, and disposal and drainage in two municipalities (Belo Horizonte and Contagem) as well as housing and park development.

The project components included construction of the first phase of two sewage treatment plants on the Arrudas and Onça rivers, parts of a COPASA program to lower pollution levels in those rivers. Other components were:

- Completing the macrodrainage system for flood control, and rehabilitating the basic drainage infrastructure at the water basin and urban levels
- Improving solid waste collection and final disposal in the two municipalities
- Implementing a resettlement program for *favela* and low-income populations living in hazard-prone areas and areas unsuitable for basic infrastructure provision
- Reforesting heavily eroded areas affecting river flow and slope stabilization
- Developing recreational parks to enhance the living environment in the Belo Horizonte Metropolitan area
- Developing market mechanisms to control environmentally damaging land use
- Introducing innovative cost recovery instruments
- Establishing mechanisms for industrial pollution control.

Institutional Framework

The project fostered water basin management, based on more effective coordination between the sectoral institutions, the two municipalities, the state water company (COPASA), and the state environmental agency (FEAM). The project set up an institutional framework to integrate state and municipal participation in the inter-disciplinary management of the water basin, introducing adequate water quality monitoring programs and environmentally sound operations and maintenance practices. It strengthened FEAM, and supported the COPASA investment program. To develop the institutional capabilities for water basin management, the project attempted to clarify state and municipal responsibilities for laws and regulations concerning environmental protection at a water basin scale.

2. ICR Findings: Implementation and Results

The audit finds the ICR to be a wholly accurate reflection of the project and its achievements. That document also contains important lessons learned that will not be repeated here.

The ICR concluded that the Arrudas and Onça basins are now less flood-prone, and sewage discharges into them in the metropolitan area are largely intercepted and discharged about five kilometers downstream (outside of the municipal boundaries, near the sites of the two sewage treatment plants). Parks and streets constructed along the canals reduce riverbank erosion. Industrial wastewater discharges are now better controlled. A new regulatory and institutional framework for the management of water resources in the river basins is now in effect, the Das Velhas River Basin Commission has been created, and FEAM is now much more effective in monitoring water pollution, and it enforces discharge fees and discharge limits. The quality of life for people living along the Arrudas and Onça rivers has been improved by the provision of better flood control, paved streets, sewage collection, better solid waste management, and better access to public transportation and recreational facilities. Nearly 3,000 families living on the flood-prone riverbanks were resettled or were compensated to their satisfaction. The ICR re-estimated the project's economic rate of return at 27 percent based on the appreciation of land values, as compared to the appraised estimate of 45 percent.

Project Achievements

The project constructed 7.2 km of a flood control canal on the Arrudas River, plus 8 km of paved roads along the canal. In addition, 11 km of canals and 11 km of paved roads along the Sarandi, Ferrugem, and Onça rivers were built. Other project benefits identified by the ICR were:

- Removal and adequate disposal of close to 20,000 tons/year of solid waste, previously discharged into the rivers (collection volume by increased by an average of 15 percent, with a 30 percent increase in low-income areas)
- Sewage collection in excess of appraisal expectations with a unit cost 10 percent lower than the appraisal estimate
- Provision of alternative traffic routes for some 15,000 vehicles per day, resulting in a significant reduction of travel times for owners of private vehicles
- Significant reductions in bus travel times, directly benefiting low-income residents.

Other improvements in solid waste collection and disposal arrangements in Belo Horizonte and Contagem include the purchase of collection equipment and the construction of a sanitary landfill. The ICR identified several pending environmental issues related to the landfill, among them was a need for measures to intercept and evacuate rainwater runoff and allow leachate recirculation. The ICR also called for the implementation of an industrial and hazardous waste control program.

Of the 2,855 families that had to be relocated, about two-thirds opted for cash compensation and the remainder chose the resettlement alternative at 11 housing complexes that were built. The project provided public areas and recreational facilities (such as soccer fields and playgrounds) totaling 400,000 square meters along the canals, some in areas made available by resettlement. An unanticipated subcomponent financed a botanical garden and tree nursery that provides ornamental trees and shrubs for planting in public spaces.

The principal institutional development achievement of the project were strengthening of FEAM and establishing mechanisms for industrial pollution control and a statewide water quality monitoring system. The state Water Resources Management Policy Law was drafted under project auspices and was subsequently approved. The law clarifies the responsibilities of the state, the municipalities, the state water resources agency, and the state forestry agency. The legislation also introduces the concept of water use and pollution fees, though these fees are not yet in effect.

Project Deficiencies

The ICR is frank in its discussion of the deficiencies of the project. The two sewage treatment plants have not been completed (one has not even been started), and downstream water quality in the Onça and Arrudas rivers has not improved. The joint ICR/PAR mission visited the Arrudas plant, which is currently under construction and is (perhaps optimistically) expected to be completed by October 2000. There is as yet no way to finance the treatment plant on the Onça. Despite this setback, water quality has improved in some sections of both rivers because neighborhoods that were connected to new sewerage systems now channel their effluent to the proposed location of the treatment plants rather than discharging it into the river. Data gathered during the mission showed that relative to pre-project conditions, water quality was initially poor and it has not deteriorated qualitatively. That is, the river could not be used for recreational purposes before the project and no ongoing uses of river water have been foreclosed by the removal of sewage from urban slum areas. In part, the small increment of additional pollution is due to the volume of sewage estimated at appraisal not materializing: industrial sewage was estimated at about 26 million cubic meters annually, while the actual increment is under 13 million cubic meters. Domestic sewage is also much lower than estimated at appraisal because of increased water metering. Furthermore, the self-purifying capacity of the local rivers is significant, and water quality is much improved 30 kilometers downstream. All the above is not to say that treatment is superfluous, only to note that the delay in the construction of the treatment facilities, though regrettable, is not devastating.

Although it was expected that a river basin management agency would be created, and the original legal covenants called for the establishment of an independent and financially self-sufficient pilot river basin agency for the das Velhas river within two years of signature of the Loan Agreement, it took five years to enact the necessary regulatory framework, and the agency has not been established.

While OED finds the ICR coverage of project deficiencies satisfactory, two deficiencies that have recently emerged are not discussed:

- Flood waters from a recent storm over-topped an under-dimensioned storm drainage canal culvert at one point, flooding a few homes in one neighborhood, and causing damage to about half a kilometer of road.
- The quality of road bed preparation and asphalt used in some neighborhoods was poor, and some stretches of heavily traveled urban streets required repaving after only two years use.

Ratings

OED fully supports the ICR ratings. The ICR rated outcome as satisfactory, arguing that the two rivers are now significantly less flood-prone in densely populated urban neighborhoods and sewage discharges into them in the metropolitan area are largely intercepted. Although the project did not actually restore the environmentally degraded basins of the Arrudas and Onça rivers in the metropolitan area of Belo Horizonte (because the treatment plants were not completed), the ICR argues that this objective was understood by both the borrower and the Bank project team as a multi-sector restoration, and the improved institutional arrangements, housing, drainage, sewerage, and access which are the result of project activities are highly significant achievements.

The ICR identified an important lesson about the crafting of project objectives. The task team was unwilling to categorize the experience of this project as unsuccessful even though the water quality in the targeted river basins did not improve. Highlighting the important project achievements, the ICR notes that long-term goals need to be carefully distinguished from short-

or medium-term project objectives. Only those objectives that can be realistically achieved within the project timeframe should be identified by teams designing projects lest projects be downgraded for failing to meet impossible objectives. Setting modest short- to medium-term project objectives provides a more realistic sense of project achievements vis-à-vis longer-term program goals.

While the failure to improve water quality within the implementation period of the project is a major deficiency, OED accepts the ICR arguments to the effect that poorly crafted objectives should not obscure important project achievements. The project outcome rating assigned to this project by OED reflects those achievements. As noted above, these include improved flood and erosion control, separate stormwater drainage and sewage disposal, environmental protection and improved urban land use. The project also made significant progress in improving the quality of life for residents in poor neighborhoods and strengthening key institutions.

The ICR rates institutional development impact likely because a new regulatory and institutional framework for the management of water resources in the river basins is now in effect, the Das Velhas River Basin Commission was created, and FEAM is now much more effective in monitoring water pollution. The ICR rated project sustainability likely because: (i) the institutional and legal reforms initiated under the project are well advanced and expected to continue; and (ii) the project executing agencies are committed to continuing the efforts started under the project, and to maintaining the physical infrastructure built as part of it.

Given the generally positive results, institutional achievements and likely sustainability, Bank and borrower performance were rated satisfactory.

3. The Joint PAR – ILI

Post-completion reporting has been evolving within the Bank. Since July 1999 each Bank Region has been expected to select about 30 percent of its projects for which the analysis and processing of the core accountability ICR are to be enhanced (good practice is guided by the provisions of BP 13.55). This enhanced ICR is called an *Intensive-Learning* ICR (ILI). As contemplated by BP 13.55, during March 2000, OED carried out a parallel audit during, and together with, the ICR mission to validate the self-evaluation process and its findings. As already noted, the PAR and ICR missions attended the same meetings and had access to same data.

In practice, because of the large number of ICRs in the preparation pipeline, the first products of ILIs are just beginning to appear. For this reason, and because the first two-years of ILI experience are considered a pilot test to be carefully reviewed, the audit focuses on the intensive-learning process itself, identifying lessons and implications for independent and self-evaluations in the coming years. With the two minor exceptions noted in the preceding section, the evaluative conclusions and lessons identified by the ICR are fully supported by the audit, and the reader is directed to the ICR for this discussion.

The Audit/ICR Process in Minas Gerais

Projects selected for an Intensive-Learning ICR are those that have the greatest learning potential when viewed from a wider institutional perspective—ILIs focus especially on lessons learned. The Minas Gerais Water Quality and Pollution Control Project was selected because lesson learning from the project experience was critically important. The project was designed as a pilot of the “comprehensive river basin approach” that underpins the Bank’s Water Resources

Management Policy. That policy stipulates that water resource management activities and policies need to take into account the interdependencies among sectors and ecosystems and make more effective use of pricing, decentralization, user participation, privatization, and financial autonomy. The project included a multi-sector and multi-institutional investment program and an institutional and legal reform program. Additionally, water pollution and flooding are problems that plague other large metropolitan areas in Brazil. It is expected that the river basin management approach will be applied more broadly in the near term, and ILI lessons can be applied to the design of new projects—discussion about a follow-on project began during the mission.

Participatory Evaluation by Stakeholders

For operational staff, the most challenging aspect of the new Bank procedures for project completion is the participatory workshop. OED has received numerous phone calls for guidance from staff about to go on the new ICR missions, and it is helpful that the department put together a task force to prepare the toolkit *Experience Using Participatory Methodology in an OED Setting* in 1999. This document and the various workshop reports (and the photo record of those events) have made support to operational staff in this regard substantially easier. For this project, OED and operations agreed to conduct the workshop as a joint exercise in order to capitalize on OED experience. The workshop report was also issued as a joint product.

For an ILI, the task team and borrower staff are expected to make arrangements for a beneficiary survey. During the process of resettling the population affected by project infrastructure works in Minas Gerais, four surveys were carried out. The implementation of this resettlement included the conduct of interviews with resettlement leaders and members of resettled families. The results of this process are contained in selected sections of four volumes prepared by the borrower. Bank guidelines for ILIs call for the incorporation of the results of any beneficiary survey, and OED can report that the survey results are contained in an annex to the ICR report and the survey findings have been taken into account in the main text.

The task team and borrower staff are also expected to hold a stakeholder workshop. Two such workshops were held for this project. Before the ICR mission, a workshop for the borrower and the executing agencies was held to discuss the results of the project and the lessons learned from it. No document summarizing the discussion and conclusions of that event was prepared, although (as the ICR notes and OED has no reason to doubt) the results of this meeting are reflected in the text of the ICR. However, absent a written report and because this event took place before the OED mission, it is impossible to know which aspects of that document have been influenced. Under the circumstances, the audit cannot comment on the quality of borrower staff participation in the ICR process.

As part of the combined ICR/PAR process, the participatory evaluation workshop described in the opening paragraph of this section was held. The workshop gave project beneficiaries, community leaders, and other stakeholders an opportunity to evaluate the strengths and weaknesses of the project, noting its positive and negative impacts on their lives and work. Project beneficiaries represented by 34 community leaders living in the project area were invited to the workshop to share their experiences. To encourage free discussion, executing agency and Bank staff participated only as observers. After a brief introduction, in which participants expressed their expectations individually, they were divided into three discussion groups. Bank guidelines indicate that the ILI is expected to incorporate the results of any beneficiary survey and a summary of the discussion at the workshop. The methodology used by the OED/operations workshop permitted the rapid preparation of a workshop report. This report was substantially completed during the course of the workshop and under the supervision of workshop participants selected by their peers. The ICR contains a summary of this report. Participants went so far as to

propose a commission to continue to provide stakeholder feedback to project and local government officials, and several expressed the view that this kind of workshop should have been organized before, during project implementation. A follow-on project would be more participatory as a result of staff and stakeholder experience during this workshop.

Two facilitators with some experience working in *favela* communities were provided by the municipality. Their lack of experience with evaluation was a minor constraint at the beginning, although the workshop concluded successfully with many interesting and useful observations. Despite repeated suggestions that they use the introductory session to teach the workshop methodology—participants with little formal education need a little time to become proficient—the facilitators instead used an exercise of which they were fond that involved throwing an enormous ball of twine around the room, and weaving it into a makeshift net (to demonstrate the participants' unity of purpose). This proved chaotic, and the participants (frugal of habit and loath to waste good twine) spent a great deal of time untangling the string and rolling it back up again. The lesson from this is that when conducting evaluation workshops, it is best to stick with practical approaches with demonstrable relevance to the task at hand, making small changes on an experimental basis. It should not be concluded from the above that only high-priced, highly experienced facilitators can do what is required. In reality, what the Bank is asking for in the ILI process is relatively new, and, for that reason, there are very few people with truly relevant experience in any event. The confusion that characterized the early stages of the workshop could have been avoided by spending more time with the facilitators before the event, ensuring that they understood that the primary objective was to enable the participants to clearly express their thoughts and feelings in a manner that could be recorded accurately.

Advantages and Disadvantages of Parallel Audits

It is clear that there are benefits to conducting parallel audits: they increase the accountability of the ICR because claims about impacts and conditions on the ground are corroborated by at least one independent observer. The impact of having someone from OED observe the quality of participation and evaluative process generally is not inconsequential. Conducting an ILI also means that it is necessary to do a participatory workshop. The workshop leads, at least in this case, to unprecedented grass-roots participation and some very frank feedback.

As the BP envisages, having OED on the mission also ensures an adequately participatory stakeholder workshop and the inclusion of key stakeholder complaints and suggestions in the ICR document. Being a member of the mission from the outset led to many instances of collaboration, and informal discussions during the evenings were of use to both parties. OED was able to make suggestions about workshop methodology, issues to be addressed in the ICR, and the evidence necessary to make certain claims more persuasive. The OED evaluation benefited from participation in the joint mission because any questions that could not be adequately explained by local staff, or explanations for the ultimate choice of strategic approach could be explained by the task manager and other mission members.

But there are significant disadvantages to conducting an audit at the exact same time as the ICR mission is in country. Foremost of these is that the borrower's agencies may not be able to support simultaneous evaluations, especially if the scheduled events do not support the informational needs of both missions. In this case, meetings before the mission confirmed that OED and operations had very similar questions about the project. Thus there was no need for separate meetings that operational staff would not be invited to attend. Should that need have arisen, however, it might have been uncomfortable. Borrower staff might well have been uncomfortable knowing that they were asked – and had answered – questions that their own superiors and the Bank staff (with whom they were accustomed to working) were not allowed to

hear. The ICR team of six persons often divided, and the various members held simultaneous meetings, several of which would have been interesting to attend. This sometimes forced the OED mission to make difficult choices. While it would have been possible for OED to extend its mission in Belo Horizonte and schedule another meeting with the same agency, that duplication of effort was forgone in exchange for the participant's verbal summary of missed event.

The borrower's agencies are accustomed to responding to requests for information from the task manager, and they are fully occupied responding to the informational needs and other logistic demands of the ICR mission during the time when the parallel audit is conducted. There is little opportunity during the joint mission to explore themes not covered in the ICR to provide "value-added." Of course, should it be necessary, the OED mission can always be extended, although it proved not to be necessary in this case. To some degree the natural role of operational staff during any self-evaluation process is still to explain project deficiencies in the most palatable way, and more incentives may be needed to increase the ILI focus on lesson learning (this observation is not, however, based on any deficiencies in the ICR produced by the team for this project, which did an outstanding job in this respect). There is an advantage to allowing time to elapse between the ICR and PAR missions—the passage of time often highlights impacts, trends, and/or to illustrates progress on the sustainability of post-project operations.

Fulfillment of other Procedural Requirements

For an ILI, the team leader is supposed to select an ICR task team that includes a member of the relevant thematic group from another Region. On this mission, an individual from ECA was present. This worked well because the mission member had worked briefly in the project before changing Regions. Future ILIs will shed more light on whether including someone from another Region completely unfamiliar with the project being evaluated is also advantageous.

4. Conclusions and Lessons Learned

The task manager and mission completed a careful and thorough evaluation of the Minas Gerais Water Quality and Pollution Control project. Their report is an accurate reflection of the project experience, and OED fully supports its conclusions.

Learning the lessons taught by the project experience is critical because the country, the sector, and Belo Horizonte area still face serious water pollution and flooding problems. There is still much to do in Belo Horizonte in terms of providing sewage treatment, extending water supply coverage, extending drainage canals and sewage networks, and protecting the regional watershed. The ICR offers an extensive list of lessons, but the following are worth highlighting here.

Projects that promote comprehensive river basin management should:

- Make budget provision (in the form of seed money) for the agency, until it can demonstrate its value, credibility, and capacity to collect water use and pollution fees
- Promote creation of a transitional institution or "embryo" unit that would take the lead in the creation of the agency
- Ensure that users and communities are well informed
- Ensure that the legal covenants applicable are realistic and so do not affect the consensus-building process adversely.

This PAR supplements this with the following lessons about the ILI process:

The ultimate success of the ILI approach will depend on the availability of technical support for the task teams. At this early stage in Bank-wide use of the ILI process, operational staff have insufficient guidance in the preparation of participatory evaluation workshops. One lesson highlighted by the present document is the need for more support from Knowledge Management and the Regional Operations Support Units for staff facing the participation and workshop requirements of the new ICR procedures.

Distill the lessons from Bank experience with the new ICR process. A systematic attempt to capture the lessons from successful efforts with intensive-learning process should be undertaken. This should take place in addition to the review of the pilot ILI efforts during the second year (which essentially will recommend whether the Bank should continue to use the ILI approach), and it ought to take a more practical, practitioner-centered approach. A written report that captures best practice and provides useful guidance should be shared with operational staff at a well-attended event that permits frank discussion of challenges inherent in the new self-evaluation process. The ICR's point about the need to take more care crafting project objectives has been made often by OED, and it also merits broader discussion.

Workshop preparations are time-consuming. Preparing the facilitators, acquiring the workshop materials, training the secretarial staff, and ensuring that the locale has been set up in way that facilitates participation is time-consuming. Depending on the level of experience of the staff that will be supporting the event, one or two full staff days are required from the Bank mission.

Always prepare a validated written record of the self-evaluation process. Self-evaluation exercises (with whatever methodology is employed) need to ensure that an adequate written record of the process remains behind with all interested parties. Preparing such a document during the workshop ensures stakeholders an opportunity to validate its contents. When possible, it is desirable to allow the participants in the self-evaluation exercise to evaluate the workshop itself. Their written conclusions are even more persuasive when seen in the context of their comments on the quality of the participation that they were permitted during the evaluation process.

The use of multiple sessions functioning independently combats validity threats. When the stakeholder group involved in the evaluative process is sufficiently large, dividing them into multiple independent sessions provides the opportunity to compare and contrast conclusions and increase the credibility of the findings. Obviously, multiple groups working independently and arriving at the same conclusion (positive or negative) carries greater weight.

Build evaluation capacity. The participants suggested that evaluation workshops should have been organized *during* project implementation, not just at completion. In any follow-on project, more direct avenues for ongoing stakeholder feedback will need to be built in. Taking more time to ensure that project staff develop an in-house capacity to conduct periodic self-evaluation guarantees that key decision-makers involved with the implementation process receive timely information from beneficiaries. It can also be beneficial (so that services meet provided efficiently meet the needs of the poor) that they continue to provide feedback on project progress to local government officials.

Basic Data Sheet

BRAZIL MINAS GERAIS WATER QUALITY AND POLLUTION CONTROL PROJECT (LOAN 3554-BR)

Key Project Data (Amounts in US\$ million)

	<i>Appraisal estimate</i>	<i>Actual or current estimate</i>	<i>Actual as % of Appraisal estimate</i>
Total project costs	307.70	299.20	97%

Staff Inputs (staff weeks)

	<i>Actual Weeks</i>	<i>Actual US\$000</i>
Identification/Preparation	12.9	22.0
Appraisal/Negotiation	21.2	52.4
Supervision	136.4	221.9
ICR	11.3	56.3
Total	181.8	352.6

Mission Data

	<i>Date (month/year)</i>	<i>No. of Persons</i>	<i>Specialization represented^a</i>	<i>Performance rating</i>	
				<i>Implementation Status</i>	<i>Development objectives</i>
Identification/Preparation	03/29/91 0/04/91	3 1	1 EN, 1 C, 1 ENV 1E		
Appraisal/Negotiation	10/14/91 03/25/92	7 2	1E, 1LS, 1ES, 4C 1LS, 1C		
	05/13/92	3	1E,2C		
Supervision 1	3/3/93	1	1EN,1C	S	U
Supervision 2	12/14/93	1	1EN	S	U
Supervision 3	12/3/93	1	1EN		
Supervision 4	12/14/93	1	1EN		
Supervision 5	2/2/94	2	1EN,1SL		
Supervision 6	2/17/94	2	1EN,1E	S	S
Supervision 7	3/14/94	1	1E		
Supervision 8	3/19/94	2	1ENV,1C		
Supervision 9	5/5/94	2	1EN,1C		

^a C – consultant, En – Engineer, E – Economist, ENV – Environment Specialist, FA – Financial Analyst, LS – Lead specialist, SL – Sector Leader, PSD – Private Sector Development Specialist, WSS – Water and Sanitation Specialist

	<i>Date (month/year)</i>	<i>No. of Persons</i>	<i>Specialization represented^a</i>	<i>Performance rating</i>	
				<i>Implementation Status</i>	<i>Development objectives</i>
Supervision 10	8/22/94	2	1EN,1WSS		
Supervision 11	10/18/94	1	1ENV		
Supervision 12	1/24/95	1	1EN	S	S
Supervision 13	6/29/95	2	1E,1EN	S	U
Supervision 14	10/4/95	3	1E,1FA,1EN	S	U
Supervision 15	6/26/96	2	2E	S	S
Supervision 16	9/30/96	3	2E,1E	S	S
Supervision 17	6/18/97	1	1C	S	S
Supervision 18	9/26/97	3	1EN,1FA,1C	S	S
Supervision 19	6/16/98	2	1EN,1PSD	S	S
Supervision 20	1/22/99	1	1FA	S	U
Supervision 21	6/25/99	2	1FA,1E	S	S
ICR	11/22/99	2	1FA,1EN	S	S
ICR	12/16/99	1	1FA		
ICR	3/20/2000	5	1FA,2C,1ENV,1WSS		