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PROJECT PERFORMANCE ASSESSMENT REPORT

BRAZIL

**CEARÁ URBAN DEVELOPMENT AND WATER RESOURCES
MANAGEMENT PROJECT (LOAN 3789-BR)**

**CEARÁ WATER RESOURCES MANAGEMENT PILOT PROJECT
(LOAN 4190-BR)**

June 29, 2006

*Sector, Thematic and Global Division
Independent Evaluation Group*

Currency Equivalents (annual averages)

Currency Unit = Brazilian Real (R\$)

Year	US\$	R\$	Year	US\$	R\$
1995	1.00	0.92	2000	1.00	1.83
1996	1.00	1.01	2001	1.00	2.36
1997	1.00	1.08	2002	1.00	2.92
1998	1.00	1.16	2003	1.00	3.08
1999	1.00	1.82	2004	1.00	2.93

Abbreviations and Acronyms

ANA	National Water Agency (<i>Agência Nacional de Água</i>)
BEC	Ceará State Bank (<i>Banco do Estado do Ceará</i>)
CAGECE	Ceará State Water and Sanitation Company (<i>Companhia de Água e Esgoto do Ceará</i>)
CAS	Country Assistance Strategy
COGERH	Ceará State Water Resources Management Company (<i>Companhia de Gestão de Recursos Hídricos do Ceará</i>)
COHAB	Ceará State Housing Company (<i>Companhia de Habitação do Estado do Ceará</i>)
DNOCS	National Drought Mitigation Department (<i>Departamento Nacional de Obras contra as Secas</i>)
EI/RIMA	Environmental Impact Study/Environmental Impact Report (<i>Estudo de Impacto Ambiental/Relatório de Impacto Ambiental</i>)
FDU	State Urban Development Fund (<i>Fundo de Desenvolvimento Urbano</i>)
ICR	Implementation Completion Report
IPEA	Economic Planning Institute (<i>Instituto de Planejamento Econômico e Social</i>)
IPECE	Economic Research and Statistical Institute of Ceará (<i>Instituto de Pesquisa Econômica do Ceará</i>)
OED	Operations Evaluation Department
PAD	Project Appraisal Document
PLANERH	Ceará State Water Resource Plan (<i>Plano Estadual de Recursos Hídricos</i>)
PPAR	Project Performance Assessment Report
PROGERIRH	Integrated Water Resource Management Project (<i>Projeto de Gestão Integrado de Recursos Hídricos</i>)
QAG	Quality Assurance Group (of the World Bank)
SAR	Staff Appraisal Report
SDLR	Ceará State Secretariat of Local and Regional Development (<i>Secretaria de Desenvolvimento Local e Regional</i>)
SDU	Ceará State (former) Secretariat of Urban Development (<i>Secretaria de Desenvolvimento Urbano</i>)
SEMACE	Ceará State Environmental Superintendency (<i>Superintendência Estadual do Meio Ambiente</i>)
SOHIDRA	Superintendency of Water Works (<i>Superintendência de Obras Hidráulicas</i>)
SRH	Ceará State Secretariat of Water Resources (<i>Secretaria de Recursos Hídricos</i>)

Fiscal Year

Government: January 1 – December 31

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*Note: Since Vinod Thomas – Director-General, IEG – was World Bank Country Director for Brazil during the period covered by the PPAR, he recused himself from all review and supervisory functions related to it.

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

About this Report

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

A Project Performance Assessment Report (PPAR) is based on a review of the Implementation Completion Report (a self-evaluation by the responsible Bank department) and fieldwork conducted by IEG. To prepare PPARs, IEG staff examine project files and other documents, interview operational staff, and in most cases visit the borrowing country for onsite discussions with project staff and beneficiaries. The PPAR thereby seeks to validate and augment the information provided in the ICR, as well as examine issues of special interest to broader IEG studies.

Each PPAR is subject to a peer review process and IEG management approval. Once cleared internally, the PPAR is reviewed by the responsible Bank department and amended as necessary. The completed PPAR is then sent to the borrower for review; the borrowers' comments are attached to the document that is sent to the Bank's Board of Executive Directors. After an assessment report has been sent to the Board, it is disclosed to the public.

About the IEG Rating System

The time-tested evaluation methods used by IEG are suited to the broad range of the World Bank's work. The methods offer both rigor and a necessary level of flexibility to adapt to lending instrument, project design, or sectoral approach. IEG evaluators all apply the same basic method to arrive at their project ratings. Following is the definition and rating scale used for each evaluation criterion (more information is available on the IEG website: <http://worldbank.org/IEG/eta-mainpage.html>).

Relevance of Objectives: The extent to which the project's objectives are consistent with the country's current development priorities and with current Bank country and sectoral assistance strategies and corporate goals (expressed in Poverty Reduction Strategy Papers, Country Assistance Strategies, Sector Strategy Papers, Operational Policies). *Possible ratings:* High, Substantial, Modest, Negligible.

Efficacy: The extent to which the project's objectives were achieved, or expected to be achieved, taking into account their relative importance. *Possible ratings:* High, Substantial, Modest, Negligible.

Efficiency: The extent to which the project achieved, or is expected to achieve, a return higher than the opportunity cost of capital and benefits at least cost compared to alternatives. *Possible ratings:* High, Substantial, Modest, Negligible. This rating is not generally applied to adjustment operations.

Sustainability: The resilience to risk of net benefits flows over time. *Possible ratings:* Highly Likely, Likely, Unlikely, Highly Unlikely, Not Evaluable.

Institutional Development Impact: The extent to which a project improves the ability of a country or region to make more efficient, equitable and sustainable use of its human, financial, and natural resources through: (a) better definition, stability, transparency, enforceability, and predictability of institutional arrangements and/or (b) better alignment of the mission and capacity of an organization with its mandate, which derives from these institutional arrangements. Institutional Development Impact includes both intended and unintended effects of a project. *Possible ratings:* High, Substantial, Modest, Negligible.

Outcome: The extent to which the project's major relevant objectives were achieved, or are expected to be achieved, efficiently. *Possible ratings:* Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.

Bank Performance: The extent to which services provided by the Bank ensured quality at entry and supported implementation through appropriate supervision (including ensuring adequate transition arrangements for regular operation of the project). *Possible ratings:* Highly Satisfactory, Satisfactory, Unsatisfactory, Highly Unsatisfactory.

Borrower Performance: The extent to which the borrower assumed ownership and responsibility to ensure quality of preparation and implementation, and complied with covenants and agreements, towards the achievement of development objectives and sustainability. *Possible ratings:* Highly Satisfactory, Satisfactory, Unsatisfactory, Highly Unsatisfactory.

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**BRAZIL: CEARÁ URBAN DEVELOPMENT AND WATER RESOURCES MANAGEMENT
PROJECT (LOAN 3789-BR)**

Principal Ratings

	<i>ICR</i>	<i>ICR Review*</i>	<i>PPAR</i>
Outcome	Satisfactory	Satisfactory	Moderately Satisfactory
Sustainability	Likely	Likely	Likely
Institutional Development Impact	Substantial	Substantial	Modest
Bank Performance	Satisfactory	Satisfactory	Satisfactory
Borrower Performance	Satisfactory	Satisfactory	Satisfactory

□The Implementation Completion Report (ICR) is a self-evaluation by the responsible operational division of the Bank. The ICR Review is an intermediate Independent Evaluation Group (IEG) product that seeks to independently verify the findings of the ICR.

Key Staff Responsible

<i>Project</i>	<i>Task Manager/Leader</i>	<i>Division Chief/Sector Director</i>	<i>Country Director</i>
Appraisal	Moazzam Mekan	Asif Faiz	Gobind Nankani
Completion	Dean Cira	John Henry Stein	Vinod Thomas

BRAZIL; CEARÁ WATER RESOURCES MANAGEMENT PILOT PROJECT (LOAN 4190-BR)

Principal Ratings

	<i>ICR</i>	<i>ICR Review*</i>	<i>PPAR</i>
Outcome	Satisfactory	Satisfactory	Moderately Satisfactory
Sustainability	Likely	Likely	Likely
Institutional Development Impact	High	High	Modest
Bank Performance	Satisfactory	Satisfactory	Satisfactory
Borrower Performance	Satisfactory	Satisfactory	Satisfactory

□The Implementation Completion Report (ICR) is a self-evaluation by the responsible operational division of the Bank. The ICR Review is an intermediate Independent Evaluation Group (IEG) product that seeks to independently verify the findings of the ICR.

Key Staff Responsible

<i>Project</i>	<i>Task Manager/Leader</i>	<i>Division Chief/Sector Director</i>	<i>Country Director</i>
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Preface

This is the Project Performance Assessment Report (PPAR) for the following urban development and water resource projects in Brazil:

- **Ceará Urban Development and Water Resources Management Project** (Ln 3789-BR), for which the World Bank approved a loan of US\$140 million on September 6, 1994. The loan was closed on December 31, 2003, three years later than planned, when US\$3.8 million undisbursed were cancelled.
- **Ceará Water Resources Management Pilot Project** (Ln 4190-BR), for which the Bank approved a loan of US\$9.6 million on June 12, 1997. The loan was closed on June 30, 2002, two years later than planned.

The report is based on a review of project documents, including Implementation Completion Reports, Staff Appraisal Reports, Memoranda to the President, legal documents and project files, and on discussions with Bank staff involved in the projects. An IEG mission visited Brazil in November 2005 to review project results and met with 50 persons including federal, Ceará state and municipal officials, as well as representatives of agencies involved in project implementation. IEG field visits, accompanied by local project staff, were made to project sites in 5 municipalities across the state of Ceará. These visits gave the IEG mission the opportunity to meet directly with the intended beneficiaries of the operations under review. We gratefully acknowledge the courtesies and attention given by these interlocutors as well as the excellent logistical support provided by the Ceará state Secretariats of Local and Regional Development and of Water Resources in Fortaleza.

Following standard IEG procedures, copies of the draft PPAR were sent to government officials and agencies for their review and comments. Their comments are included as Annex C to this report.

Summary

This is a Project Performance Assessment Report (PPAR) of two projects helping to develop one of Brazil's poorest states, Ceará, in the country's Northeastern region. They are the Ceará Urban Development and Water Resources Management Project (Ln3789-BR) called *PROURB* here, and the Ceará Water Resources Management Pilot Project (Ln4190-BR), called *Pilot-PROGERIRH*. Poverty and drought in Ceará pose enormous challenges to nearly half the population that has to eke out a living from informal jobs in cities or subsistence farming in the arid rural areas, especially since Ceará's economy weakened and poverty worsened during the implementation of these projects.

Ceará's modernizing administrations from 1988 appeared poised, however, to take the state forward, and it became borrower for these two loans. The state's 184 municipalities, too, were obvious partners for the Bank, but were still weak. By addressing both poor living conditions in cities and recurrent droughts in the countryside the Bank supported Ceará's policy on two fronts.

PROURB objectives:

- Strengthen the financial and institutional capacity of municipalities and relevant state agencies.
- Improve living conditions in very poor urban neighborhoods.
- Increase efficiency of water use in Ceará.
- Provide reliable, economic and safe water supply to needy urban communities.

Pilot-PROGERIRH objectives:

- Help prepare a stand-alone water resource project for Ceará (PROGERIRH project Ln4531)
- Develop and refine methodologies to implement the stand-alone project.
- Evaluate a small trans-basic diversion project.
- Evaluate an appropriate institutional framework for water resource management.

PROURB's largest urban component was the upgrading of poor urban areas with basic services and infrastructure. PROURB's main water resource components involved building dams and filling reservoirs called 'açudes' in Ceará, primarily to supply water to cities. Monitoring and evaluation of project outcomes would have been stronger with explicit tracking of poor beneficiaries and clear indicators of efficiency of water use.

The Pilot-PROGERIRH's first objective was to prepare a follow-on project, but only one third of estimated expenditures were earmarked for that purpose. The remainder was to finance studies unnecessary for preparing the follow-on. Some remained unfinished at project completion.

PROURB implementation faced two severe, yet quite different challenges in 2000—first Brazil's Federal Fiscal Responsibility Law that halted project lending to municipalities, and then a very severe drought. Still, urban upgrading components were completed in 49 municipalities, and 16 dams were built in compliance with Bank environmental and involuntary settlement safeguards.

The implementation of the Pilot-PROGERIRH also proceeded more slowly than expected. Demand for its funds was weakened by the substantial technical assistance (TA) resources already available through PROURB.

PROURB had mixed results in strengthening municipalities. Across Ceará as a whole, municipal own revenues grew faster than state and federal transfers, but efforts by municipalities visited by the IEG mission to collect their own taxes were still meager. Ceará's water resource agencies are stronger thanks to PROURB, but the hoped-for market for bulk water has yet to evolve.

In spite of increasing poverty, statewide data show improvements in living conditions of the urban poor in Ceará over the life of the PROURB project. The share of urban households served by water rose from 74.3 percent in 1997 to 87.0 percent in 2003. PROURB investments introduced water and other basic services to 89 poor urban areas. A self-help approach, called *mutirão* in Brazil, helped strengthen beneficiary ownership.

Evidence of more efficient water use in Ceará thanks to PROURB water resource investment is not persuasive. Using ICR data, 15 out of the 16 PROURB dams generate an economic rate of return

(ERR) of 6.3 percent, below the 12 percent minimum required by the project. The outlying best performer (29 percent ERR) was a single dam supplying 77 percent of PROURB's incremental water to the Pecém port and industrial complex near Fortaleza. Supplying so much project water for industrial use was a major shift away from PROURB's initial focus on urban water supply, especially for the poor, as per project objectives. A recalculation by IEG of the water component overall points to an estimated ERR of 8.7 percent (against the appraisal estimate of 17 percent) after fully accounting for costs such as those of urban water distribution. IEG concludes, therefore that PROURB investments in dams did not fully achieve their objective of contributing to more efficient use of water in the State.

Other PROURB investment, on the urban side of the project, did contribute to greater efficiency, however. Project financed water meters helped reduce unaccounted for water from 44.3 percent in 1994 to 26.7 percent in 2003. PROURB also provided water service to the poor, but reliability could improve. Residents of upgraded areas complained to IEG about intermittent service.

The Pilot-PROGERIRH helped prepare a good quality follow-on (and ongoing) project PROGERIRH (Ln4531), but it might have been done more efficiently with available PROURB funding that was eventually cancelled.

The *overall outcome* of the **Ceará Urban Development and Water Resources Management Project (Ln3789)** is rated **moderately satisfactory** since achievements on the urban side outweigh significant shortcomings on the water resource side, including the low ERR. *Sustainability* is rated **likely**, given the continuing need for most of the project's services. *Institutional development impact* is rated **modest**, given the weak evaluation capacity of water resources agencies particularly. *Bank performance* is rated **satisfactory**, but moderately so, given the awkward two-in-one project design and too frequent turnover of task managers. *Borrower performance* is rated **satisfactory**, in spite of insufficient attention to pursuing greater efficiency.

The *overall outcome* of the **Ceará Water Resources Management Pilot Project (Ln4190)** is rated **moderately satisfactory**. The objectives could have been achieved more efficiently through using (unspent) resources of the PROURB project. Since the follow-on project is ongoing and not at risk, *sustainability* is rated **likely**. *Institutional development impact* is **modest**, as strong project preparation capability had long existed in Ceará prior to this project. *Bank performance* is rated **satisfactory**, but not fully so, since the Bank could have found a more efficient way of preparing a follow-on project. *Borrower performance* is rated **satisfactory** for completing all the work necessary for the preparation of the follow-on project.

Experience with these projects highlights the following lessons:

- Especially in poor, drought-stricken regions like Ceará, water resource infrastructure investments need to be sensitive to demand in order to be efficient in boosting development.
- ERRs provide useful measures of efficiency and indicators of demand when using actual cost and benefit data that are calibrated with the real constraints of the local economy and the capacities of local agencies.
- Bank assistance can help nurture a culture of self-evaluation by borrowers and implementing agencies, and stimulate them to continuously monitor results.
- Project upgrading of low income urban areas can bring significant improvements to the living conditions of the poor even in remote cities of the interior.

Ajay Chhibber
Acting Director-General
Evaluation

1. Ceará's Adverse Conditions for Development - Background

1.1 Poverty and drought were and remain enormous challenges for the North-eastern state of Ceará, one of Brazil's poorest. Ceará's per capita GDP is currently just 41 percent of Brazil's—down from 47 percent in 1997, and 46 percent of households in the state currently live on less than one minimum salary—up from 35 percent in 1997. These worsening trends contrast sharply with the optimistic assessments of Ceará's economic growth and social progress reported in the PROURB SAR in 1994. In 2003, 71 percent of Ceará's population of nearly 8.0 million lived in urban areas, up from 62 percent in 1997. Although not a large population for an area the size of England and Wales, eking out a living in most of this semi-arid state is the best that most poor families can do, whether as migrants to the cities or as subsistence farmers in rural areas.

1.2 Local municipal administration is weak throughout most of the state. Even so, Ceará's 184 municipalities, like those elsewhere in Brazil, accumulated more revenue, especially federal and state transfers since the 1988 Constitution, making them potentially more important for Ceará's development, and obvious partners for Bank support. PROURB wisely incorporated them as key stakeholders.

1.3 Physical conditions in Ceará are tough. Although the state's annual rainfall averages 800 millimeters, precipitation is highly variable over time and across the state. Severe droughts, worsened by crystalline formations of sub-soils that do not hold ground water, play havoc with agricultural production that, in some years may fall by one fifth, yet recover by as much in others. The hot sunny climate means that up to 40 percent of surface water is lost through evaporation. Rivers are intermittent. Collecting water from them during rainy periods in large reservoirs called *açudes* for use during dry periods has been practiced in Ceará for a century since the creation of the first *açude* in the city of Quixadá in 1906 and the establishment in 1909 of the federal drought mitigating agency DNOCS (*Departamento Nacional de Obras contra as Secas*), still headquartered today in Ceará's capital, Fortaleza.

1.4 Ceará's response in the early 1990s to these conditions was to set up a Water Resource Management Company, *COGERH*, to manage water resources in Ceará. COGERH operates half the state's 123 *açudes*—smaller ones that store 20 percent of Ceará's water resources. DNOCS owns and operates the other half that stores 80 percent of the state's water resources. The state's water plan *PLANERH* follows a French model of water resource management by river basin (Teixeira 2004 p. 13). Only much later, in 2000, was a similar approach adopted at the federal level with the creation of the National Water Agency *ANA* in Brasilia. As the federal government's advisory and regulatory agency for all Brazil's water resources, 80 percent of which lie in the Amazon basin, ANA's mandate sometimes overlaps with that of the environment, such as when dealing with polluting effluents. Even so, the top priority in water resource management remains water supply for human consumption, traditionally the responsibility of state sanitation companies in Brazil.

1.5 Acute poverty and drought indeed made up a challenging context for Bank assistance for Ceará's development. After decades of misgovernment and corruption, however, Ceará seemed poised to move forward with a series of modernizing

administrations in the State government from 1988 onwards that the Bank could support. PROURB assistance was timely in terms of a renewal of Ceará politics.

2. Urban Services and More Water – Objectives and Design

2.1 Called here by its Brazilian acronym *PROURB*, the Ceará Urban Development and Water Resources Management Project (Ln3789) was really two separate operations bundled into one, as illustrated by the full project title. The first part on urban development focused upon strengthening municipalities and improving physical conditions for the urban poor in cities. The second part on water resource management focused instead upon improving the efficiency and availability of water—primarily for human consumption in cities. The second project reviewed here, the Ceará Water Resources Management Pilot Project (Ln 4190), referenced by its Brazilian acronym *Pilot-PROGERIH*, finally unbundled PROURB’s the water resource part by preparing *PROGERIH (Ln4531 ongoing)* a follow-on operation just for water (details: Box 1).

Box 1. Summary of Project Objectives and Components

<i>Objectives</i>	<i>Components (with costs in US\$ millions)</i>
CEARÁ URBAN DEVELOPMENT & WATER RESOURCES MANAGEMENT PROJECT (LOAN 3789) - PROURB	
<p>To strengthen the financial management and institutional capacity of municipalities and the Borrower’s urban development and water resources management agencies.</p> <p>To improve living conditions in very poor neighborhoods in selected cities in the Borrower’s territory.</p> <p>To increase the efficiency of water use in the Borrower’s territory.</p> <p>To provide a reliable, economic and safe source of water supply to targeted urban communities in critical need in the Borrower’s territory.</p>	<p>Institutional Development, including technical assistance, training, IT equipment to municipalities, and planning and management assistance to implement the Borrower’s water resource management policy (appraisal cost US\$25.5 million; actual cost US\$36.7 million).</p> <p>Urban Infrastructure, including low-cost sanitation, water meters, drainage, street paving and lighting, housing and community facilities, for poor populations in about 140 areas in small towns and medium-sized cities, and larger ‘structural’ works in other areas (appraisal cost US\$101.5 million; actual cost US\$82.5 million).</p> <p>Water Resource Management Infrastructure, including 16 new dams and reservoirs with main water supply lines, and rehabilitation of existing reservoirs (appraisal cost US\$109.3 million; actual cost US\$110.4 million)</p> <p>Pilot Projects, including vocational education for children of low-income families, and program to test market trading of water rights in Araras district (appraisal cost US\$3.7 million; actual cost US\$3.3 million).</p>
CEARÁ WATER RESOURCES MANAGEMENT PILOT PROJECT (LOAN 4190) – PILOT-PROGERIRH	
<p>To help prepare and achieve a high level of quality at entry for the proposed PROGERIRH project.</p>	<p>Fortaleza Metropolitan Basin Study (appraisal cost US\$3.4 million; actual cost US\$2.9 million).</p> <p>Jaguaribe/Icapui Basin Integration (appraisal cost US\$0.9 million; actual cost US\$0.0 million).</p> <p>Ibiapaba/Acaraú Basin Integration (appraisal cost US\$2.9 million; actual costs US\$1.6 million).</p> <p>PROGERIRH preparation (appraisal cost US\$3.3 million; actual cost US\$6.0 million).</p>

2.2 Despite the priority for urban use, the same cities were not necessarily targeted to benefit from both PROURB’s urban improvements and water resource investments. Furthermore, water for irrigated agriculture was important, accounting for one third of estimated benefits of the dams. But there was no agronomist on the Bank appraisal team.

Officials in Ceará also informed the IEG mission that the Bank had deployed too few water sector experts too, until towards the very end of project implementation. Even though the project fell under the remit of two distinct state programs, each with its separate lines of command, the design nominally assigned overall project responsibility to the urban side only. Somehow, the water components would be “coordinated” by the urban authorities. Within the Bank itself, several voices argued in vain against including the water resource component within the project. Later, the water side of PROURB asserted its autonomy, leading to a schism between the urban and water parts. Indeed, IEG’s own evaluation of PROURB became as if it were an assessment of two parallel and unconnected operations. In hindsight, the PROURB design had to make the best of an awkward bundling of two parts unconnected by policy, administration or concept.

2.3 By far the largest component of the urban part of PROURB was the upgrading of selected low-income areas in selected cities, by installing basic urban services within them, using the community contributions and participation, known as *mutirão* in Brazil. Additional funding through advantageous exchange rate movements made larger urban investments possible in so-called “structural works” for the selected cities. A component to install water meters in selected cities came under the urban part of the project, since the state sanitation company responsible, *CAGECE*, reported to the state’s urban authorities. PROURB also provided technical assistance to strengthen municipal government administrations especially in financial planning and management and project evaluation.

2.4 PROURB’s urban part foresaw that project finance would be on-lent to municipalities through a state Urban Development Fund (FDU), specially created for this purpose and administered by the state development bank, BEC. Similar arrangements were used in other Bank-financed municipal development projects in Brazil, but FDU did suffer from a design weakness. The maturity of FDU loans was counted from the date of signing the sub-loan agreement, but the grace period was counted from the date of the first disbursement. When the first disbursement was delayed because of the slow start-up of works, municipalities found themselves having to fully pay off a loan at the end of a grace period that sometimes coincided with the end of the loan term itself.

2.5 The design of the water part of PROURB sought to improve water resource management within the framework of Ceará’s 11 natural river basins. This meant damming the state’s intermittent rivers so that water could be collected in the açudes during the rainy period, for use during the dry season, Ceará’s traditional practice as has already been mentioned. Water resource management in these circumstances involved reconciling conflicting demands for human use in cities, and for irrigation and hydro-power. However, urban use was PROURB’s priority as it was in both the state and federal water resource plans. The gradual development of a market for bulk water was, according to PROURB, the best way to reconcile conflicting uses. Among the criteria for choosing dam locations were severe shortage of water, topography, remoteness from Fortaleza (considered to be already well-served) and absence of large scale DNOCS açudes. The water part of PROURB also included technical assistance to strengthen water resource agencies, particularly the newly created State Secretariat for Water Resources (SRH) and the implementing agency COGERH.

2.6 Monitoring and Evaluation (M&E) to verify the achievement of project objectives was weak with respect to both the urban and water parts of PROURB. On the urban side, the project design did not make clear, for instance, how many poor people were targeted to benefit from the intended improvements to urban living conditions and safer sources of water. On the water resources side, the project design did not include indicators that would spell out clearly how the greater efficiency in water use would be measured.

2.7 The Pilot-PROGERIRH design was more complex than needed just to prepare a follow-on operation—for which only one third of the appraised expenditures were earmarked. The remaining two-thirds sought to finance studies and support the consolidation of the Ceará state water resources secretariat (SRH). They even included funding for physical works that were later dropped. The ‘pilot’ designation was unusual for an operation that pursued activities covered already by a PROURB project into its third year of implementation when the Pilot-PROGERIRH was appraised.

2.8 For both loans, the State of Ceará itself was borrower—one of the first state-level borrowers in Brazil’s poorer Northeast—while a guarantee agreement was signed with the Federal Government. Improved financial management since 1988 made Ceará one of Brazil’s most credit worthy states. Ceará officials told the IEG mission that they often felt under pressure to borrow more because of this. At this writing, the state has already repaid 65 percent of the PROURB loan and 22 percent of the Pilot-PROGERIRH loan.

3. One Challenge after Another – Implementation Experience

3.1 PROURB was successfully implemented even though it faced challenges at every turn, slowing disbursements and construction. Clarifying and implementing the autonomy of the water part occupied the first two years after loan effectiveness. By then, only 15 percent (instead of the expected 51 percent) of the loan had been disbursed. SRH became fully functional by 1997 when PROURB was effectively divided into two separate operations. Further disruption came in 1999 with the liquidation of the Ceará state low-income housing company *COHAB*, executing agency for PROURB’s upgrading component. But 2000 was an even more difficult year for the project. The first big blow in that year to the PROURB model of financing municipalities (and to all similar operations elsewhere in the country) was Brazil’s Law of Fiscal Responsibility, enacted in May 2000 to help stabilize the country’s notoriously volatile public finances. The law forbade new borrowing by municipalities from the state, not only in Ceará, but throughout Brazil. FDU lending therefore ceased. Disbursements continued, but as grants rather than loans, undermining the long-term sustainability of the PROURB operation. Measures are urgently needed to deal with the rump of the FDU that still receives loan repayments from municipalities, while PROURB still has to pay administrative fees levied by Ceará’s State Bank *BEC*.

3.2 By the original closing date of March 2000, 70 percent of the PROURB loan had been disbursed. The so-called “structural works” components were incorporated by formal amendment approved by the Board to accelerate US\$ disbursements, slowed in part by the devaluation of the Brazilian real. Altogether, 17 such works were financed, the largest (US\$13 million) being a commercial center and public meeting plaza in the

city of Juazeiro do Norte. The IEG mission visited three smaller works: a tourism-cultural corridor (US\$5.4 million) in the city of Quixeremobim (pop. 59,000); completion of a section of Maracanaú's ring road located within the metropolitan region of Fortaleza (US\$4.5 million); and landscaping and paving (US\$3.5 million) around the main açude of the city of Quixadá (pop. 70,000). All works visited were well built and intensively used.

3.3 Urban upgrading components were implemented in 49 municipalities throughout the state, always using the community participation approach, called *mutirão* in Brazil. Also widespread was the introduction of 176,000 water meters throughout the state, which helped reduce unaccounted for water significantly.

3.4 The construction of the dams by SOHIDRA (the state Superintendency of Water Works and SRH's contracting arm) was relatively trouble-free, although many changes were made in this component. Fewer but larger dams were built—only 16 instead of the 35 planned, but their storage capacity was still 87 percent of the appraisal target (using 35 dams). Their procurement, contracting and construction went smoothly. There was no shortage of construction material or labor to build the dams and related works.

3.5 Implementation of the Pilot-PROGERIRH was slower than expected. The loan became effective six months later than planned and only 37 percent had been disbursed by the original closing date, that had to be extended two years. Even so, an unused US\$1.2 million still had to be cancelled at the later closing date. Clearly, resources for technical assistance through these two projects were abundant in Ceará, with PROURB's own US\$36.7 million in institutional development and the Pilot-PROGERIRH's US\$9.6 million. Pilot PROGERIRH money was used to prepare extensive and detailed studies and designs for future water sector investments in Ceará, and to ensure the continuing functioning of the water resource agencies until the new PROGERIRH project came on board. Despite the plentiful resources, six studies begun under the Pilot-PROGERIRH including one on bulk water pricing, State water resource plan update and management of groundwater in Fortaleza, remained unfinished.

3.6 Since 75 percent of Pilot-PROGERIRH disbursements were made to SRH that had already received significant funding through PROURB, the IEG mission together with SRH officials carefully reviewed how SRH had used the additional Pilot-PROGERIRH funding. From this review, IEG has no reason to doubt that considerable work resulted from this expenditure. Pilot-PROGERIRH efforts did help to assess the appropriateness of the institutional framework for water resource management as intended. On the other hand, the project objective of preparing the follow-on operation could have been achieved more efficiently had greater use made of the PROURB resources already available—some of which were later cancelled.

3.7 Both projects were implemented in compliance with key Bank safeguard policies. PROURB's dam component required the resettlement of 1,374 families displaced by the encroaching reservoir, a relatively small number given the sparse population of the extensive areas flooded. Of these, 420 families were re-housed in 13 specially built 'agrovilas', 531 were moved to higher locations within their partially affected farms, and 393 chose to move to a new locality altogether. All were consulted about the necessary moves and all were compensated in compliance with Bank safeguards, resulting in a total

expenditure of US\$17 million financed by the state. Longer processing and higher costs were incurred than anticipated, however, contributing to implementation delays. But PROURB management of resettlement improved during implementation, being most effectively handled in the Jerimum dam case. Residents resettled in the agrovila of Itauna told the IEG mission that they had been consulted and adequately compensated. PROURB paid careful attention to environmental safeguards too. All completed dam projects and construction were approved by the State environmental authorities in SEMACE (the State Environment Superintendency). In fact, five dams originally planned that did not meet environmental safeguards were not built at all. SEMACE's superintendent assured the IEG mission that the completed dams and reservoirs posed no environmental threat. While there was considerable public protest against the flooding caused by dams in Ceará, it was mainly directed at the much larger Castanhão açude built by the federal DNOCS outside the PROURB project.

4. Some Improvements to a Weak Base – Project Results

STRONGER MUNICIPALITIES IN CEARÁ

4.1 Through their direct participation in investments of PROURB's urban components, 49 municipalities learned how to handle competitive procurement, many for the first time. The experience also led them to tighten their accounting and reporting procedures. In addition, 44 municipalities received direct technical assistance through the project that aimed at improving revenue collection, rationalizing spending for better financial management. The ICR reported that the 27 best performing municipalities assisted by PROURB increased their own revenues by 449 percent over the 1994-2001 period, higher than the 342 percent growth reported for seven control municipalities chosen for comparison. IEG would have been willing to use these results as evidence had the representativeness of the 27 experimental and 7 control municipalities been fully explained and had a t-test result demonstrating the statistical significance of the difference of means been reported. Other evidence, however, does point to a positive trend of municipal finance as a whole in Ceará. Total revenue for all municipalities in the state rose from R\$2.9 billion in 2001 to R\$3.9 billion in 2003, growing faster than state and federal transfers over the same period.

4.2 Despite this improvement, the financial base and management capability of local municipalities still needs strengthening. The IEG mission observed continuing weaknesses in municipalities it visited. In the municipalities of Quixadá, Quixeramobim and Maracanaú, all hosting PROURB urban investments, local property tax collection has fallen in recent years. In Quixadá, 40 percent of the tax due had not been paid. PROURB technical assistance in computerized accounting methods had obviously not improved tax performance. In Quixeramobim, 80 percent of local taxpayers are not up to date with their property tax payments. Maracanaú, although a much wealthier city, informed the IEG mission of a similar rate of delinquency. PROURB technical assistance aerial photography of that city has yet to produce a better cadastre and higher revenue.

STRONGER WATER RESOURCES AGENCIES

4.3 PROURB helped strengthen Ceará's water resource agencies, some of which were barely operational at the time of project appraisal. SRH, for instance, did not even qualify for a lead role in the project at that time. Later, it assumed full responsibility for the implementation of the water resource components. Thus, the groundwork for SRH was laid before the Pilot-PROGERIRH project. At the time of the IEG visit, SRH was fully operational.

4.4 COGERH, too, grew significantly under PROURB. It now has a staff of 420, and is currently responsible for the oversight and management of 64 dams and reservoirs (açudes) throughout the state of Ceará, 16 of which were built under PROURB. Even so, COGERH is still the junior partner in water resources in the state. The federal DNOCS' remit is much larger, owning and managing 59 dams that hold 80 percent of the Ceará's water, including the largest Castanhão. DNOCS' facilities together store 14.1 billion cubic meters of water, against COGERH's storage of 0.9 billion cubic meters.¹ Nevertheless, COGERH was fully consolidated prior to the Pilot-PROGERIRH project.

4.5 Since 1996, however, COGERH has been responsible for the bulk supply of water for the metropolitan region of Fortaleza, the source of 90 percent of its revenues and demand. In 2004, 91 percent of COGERH's annual production of 305 million cubic meters of bulk water is sold to CAGECE, the water supply operator for Fortaleza and most other cities in Ceará.² For CAGECE, COGERH is the principal supplier. The direct dealing between these two agencies accounts for nearly all the 'market' for bulk water that PROURB hoped to develop in Ceará. In fact, the periodic price and supply agreements are the outcome of bilateral negotiations between a monopoly buyer and seller—not a competitive market. In 2004, COGERH received R\$0.05/m³ for bulk urban water and R\$0.01/m³ for irrigation water, giving the company a clear incentive to concentrate upon the urban water side of its business. This explains why only 2.5 percent of the volume of COGERH's production was destined to irrigation, according to its 2004 annual report figures. With the demand for urban water rising, COGERH's own revenues have risen in recent years, enabling the agency to report a small profit in 2004, after several years of losses. Whether COGERH and its water resource management model represent a model for Brazil, as the IEG mission was frequently told, still has to stand the test of time. At this writing, no other state in Brazil has adopted a similar approach to Ceará's.

4.6 PROURB investment in dams helped build up the State Superintendency of Water Works *SOHIDRA*. *SOHIDRA* handled its work program effectively, and major works were completed, albeit with delays. On finishing the works, *SOHIDRA* hands over the infrastructure to COGERH. *SOHIDRA* staff informed that project works on dams were relatively straightforward with readily available materials and labor and were well executed by contractors—all local in spite of ICB—in terms of quality. Also, they

¹ In the borrower's opinion (Annex C), DNOCS has limited authority over its existing dams where its activities are restricted to operations and maintenance.

² COGERH's sales to urban consumers accounted for 68 percent of its total revenues in 2004, according to the agency's annual report.

reported no serious cost overruns. No misprocurement was reported either. Whether such a result represents a significant institutional development in a state with nearly a century of experience in building and operating dams and reservoirs must be open to question, however. Prior to SOHIDRA and SRH, capability for executing such works in Ceará existed in the state Secretariat of Public Works.

4.7 The state *water* and sanitation company, CAGECE was cast as an *urban* executing agency under PROURB, reporting as it does to the state's urban development authorities. Thanks to its extensive program of installing water meters, supported by PROURB, CAGECE significantly lowered unaccounted for water from 44.3 percent of the total in 1994 to 26.7 percent in 2003. The ICB procurement of the water meters was an important learning experience for CAGECE. Evidently with the development of CAGERH, CAGECE has retreated from bulk water production, concentrating almost exclusively upon water distribution to consumers in urban areas. Today CAGECE supplies 5.7 million people (up from 2.4 million in 1993) in 81 percent of Ceará's municipalities, including the metropolitan region of the capital Fortaleza. It had close to 3,400 employees in 2004, and reported a profit of R\$16.6 million, up from R\$1.1 million in 2003.

BETTER LIVING CONDITIONS FOR THE URBAN POOR

4.8 Ceará state-wide data demonstrate improvements in urban living conditions during the 1997-2003 period in which the PROURB project was implemented; despite the income indicators cited earlier that point to increased poverty over the same period. During this time, the share of urban households served by mains water rose from 74.3 percent to 87.0 percent, while those connected to a sewerage system rose from 41.1 percent of the total to 53.6 percent. Typically lacking these services, low income households were the main beneficiaries of these improvements. PROURB itself contributed to this result, especially through the upgrading component that improved 89 low income areas in 49 municipalities, including water and sanitation service extensions. Using the ICR's estimate that this benefited 100,000 people, would mean that the PROURB effort accounted for about 10 percent of the overall improvement reported for the state during this period.

4.9 Field visits by the IEG mission to several parts of the state brought out evidence of the improvements reported. In two cities in Ceará's poor *Central Sertão* region, Quixadá and Quixeramobim, the mission could observe considerable improvements to low-income areas resulting from the PROURB interventions. In both towns, precarious informal settlements with people living in shacks had been transformed into consolidated neighborhoods, with basic infrastructure and community services. In two cases in Quixeramobim, residents nevertheless complained to the IEG mission about the unreliable water supply that often left taps dry in the afternoons especially, something that the local authorities were reluctant to recognize, even though their officials heard the complaints together with the IEG mission. Community centers and health posts provided and operated by the respective municipalities were in full operation and staffed by medical personnel on the day of the IEG visit; normal activity according to users questioned by the IEG mission. The SAR estimates that the ERR from these investments would be 14 percent. Had the ICR re-estimated the ERR at completion—a useful input

into the evaluation—it would likely have been high, if demand for these urban improvements was as buoyant as it was in the cities visited by IEG.

4.10 Local and state officials made much of the self help or *mutirão* approach to these improvements and its contribution to a feeling of ownership of the project improvements by the beneficiaries. When asked by IEG, these beneficiaries confirmed their intensive involvement in the works. They generally expressed their satisfaction with the results obtained and the professional training that they had gleaned from the building experiences. Particularly notable was the large participation by women in these local works. From the point of view of the authorities, *mutirão* had the advantage of being lower cost, although the same authorities recognized that implementation was inevitably slower when more community members were involved. The SDLR’s enthusiasm for *mutirão* transpired not only from their repeated references to it during the IEG mission, but also from their (incorrectly) citing the achievement of community participation as itself an explicit objective of the PROURB project, which it was not. Community participation was key to PROURB urban upgrading, but it was an *instrument* for helping achieve the project objective of improved living conditions for the urban poor, and not as an end in itself. The same can be said about “recovering local pride” also elevated to become a project ‘objective’ in the eyes of SDLR.

4.11 Finally, under better living conditions for the urban poor, it is worth recording the experience of the small town of Barroquinho (pop. 14,000 - 65 percent urban), and beneficiary of the Itaúna dam built by PROURB in the north-west of the state. The local mayor and her team told the IEG mission that the PROURB investment had given the town a new lease of life. Population decline had been reversed and cholera, that had once plagued poor areas of the city, was no longer a problem. The place had become ‘emancipated’ as a new municipality, where more than 70 percent of the taxpayers are up to date with their property tax dues, the highest rate observed by the IEG mission.

MORE EFFICIENT WATER USE IN CEARÁ

4.12 PROURB helped make water use significantly more efficient through the installation of 176,000 water meters by CAGECE, exceeding the appraisal target of 116,000. In addition, the Inter-American Development Bank (IDB) financed another 300,000. Water meter coverage in Ceará rose from 18.7 percent to 80.5 percent over the 1994-2003 period. This helped CAGECE’s reduce unaccounted-for water sharply, as already mentioned. PROURB’s contribution to this was an investment of US\$4.8 million through its *urban* infrastructure component.

4.13 Evidence that PROURB’s much larger investment—US\$110.4 million—in water resource infrastructure of dams and main water lines made water use more efficient is not convincing, at least as far as the efficiency of the investments themselves is concerned. While the ICR reported an overall 13 percent economic rate of return (ERR) from these investments in the 16 dams (against an appraisal ERR of 17 percent for 40 dams) IEG’s reassessment points to a much lower ERR of 8.7 percent. The lower estimate results from accounting for all costs reported in the ICR cost tables, as well as including those resulting from the necessary investments in urban water distribution not considered by the ICR estimate (details in Annex A). For IEG an ERR significantly below the

opportunity cost of capital is an input into an unsatisfactory outcome. For rating the project outcome as a whole, however, IEG's considers PROURB's other stronger outcomes—notably better living conditions for the urban poor—that help lift the overall project rating into the positive, satisfactory range.

4.14 It is likely that the majority of the 16 PROURB dams did not meet the 12 percent ERR minimum that PROURB required of each one (PROURB SAR para. 7.5). Extracting the best performing one, 'Sítios Novos' with 29 percent ERR, leaves the remaining 15 dams with an average 6.3 percent ERR only, most therefore unlikely to meet PROURB's own minimum requirement of efficiency (details Tables A.3a and A.3b in Annex A.). Sítios Novos' outstanding performance comes, as borrower comments on this report point out,³ from its supplying water to the new Pecém port and industrial complex near Fortaleza that alone accounts for 77 percent of the total incremental water consumption resulting from PROURB. The other 15 dams, located in the state's sparsely populated interior (as PROURB intended), could not match such a performance. But PROURB's initial design did require and promise, appropriately given the high costs involved, a good individual performance by each and every dam. For not reporting dam-level results, the ICR could not confirm this, a significant shortcoming in the self-assessment of a project seeking greater efficiency of water use through all of its water resource investments.

4.15 IEG concerns about the efficiency of these investments arose from its review of the cost-benefit analysis reported in the ICR. IEG found that raising the ICR cost benefit's component cost of US\$62.3 million to bring it in line with reported ICR costs of US\$110.4 million, and factoring in the investment costs of water distribution to the final urban beneficiaries—not included in the ICR cost benefit estimates—lowers the overall project ERR to just 8.7 percent (Annex A. Table A.4), below the opportunity cost of capital.

4.16 A meaningful assessment of the efficiency of these dam investments depends upon data that accurately reflects the scale and operations of the local water supply sector and the market for water in the cities of Ceará. This is especially important for a component that supposedly received more than two thirds of its benefits from incremental urban water consumption.⁴ Such investments as these cannot be justified on basis of the consumption of bulk water alone. Even if as much as half COGERH's R\$19.1 million bulk water sales in 2004 could be attributed to PROURB—an unlikely prospect since most COGERH revenue comes from sales to Fortaleza—the resulting benefits would be less than the project costs, yielding no net benefit and no calculable ERR at all.

4.17 According to the ICR ERR, 28 percent of the net benefits of the 16 dams came from irrigated agriculture. For this to happen, there would have been some US\$50 million

³ The heavy dependence of the PROURB project's performance upon the sale of water for industrial use was not foreseen at appraisal, and represents a major shift of the project focus away from improving the living conditions of the poor and providing them with reliable and safe water, which were key project objectives.

⁴ As earlier studies have noted, the value of urban water produced is critical for the economic viability of such projects. (Margulis 2002 p.16).

in investment by 2005 in irrigation channels, and pumping stations etc.—not financed by PROURB—bringing 6,490 hectares of land into agricultural production for the first time, with an annual yield worth US\$16 million by 2006 and growing thereafter. Rather than using data from projections for the Faé dam—implemented after PROURB under the PROGERIRH project—the ICR ERR should have presented data on actual investments made, actual area irrigated and actual increased yields using the latest data available to the cost benefit analyst. While projections are unavoidable at the appraisal stage, ex-post ERR estimates should be based upon empirical data of the project experience up to the time of the analysis. Experience in irrigated semi-arid zones outside the PROURB project in the Lower Jaguaribe River valley in the east of the state found that local (subsistence) farmers did not increase productivity on the necessary scale, and were not adept at shifting to higher value-added production such as exotic fruits for export, for example. The same study also found that a viable land market, that could have facilitated the fair resale of farms from subsistence farmers to more productive users, did not exist (Valdes et al. 2004). More empirical evidence is needed to demonstrate the actual economic costs and benefits of the irrigation experiences of PROURB.

4.18 IEG's concerns about possible inefficiency of PROURB water resource investments first arose from IEG's mission field visit to the Itaúna dam in the north-west of the state. Completed in 2000 at a cost of US\$3.8 million⁵, this dam led to formation of a reservoir covering 1,800 hectares that could store up to 77.5 million cubic meters of water. It was in a remote location with sparse urban and rural populations and consequently limited demand for water resources. Since only 17,800 urban dwellers live near this reservoir⁶, revenues from the sale of water for urban use could not, by themselves, generate a positive net benefit stream, so that agricultural benefits would be most important. On its site visit there, the IEG mission was able to verify the very small scale of water taken from the reservoir for urban use. Thus, the justification of the dam relied upon buoyant agricultural production of US\$5-6 million per annum, or about US\$3,250 per each of the 1,700 rural (mostly subsistence) households living in this area. But the IEG mission did not find evidence of the reported US\$2.5 million investment in irrigation infrastructure for 950 hectares necessary to generate these benefits. Again, the empirical evidence is thin.

4.19 In summary, PROURB's water resource infrastructure investments did not appear to yield the hoped for benefits. More attention needs to be given in Ceará and by the Bank to rigorous assessments of the efficiency of these kinds of projects. An important step too would be to encourage a more thorough understanding of the demand for these investments and the methods (with good quality data) for evaluating their performance. In the case of PROURB, the relevant cost benefit analyses were not readily available to the project team in SRH, is thus unlikely to have benefited from the self-evaluation experience. IEG and SRH had to make considerable efforts during the mission to

⁵ More than ten times the appraisal cost estimate of US\$340,000 that, according to the borrower ICR would have stored 87.5 million cubic meters. A major cost overrun such as this requires further clarification and explanation.

⁶ This number is estimated using the urbanization percentages of the two neighboring municipalities as follows: 69.9 percent of the 12,709 population of Chaval plus 65.3 percent of the 13,661 population of Barroquinho.

Fortaleza and Brasilia to retrieve both the appraisal and completion economic analyses, with whose methodology and results the project team needs to be familiar. Only then can they help ensure that the project is heading toward the efficiency improvements expected of it.

RELIABLE , AFFORDABLE AND SAFE WATER FOR THE URBAN POOR

4.20 This was largely achieved through PROURB's urban upgrading components, but there were some shortcomings. During field visits to the *Mutirão Boqueirão* upgraded site in Quixeramobim, the IEG mission heard complaints from residents about frequent interruptions to their water supply, as mentioned earlier. Low-income residents did confirm that their water bills were affordable. Having heard assurances from CAGECE about the high quality of water in the state and hearing no reports of any sickness arising from contamination of any kind, IEG has no reason to doubt that water supply through PROURB was safe. Curiously, the IEG mission also found another unreliable water supply when it visited the *agrovila* of the Itaúna dam. Residents told IEG that they had been without water for five days. SRH engineers accompanying the IEG mission soon found the cause; the poor installation of the main water pipe that had blocked the flow, that they promised fix expeditiously. Nevertheless, it is indeed ironic that there should be a shortage of water next to one of the largest açudes financed by PROURB. Furthermore, spokesmen for the community told the IEG mission that they wanted much more water, to allow them to raise large herds of cattle, an unlikely prospect in such an arid area as this. With proposals like this, SRH can do more to inform final users about the constraints in a semi-arid region as this, to ensure that water is used efficiently as PROURB intended.

PREPARING A HIGH QUALITY FOLLOW-ON WATER PROJECT

4.21 The Pilot PROGERIRH did help the preparation of the follow-on PROGERIRH (Ln4531), now under implementation, with quality at entry was rated satisfactory by a QAG panel in April 2001. As of this writing near the June 30 2006 closing date, only 64 percent of the Bank loan of US\$136 million has been disbursed. however. Project performance has nevertheless been rated satisfactory by most Bank supervision missions. While this was the Pilot-PROGERIRH's intended result, it was not achieved efficiently, since it incurred additional costs not directly related to preparing the follow-on project. In fact, it would have been most efficient if the PROURB's own resources had been used to for this purpose—especially considering that US\$3.8 million of the loan was cancelled—since PROURB was working with the same state agencies as PROGERIRH.

5. Ratings and Lessons

RATINGS

5.1 *Ceará Urban Development and Water Resources Management Project (Ln3789):* Project objectives were and remain **highly relevant** to development priorities for Ceará in both the urban and water sectors set by the Federal and State authorities and the Bank.

Efficacy in achieving these objectives was mixed and is rated **modest**.⁷ The best results were achieved in the two important objectives of improving the living conditions of the urban poor and providing them with water, and reducing unaccounted for water. More efficient water use was not achieved through water resource infrastructure investment. Thus, *efficiency* in achieving the objectives is only **modest**, the rating brought down by the poor economic performance of the project's dam investments. Since the project achieved some of its major objectives, but with significant shortcomings, the *overall outcome* is rated as **moderately satisfactory**.⁸ *Sustainability* is rated **likely**, given the continuing need for and government support of the services provided by the project. *Institutional development impact* is rated **modest**, - while urban agencies, including some municipalities, began to use resources more efficiently, these gains were outweighed by the inefficient use of resources on the project's water resource side. *Bank Performance* is rated **satisfactory**, but marginally so with the awkward project design of bundling two operations into one and the very frequent turnover of project task managers, most with little knowledge of the water components. *Borrower performance*, is rated **satisfactory**, although local agencies could give more attention to monitoring project results and achieving greater efficiency in the use of resources.

5.2 *Ceará Water Resources Management Pilot Project (Ln4190)*: The project objective remains **substantially relevant** to Bank and Government priorities for addressing the state's water resource issues. *Efficacy* is rated **substantial**, since a high quality follow-on operation was approved. *Efficiency* in achieving this objective was only **modest**, however, since the project objective could have been achieved more efficiently using funds already available to the same agencies through PROURB. Despite the considerable resources deployed, several pilot project studies remained unfinished. Since the pilot project achieved its main objective with these shortcomings, the *overall outcome* is rated **moderately satisfactory**. *Sustainability* is rated **likely**, since the resulting follow-on project is ongoing and not at risk. *Institutional development impact* is rated **modest** given that strong project preparation capabilities already existed in this sector in Ceará, as the PROURB experience itself demonstrates. *Bank performance* is rated **satisfactory**, but not fully so, as the Bank could have found a more efficient way to prepare the follow-on project, and should have prepared its own ICR assessment to review project performance—only a borrower ICR was prepared at completion. *Borrower performance* is rated **satisfactory** for completing all the work necessary for the preparation of the follow-on project.

LESSONS

- Especially in poor, drought-stricken regions like Ceará, water resource infrastructure investments need to be sensitive to demand in order to be efficient in boosting development.

⁷ This rating results from shortcoming in achieving PROURB's objective of increased efficiency of water use in Ceará..

⁸ In the opinion of the Borrower (Annex C), the rating should be (fully) satisfactory, citing IEG's conclusion (para. 3.1) that PROURB was successfully implemented. IEG wishes to clarify that outcome ratings are determined by the results of the project in achieving its intended objectives, not by how well it was implemented.

- ERRs provide useful measures of efficiency and indicators of demand when using actual cost and benefit data that are calibrated with the real constraints of the local economy and the capacities of local agencies.
- Bank assistance can help nurture a culture of self-evaluation by borrowers and implementing agencies, and stimulate them to continuously monitor results.
- Project upgrading of low income urban areas can bring significant improvements to the living conditions of the poor even in remote cities of the interior.

Table A.1: PROURB Total Water Resource Component									
SAR cost benefit analysis (in 1993 US dollars)									
year	COSTS				BENEFITS				NET
	Dams	Supply Lines	Dam Rehab	Total costs	Water supply	Agric Production	Fishing	Total Benefits	BENEFITS
1995	16,612,759	8,121,228	1,361,294	26,095,281	147,168	-	-	147,168	(25,948,113)
1996	10,113,387	7,051,293	634,867	17,799,547	3,104,325	(5,746,462)	-	(2,642,137)	(20,441,684)
1997	10,353,277	6,832,690	641,964	17,827,931	6,245,902	(9,062,632)	183,715	(2,633,015)	(20,460,946)
1998	11,670,438	4,583,263	775,639	17,029,340	7,905,336	(9,556,038)	293,538	(1,357,164)	(18,386,504)
1999	11,775,797	4,875,517	623,233	17,274,547	9,449,565	(7,126,322)	571,242	2,894,485	(14,380,062)
2000	1,159,957	1,327,597	-	2,487,554	10,741,769	(3,153,057)	676,193	8,264,905	5,777,351
2001	1,159,957	1,327,597	-	2,487,554	11,718,252	5,401,344	823,774	17,943,370	15,455,816
2002	1,159,957	1,327,597	-	2,487,554	11,718,252	12,813,383	823,774	25,355,409	22,867,855
2003	1,159,957	1,327,597	-	2,487,554	11,718,252	20,257,745	823,774	32,799,771	30,312,217
2004	1,159,957	1,327,597	-	2,487,554	11,718,252	24,155,542	823,774	36,697,568	34,210,014
2005	1,159,957	1,327,597	-	2,487,554	11,718,252	24,302,525	823,774	36,844,551	34,356,997
2006	1,159,957	1,327,597	-	2,487,554	11,718,252	24,302,525	823,774	36,844,551	34,356,997
2007	1,159,957	1,327,597	-	2,487,554	11,718,252	24,302,525	823,774	36,844,551	34,356,997
2008	1,159,957	1,327,597	-	2,487,554	11,718,252	24,302,525	823,774	36,844,551	34,356,997
2009	1,159,957	1,327,597	-	2,487,554	11,718,252	24,302,525	823,774	36,844,551	34,356,997
2010	1,159,957	1,327,597	-	2,487,554	11,718,252	24,302,525	823,774	36,844,551	34,356,997
2011	1,159,957	1,327,597	-	2,487,554	11,718,252	24,302,525	823,774	36,844,551	34,356,997
2012	1,159,957	1,327,597	-	2,487,554	11,718,252	24,302,525	823,774	36,844,551	34,356,997
2013	1,159,957	1,327,597	-	2,487,554	11,718,252	24,302,525	823,774	36,844,551	34,356,997
2014	1,159,957	1,327,597	-	2,487,554	11,718,252	24,302,525	823,774	36,844,551	34,356,997
2015	1,159,957	1,327,597	-	2,487,554	11,718,252	24,302,525	823,774	36,844,551	34,356,997
2016	1,159,957	1,327,597	-	2,487,554	11,718,252	24,302,525	823,774	36,844,551	34,356,997
2017	1,159,957	1,327,597	-	2,487,554	11,718,252	24,302,525	823,774	36,844,551	34,356,997
2018	1,159,957	1,327,597	-	2,487,554	11,718,252	24,302,525	823,774	36,844,551	34,356,997
2019	1,159,957	1,327,597	-	2,487,554	11,718,252	24,302,525	823,774	36,844,551	34,356,997
NPV's @ 12%	\$49,279,405	\$29,041,801	\$3,025,062	\$81,346,269	\$66,609,267	\$53,248,601	\$4,058,136	\$123,916,004	42,569,735
share of NPV:	60.6%	35.7%	3.7%	100.0%	53.8%	43.0%	3.3%	100.0%	17.0%
Source: Ceara SDU - PROURB-CE Analise Economica e Social do PROURB - Novembro de 1993									ERR
Notes:									(SAR data)
Urban water beneficiaries (number)	509,600	CAGECE op. costs (US\$/ m3)		0.38	maintenance 2% of investment cost; operations US\$33,190 per dam				
Urban water consumption (m3)	27,900,600	Net benefit water supply (US\$/m3)		0.42	Water benefits net of operating costs.				
Urban water consumption (US\$)	11,718,252	Urban water cons (lts/person/day)		150	Agriculture/fishing benefits net of investment/operating costs.				
Area for irrigation (ha)	17,890	Family willingness to pay (US\$/m3)		0.40	Volume of irrigation water (m3)	357,800,000			

Table A.2a: PROURB Total Water Resource Component									
ICR cost benefit analysis (in 2002 Brazilian reals)									
year	COSTS				BENEFITS				NET
	Dams	Supply Lines	Dam Rehab	Total costs	Water supply	Agric Production	Fishing	Total Benefits	BENEFITS
1995	2,997,854	1,171,067	109,115	4,278,036	-	-	-	-	(4,278,036)
1996	11,369,432	2,776,931	129,436	14,275,799	-	-	-	-	(14,275,799)
1997	20,274,407	5,471,658	1,110,869	26,856,934	-	-	-	-	(26,856,934)
1998	42,973,349	25,123,147	216,428	68,312,924	701,312	-	2,793	704,105	(67,608,819)
1999	30,472,744	8,121,893	1,665,895	40,260,532	3,653,840	(1,204,364)	33,108	2,482,584	(37,777,948)
2000	14,456,307	1,891,308	1,153,776	17,501,391	7,155,430	(5,060,398)	189,415	2,284,447	(15,216,944)
2001	7,641,084	2,101,624	93,020	9,835,728	10,772,991	(14,673,732)	543,465	(3,357,276)	(13,193,004)
2002	1,455,439	1,312,365	505,764	3,273,568	13,083,286	(19,695,580)	810,114	(5,802,180)	(9,075,748)
2003	506,660	1,132,393	-	1,639,053	18,153,433	(26,814,673)	1,063,086	(7,598,154)	(9,237,207)
2004	506,660	1,132,393	-	1,639,053	21,724,158	(18,675,148)	1,234,825	4,283,835	2,644,782
2005	506,660	1,132,393	-	1,639,053	25,300,720	(7,676,475)	1,356,373	18,980,618	17,341,565
2006	506,660	1,132,393	-	1,639,053	27,227,611	10,905,726	1,403,760	39,537,097	37,898,044
2007	506,660	1,132,393	-	1,639,053	29,160,605	26,804,564	1,379,586	57,344,755	55,705,702
2008	506,660	1,132,393	-	1,639,053	29,444,200	38,855,133	1,379,586	69,678,919	68,039,866
2009	506,660	1,132,393	-	1,639,053	29,734,176	45,148,758	1,379,586	76,262,520	74,623,467
2010	506,660	1,132,393	-	1,639,053	30,030,675	47,628,065	1,379,586	79,038,326	77,399,273
2011	506,660	1,132,393	-	1,639,053	30,030,675	47,628,065	1,379,586	79,038,326	77,399,273
2012	506,660	1,132,393	-	1,639,053	30,030,675	47,628,065	1,379,586	79,038,326	77,399,273
2013	506,660	1,132,393	-	1,639,053	30,030,675	47,628,065	1,379,586	79,038,326	77,399,273
2014	506,660	1,132,393	-	1,639,053	30,030,675	47,628,065	1,379,586	79,038,326	77,399,273
2015	506,660	1,132,393	-	1,639,053	30,030,675	47,628,065	1,379,586	79,038,326	77,399,273
2016	506,660	1,132,393	-	1,639,053	30,030,675	47,628,065	1,379,586	79,038,326	77,399,273
2017	506,660	1,132,393	-	1,639,053	30,030,675	47,628,065	1,379,586	79,038,326	77,399,273
2018	506,660	1,132,393	-	1,639,053	30,030,675	47,628,065	1,379,586	79,038,326	77,399,273
2019	506,660	1,132,393	-	1,639,053	30,030,675	47,628,065	1,379,586	79,038,326	77,399,273
NPVs @ 12%	\$83,597,794	\$33,423,861	\$2,905,008	\$119,926,663	\$93,244,281	\$38,577,575	\$4,495,340	\$136,317,196	16,390,533
share of NPV:	69.7%	27.9%	2.4%	100.0%	68.4%	28.3%	3.3%	100.0%	13.1%
Source: Ceará Secretaria de Recursos Hídricos PROURB – Relatório de Encerramento do Componente Hídrico									ERR
Notes:									(ICR data)
Urban water beneficiaries (number)	257,920		Irrigation investment costs (R\$/ha)	8,006	Water benefits net of operating costs.				
Urban water consumption (m3)	41,138,362		Irrigation operating costs (R\$/ha)	5,376	Agriculture/fishing benefits net of investment/operating costs.				
Urban water consumption (US\$)	92,149,930		Irrigation value added (R/ha)	12,714	FGV consumer price index converts current R\$ values to R\$2002 prices.				
Area for irrigation (ha)	6,490		Urban water cons. (R\$/person/day)	437	Volume of irrigation water (m3)		357,800,000		

Table A.2b: PROURB Overall Water Resource Component									
ICR cost benefit analysis (in 2002 US dollars)									
	COSTS				BENEFITS				NET
	Dams	Supply Lines	Dam Rehab	Total costs	Water supply	Agric Production	Fishing	Total Benefits	BENEFITS
1995	1,026,662	401,050	37,368	1,465,081	-	-	-	-	(1,465,081)
1996	3,893,641	951,004	44,327	4,888,972	-	-	-	-	(4,888,972)
1997	6,943,290	1,873,855	380,435	9,197,580	-	-	-	-	(9,197,580)
1998	14,716,900	8,603,817	74,119	23,394,837	240,175	-	957	241,132	(23,153,705)
1999	10,435,871	2,781,470	570,512	13,787,853	1,251,315	(412,453)	11,338	850,200	(12,937,653)
2000	4,950,790	647,708	395,129	5,993,627	2,450,490	(1,733,013)	64,868	782,345	(5,211,282)
2001	2,616,810	719,734	31,856	3,368,400	3,689,380	(5,025,251)	186,118	(1,149,752)	(4,518,152)
2002	498,438	449,440	173,207	1,121,085	4,480,577	(6,745,062)	277,436	(1,987,048)	(3,108,133)
2003	173,514	387,806	-	561,320	6,216,929	(9,183,107)	364,071	(2,602,108)	(3,163,427)
2004	173,514	387,806	-	561,320	7,439,780	(6,395,599)	422,885	1,467,067	905,747
2005	173,514	387,806	-	561,320	8,664,630	(2,628,930)	464,511	6,500,212	5,938,892
2006	173,514	387,806	-	561,320	9,324,524	3,734,838	480,740	13,540,102	12,978,782
2007	173,514	387,806	-	561,320	9,986,509	9,179,645	472,461	19,638,615	19,077,295
2008	173,514	387,806	-	561,320	10,083,630	13,306,552	472,461	23,862,643	23,301,324
2009	173,514	387,806	-	561,320	10,182,937	15,461,903	472,461	26,117,301	25,555,982
2010	173,514	387,806	-	561,320	10,284,478	16,310,981	472,461	27,067,920	26,506,600
2011	173,514	387,806	-	561,320	10,284,478	16,310,981	472,461	27,067,920	26,506,600
2012	173,514	387,806	-	561,320	10,284,478	16,310,981	472,461	27,067,920	26,506,600
2013	173,514	387,806	-	561,320	10,284,478	16,310,981	472,461	27,067,920	26,506,600
2014	173,514	387,806	-	561,320	10,284,478	16,310,981	472,461	27,067,920	26,506,600
2015	173,514	387,806	-	561,320	10,284,478	16,310,981	472,461	27,067,920	26,506,600
2016	173,514	387,806	-	561,320	10,284,478	16,310,981	472,461	27,067,920	26,506,600
2017	173,514	387,806	-	561,320	10,284,478	16,310,981	472,461	27,067,920	26,506,600
2018	173,514	387,806	-	561,320	10,284,478	16,310,981	472,461	27,067,920	26,506,600
2019	173,514	387,806	-	561,320	10,284,478	16,310,981	472,461	27,067,920	26,506,600
NPVs @ 12%	\$28,629,382	\$11,446,528	\$994,866	\$41,070,775	\$31,932,973	\$13,211,498	\$1,539,500	\$46,683,971	<u>5,613,196</u>
shares of NPV	69.7%	27.9%	2.4%	100.0%	68.4%	28.3%	3.3%	100.0%	<u>13.1%</u>
Source: Ceará Secretaria de Recursos Hídricos PROURB – Relatório de Encerramento do Componente Hídrico									<u>ERR</u>
Notes:									(ICR data)
(see Table A.2a)									
US\$: R\$ exchange rate		1.00 = 2.92							

Table A.3b: PROURB Partial Water Resource Component									
IEG adjusted cost benefit analysis - Remaining 15 dams only (in 2002 US dollars)									
	COSTS				BENEFITS				NET
	Dams	Supply Lines	Dam Rehab	Total costs	Water supply	Agric Production	Fishing	Total Benefits	BENEFITS
1995	1,575,184	615,322	57,333	2,247,840	-	-	-	-	(2,247,840)
1996	5,973,924	1,459,103	68,011	7,501,038	-	-	-	-	(7,501,038)
1997	9,352,873	2,875,014	583,692	12,811,578	(2,063,360)	-	-	(2,063,360)	(14,874,938)
1998	21,329,752	11,950,589	113,719	33,394,060	(1,823,185)	-	957	(1,822,228)	(35,216,289)
1999	14,887,382	3,143,410	875,323	18,906,115	(2,063,360)	(412,453)	11,338	(2,464,475)	(21,370,590)
2000	7,579,774	993,764	606,237	9,179,775	103,629	(1,733,013)	52,154	(1,577,230)	(10,757,005)
2001	3,994,774	1,104,272	48,876	5,147,922	1,059,020	(4,914,791)	128,113	(3,727,657)	(8,875,579)
2002	744,605	689,566	265,747	1,699,918	3,630,077	(6,560,962)	216,265	(2,714,620)	(4,414,538)
2003	153,377	387,806	-	541,183	3,948,929	(8,925,368)	301,316	(4,675,123)	(5,216,305)
2004	153,377	387,806	-	541,183	4,037,780	(6,325,474)	352,982	(1,934,712)	(2,475,894)
2005	153,377	387,806	-	541,183	4,128,630	(2,696,155)	387,459	1,819,935	1,278,752
2006	153,377	387,806	-	541,183	4,734,524	3,493,443	409,253	8,637,220	8,096,038
2007	153,377	387,806	-	541,183	4,316,509	8,764,080	400,974	13,481,563	12,940,381
2008	153,377	387,806	-	541,183	4,413,630	12,803,903	400,974	17,618,508	17,077,325
2009	153,377	387,806	-	541,183	4,512,937	14,959,254	400,974	19,873,165	19,331,983
2010	153,377	387,806	-	541,183	4,614,478	15,808,332	400,974	20,823,784	20,282,601
2011	153,377	387,806	-	541,183	4,614,478	15,808,332	400,974	20,823,784	20,282,601
2012	153,377	387,806	-	541,183	4,614,478	15,808,332	400,974	20,823,784	20,282,601
2013	153,377	387,806	-	541,183	4,614,478	15,808,332	400,974	20,823,784	20,282,601
2014	153,377	387,806	-	541,183	4,614,478	15,808,332	400,974	20,823,784	20,282,601
2015	153,377	387,806	-	541,183	4,614,478	15,808,332	400,974	20,823,784	20,282,601
2016	153,377	387,806	-	541,183	4,614,478	15,808,332	400,974	20,823,784	20,282,601
2017	153,377	387,806	-	541,183	4,614,478	15,808,332	400,974	20,823,784	20,282,601
2018	153,377	387,806	-	541,183	4,614,478	15,808,332	400,974	20,823,784	20,282,601
2019	153,377	387,806	-	541,183	4,614,478	15,808,332	400,974	20,823,784	20,282,601
NPVs @ 12%	\$41,217,874	\$15,534,059	\$1,526,400	\$58,278,333	\$10,805,995	\$12,561,263	\$1,278,613	\$24,645,871	<u>(33,632,462)</u>
shares of NPV	70.7%	26.7%	2.6%	100.0%	43.8%	51.0%	5.2%	100.0%	<u>6.3%</u>
Source: Ceará Secretaria de Recursos Hídricos PROURB – Relatório de Encerramento do Componente Hídrico									<u>ERR</u>
Notes:									<u>(IEG data)</u>
Estimated by subtracting the costs and benefits of Sítios Novos (Table A.3a) from those of IEG's Total Water Component cost benefit analysis (Table A.4)									
Other data/assumptions as per ICR cost benefit analysis.									

Table A.4: PROURB Total Water Resource Component									
IEG adjusted ICR cost benefit analysis (in 2002 US dollars)									
	COSTS				BENEFITS				NET
	Dams	Supply Lines	Dam Rehab	Total costs	Water supply	Agric Production	Fishing	Total Benefits	BENEFITS
1995	1,575,184	615,322	57,333	2,247,840	-	-	-	-	(2,247,840)
1996	5,973,924	1,459,103	68,011	7,501,038	-	-	-	-	(7,501,038)
1997	10,652,931	2,875,014	583,692	14,111,636	(2,063,360)	-	-	(2,063,360)	(16,174,996)
1998	22,579,803	13,200,640	113,719	35,894,162	(1,823,185)	-	957	(1,822,228)	(37,716,391)
1999	16,011,518	4,267,546	875,323	21,154,387	(2,063,360)	(412,453)	11,338	(2,464,475)	(23,618,863)
2000	7,595,884	993,764	606,237	9,195,885	387,129	(1,733,013)	64,868	(1,281,016)	(10,476,900)
2001	4,014,911	1,104,272	48,876	5,168,059	1,626,020	(5,025,251)	186,118	(3,213,112)	(8,381,171)
2002	764,742	689,566	265,747	1,720,055	4,480,577	(6,745,062)	277,436	(1,987,048)	(3,707,103)
2003	173,514	387,806	-	561,320	6,216,929	(9,183,107)	364,071	(2,602,108)	(3,163,427)
2004	173,514	387,806	-	561,320	7,439,780	(6,395,599)	422,885	1,467,067	905,747
2005	173,514	387,806	-	561,320	8,664,630	(2,628,930)	464,511	6,500,212	5,938,892
2006	173,514	387,806	-	561,320	9,324,524	3,734,838	480,740	13,540,102	12,978,782
2007	173,514	387,806	-	561,320	9,986,509	9,179,645	472,461	19,638,615	19,077,295
2008	173,514	387,806	-	561,320	10,083,630	13,306,552	472,461	23,862,643	23,301,324
2009	173,514	387,806	-	561,320	10,182,937	15,461,903	472,461	26,117,301	25,555,982
2010	173,514	387,806	-	561,320	10,284,478	16,310,981	472,461	27,067,920	26,506,600
2011	173,514	387,806	-	561,320	10,284,478	16,310,981	472,461	27,067,920	26,506,600
2012	173,514	387,806	-	561,320	10,284,478	16,310,981	472,461	27,067,920	26,506,600
2013	173,514	387,806	-	561,320	10,284,478	16,310,981	472,461	27,067,920	26,506,600
2014	173,514	387,806	-	561,320	10,284,478	16,310,981	472,461	27,067,920	26,506,600
2015	173,514	387,806	-	561,320	10,284,478	16,310,981	472,461	27,067,920	26,506,600
2016	173,514	387,806	-	561,320	10,284,478	16,310,981	472,461	27,067,920	26,506,600
2017	173,514	387,806	-	561,320	10,284,478	16,310,981	472,461	27,067,920	26,506,600
2018	173,514	387,806	-	561,320	10,284,478	16,310,981	472,461	27,067,920	26,506,600
2019	173,514	387,806	-	561,320	10,284,478	16,310,981	472,461	27,067,920	26,506,600
NPVs @ 12%	\$43,658,832	\$16,966,354	\$1,526,400	\$62,151,586	\$25,293,454	\$13,211,498	\$1,539,500	\$40,044,452	(\$22,107,134)
shares of NPV	70.2%	27.3%	2.5%	100.0%	63.2%	33.0%	3.8%	100.0%	8.7%
Source: Ceará Secretaria de Recursos Hídricos PROURB – Relatório de Encerramento do Componente Hídrico (with IEG update)									ERR
									(IEG data)
Notes:									
1. Calibration of ERR investments costs toward US\$110.4 million costs reported in ICR. Average increase of 53% brings ERR costs to approximately 90% of ICR costs, the same ratio at appraisal.									
2. Addition of urban water distribution investment costs. IEG estimate of once-off payment of US\$200 per each 51,584 beneficiary household. Total investment over five years starting 1997.									
Other data/assumptions as per ICR cost benefit analysis.									

Annex B. Basic Data Sheet

CEARÁ URBAN DEVELOPMENT AND WATER RESOURCES MANAGEMENT PROJECT (LOAN 3789-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	240.0	232.7	97%
Loan amount	140.0	136.2	97%
Cofinancing	25.5	-	0%
Cancellation	-	3.8	-

Project Dates

	<i>Original</i>	<i>Actual</i>
Appraisal Mission	11/15/1993	11/15/1993
Board approval	09/06/1994	09/06/1994
Signing	12/16/1994	12/16/1994
Effectiveness	03/19/1995	05/15/1995
Closing date	03/31/2000	12/31/2003

Staff Inputs *(staff weeks)*

	<i>Actual/Latest Estimate</i>	
	<i>N° Staff weeks</i>	<i>US\$US\$('000)</i>
Identification/Preparation	N/A	152.25
Appraisal	N/A	65.25
Supervision	N/A	1,870.00
ICR	N/A	15.00
Total	N/A	1,319.50

Mission Data

	<i>Date (month/year)</i>	<i>Count</i>	<i>Specializations represented</i>	<i>Performance Rating Imple. Progress Dev. Obj.</i>	
Identification/ Preparation	Four separate preparation missions during 1993	14 (number varied according to mission objective)	Specialists included Bank and consultants in the areas of Urban Development, Environmental and Socially Sustainable Development, Finance and Financial Management, Bank Operations, Procurement, Water Supply and Sanitation, Water Resources Management.		
Appraisal/Negotiation	November 1993	8	Urban Development, Operations, Environment, Water Resources Management and Consultants.		
Supervision	12/19/1994	5	Anthropologist (1); Hydrologist (1); Consultant (1); Water Res. Specialist (1); Sr. Financial Analyst (1)	S	S
	10/27/1995	5	Environment (1); Urban/Inst. Develop (1); Procurement (1); Water Resource (1); Financial Analyst (1)	S	S
	03/22/1996	5	Envr/Resettlement (1); Urban/Inst. Develop (1); Water Management Spec. ((2); Financial Analyst (1))	S	S
	06/04/1996	3	Envir/Resettlement (1); Urban Inst. Develop (1); Water Management Spec. (1)	S	S
	03/23/1996	6	Division Chief (1); Envir/Resettlement (1); Resettlement (1); Urban/Inst. Develop. (1); Water Management Spec. (1); TM (Fin. Analyst) (1)	U	S
	10/31/1996	3	Envir/Resettlement (1); Urban/Inst. Develop (1); Water Management Spec.(1)	U	S
	01/25/1997	7	Envir/Resettlement (2); Resettlement (2); Urban/Inst. Develop.(1); Water Management (1); Projects Adviser (1)	U	S
	10/31/1997	6	Task Manager/Urban (1); Water Resources (2); Resettlement (1); Env (1); Previous TM (1)	S	S
	04/30/1998	2	Task Manager (1); Consultant (1)	S	S
	10/16/1998	1	Urban Planner (1)	S	S
	04/23/1999	2	Pr. Operations Officer (1); Sr. Urban Specialist (1)	S	S
	04/23/1999	3	Task Manager (1); Consultant (1); Fin (1). Mgmt. Analyst (1)	S	S
	04/23/1999	3	Princ. Operations Off. (1); Consultant (2)	S	S
	11/21/2000	4	Task Team Leader (1); Urban Specialist (1); Consultant (2)	S	S
	05/24/2001	4	Urban Specialist (1); Lead Operations Offr. (1); Envir/Resettlement Spe (1); Consultant (1)	S	S

	<i>Date (month/year)</i>	<i>Count</i>	<i>Specializations represented</i>	<i>Performance Rating</i>	
				<i>Imple. Progress</i>	<i>Dev. Obj.</i>
	11/02/2001	1	Urban Specialist (1)	S	S
	11/02/2001	1	Supervision (1)	S	S
	01/31/2002	4	Task Manager (1); Env. Specialist (1); Economist (1); Urban Specialist (1)	S	S
	05/28/2002	1	Economist (1)	S	S
	12/11/2002	3	Task Manager (1); Economist (1); Env. Specialist (1)	S	S
	07/21/2003	2	Task Manager (1); Economist (1)	S	S
	11/04/2003	2	Task Manager (1); Economist (1)	S	S
ICR	04/01/04	2	Senior Urban Specialist (1), Economist/Consultant (1)		

CEARÁ WATER RESOURCES MANAGEMENT PILOT PROJECT (LOAN 4190-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	12.00	10.53	88%
Loan amount	7.60	8.40	111%
Cofinancing	-	-	-
Cancellation	-	-	-

Project Dates

	<i>Original</i>	<i>Actual</i>
Appraisal Mission	01/30/1997	01/30/1997
Board approval	06/12/1997	06/12/1997
Signing		
Effectiveness	02/20/1998	02/20/1998
Closing date	06/30/2000	06/30/2002

Staff Inputs (staff weeks)

	<i>Actual/Latest Estimate</i>	
	<i>N° Staff weeks</i>	<i>US\$('000)</i>
Identification/Preparation	N/A	N/A
Appraisal/Negotiation	N/A	N/A
Supervision	N/A	N/A
ICR	6	36.0
Total	N/A	N/A

Mission Data

	<i>Date (month/year)</i>	<i>Count</i>	<i>Specializations represented</i>	<i>Performance rating</i>	
				<i>Imple. Progress</i>	<i>Dev. Objective</i>
Identification/ Preparation	03/20/1996	2	1 Water Resources Engineer (Task Manager); 1 Water Resources Engineer	S	S
	07/22/1996	1	Water Resources Engineer	S	S
	08/21/1996	2	1 Water Resources Engineer (Task Manager); 1 Water Resources Engineer	S	S
Appraisal Negotiation	11/04/1996	1	Water Resources Engineer	S	S
	11/11/1996	2	1 Water Resources Engineer; 1 Procurement Specialist	S	S
	10/11/1997	1	Water Resources Engineer	S	S
	05/19/1998	1	Sr. Water Resources Specialist	S	S
	04/26/1998	1	Sr. Water Resources Engineer	S	S
	10/14/1998	1	Sr. Water Resources Engineer	S	S
	10/25/1998	1	Water Resources Engineer (Task Manager)	S	S
	03/15/1999	1	Water Resources Engineer	S	S
	06/01/2000	1	Procurement Specialist	S	S
	02/21/2001	1	Water Resources Engineer	S	S
	09/11/2001	4	1 Water Resources Engineer (Task Manager); 1 Water Resources Engineer; 1 Operations Analyst; 1 Senior Anthropologist	S	S
	11/13/2001	1	Procurement Specialist	S	S
	02/25/2002	1	Operations Analyst	S	S
	09/16/2002	5	1 Water Resources Engineer (Task Manager); 3 Water Resources Engineer; 1 Operations Analyst	S	S

Annex C. Borrower Comments

[Original in Portuguese]

OFÍCIO GS N°.628/2006

Fortaleza, 12 de junho de 2006

ASSUNTO: BRASIL - Projeto de Desenvolvimento Urbano e Gestão dos Recursos Hídricos do Ceará (Empréstimo 3789) e Projeto-Piloto de Gestão dos Recursos Hídricos do Ceará (Empréstimo 4190-BR) - Minuta do Relatório de Avaliação dos Resultados dos Projetos.

Caro Alain Barbu,

Cumprimentando-o cordialmente, em resposta à sua carta, que trata do encaminhamento do Relatório de Avaliação dos Resultados do PROURB (Loan 3789-BR) e PROGERIRH-Piloto (Loan 4190-BR), vimos apresentar os comentários do Governo do Estado do Ceará em relação ao referido relatório, conforme documento em anexo.

A oportunidade de opinar sobre o relatório apresentado, permitiu-nos promover importantes comentários e esclarecimentos sobre pontos fundamentais do Projeto, que submetemos à apreciação de Vossas Senhorias. O objetivo dos nossos comentários é de propor novas reflexões que possam contribuir para obtenção de visão mais equilibrada quanto aos resultados esperados e aqueles obtidos, e também que os mesmos sejam capazes de construir uma análise mais completa dos impactos sociais e econômicos dos investimentos realizados.

Parabenizamos esse Banco pela iniciativa da avaliação e ressaltamos que o relatório nos será muito útil, e trazendo contribuições para aperfeiçoarmos a atuação do Estado nos setores urbano e hídrico.

Aproveitamos para renovar votos de distinta consideração, e antecipadamente agradecemos à atenção dispensada ao assunto.

Cordialmente,

Antônio Sérgio Montenegro Cavalcante
Secretário, em exercício.

Ilmo. Sr.

Alain Barbu, Manager
Sector, Thematic and Global Evaluation
Division Independent Evaluation Group
World Bank
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COMENTÁRIOS DO GOVERNO DO ESTADO DO CEARÁ SOBRE O RELATÓRIO DE AVALIAÇÃO DOS RESULTADOS DO PROJETO - PPAR PARA O PROURB (Loan 3789-BR) e PROGERIRH-PILOTO (Loan 4190-BR)

1. O Estado do Ceará congratula-se com a iniciativa do Banco Mundial, por intermédio do IEG, em proceder avaliações dos programas e atividades financiadas pelo Banco, através de métodos que oferecem rigor e que são devidamente flexíveis para se adaptarem ao instrumento de empréstimo, tipo de projeto ou abordagem setorial.
2. Entende o Estado do Ceará que avaliações isentas proporcionam informações preciosas para os dirigentes públicos responsáveis pelos projetos e pelas políticas públicas, proporcionando elementos que podem fundamentar novas tomadas de decisões.
3. Para garantir a consecução do PPAR, o Estado do Ceará concedeu o necessário apoio logístico e acompanhou a missão do IEG, que visitou o Estado, em novembro de 2005, com o objetivo de avaliar os projetos PROURB e PROGERIRH-PILOTO.
4. O Estado do Ceará concorda com o método preconizado pelo Banco que “busca garantir uniformidade e homogeneidade nas avaliações”. No entanto, considera que o PPAR cometeu alguns equívocos de interpretação ou utilizou informações incompletas, que necessitam ser esclarecidos.

I. SOBRE O PROURB

5. No entendimento do Governo do Ceará, o PROURB foi um projeto que proporcionou grande contribuição para mitigar a pobreza urbana e iniciar a estruturação de uma rede de cidades no interior do Estado, para racionalizar o aproveitamento e ampliar a oferta de água, que é um recurso escasso e de importância básica para o bem estar da população e para o desenvolvimento econômico. O Projeto representa um marco histórico no Ceará para o planejamento urbano e para a gestão de recursos hídricos. O sistema estadual de gestão de recursos hídricos, fundamental para convivência com a irregularidade do regime de chuvas no semi-árido, teve sua implantação iniciada pelo PROURB e vem sendo complementada e aperfeiçoada com o apoio do PROGERIRH.

As Classificações do PPAR

6. Entende-se que algumas das classificações de desempenho do Projeto estabelecidas no item 5 – Classificações e Lições, merecem algumas reflexões que são feitas a seguir:

Eficácia – Apesar do relatório reconhecer que o PROURB conseguiu melhorar as condições de vida da população urbana pobre, supri-la de água e reduzir as perdas de

água, utiliza um cálculo de retorno econômico para considerar a eficácia apenas Modesta. A utilização do retorno econômico para reduzir essa classificação não parece ser coerente. Isto também parece não estar de acordo com o sistema de classificação do IEG, descrito na página “i” do relatório, onde diz “**Eficácia:** Até onde os objetivos do projeto foram atingidos ou deverão ser atingidos, levando em conta sua importância relativa. *Possíveis classificações:* Alta, Substancial, Modesta, Insignificante”. Assim, em função dos objetivos do Projeto terem sido alcançados, o Estado continua considerando que a classificação do ICR (SUBSTANCIAL) é mais adequada.

Eficiência - A eficiência teve seu conceito considerado Modesto em função de um valor menor da taxa econômica de retorno (ERR) encontrada através de cálculos reformulados pelo IEG. Entendemos que para alterar os cálculos de retorno econômico apresentados no ICR, seriam necessários maiores estudos e levantamento de dados sobre os benefícios do Projeto⁹.

Impacto sobre o Desenvolvimento Institucional - Embora o PPAR afirme que os órgãos urbanos, inclusive alguns municípios, tenham começado a usar os recursos com mais eficiência, considera que esses ganhos foram superados pelo uso ineficiente dos recursos do lado dos recursos hídricos do projeto, com base na taxa econômica de retorno (ERR) recalculada pelo IEG. O próprio relatório reconhece grandes avanços das instituições de recursos hídrico e prefeituras no planejamento e gestão de seus setores. Assim, o conceito considerado pelo PPAR não se apresenta como pertinente com o critério de avaliação estabelecido na página “i” do Relatório “**Impacto sobre o Desenvolvimento Institucional:** Até onde um projeto melhora a capacidade de um país ou região de fazer uso mais eficiente, equitativo e sustentável de seus recursos humanos, financeiros e naturais, através: (a) da melhor definição, estabilidade, transparência, aplicabilidade e previsibilidade dos esquemas institucionais e/ou (b) do melhor alinhamento da missão e da capacidade de uma organização com seu mandato que decorre desses esquemas institucionais.. O Impacto sobre o Desenvolvimento Institucional inclui os efeitos previstos e imprevistos de um projeto. *Possíveis classificações:* Alta, Substancial, Modesta, Insignificante”. É sempre importante ressaltar que o sistema de gestão de recursos hídricos do Ceará foi implantado pelo PROURB, se tornou referência nacional e internacional e tem sido considerado um *case* de grande avanço institucional no setor de recursos hídricos do Brasil. Desta forma, o Estado considera que a classificação do ICR (SUBSTANCIAL) é mais adequada aos avanços institucionais proporcionados pelo Projeto.

Resultado – Diante do exposto nos itens acima e pelos conceitos obtidos nos demais itens, a classificação do resultado geral necessita ser reavaliada, podendo ser considerado SATISFATÓRIO. Ressalta-se que essa opinião é reforçada pelo próprio Relatório do IEG, que em muitos trechos ressalta os bons resultados da implantação do Projeto (ex: Item “3.1 O PROURB foi implementado com sucesso, muito embora tenha enfrentado desafios em cada momento ...”).

O Estado considera consistente os conceitos auferidos aos demais itens – Objetivo - Sustentabilidade - Desempenho do Banco - Desempenho do Mutuário, no entanto afirma seu interesse e dedicação em continuar agindo e recebendo apoio para melhorar seu próprio desempenho.

7. Ressaltamos que o Estado reconhece a necessidade de monitorar e avaliar melhor a eficiência econômica dos investimentos em obras hídricas e que procurará receber o

⁹ O cálculo da Taxa Econômica de Retorno é comentada nos parágrafos 14 e 15.

apoio do Banco para o desenvolvimento de uma metodologia e um sistema para essa finalidade.

8. Reconhece também que ainda há muito o que ser feito nas áreas do desenvolvimento urbano e de recursos hídricos, mas deve ser enaltecido que o PROURB marca uma grande mudança da atuação do Estado nesses dois setores.

Comentários em Relação ao Item 1 – Condições Adversas para o Desenvolvimento do Ceará – Antecedentes

9. No Item 1.1 o relatório trata das condições de pobreza e seca no Ceará e conclui que há uma tendência de agravamento ocorrida entre 1997 e o momento atual, com base em 2 indicadores estatísticos a saber, PIB per Capita e Renda Familiar. Esclarece-se que os indicadores de renda da população sofreram distorções pelo lançamento do plano de ajuste econômico feito no Brasil em 1994 (Plano Real). A utilização das estatísticas dos anos anteriores a 1994, além de solucionar esse problema, permite comparar indicadores em momentos anteriores e posteriores a implantação do Projeto. Tomando-se os anos de 1992 e 2004 para alguns indicadores, os resultados são diferentes daqueles apresentados no relatório, conforme pode ser observados a seguir.

Indicadores de Pobreza e Renda no Estado do Ceará

Indicador	1992	2004
% de Pobres (abaixo da linha de pobreza)	70,6 %	55,5 %
% de pessoas extremamente pobres (indigentes)	45,2 %	24,8 %
Renda Familiar per Capita (R\$)	135,17	216,70
Pib per Capita - % em Relação ao Brasil	42,3 %	41,6 %

Fonte: IPECE

Comentários em Relação ao Item 4 – Algumas Melhorias numa Base Fraca – Resultados dos Projetos

10 – Em relação ao exposto no item 4.4 (também retratado no item 1.4), quando se refere que a gerência de 80% da água do Ceará é feita pelo DNOCS, cabendo à COGERH somente 20% , esclarece-se que o Estado, através da SRH e da COGERH, organiza e coordena a gestão da totalidade dos recursos hídricos do estado, incluindo aí toda água armazenada nos açudes administrados pelo DNOCS. Não há, nas competências e atribuições do DNOCS, o exercício da totalidade das funções de gerenciamento de recursos hídricos, restringindo-se sua ação à operação física e manutenção das infra-estruturas. Um convênio firmado entre a COGERH e DNOCS estabelece a parceria entre as instituições para a gestão dos recursos hídricos armazenados nos reservatórios federais. Assim, a COGERH exerce o monitoramento destes açudes, efetuando a alocação da água conforme decisão dos comitês de bacias e das comissões de usuários. Logo, à COGERH e a Secretaria de Recursos Hídricos do Estado do Ceará, sob a égide do Conselho Estadual de Recursos Hídricos e com a

participação dos comitês de bacia, cabem o exercício das funções de planejamento, administração e regulamentação.

A formação dos comitês de bacias, o suporte a atuação desses comitês, bem como a realização dos estudos de apoio e manutenção do sistema de informações são ações do Estado efetuadas através da COGERH e da SRH, com o apoio da FUNCEME (Fundação Cearense de Meteorologia). Ressalta-se, contudo, que o DNOCS, mesmo atuando mais diretamente em obras e administração dos açudes, é um parceiro importante no sistema de gestão.

11. No item 4.5 do PPAR foi mencionado que “*A dependência que a COGERH tem da água urbana aumentou quando ela perdeu seus clientes industriais em 1998.*”. Esclarecemos que isto foi um equívoco da interpretação das informações recebidas. Em 1998 a CAGECE repassou para a COGERH os clientes industriais. Atualmente, os clientes industriais respondem por 53,4% do faturamento da COGERH.

12. No item 4.5 do PPAR foi mencionado ainda que “*Se a COGERH com seu modelo de gestão de recursos hídricos representa um modelo para o Brasil, como foi freqüentemente dito à missão do IEG, ela ainda precisa passar no teste do tempo. Neste momento, nenhum outro Estado brasileiro adotou um sistema similar ao do Ceará.*” Neste sentido, O Estado do Ceará, de fato, tem se preocupado em validar o modelo institucional definido para a política de recursos hídricos e isto tem sido objeto de incontáveis discussões nos mais variados fóruns em todo o Brasil e o Modelo adotado pelo Ceará tem sido freqüentemente citado como referência na gestão de recursos hídricos. Por outro lado, poucos modelos foram, de fato, implementados no país. Destes, podemos verificar, que Estados como São Paulo, Rio Grande do Sul, Minas Gerais, Bahia ou Rio Grande do Norte, que se encontram num estágio próximo ao do Ceará, não alcançaram a sustentabilidade financeira da gestão dos recursos hídricos. Vale ressaltar que a COGERH é considerada a primeira e, até este momento, único órgão gestor de água do Brasil, com autonomia financeira, ensejando, através da cobrança pela oferta hídrica, a sustentabilidade operacional da infra-estrutura hidráulica e o gerenciamento integrado, descentralizado e participativo dos mananciais.

13. No item 4.6 do PPAR, ao tratar da questão inerente ao desenvolvimento institucional do órgão estadual responsável pela implantação das infra-estruturas hídricas, em especial as barragens, questiona-se o resultado. “*Todavia, se esse resultado representa um desenvolvimento institucional significativo num Estado com quase um século de experiência em construção e operacionalização de barragens e açudes deve ficar aberto a perguntas. Antes da SOHIDRA e da SRH, quem tinha capacidade para executar tais obras no Ceará era a Secretaria Estadual de Obras Públicas*”. A grande infra-estrutura hidráulica do Estado foi concebida e implantada, ao longo de mais de 80 anos (1906 – 1992) pelo Governo Federal. Com a criação da SRH e da SOHIDRA, em 1987, o Governo do Estado deu o primeiro passo no sentido de estruturar um setor de recursos hídricos com competência para desenvolver grandes programas nesta área. O Plano Estadual de Recursos Hídricos, concluído em 1991, e a instituição da Política Estadual, através da Lei 11.996 de 1992, credenciaram o Estado a obter um empréstimo do Banco Mundial para a implementação do PROURB-RH. Somente a partir de 1993, dispendo do apoio financeiro, técnico e institucional do Banco Mundial, através do PROURB, a SRH e a SOHIDRA entraram num processo de melhoria contínua para desenvolver

projetos de infra-estrutura hídrica, tais como os implantados no âmbito daquele programa ou mesmo dentro do PROGERIRH.

14. No item 4.15 do PPAR foi descrito que no Relatório de Conclusão da Implementação – ICR havia sido considerado um consumo de 437 litros de água por pessoa dia, quando na avaliação inicial foram considerados 150 litros por pessoa dia. O Estado do Ceará informa que isto não aconteceu. As informações constantes indicam que o consumo incremental anual equivalente a 41.138.362 m³, dos quais, 31.536.000 m³ referiam-se ao consumo do Complexo Industrial Portuário do Pecém e apenas 9.602.362 m³ referem-se ao consumo de uma população incremental de 257.920 habitantes. Isto posto, o consumo considerado foi de tão somente 102 litros de água por pessoa por dia.

15. Demais Aspectos sobre a Análise Econômica abordados nos itens de 4.13 a 4.19. A análise econômica apresentada no ICR foi realizada na mesma base metodológica do SAR, acordada entre o Banco e o Estado na ocasião. Essa metodologia não incluiu alguns custos citados, bem como outros benefícios dos investimentos hídricos, tais como a redução dos gastos com abastecimento de água alternativo (carro-pipa), custos evitados com a redução da migração, custos evitado com saúde etc. Assim sendo, o Estado considera que qualquer alteração na análise econômica apresentada no ICR deveria ser feita de forma mais completa, incluindo o levantamento de dados empíricos bem como a agregação de outros itens de custos e benefícios. Considera-se os ajustes efetuados como parciais e com possibilidade de estar cometendo equívocos, de forma que não são seguros os resultados de retorno econômico (ERR) apresentados no PPAR.

II. SOBRE O PROGERIRH-PILOTO

16. O Estado do Ceará concorda que poderiam ter sido utilizados recursos do próprio PROURB para a elaboração do PROGERIRH, no entanto informa que estes recursos estavam destinados e comprometidos com as ações do componente Urbano do PROURB.

17. Finalmente, o Estado do Ceará considera que, se foi atingido o principal objetivo do Projeto PROGERIRH-Piloto, o seu resultado global deveria ser classificado como **satisfatório** e não como **moderadamente satisfatório**.

[Translation into English]

Official Communication GS No. 628/2006

Fortaleza, June 12, 2006

SUBJECT: BRAZIL – Ceará Urban Development and Water Resources Management Project – (Loan 3789) and Ceará Water Resources Management Pilot Project (Loan 4190-BR) – Draft Project Performance Appraisal Report.

Mr. Alain Barbu, Manager
Sector, Thematic, and Global Evaluation Division
Independent Evaluation Group
World Bank
(Abarbu@worldbank.org)

Dear Mr. Barbu

I extend cordial greetings to you. In response to your letter concerning the distribution of the Appraisal Report on the Results of PROURB (Loan 3789-BR) and PROGERIRH- Pilot (Loan 4190-BR), the document attached here contains comments by the Government of the State of Ceará concerning that report.

The opportunity to express an opinion about the report as presented has enabled us to develop important comments and clarifications about basic points of the Project, and we are submitting them for your appreciation. The purpose of our comments is to suggest further reflection that might contribute to a more balanced view of the expected results and those obtained, as well as constructing a more complete analysis of the social and economic impacts of the investments made.

We congratulate the Bank for the evaluation initiative and emphasize that the report will be very useful to us, by helping improve the work of the State in the urban and water resources sectors.

We take this opportunity to renew to you our expressions of high consideration, and we thank you in advance for your attention to the matter.

Cordially

Antônio Sérgio Montenegro Cavalcante
Acting Secretary

cc: Mr. Roy Gilbert (Rgilbert@worldbank.org)
Alex Araújo, Secretary of Local and Regional Development (SDLR) –
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Eduardo Rodrigues – Secretary of Water Resources (SRH) eduardo@srh.ce.gov.br
John Briscoe ? World Bank Director for Brazil - jbriscoe@worldbank.org
Otaviano Canuto, Executive Director of the World Bank in Brazil
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José Carlos Miranda ? Secretary of SEAIN (MPOG) j.miranda@planejamento.gov.br

**COMMENTS BY THE GOVERNMENT OF THE STATE OF CEARÁ ON
THE PROJECT PERFORMANCE ASSESSMENT REPORT – PPAR - FOR PROURB
(Loan 3789-BR) and PROGERIRH-PILOTO (Loan 4190-BR).**

1. The State of Ceará derives great satisfaction from the initiative taken by the World Bank, through the IEG [Independent Evaluation Group], to evaluate the programs and activities financed by the Bank, using methods that are sound and appropriately flexible for adapting to type of loan, type of project, or sectoral approach.

2. The State of Ceará believes that impartial evaluations provide information that is extremely valuable to the public sector leaders who are responsible for the projects and for public policies, by furnishing elements that can be used as the basis for further decision making.

3. To ensure that the PPAR was completed, the State of Ceará made available the needed logistical support and accompanied the IEG mission during its visit to the state in November 2005. The purpose of the visit was to appraise the PROURB [Urban Development and Water Resources Management Project] and PROGERIRH-PILOTO [Ceará Integrated Water Resources Management Pilot Project] projects.

4. The State of Ceará agrees with the method advocated by the Bank, which “attempts to ensure uniformity and homogeneity in the evaluations.” However, it believes that the PPAR made some mistakes in interpretation, or used incomplete data, things that need to be clarified.

I ABOUT PROURB

5. In the opinion of the Government of Ceará, PROURB made a major contribution to the mitigation of urban poverty and the initial structuring of a network of cities in the interior of the state to rationalize water use and increase the supply. Water is a scarce resource that is vital to the well-being of the population and to economic development. The Project represented an historical landmark in urban planning and water resources management in Ceará. PROURB launched a state water management system, a system that is essential if we are to live with the irregularity of rainfall in this semi-arid region. Its work has been supplemented and perfected with the support of [the later on-going] PROGERIRH [project (Loan 4531), not evaluated by this PPAR].

The PPAR Ratings

6. We believe that some of the ratings of Project performance established in item 5 – Ratings and Lessons Learned, deserve some comments, as follows:

Efficacy Although the report acknowledges that PROURB succeeded in improving the living conditions of the poor urban population by supplying it with water and reducing water loss, it uses a calculation of economic return to rate the efficacy as only Modest. The use of the economic return to lower that rating does not seem to be coherent. It also does not seem to be in accord with the IEG rating system, as described on page “i” of the report, which reads: “***Efficacy***: The extent to which a project’s objectives were achieved, or expected to be achieved, taking into account their relative importance. Possible ratings: High, Substantial, Modest, Negligible. And so, in terms of the project objectives having been achieved, the State continues to believe that the ICR [Implementation Completion Report] rating of (SUBSTANTIAL) is more appropriate.

Efficiency: The rating for efficiency was Modest because a lower value of the economic rate of return (ERR) was found when the calculations reformulated by IEG were used. We believe that in order to change the economic return calculations presented in the ICR, further study and a gathering of data on the benefits of the Project is necessary.¹⁰

Institutional Development Impact – Although the PPAR states that urban agencies, including some municipalities, have begun to use the resources more efficiently, it finds that those gains were cancelled out by the inefficient use of resources from the water resources side of the project, based on the economic rate of return recalculated by IEG. The report itself acknowledges that significant progress was made by the water resources institutions and city governments in planning and managing their sectors. And so the definition used by the PPAR does not seem to pertain to the evaluation criterion established in page “i” of the Report: *“Institutional Development Impact:* The extent to which a project improves the ability of a country or region to make more efficient, equitable and sustainable use of its human, financial, and natural resources through: (a) better definition, stability, transparency, enforceability, and predictability of institutional arrangements and/or (b) better alignment of the mission and capacity of an organization with its mandate, which derives from these institutional arrangements. Institutional Development Impact includes both intended and unintended effects of a project. *Possible ratings:* High, Substantial, Modest, Negligible” It is always important to emphasize that Ceará’s water resources management system was installed by PROURB, has become a national and international standard of reference, and has been considered an instance of major institutional progress in Brazil’s water resources sector. Therefore, the state believes that the ICR rating (SUBSTANTIAL) is more appropriate, given the institutional progress made possible by the Project.

Results – In light of the foregoing, and based on the ratings obtained on the other items, the rating of the overall results needs to be reassessed, and can be considered as SATISFACTORY. We emphasize that this opinion is bolstered by the IEG’s report itself, which in many passages points to the good results of the implantation of the Project. For example: “3.1 PROURB was successfully implemented, even though it faced challenges at every turn...”).

The State believes that the grades given the following items are consistent: – Objective – Sustainability – Bank Performance – and Borrower Performance. However, it affirms its interest and commitment to continue working and receiving assistance to improve its own performance.

7. We emphasize that the State acknowledges the need to do a better job of monitoring and evaluating the economic efficiency of water resource investments. It will seek the assistance of the Bank in the development of a methodology and system to achieve that purpose.

8. The state also acknowledges that much remains to be done in the fields of urban development and water resources, but it is the fact that PROURB marks a big change in the effort by the State in those two sectors that should be lauded.

Comments on Item 1 – Ceará’s Adverse Conditions for Development– Background

9. Under Item 1.1, the report discusses poverty and drought in Ceará and concludes that the situation has worsened between 1997 and the present. It bases this finding on two statistical indicators: per capita GDP and family income. We should explain that the income indicators for the population as a whole were distorted by the launching of the economic adjustment plan in Brazil in 1994 (The *Real Plan*). Use of statistics from years

¹⁰ Comments on the calculation of the Economic Rate of Return are found in paragraphs 14 and 15.

prior to 1994 would not only solve that problem, but make it possible to compare indicators for years prior to and after the implantation of the Project. Using 1992 and 2004 for certain indicators, the results are different than those presented in the report, as can be seen from the following table:

Indicators of Poverty and Income in the State of Ceará

Indicator	1992	1994
% of people who are poor (below the poverty line)	70.6%	55.5%
% of people who are extremely poor (indigent)	45.2%	24.8%
Family Income per capita (R\$)	135.17	216.70
GDP per capita - % in relation to Brazil as a whole	42.3%	41.6%

Source: IPECE

Comments on Item 4 – Some Improvements to a Weak Base – Project Results

10. With respect to the findings in item 4.4 (also portrayed in item 1.4), when it is said that 80 percent of the water in Ceará is managed by the DNOCS [National Department for Anti-Drought Projects], and that the COGERH [Ceará Water Resources Management Company] manages only 20 percent, we should explain that the State, working through the SRH [Secretariat for Water Resources] and the COGERH, organizes and coordinates management of the entirety of the state's water resources, including all the water stored in reservoirs that are administered by the DNOCS. The authority and duties assigned to the DNOCS do not include the exercise of all managerial functions relating to water resources. Its action is restricted to the physical operation and maintenance of the infrastructures. An agreement signed by COGERH and DNOCS establishes a partnership between these institutions to manage the water resources that are stored in federal reservoirs. And so, COGERH handles the management of these reservoirs and allocates the water according to decisions by the basin committees and user committees. COGERH and the Water Resources Secretariat of the State of Ceará, under the aegis of the State Water Resources Council and with participation by the basin committees, are tasked with planning, administration, and regulation.

The formation of the basin committees and support of their activities, as well as the conduct of studies to support and maintain the data system, are actions taken by the State through the COGERH and the SRH, with assistance from FUNCEME (Ceará Meteorological Foundation). We stress, however, that the DNOCS, even when it acts more directly on construction projects and reservoir administration, is an important partner in the management system.

11. Under item 4.5 of the PPAR, it was said that *“The COGERH’s dependence on urban water increased when it lost its industrial customers in 1998.”* This was a misinterpretation of the information received. In 1998, the CAGECE [Ceará Water and Sewer Company] passed the industrial customers on to COGERH. Industrial customers are now responsible for 53.4 percent of COGERH’s sales.

12. Under item 4.5 of the PPAR, it was also said that *“If the COGERH with its water resources management model represents a model for Brazil, as the IEG mission was often told, it has yet to pass the test of time. So far, no other Brazilian state has adopted a system similar to that of Ceará.”* On this point, the State of Ceará has indeed been anxious to validate the institutional model that was designed for water resources policy, and this has been the subject of countless discussions in a wide variety of forums throughout Brazil. The model adopted by Ceará has frequently been

mentioned as a reference in water resources management. On the other hand, very few models have actually been implemented in Brazil. Of these, we would observe that states like São Paulo, Rio Grande do Sul, Minas Gerais, Bahia, or Rio Grande do Norte, whose stage of progress in this field resembles that of Ceará, have not achieved financial sustainability in water resources management. COGERH is considered to be the first and, at this point the only, water management agency in Brazil that is financially autonomous. This suggests that charging for the water supply leads to operational sustainability of the water infrastructure and an integrated, decentralized, and participatory management of the water sources.

13. Under item 4.6 of the PPAR, in a discussion of the issue inherent in the institutional development of the state agency that is responsible for installing basic water infrastructures, especially dams, the results are questioned. *“Still, if that result represents a significant institutional development in a State that has almost a century of experience in building and operating dams and reservoirs, then this is open to question. Before that SOHIDRA [Ceará Hydraulics Works Company] and the SRH, it was the State Public Works Department that had the ability to execute these works projects.”* The major hydraulic infrastructure in the State was designed and installed over a period of more than 80 years (1906-1992) by the federal government. With the creation of the SRH and SOHIDRA in 1987, the state government took the first step toward structuring a water resources sector that would be able to carry out major programs in this area. The State Water Resources Plan, completed in 1991, and the institution of state policy under Law 11.996 of 1992, enabled the State to obtain a loan from the World Bank to implement PROURB-RH. It was not until 1993, when it had financial, technical, and institutional assistance from the World Bank through PROURB, that the SRH and SOHIDRA embarked on a process of continuous improvement in order to carry out water infrastructure projects such as those installed under that program, or even as part of PROGERIRH.

14. Under item 4.15 of the PPAR, it was said that in the Implementation Completion Report – ICR, the assumption was adopted that per capita water consumption is 437 liters per day, but that during the initial appraisal, the figure used was 150 liters per day. The State of Ceará wishes to say that this did not happen. The data in the record put annual incremental consumption at the equivalent of 41,138,362 cubic meters, of which 31,536,000 cubic meters are believed to refer to consumption by the Pecém Port Industrial Complex and only 9,602,362 cubic meters to consumption by a population increment of 257,920 residents. Therefore, the consumption figure used was only 102 liters of water per capita, per day.

15. Other aspects of the Economic Analysis are addressed in items 4.13 to 4.19. The economic analysis presented in the ICR was conducted on the same methodological basis as the SAR, and this was agreed to by the Bank and the State at the time. That methodology did not include some of the costs mentioned, or other benefits from the water-related investments, such as a reduction in expenditures for alternative means of supplying water (tanker trucks), costs avoided because of a reduction in migration, health costs avoided, etc. And so the State believes that any change in the economic analysis presented in the ICR should be made in a more complete fashion, including a survey of empirical data, as well as the aggregation of other cost and benefit items. It considers the adjustments already made to be partial and lending themselves to mistakes, which makes the results of the economic rate of return presented in the PPAR unreliable.

II. THE PILOT PROGERIRH

16. The State of Ceará agrees that resources of PROURB itself could have been used to prepare the PROGERIRH; however, it reports that these funds were earmarked and committed to activities under the urban component of PROURB.

17. Lastly, the State of Ceará believes that if the main objective of the Pilot PROGERIRH Project was achieved, its overall results should be rated as **satisfactory** rather than **moderately satisfactory**.

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