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Report No. 19981

IMPLEMENTATION COMPLETION REPORT

HAITI

PORT-AU-PRINCE WATER SUPPLY PROJECT

(CREDIT 2052-HA)

December 21, 1999

Finance, Private Sector and Infrastructure Department
Caribbean Country Management Unit
Latin America and Caribbean Region

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CURRENCY UNIT:

Gourde

EXCHANGE RATE FOR US\$1.00

(Yearly Average)

1989	:	5.00	1995	:	15.1
1990	:	5.00	1996	:	15.7
1991	:	6.00	1997	:	16.7
1992	:	9.80	1998	:	16.8
1993	:	12.8	1999	:	16.9
1994	:	15.0			

WEIGHTS AND MEASURES

Metric System

FISCAL YEAR

October 1 to September 30

ABBREVIATIONS AND ACRONYMS

AFD	:	Agence Française de Développement
CAMEP	:	Centrale Autonome Métropolitaine d'Eau Potable
IDA	:	International Development Association
IDB	:	Inter-American Development Bank
POCHEP	:	Projet de Poste Communautaire d'Hygiène et d'Eau Potable
PPF	:	Project Preparation Facility
SNEP	:	Service National d'Eau Potable
UFW	:	Unaccounted For Water

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PREFACE

1. This is the Implementation Completion Report (ICR) on the Port-au-Prince Water Supply Project in Haiti. It was supported by Credit 2052-HA in the amount of SDR 15.2 million (US\$20 million), which was approved on June 27, 1989 and became effective on February 14, 1990. The last disbursement took place on November 29, 1999 at which time an undisbursed balance of SDR 0.38 million was cancelled.
2. The Credit was suspended in October 1991, following a coup d'état. The suspension was lifted in December 1994 following which the project was amended on December 7, 1995 to adapt it to the post-embargo environment. The original Closing Date was extended to June 30, 1999.
3. The project was restructured in December, 1998 with one of the main aims of fostering a deeper private sector involvement in the water sector in Haiti. Had this effort been successful, the revised project Closing Date might have been further extended. However, the water sector reform law (prepared with IDB's assistance) that would have helped bring about significant changes has not yet been approved by Parliament and attempts to use an alternative law have not been successful. The project closed on June 30, 1999. Co-financing for the project was provided from the Agence Française de Développement (AFD) and the OPEC Fund.
4. This ICR was prepared by Bernard Decaux (consultant) and Emmanuel Njomo (Task Manager), who visited Port-au-Prince, Haiti, from October 23 to 30, 1999. It is based on information obtained during this mission and contained in the project files. The borrower contributed to the preparation of the ICR by providing facts, figures and views. The ICR was reviewed by Oscar Alvarado, Abel Mejia and Max Pulgar-Vidal.
5. A translated summary of the borrower's report on the project is attached as an Appendix. The full report is available in the project files.

IMPLEMENTATION COMPLETION REPORT

HAITI

PORT-AU-PRINCE WATER SUPPLY PROJECT

(Credit 2052-HA)

EVALUATION SUMMARY

Introduction

1. Port-au-Prince is a city of almost 2 million inhabitants or about 25% of Haiti's population. During the last two decades, the number of inhabitants has more than doubled, mainly because of immigration from rural areas. This has led to a rapid development of low income neighborhoods, with little access to potable water and deficient sanitary conditions.

Project Objectives

2. The original Government request was for IDA assistance to improve water services in the Port-au-Prince Metropolitan area and strengthen the institutional capabilities of Centrale Autonome Métropolitaine d'Eau Potable (CAMEP). The specific project objectives were to : (a) develop CAMEP into an operationally and administratively efficient and financially viable water utility; (b) improve and expand water services in the project area; (c) execute a first stage investment program to rehabilitate existing water supply infrastructure; (d) formulate a concrete plan for improving the sanitary conditions in Port-au-Prince; and (e) attain the Government agreement on a strategy and a plan of action for achieving more dynamic and efficient water sector. These objectives were addressed by three project components: expansion of the water supply system through infrastructure investments, institutional development, and technical assistance and studies.

Project Implementation

3. Credit 2052-HA was approved on June 27, 1989, and became effective on February 14, 1990. The original closing date was June 30, 1994; it was extended to June 30, 1999, to make up for the delays resulting from the three year suspension that followed the coup d'état and the slow start of the project which was partly due to difficult procurement problems. The project was restructured in December, 1998 primarily with the aim of fostering a deeper private sector involvement in the water sector in Haiti. Had this effort been successful, the closing date might have been extended further. However, the water sector reform law that would have helped bring change about is still held up in the Parliament and attempts to use an alternative law have not been successful. The preparation of this law was financed by the IDB. The project closed on June 30, 1999. Total project cost is calculated at US\$35.4 million of which, US\$20.5 million were drawn from the IDA credit. In addition, cofinancing in a form of two loans, totaling about US\$15 million was obtained from the French Agency of Development and the OPEC Fund. Only US\$0.3 million came from the water supply company and the Haitian Government.

4. Project implementation did not really start until 1995, when the project was reactivated after the three-year suspension. After disbursements were resumed in 1996, progress in expanding and rehabilitating the water supply works was relatively satisfactory. However, progress in the implementation of the commercial, financial and administrative management components was deficient and plagued by delays. Technical assistance provided by well-known foreign consulting firms between 1996-1998 did not fully meet its objectives, particularly in the commercial and human resources area.

Project Results

5. The project's physical objectives have been partially achieved. A well field was constructed with seven productive wells, with a daily capacity of 19,760 cubic meters as planned. Pumping stations and new reservoirs have been installed. Transmission pipes were put in place and water mains were installed or rehabilitated. House connections increased by 4,600 since the project was reactivated in 1995, which is below the 10,500 initial target. A number of house connections have been disconnected due to non payment of bills by water users or technical failures. Only 1,000 water meters have been installed compared to 6,500 originally expected. A low percentage of existing meters is effectively working and/or read. Population served has increased but water users served through legal connections represent only about 18% of the total population against 25% ten years ago, reflecting among other things the rapid increase in population of the Port-au-Prince Metropolitan area (about 78%) during the project period.

6. The unaccounted for water is estimated no less than 55%, which exceeds the already high 50% average of the countries in Latin America. Other key performance indicators such as water billings and connections remain unsatisfactory. Improvements in commercial and financial management have been limited. There are still problems with water quality and reliability. There is a serious leak problem, and the program of control of connections and meters remains inadequate. The poor results achieved in the institutional performance of the company (which was conceived as the project's most important objective, as confirmed by the 1998 Amendment to the Credit Agreement) outweigh the progress made on physical works, leading to an overall "unsatisfactory" rating of the project. The financial rate of return is estimated at -8.26% due mainly to the high rate of illegal connections and a collection rate of approximately 80%. The economic rate of return is estimated at 7.08% compared to the 10.1% estimated during appraisal. The result of the economic rate of return reflects the considerable differential between the prices charged by private vendors and that charged by CAMEP¹ which are deemed closer to the real economic benefit.

IDA Performance

7. IDA's performance was unsatisfactory in identification, preparation and appraisal phases of the project. The difficulties inherent in attempting to strengthen the water utility over the five-year project period, given Haiti's subsequent history of instability and weak institutional setting, were vastly underestimated. After the project was reactivated in 1995, following a three year suspension of the credit, IDA staff enthusiasm proved short lived given the deep seated problems in the water company and the slow progress achieved. A more

¹ CAMEP's prices of about US\$1/m³ are estimated close to marginal cost, according to experience in other regional utilities. Vendors charge about US\$4/m³ on average.

fundamental restructuring of the project should have been undertaken following the lifting of the suspension. Subsequent supervision efforts as well as technical assistance by reputable international firms were not sufficient to solve the difficult issues encountered during the implementation of this poorly designed problem project.

Borrower Performance

8. The overall performance of the Borrower was uneven. At the start of the project, the entire management and cadres of CAMEP were fired and replaced by inexperienced staff. CAMEP's performance was further impaired during the three-year suspension which prevented the inflow of external resources that would have financed investments needed to increase access to potable water and improve service. The relatively numerous changes in personnel in the commercial and financial departments were detrimental at times. Nevertheless, the working relationship between CAMEP and IDA staff was often good, and the dialogue contributed to the timely resolution of a number of specific problems relating to procurement, disbursements, institutional development and audits.

Assessment of Outcome

9. The project outcome is rated as unsatisfactory on the basis of the original project objectives, even though physical objectives have been reasonably achieved and the rate of project implementation attained represented a commendable outcome under the political and social conditions existing in Haiti. The target relating to production capacity was met fully. About 50% of the planned transmission mains were constructed. Two pumping stations were constructed, as opposed to a single station expected during appraisal and 83 km of distribution pipes were laid, instead of the 60 km planned. However, the number of house connections amounted to only 2,580 or 50% of the new connections envisaged under the project. CAMEP was in the process of planning a major push to expand house connections during the visit of the ICR mission. Because of rationing, the estimated water consumption is still 46% below the expected water demand, although illegal connections and other methods of indirectly obtaining CAMEP's supply of potable water abound.

10. Unaccounted for water is high (55%). Only two-thirds of the bills are collected. The collection period is 355 days.² Only about two-thirds of the bills are collected. The collection period is 355 days partly as a result of CAMEP's reluctance to write-off its bad debts because of its impact on operating profits. The ratio of collections to billings increased from 51% in 1994 to an average of 77.5% between 1995-1999. CAMEP showed an operating profit annually through out the entire 1995-1999 period, averaging about US\$0.8 million. CAMEP also made a modest profit during this period except in 1998, when it incurred a loss of about US\$1 million. Nonetheless, CAMEP's profits are overstated because it did not service the debts owed to the state. The average tariff level has been raised, but a number of de facto structural distortions remains, due to the quasi absence of meters which prevents the application of the tariff structure.

11. A positive outcome of the project has been the sharp increase in the number of people served through stand pipes in low income neighborhoods. Only about 350,000 people, or

² This is mainly caused by the need to provide sufficient quantities of water into the network, in order to avoid negative pressures and hence contamination. Besides, there are many illegal connections and leaks.

18% of the population, are served through legal connections. Another 734,000 are estimated to obtain potable water services either through neighbors or illegal connections. About 514,000 residents (up from nil in 1994) of low income areas are served through water kiosks managed by water committees selected by the residents themselves, with the assistance of NGO's. Despite the good progress in expanding the access to potable water during the ten-year project implementation period, the overall outcome is still considered unsatisfactory. This negative assessment is based on the levels of key performance indicators, linked to the project's original objectives, which remain deficient. In addition, important institutional objectives were not achieved in spite of the combined efforts of the project co-financiers, international consultants and IDB's support for sector reform. Despite the achievements in the physical aspects of the project, CAMEP can not be considered financially viable. The bacteriological quality of the water being supplied by CAMEP continue to be mixed, though considerably improved, and water rationing remains a fact of life in Port-au-Prince. Furthermore, the hoped for reform of the sector, although within reach, has not materialized.

Summary of Findings, Future Operations and Key Lessons Learned

12. The failure to achieve institutional strengthening outweighs the reasonable physical accomplishments, as it introduces great uncertainty in project sustainability. The present administration and donor agencies support a major reorganization of the entire water supply sector, in the hope that institutional weaknesses will be eliminated with a deeper involvement of the private sector, by putting CAMEP under a management contract, which would be subsequently followed by a concession.

13. Even with a management contract for a period of about five years, CAMEP will need significant resources to finance the investments proposed in the new Port-au-Prince master plan for potable water, which was prepared by an IDA-financed consultant. The needs of the water sector in Port-au-Prince are enormous. Tentative projections for the period 2000-2005 indicate that investments required may amount to US\$200 million. The bulk of this amount would have to come from external donors including IDA. Beyond 2005, when a private concessionaire would eventually take over, some of the investments could be financed by such concessionaire, the remainder (substantially less than in the period up to 2005), would be made available to support works that are needed, but which are not attractive to the private sector (e.g. water supply in marginal areas, technical assistance, etc.). An alternative approach would be to continue to support the above-mentioned community-based program of water supply to low income sections in the Port-au-Prince area, where a fast growing population lack water distribution networks, but is nonetheless increasingly being served through water kiosks, managed by community groups with NGO support. This program has already made a successful start and deserves to be continued with donor support. Its decentralized management and focus on poverty alleviation would be in line with IDA's overall development strategy for Haiti.

Key Lessons Learned

14. The project provided several important lessons for water supply operations.

- Early on in project preparation, consideration should have been given to private sector management or ownership as an alternative to relying on the public sector.

Institutional strengthening is a very difficult and time-consuming task. The role of the private sector and the modalities for its involvement should have been properly evaluated during project preparation. The option of introducing a management contract, concession or affermage should have been studied as a viable alternative before the project was approved. Even though this is now evident and a law has been drafted to reform the sector and enhance the role of the private sector, the law is presently stymied in Parliament.

- Project design should be flexible to take advantage of unexpected developments during project implementation. The project had originally envisaged the construction and improvement of about 150 stand pipes to serve residents of low income areas. During project implementation, CAMEP expanded this approach to include the provision of bulk water to water kiosks that were managed by the community with the assistance of NGOs. This approach turned out to be quite successful, as it led to considerable savings in potable water expenditures and fostered community self-help and participation in their own development. At present over half million low-income residents are benefiting from this program. They are among CAMEP's best paying customers, since they pay when they receive service. This approach should be studied to determine its replicability in other low income areas in Haiti and in similar situations in other countries.
- A careful assessment of the feasibility of institutional strengthening programs and the establishment of realistic objectives in this regard should have been undertaken from the onset. This is especially true in unstable political environments where frequent government changes result in high staff turnover in public sector institutions as well as frequent policy reversals. In situations where a project supports a phased investment program, project performance indicators should also be phased.
- Clear and realistic objectives and goals were not established prior the commencement of project implementation. The two main objectives of the project - extension of service coverage through physical works and institutional development - were initially presented on the same footing. As project implementation proceeded, the institutional development aspects of the project began to lag behind the physical aspects. The IDA began to stress institutional strengthening (which was reflected in amendments made to the project) and AFD supported additional technical assistance. This re-orientation of emphasis was not fully appreciated by the management and employees of CAMEP. This led to misunderstandings and failures during implementation. Poor project design is often very hard to correct during implementation.
- Close cooperation is necessary among co-financiers in order to achieve shared objectives. Working in tandem would lead to more information sharing, and a consensus on project performance targets. Given the gaps in potable water services, all donors were concerned about water facilities network expansion; however, there were divergent views on institutional matters, in particular with regard to the role and timing of private sector involvement as well as on the urgency for attaining institutional targets.

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(Credit 2052-HA)

PART 1: PROJECT IMPLEMENTATION ASSESSMENT

A. Background

1. At the time of appraisal in 1988, water service levels for Port-au-Prince's 1 million residents were very low and among the lowest in the Western Hemisphere. Only about 15% of the population had a house connection; another 65% obtained water from a neighbor with a house connection; about 5% relied on public stand pipes; and about 25% resorted to other means such as cisterns, water vendors and natural surface-water sources. Water was severely rationed and supply limited to less than six hours per day; many people received water no more than two hours every other day. The water provided was generally unsafe and often insufficiently disinfected. In addition, Port-au-Prince did not have a water-borne sewerage system.

2. Given the lack of safe water and the poor sanitary conditions prevailing in the area, diseases generally associated with unsafe water and poor sanitation ranked second among all causes of mortality. Infant mortality, with a reported 77 deaths per 1,000 live births, remain among the highest in the Western Hemisphere (compared to between 25 to 55 recorded in other Latin American countries).

3. Two agencies are responsible for operating water supply facilities in Haiti: Centrale Autonome Metropolitaine d'Eau Potable (CAMEP) for the Port-au-Prince area; and Service National d'Eau Potable (SNEP) for the rest of the country. In 1978, SNEP received a US\$6.6 million IDA Credit (747 - Ha) in support of an investment program including the expansion and rehabilitation of water systems in seven provincial towns and institutional strengthening of SNEP. The project was completed in 1984 with a 2.5 year delay. Objectives of the project were achieved only partially. A Project Performance Audit Report (PPAR) issued in 1987 found that physical components were executed, but financial and institution-building goals were not met. SNEP remained a very weak institution with chronic funding problems and poor management, largely unable to operate and maintain the water supply facilities under its responsibility. The PPAR concluded that in spite of the project's shortcomings and limited achievements, there appeared to be no cause for doubt that it was justified, if only for social and health reasons.

4. One very important and perhaps overriding factor for the sector's limited potential for revenue generation and CAMEP/SNEP water performance was without doubt the high proportion of the Haitian population below the poverty line, currently estimated at over 65%. IDA had a long-standing strategy of providing assistance to Haiti through lending operations in the social sector with a strong impact on improving the living conditions of the poor.

Support to the water sector matched closely the IDA strategy, as the improvement of water services to the inhabitants of Port-au-Prince would meet the social aspects of this strategy. It was also hoped that assistance to CAMEP would promote more efficiency in the operation of an important public enterprise, and the introduction of more appropriate cost recovery policies would ease the government's need to provide operating subsidies. On these grounds, an IDA credit supporting a Port-au-Prince water supply project was approved in June 1989.

B. Project Objectives

5. The project, to be executed during 1989-1994, was to support the execution of the first phase of a 1988-1998 investment program proposed by consultants in the Port-au-Prince Water Supply master plan.

6. The original Government request was for IDA assistance to improve water services in the Port-au-Prince Metropolitan area and strengthen the institutional capabilities of Centrale Autonome Métropolitaine d'Eau Potable (CAMEP). The specific project objectives were to : (a) develop CAMEP into an operationally and administratively efficient and financially viable water utility; (b) improve and expand water services in the project area; (c) execute a first stage investment program to rehabilitate existing water supply infrastructure; (d) formulate a concrete plan for improving the sanitary conditions in Port-au-Prince; and (e) attain the Government agreement on a strategy and a plan of action for achieving more dynamic and efficient water sector. These objectives were addressed by three project components: expansion of the water supply system through infrastructure investments, institutional development, and technical assistance and studies.

7. The detailed Project components were as follows:

- **Infrastructure Investments**

- a. Water Supply Infrastructure consisting of:

- (i) construction of a well field with an average daily capacity of about 20,000 cubic meters/day and connection of the well field to the water transmission system at the reservoir known as R120 including: construction of six wells, installation of pumps, electrical power lines, and pressure pipes (10 kilometers);
- (ii) replacement/construction of transmission mains conveying water from existing sources to the transmission system.

- b. Expansion and Rehabilitation of water transmission, pumping and storage infrastructure consisting of:

- (i) construction of about 50 kilometers of transmission mains (200 to 800 millimeters diameter).
- (ii) construction of three storage reservoirs with an aggregate capacity of about 5,000 cubic meters (R120, Gentil and Madame Baptiste).

- (iii) construction of a pumping station (200 cubic meters/hour).
- (iv) installation of monitoring and regulating equipment of CAMEP water systems.

c. Distribution Network and Connections

- (i) construction of about 60 kilometers of water distribution pipes (less than 100 millimeters).
- (ii) installation of about 5,000 new and the rehabilitation of about 5,500 existing connections.
- (iii) installation of about 2,500 water meters.
- (iv) installation of about 2,600 flow limiting devices.
- (v) construction of 100 new and improvement of 50 public stand pipes.
- (vi) installation of about 50 fire hydrants.

d. Construction of an Operations Building.

- **Institutional Development of CAMEP**

- (i) acquisition of equipment, including vehicles and tools, required for maintenance and operation of CAMEP water supply facilities.
- (ii) carrying out a program of technical assistance and training to promote the development of management capabilities within CAMEP.

- **Technical Assistance and Studies**

Provision of technical assistance for:

- (i) supervising and engineering of the works included in the Project.
- (ii) studies for purposes of developing and designing a follow up project including final designs and specifications.
- (iii) studies for the purpose of preparing a plan to improve sanitation and waste disposal facilities and services in the Project Area.

C. Achievement of Project Objectives

8. The objective of expanding the water supply infrastructure has been relatively well achieved despite continued shortcomings at the distribution level. While physical achievements were relatively satisfactory, the project objectives related to institutional strengthening were unsatisfactory. Key performance indicators on the basis of the original project design (unaccounted for water, water billings and collections) were not attained. Total project cost is calculated at US\$35.6 million of which US\$20.5 million were drawn from IDA funds, US\$12.9 million from Agence Française de Développement (AFD) and the Government loan and US\$2 million from the OPEC Fund. CAMEP contribution was minimal, at US\$0.3 million. This amount is nearly identical to the appraisal estimate of US\$ 35.5 million. However, funds allocated to CAMEP institutional development and technical

assistance were 50% higher than anticipated (US\$6.6 million instead of US\$4.4 million) due to the need to address deficiencies in CAMEP performance which were exacerbated by the 3-year suspension due to the coup d'état.

9. An economic ex-post evaluation was carried out, using incremental revenues generated by the investments and the price paid for water delivered by water vendors as a proxy for CAMEP's customers' willingness-to-pay. However, to take into account the increase in quantity demanded due to CAMEP's lower price, it was assumed that the quantity purchased by CAMEP's customers prior to the switch in supply, represents only about one-tenth of their current purchases from CAMEP. On the cost side, it includes investments carried out for expansion and rehabilitation of the water supply system (IDA, French AFD, OPEC) as well as incremental operating costs. Expenditures related to operations improvement and technical assistance were also included to the extent they represented actions taken to improve water supply investment productivity. On the benefit side, incremental revenues generated from tariffs together with connection fees, as well as consumer surplus brought about by savings due to the differential between the average vendor price (Gds. 132/m³) and CAMEP's tariffs or final price to Kiosk customers (Gds. 15.8/m³). The internal economic rate of return (IERR) of the project was estimated at 16%, taking the revenues and savings by kiosk customers and CAMEP's regular customers. If only the savings of CAMEP's regular customers are taken into account, the IERR drops to 14%. If only the savings of the kiosk customers are taken into account the IERR drops further to 4%. The financial internal rate of return (IRR) was estimated at -1.4%.

10. Project completion was delayed because of political problems that resulted in the 3-year suspension of the project between October 1991 and 1994. The suspension was lifted in December 1994 and the project was amended on December 7, 1995 to adapt it to the post-embargo environment¹. Investments carried out in 1991-93 by the French AFD were modest, totaling US\$0.8 million and consisting of studies and some drilling activities. IDA did not disburse any amount before 1996². No operating costs nor benefits were obtained by the project before and during the suspension period and the financial and economic evaluation was thus carried out for the period starting in 1995.

11. The result of the economic evaluation appears reasonable. However, the project is clearly not financially viable. The negative financial return is explained by much lower demand than anticipated³, and to the delay in upgrading the commercial system, a process that is still underway. In addition, the high proportion of illegal connection and "customers" obtaining service from their neighbors (about 46% of total) has meant that CAMEP could only charge for less than half the water produced. Unaccounted for water⁴ was about 55% in 1998, the level of accounts receivable measured in number of days of billing rose from 216 at appraisal in 1989 to 355 in 1999 and the ratio of collections to billings ranged from 51% in

¹ The Amendment to the Credit Agreement reflected the Bank's efforts to help the Government of Haiti and CAMEP in gaining flexibility for project execution.

² Except for a PPF (US\$837,000) disbursed in 1990/91.

³ Estimated annual water consumption was 24.5 million cubic meters in 1995 compared to 39.7 million anticipated at appraisal. Consumption remained at that level until 1998.

⁴ Technical and administrative losses. Technical losses are caused by poor pipe connections, faulty water meters and broken pipes.

1994 to 77% in 1999, with a high of 84% in 1996. Despite the high proportion of illegal customers, CAMEP was able to cover its operating costs fully, following the lifting of the suspension. Nevertheless, although CAMEP did show positive net income during the project period except for 1998, actual net income was negative because CAMEP was not able to service its debts to the state. Considerable wastage occurs as a result of a lack of meters and the flat rate billing system for consumption. The working ratio⁵ has in fact increased from 71% in 1995 to 76.7% in 1999, whereas it was assumed to decrease by half between appraisal and project completion. These project outcomes support the overall unsatisfactory rating given to the project.

12. It became evident in 1998 that the project, as originally designed would not be able to meet its original development objectives. The key problematical objective called for transforming CAMEP into an operationally and administratively efficient and financially viable utility. CAMEP was not financially viable nor was it expected to become so before the project closing date of June 30, 1999. Other original development objectives that were not expected to be attained were: (i) improving the bacteriological quality of the water being supplied by CAMEP; (ii) eliminating severe rationing; and (iii) attaining agreement on a strategy and a plan for achieving a more dynamic water sector. The principal cause for the failure to attain these project development objectives was the three year suspension of the projects in Haiti. As a result of the hiatus, project implementation fell behind as CAMEP's network deteriorated due to lack of maintenance. Given the institutional development constraints, the objectives of the project were simplified⁶ in order to bring them in line with the skills available in Haiti. Care was taken to reorient the project emphasis toward the institutional development of CAMEP as opposed to stressing only physical implementation.

Physical Implementation.

13. Implementation of the infrastructure components was generally satisfactory, despite intermittent delays. After substantial initial problems, procurement went relatively smoothly. The supply and installation of some transmission and distribution pipes had to be re-tendered because all the offers received exceeded the project budget. The construction of the operation building was delayed because the firm that originally won the contract went bankrupt as a result of the embargo that was imposed following the overthrow of President Aristide. Improvement in operations has taken place and include an increase in water production and an expansion of transmission and distribution pipes network.

A. Water Supply Infrastructure

- (i) **Construction of a well field at Tapage Galette:** production capacity reached 19,760 cubic meters as planned. Eight wells (as opposed to 6 planned) with a depth of about 120 meters have been drilled of which seven are productive. Pumps and related hydraulic and electrical equipment have been installed. An electric power line of 4 kilometers (against 11 km planned because the circuit was modified) has been constructed. About 20 kilometers of pressure pipes (against 10

⁵ Ratio of operating costs to operating revenue.

⁶ The Development Credit and Project Agreement were formally amended on December 21, 1998.

kilometers planned) with diameters ranging from 200 millimeters to 800 millimeters have been installed. Accelerated urbanization in the Port-au-Prince area led to the expansion of the pressure pipes network and to changes in the original plan for transferring water to reservoirs.

- (ii) **Transfer of water from existing sources to the transmission system.** Water was to be transferred from seven existing springs and one new source (Gentil Spring). The Gentil Spring was not developed due to excessive price claimed by the landowner. Work was undertaken on only four sources leading to the replacement of 5.6 kilometers of transmission mains instead of the 11.2 kilometers planned. It appears that the reallocation of funds to other priority tasks, led to the decision not to replace some existing pipes considered as still in working condition.

B. Expansion and Rehabilitation of Water Transmission, Pumps and Storage Distribution

Construction/rehabilitation of 19.3 kilometers of transmission mains was undertaken compared to 40 kilometers originally planned. The number of storage reservoirs to be constructed/expanded was reduced from three to two but with an identical combined capacity of 5,000 cubic meters. Due to the cancellation of the Gentil Reservoir component (since the Gentil Spring could not be developed), and of the Mrs. Baptiste Reservoir in the same area, the works plan was modified: an additional water tank was put in place at the Christ-Roi Reservoir; a pumping station was installed at the Nazon Reservoir site; an additional water mains was installed between the Bourdon and Nazon existing reservoirs; and the distribution network around the new Reservoir R120 was extended, with a new pumping station installed at the Frères 1 Reservoir. The result was to facilitate the "sectorisation" of water distribution, allocating specific springs and reservoirs to particular urban sectors, thus ensuring better control of distribution and consumption.

C. Distribution Network and Connections.

About 80 kilometers (as compared to 60 km planned) of distribution pipelines with a diameter of less than 200 mm were constructed. The number of new and rehabilitated water connections was less than originally planned, due to difficulties in reaching some overbuilt areas but mainly due to the reluctance of potential customers to pay 3,400 gourdes (US\$200) connection charge, which is a sizable sum for low income people. About 3,600 new meters were purchased in May 1999 by CAMEP but only 1,000 have been installed (compared to 2,500 water meters planned). Present tariffs discourage the use of meters, particularly since water is still severely rationed in a number of areas. Flow limiting devices have been abandoned (2,600 were planned) due to improper use of such devices by users. Only 14 fire hydrants have been installed in new sections instead of 50 planned.

14. While the project's original objectives were only partially achieved in the distribution field, highly satisfactory results were obtained regarding the installation of public fountains in Port-au-Prince poor districts and slums. CAMEP support of a potable water supply

program initiated by a French NGO⁷ in 1994 led to a significant improvement in the service to low income areas that were being served by private vendors using water trucks. The program initially encompassed 14 districts with about 210,000 inhabitants. Currently about 514,000 customers are served under the program. This program consists of the construction of water kiosks inside the shanty towns. CAMEP provides the bulk water but the management, operations and maintenance of the kiosks are undertaken by water committees, elected by beneficiaries. The water is sold by attendants employed by the water committees. Even though water is sold by containers, the price to users (US\$1 per cubic meter) is not negligible for the poorest families, but affordable for the majority of families, who previously had to purchase water from water trucks at 2 to 3 times the price. The revenues generated are sufficient to cover all expenses of the local organizations, including the payment of water to CAMEP, the maintenance and some revenue left for investment in small collective infrastructures (especially in sanitation).

15. About 20 km of pipes have been installed, providing water to 60 fountains. In 1998, it was estimated that 50 more stand pipes and 500 homes were connected to the system. This program was financed in 1994-1998 by the European Union and the French Agency for Development (AFD). In 1998-1999, AFD also financed installation of stand pipes supplied by CAMEP in 13 other districts. At these stand pipes water is also sold by the container (at a price roughly equivalent to about US\$1/m³). Total population in these 27 districts totaled 500,000 people, i.e. about 25% of the almost 2 million population living in the Port-au-Prince area. Although it entails an extension of the original scope of the project, the positive results obtained by the public stand pipes program have compensated to a significant extent (from a social view point mainly) for the relatively modest results achieved by CAMEP in the distribution field. Besides, these customers have evolved to be among CAMEP's best paying customers, since they pay at the time that service is provided.

Institutional Development of CAMEP

(a) Acquisition and utilization of equipment

16. Equipment, including vehicles and tools, was purchased for maintenance and operations of CAMEP facilities, including the works included in the project. The amount spent on trucks and pickups was US\$604,000 while equipment purchased was valued at US\$2,797,000⁸. The largest item was equipment for the rehabilitation and construction of 10,000 connections supplied in July 1998 for US\$1,029,000. Other big items included equipment for repairing leaks (US\$418,000), macro and micro meters (US\$121,000), water pipes 12" to 1/2" (US\$411,000) and electronic and computers equipment (US\$391,000). Actual payment of US\$3.4 million was thus 3.5 times higher than the US\$1 million estimated at appraisal. This substantial deviation is an indication of the extent of the work required for maintenance and repair of a water network in extremely poor condition.

⁷ GRET (Groupe de Recherche et d'Echanges Technologiques).

⁸ Excluding US\$622,000 for regulating equipment to maintain water pressure included under water transmission infrastructure investments.

(b) Development of CAMEP's management capabilities

17. At the time of appraisal, CAMEP was an inefficient water utility. It had made some progress towards improving its operational efficiency with the assistance of French consultants under a French Agency for Development (AFD) Emergency Program and an IDA PPF (US\$764,000) but had a long way to go for achieving levels comparable to the Latin American average⁹. IDA consequently accorded the utmost priority to assisting CAMEP in its efforts to become a viable entity. Monitoring indicators were set at appraisal (and revised downwards in 1998 when it became clear that the original objectives were not achievable).

18. Technical assistance was provided by AFD. A detailed and useful organizational and management study was performed in 1995/1996 by a French water company (Lyonnaise) at a cost of US\$535,000. Some training was provided for CAMEP staff in France. It was immediately followed in 1997/98 by the arrival of a team seconded by another French company (Compagnie Générale des Eaux, CGE). They worked inside CAMEP on such issues as reporting, accounting, budgeting, financial planning, electronic data processing. Total cost of this assistance was US\$1.42 million. Unfortunately it appears that poor working relationship between CAMEP staff and CGE personnel substantially reduced the transfer of expertise and the efficiency of the technical assistance. The local staff had the impression that the management of CAMEP would be on its way out, with the possibility of a deeper private sector involvement in CAMEP. This view led to the resentment of the CGE experts. The outcome was thus relatively unsatisfactory. At present the principal problems remain: a lack of a viable customer billing and accounting system and adequate information on the customer data base¹⁰; poor management of accounts receivable; treatment of debt service payments due to the state; ad hoc change to journal entries; and lack of an updated fixed asset register.

Technical Assistance and Studies

(a) Supervising and engineering of the work included in the Project

19. Another French consulting firm (SAFEGE) was selected in 1991 to assist CAMEP in preparing a detailed work program and supervise submission of bids and signing of contracts. In 1995, SAFEGE was again selected to help CAMEP to reactivate the project, after the embargo was suspended. It revised project costs, analyzed bids and generally supervised the execution of work. Total SAFEGE assistance amounted to US\$3.26 million over the years 1991 and 1995-1998 and was entirely financed by AFD. SAFEGE's performance has generally been considered satisfactory under difficult conditions.

(b) Follow-up project

20. A Belgian consulting firm (TRACTEBEL) was selected to carry out a Potable Water Investment Program covering the period 2000-2015 with detailed project costs estimates and

⁹ For instance, 20 staff per 1,000 water connections against 6-10 in Latin America. Also 4% of university graduates at CAMEP compared to 8%-15% in Latin America.

¹⁰ Although some progress has been recently made following a census of water customers conducted by a consultant financed by IDA.

plan of action up to 2005 for the Port-au-Prince Metropolitan area. The consultant's Master Plan submitted in November 1998 recommended accelerated rehabilitation efforts in order to reduce technical losses; installation of meters and improved management to reduce unaccounted for water (estimated at 55%); and an increase in the water rates in order to moderate over consumption. The cost of the study (financed by IDA instead of AFD as originally planned) was US\$826,000.

(c) Sanitation Master Plan

21. IDA supported the preparation of a Sanitation Master Plan for the Port-au-Prince area, undertaken by consultants (a French/Canadian/Haitian consortium) at a cost of \$398,000 in 1998/99. The Plan provided an excellent diagnosis and made detailed recommendations although a financially viable strategy remains to be developed to address the enormous needs, via a demand responsive approach.

(d) Census of CAMEP customers

22. At appraisal a census of customers was not formally included in the Project but was definitely considered useful since the lack of data on effective users was one major source for under-billings and non payment by customers. A French consultant (CGE) was selected to carry such a census based on 50,000 "fiches" and on that basis water users (regular or potential) were located through an aerial photo system. CGE was supposed to install software to manage the "fiches" and to train CAMEP staff in its use, in order to enable CAMEP to survey other areas and to undertake future updates of the customer data base. The census was completed in July 1998 and is now being continued by CAMEP trained staff. The census was conducted in 1997/98 at a cost of about US\$1 million, financed by IDA.

D. Major Factors Affecting the Project

23. Credit 2052-HA was approved on June 27, 1989, and became effective on February 1990, seven months after Board approval. Only a few month later, CAMEP faced significant problems in its organization, finances and operations. The Government replaced CAMEP's Director General and all department heads. The previous team had been able to initiate a number of positive changes in CAMEP's organization. Their departure was motivated by a strike of CAMEP staff opposed to the company's improved efficiency. Under the new management, CAMEP's administrative operations were not coherent and communications at all levels were inadequate. The new Director General fired the company's external auditors aggravating the situation and delaying the preparation of the audit report. In addition to the time lost due to these changes, the project fell behind schedule due to delays in the procurement of major civil works contract. The lowest bid for a large water supply system and distribution networks was about 2.4 times the engineer's estimate at appraisal and funds were not available under the Credit to cover the cost overrun. New bids were sought, but it took a considerable time to re-tender.

24. Along with all other ongoing IDA credits to Haiti, the Credit for the water supply project was suspended in October 1991, following the coup d'état that ousted president Aristide. At that time US\$0.736 million of the original US\$20 million had been disbursed, which represented mainly the refinancing of the PPF. The French AFD had spent US\$0.309

million on wells drilling operation out of an original US\$9.5 million loan. The suspension was lifted in December 1994, i.e. more than three years later, after President Aristide's return to power, and the project was amended on December 7, 1995 to adapt it to the post-embargo environment.

25. The closing date was extended to June 30, 1999. A special account (US\$750,000) was established in the Central Bank to facilitate disbursements after the project was reactivated in 1995. A major concern was also the non availability of counterpart funds promised by the Haitian authorities for the project. The financing plan presented in the 1989 SAR included US\$6 million of counterpart financing (including interest) of project costs from the Government. Counterpart financing was immediately needed in 1995 to cover 20% of the works being launched (contracts for a total of approximately US\$5.1 million, i.e. US\$1.02 million for the Government). To help solve this issue, additional funding was provided by the OPEC Fund for International Development to the Government, amounting to US\$2.05 million, to cover a portion of its counterpart financing needs. This loan, originally made in 1990, was confirmed in 1995.

26. At the end of the embargo (end 1994), CAMEP was financially bankrupt. The Board of Directors had never met, showing thus an absence of policy guidance and control: there was no finalized balance sheet (only a trial balance at the end of September); there was a lack of a management information system; the bulk of the accounting transactions was recorded manually; no annual budget was prepared: most of the clients were government state or local entities who never paid; the amount of stocks appearing in the balance sheet was unreliable, etc. With project reactivation, the three principals in the Finance/Accounting Department – who had not performed well – were replaced by two more competent professionals and an Institutional Strengthening Study financed by AFD began in 1995.

27. By end 1996, the project's physical implementation appeared to be on track, with the exception of the distribution network. Water wells, reservoirs and transmission pipes were being fabricated and installed despite the political uncertainty during this period. However CAMEP, although slowly progressing, remained a weak institution, particularly in the field of finance and commercial operations, lacking customer orientation. Significantly, CAMEP's management agreed to turn over, in the future, the management of the distribution systems to a private firm under an affermage arrangement. In July 1996, a Unit for the Reform of the potable water sector (URSEP) was put in place by the Government with IDB financing: URSEP prepared in July 1997 a draft law for reforming the Potable Water and Sanitation Sector and which was submitted to Parliament by the Ministry of Public Works. However the law could not be considered because of the absence of a Prime Minister, the Head of Government under Haiti's constitution. When a Prime Minister was finally approved by the Senate, the Government was thrown into yet another crisis when disagreement over the outcome of provisional elections led to a boycott and subsequent suspension of the Parliament by the President. So far the law and an IDB loan (US\$45 million) linked to its passage continue to languish in the Parliament. The Government attempted to pursue other modalities (through the Conseil de Modernisation des Entreprises Publiques) for involving the private sector in CAMEP's operations prior to the ratification of the reform law by the Parliament. This attempt was not successful.

28. Given the continuing slow institutional development of CAMEP, the Government and CAMEP agreed by end 1998 that the objectives had to be simplified to bring them in line with the skills available in Haiti¹¹. They also agreed that the project objectives should include a clear role for the private sector in managing CAMEP's operations in the future. The emerging consensus was that the private sector would be brought in under a management contract for a period of 5 years or so, and during the last year of the management contract, proposals would be sought for a deeper private sector involvement, such as a concession or affermage. However the Conseil de Modernisation des Entreprises Publiques (CMEP) in charge of the privatization program had no budget or funding source to pay for the preparation of bidding documents in order to solicit proposals for the management contract. So far the issue of involvement of the private sector has thus not been solved, which has a direct impact on CAMEP's management and operations. Had the efforts to enhance the role of the private sector in CAMEP's operations been successful, it is conceivable that the project closing date might have been extended.

E. Project Sustainability

29. The failure to achieve institutional strengthening outweighs the reasonably good physical accomplishments as it introduces great uncertainty concerning project sustainability. In addition sustainability is undermined by the fact that only 345,000 customers are served directly through house connections, with an additional 514,000 through stand pipes and kiosks, while the majority of CAMEP's customers (734,000) obtain their water either illegally or through neighbors. The present administration and donor agencies support a major reorganization of the entire potable water sector in the hope that institutional weaknesses will be eliminated by a reform of the sector and private concessionaire for CAMEP, thus enhancing project sustainability.

30. When CMEP was attempting to accelerate the institutional reform of CAMEP, CMEP requested the services of a consultant to review the options for private sector involvement. The consultant recommended in February 1999 that the private sector be brought in under a management contract for a period of 5 years or so and after this period proposals would be sought for a deeper private sector involvement, such as concession or affermage. The consultant's recommendations appear to have been accepted by CMEP¹². However, further work could not proceed because of budgetary constraints. At this stage, the consensus among the donors is that the 1997 water sector legislation should be approved by Parliament (elections are scheduled for March/April 2000) and that the privatization of the CAMEP operations (at least in the first phase of a management contract) should be well under way before additional external resources should be provided to the sector.

31. To the extent that a management contract would provide for operations and maintenance as well as supervision of new/rehabilitation investments up to 2006, CAMEP

¹¹ Agreement was also reached on a limited number of performance indicators (physical, financial, institutional on which to assess future project implementation progress).

¹² A three-year contract would be given through a management contract (instead of five years) with a part of the contractor's revenues fully guaranteed and another part linked to performance (reduced water losses, better billings, etc.)

will need to find financial resources to fund investments proposed in the new Port-au-Prince master plan for potable water (TRACTEBEL study). A US\$45 million loan has already been approved by the IDB, but access to the IDB loan is contingent on the passage of the water sector reform law by the Parliament. The law also entails a merger of SNEP with CAMEP. Presumably other donors will likely follow IDB's lead and provide assistance to the sector only if the law is enacted and the reforms are implemented. Until a clear timetable is available regarding the privatization process and a new management system is put in place, CAMEP's future and project sustainability would remain uncertain.

32. The current needs in the sector in Port-au-Prince are enormous, including sewerage, storm water drainage and wastewater treatment systems. The main purpose of any future project would focus on investments that would not be the responsibility of a new private operator, particularly during the management contract phase. This financing (which would include a technical assistance component in setting up the regulatory framework) would help make the water (and sewerage) investment program feasible and help ensure the transition to a future concession¹³. Such assistance would definitely increase project sustainability. Furthermore, any IDA involvement in the potable water sector in Haiti should include further support for the extension of potable water service to low income residents utilizing kiosks and stand pipes managed by water committees with the support of NGOs.

F. IDA Performance

33. The IDA's performance was unsatisfactory in preparation and appraisal phase of the project to the extent that: (i) lessons learned from the previous project with SNEP which indicated that physical components were executed but financial and institutions building goals had not been met, were not taken into account in designing the CAMEP project; (ii) the performance targets for CAMEP were overly ambitious given the unstable political environment, and limited human resources capabilities; and (iii) the difficulty in implementing institutional reforms was considerably underestimated.

34. IDA staff originally supported a much more ambitious investment program which would have provided more adequate means for dealing with the enormous problems resulting from the disastrous Port-au-Prince water supply situation. However a much scaled down program was finally decided upon because of doubts on CAMEP's ability to implement the project and doubts showed by the French cofinancier. Nevertheless, the reduced program was not accompanied by a tight institutional building program required under the circumstances then prevailing.

35. The company management was inclined to put emphasis on physical investments, given the severe operational constraints and the extent of network deterioration, while according a lower priority to the negotiated reforms. When the project was reactivated in 1995 after the embargo was lifted, disbursements had been considerably delayed, and in order to make up for lost time, the IDA and the French AFD decided to restart the project as originally conceived which proved not to be realistic. The stress was put on investments (need to achieve implementation targets for infrastructure). This attitude was exemplified by the

¹³ After an initial five year management contract.

French co-financier, insisting on the need to "push the works", which was understandable, given the low level of service following the reactivation of the project.

36. As regards institutional strengthening, the IDA became increasingly concerned with lack of progress, particularly in 1996-1998. However the entire technical assistance program was financed exclusively by the French and remained AFD's prerogative. As a result, there was relatively little coordination between IDA and AFD staff and unfortunately technical assistance to CAMEP did not prove very effective. In addition, there was a lack of trust which adversely affected the effectiveness of a significant portion of the technical assistance program.

37. The project was based on a five year implementation schedule. The technical assistance was supposedly tied to a specific plan of action to strengthen CAMEP's management and operations. All this fell apart in 1991 when the project which had a slow start to begin with, was abruptly suspended as the result of the embargo. The enthusiasm with which the IDA reactivated the project in 1995 proved short lived because of the lack of progress in solving CAMEP's persistent problems, problems which, with the benefit of hindsight, had been considerably underestimated and had been exacerbated by the 3-year hiatus brought on by the suspension. A more fundamental restructuring of the project should have been undertaken following the lifting of the suspension.

38. IDA's project preparation, involving about 95 staff weeks, was relatively intense. Project supervision amounted to about 124 staff weeks and the project was at most time adequately staffed. These were four task managers. The last IDA task manager supervised the project for three years (from May 1996 to present), thus providing continuity. Many of the issues related to the physical implementation of the project entailed procurement and they were satisfactorily addressed. With respect to the institutional aspects, assistance was provided in setting up the internal auditing unit in strengthening CAMEP's management information system and in addressing some of the internal control issues that were raised during external audits. Nonetheless, this period was marked with persistent deep rooted problems which finally led the staff to rate the project as unsatisfactory in April 1998.

G. Borrower Performance

39. The overall performance of the Borrower was uneven. At the start of the project, the entire management and cadres of CAMEP were fired and replaced by inexperienced staff. CAMEP's performance was further impaired during the three-year suspension which prevented the inflow of external resources that would have financed investments needed to increase access to potable water and improve service. The relatively numerous changes in personnel in the commercial and financial departments were detrimental at times. The situation settled down when the current Director General took over for the second time in 1995. He has been in place now for several years, and has put in place a coherent management team.

40. On a number of occasions CAMEP's staff and consultants produced good data and information to review and analyze. Working relationship with IDA staff was often good, and an effective dialogue during supervision between IDA staff and borrower contributed to timely resolution of a number of specific problems (procurement, disbursements, institutional

development and audits). However, in the area of covenant compliance, specifically as it related to financial issues, the Borrower performance is considered to have been lacking. The overall Borrower's rating is unsatisfactory.

H. Assessment of Outcome

41. The project outcome based on the original project objectives is rated as unsatisfactory. Credit 2052-HA's original development objectives aimed at increasing water service coverage to 93% and at strengthening the company into a solid and financially viable institution. The project's physical objectives have been reasonably achieved with planned works virtually completed. The installation of meters and house connections is however below the initial targets and water coverage is also below the initial target. But about 500,000 people in disadvantaged sections of the Port-au-Prince area are now being supplied through kiosks and stand pipes. This success story has contributed to the considerable favorable social impact of the project and ameliorated the lack of progress in investments in distributing facilities and individual house connections. Through collaboration with an NGO, CAMEP was able to contribute to developing a cost effective method for providing potable water services to the poor in its service area.

42. In contrast, one of the main original institutional objective, of transforming CAMEP into a financially viable water utility, was not achieved and had to be abandoned during the project restructuring. Despite recent improvements, CAMEP's performance has remained modest. Unaccounted for water, is at least 55%¹⁴. Only about two-thirds of the bills are collected. The collection period is 355 days, since CAMEP is reluctant to write-off its bad debts because of its impact on operating profits. The ratio of collections to billings increased from 51% in 1994 to an average of 77.5% between 1995-1999. CAMEP showed an operating profit through the entire 1995-1999 period averaging about US\$0.8 million. CAMEP also made a modest profit during this period except in 1998, when it incurred a loss of about US\$1 million due to high administrative costs brought on by its sectorization program and a 90% increase in depreciation charges. Nonetheless, CAMEP's profits are overstated because it did not service the debts owed to the state. On the other hand, the state made practically no transfers to CAMEP during the project, except for US\$ 74,000 provided to CAMEP for the purchase of land. The number of employees per thousand connections remained high, although it registered a slight decline from 14.4 in 1995 to 12.6 in 1999. The average tariff has been raised but, due to the small number of metered connections, water supplied through private connections is paid on the basis of estimated consumption at low prices.

43. Potable water is now used by a higher number of the city's poorer residents. However the proportion of consumers directly served through connections has actually decreased in the last decade compared to the total population of the Port-au-Prince metropolitan area (now almost 2 million people). Despite some progress in the ten-year period of implementation, there is still considerable way to go before CAMEP is transformed to a financially viable water utility which was central to the project.

¹⁴ This is mainly caused by the need to provide sufficient quantities of water into the network, in order to avoid negative pressures and hence contamination. Besides, there are many illegal connections and leaks.

I. Future Operations

44. The proper operations and maintenance of project financed facilities is linked to the privatization process and continued donor support. Without the passing of the sector reform law and the introduction of the private sector, the future of IDA facilities would largely depend on the availability of internally generated funds by CAMEP. Despite uncertainties regarding project sustainability linked to the privatization process and to a future private management contractor decisions regarding future operation, the needs in the sector in Port-au-Prince remain enormous. Tentative projections for the period 1999-2005 indicate that investments may be required for US\$200 million. During the management contract period (no investment being made by the contractor) and in the absence of meaningful possible contribution by CAMEP and/or the Haitian authorities, the bulk of this amount would have to come from external donors. Beyond 2005, when a private concessionaire would eventually take over, some of the investments would be financed by such concessionaire, the remainder (substantially reduced compared to the period up to 2005) being made available to support works needed but not attractive to the private sector (water supply in marginal areas, flood control and technical assistance).

45 Any future operations in the potable water sector involving IDA should consider continued support for the improvement of access to potable water in low income areas managed by water committees elected by the communities themselves. The committees are elected for a fixed term during which they manage the water kiosk on behalf of the community. The price charged is sufficient to cover the price of bulk water and to pay the attendant, with funds left over for small community projects. The communities are assisted by an NGO at least through one election to change members of the committee. Such support will be consistent with IDA's strategy of providing assistance to Haiti through lending operations aimed at improving the living conditions of the poor. It will also support good governance and self- help among the poor.

J. Summary of Findings and Key Lessons Learned

46. The main lessons learned from this project can be summarized as follows:

- Early on in project preparation, consideration should have been given to private sector management or ownership as an alternative to relying on the public sector. Institutional strengthening is a very difficult and time-consuming task. The role of the private sector and the modalities for its involvement should have been properly evaluated during project preparation. The option of introducing a management contract, concession or affermage should have been studied as a viable alternative before the project was approved. Even though this is now evident and a law has been drafted to reform the sector and enhance the role of the private sector, the law is presently stymied in Parliament.
- Project design should be flexible to take advantage of unexpected developments during project implementation. The project had originally envisaged the construction and improvement of about 150 stand pipes to serve residents of low income areas. During project implementation, CAMEP expanded this approach to include the provision of bulk water to water kiosks that were managed by the community with the

assistance of NGOs. This approach turned out to be quite successful, as it led to considerable savings in potable water expenditures and fostered community self-help and participation in their own development. At present over half million low-income residents are benefiting from this program. They are among CAMEP's best paying customers, since they pay when they receive service. This approach should be studied to determine its replicability in other low income areas in Haiti and in similar situations in other countries.

- A careful assessment of the feasibility of institutional strengthening programs and the establishment of realistic objectives in this regard should have been undertaken from the onset. This is especially true in unstable political environments where frequent government changes result in high staff turnover in public sector institutions as well as frequent policy reversals. In situations where a project supports a phased investment program, project performance indicators should also be phased.
- Clear and realistic objectives and goals were not established prior the commencement of project implementation. The two main objectives of the project - extension of service coverage through physical works and institutional development - were initially presented on the same footing. As project implementation proceeded, the institutional development aspects of the project began to lag behind the physical aspects. The IDA began to stress institutional strengthening (which was reflected in amendments made to the project) and AFD supported additional technical assistance. This re-orientation of emphasis was not fully appreciated by the management and employees of CAMEP. This led to misunderstandings and failures during implementation. Poor project design is often very hard to correct during implementation.
- Close cooperation is necessary among co-financiers in order to achieve shared objectives. Working in tandem would lead to more information sharing, and a consensus on project performance targets. Given the gaps in potable water services, all donors were concerned about water facilities network expansion; however, there were divergent views on institutional matters, in particular with regard to the role and timing of private sector involvement as well as on the urgency for attaining institutional targets.
- Full commitment of the stakeholders is necessary for successful project implementation. Lack of complete commitment (at the ministerial level and in some cases at the managerial level), insufficient training, as well as the existence of vested interests against change, led to a prolongation of the implementation period¹⁵, and to the initial rejection of the reform efforts. The understanding of a particular society, culture and institutions is essential both at the design stage and also during implementation, if institutional and behavioral changes are to be achieved. For instance, the reluctance of poor people to pay for water as well as the "cultural" attitude toward testing the company's ability and/or willingness to collect bills before paying has to be carefully evaluated at the preparation stage. It is not sufficient to hope that "close supervision" will be enough to do the job. Potential conflicts between the social/subsidized approach and the cost recovery/autonomy approach have to be assessed to make sure that beneficiaries (ranging from managers to engineers and employees) fully agree with the project objectives and thus feel really

¹⁵ Obviously aggravated by a three year suspension period.

committed¹⁶. Intensive evaluation of behavioral issues is needed to: a) identify local perception of problems and constraints; b) identify values and attitudes to which project responses must be adapted; and c) obtain the commitment of appropriate stakeholders.

- The government should set tariffs at levels that allow the long-term sustainability of the system and reduce the distortions in the tariff structure, leading in particular to discrimination against the poor. In addition, the tariff structure should be set to encourage, rather than discourage, connections to the system as was the experience of CAMEP where high connection charges caused some customers to refuse a connection. Besides, sustainability can only be ensured if tariffs generate enough resources to operate the system, finance the expansion of the service to new customers and ultimately replace the facilities after their useful life.
- A sustained effort should be made to collect the payment of bills in order to increase revenues and enable the water company to adhere to the principles of viable financial policies.
- System reliability and performance need to be improved to lower Unaccounted-for-water (UFW). Physical leakage and administrative losses have substantially increased the cost of water production and supply because of a deteriorating distribution system. Systematic and much increased metering should be implemented, preferably, not through small and piece meal contracts often resulting in only minor improvements, but by contracting the activity out in its entirety. This may provide for the introduction of a more viable and effective leak detection and control program within a shorter time frame.
- Important financial covenants between IDA and CAMEP were often not complied with. Covenants requiring critical action to be taken, should be regularly supervised and updated if needed. When the project was reactivated in 1995, a number of covenants had clearly become out of date and unrealistic. However they were kept as they were, and were de facto largely ignored. Only one year before the Credit was closed, it was amended and more modest objectives and monitoring indicators introduced. The lesson is that, once agreed, covenants should be enforced with all the leverage available to the IDA and, if this proves not feasible, should be formally revised, amended or waived.

¹⁶ It must be recalled that the entire management and senior staff was removed by the government unable to face a strike by CAMEP employees against project objectives which they did not fully understand.

PART II:

STATISTICAL ANNEXES

TABLE 1: SUMMARY OF ASSESSMENTS

A. Achievement of Objectives	Substantial	Partial	Negligible	Not Applicable
Macro Policies				✓
Sector Policies			✓	
Financial Objectives			✓	
Institutional Development			✓	
Physical Objectives	✓			
Poverty Reduction		✓		
Gender Issues				✓
Other Social Objectives				✓
Environmental Objectives		✓		
Public Sector Management			✓	
Private Sector Development				✓
B. Sustainability	Likely	Unlikely	Uncertain	
				✓
C. IDA Performance	Highly Satisfactory	Satisfactory	Deficient	
Identification				✓
Preparation				✓
Appraisal				✓
Supervision		✓		
D. Borrower Performance				
Preparation				✓
Implementation				✓
Covenant compliance				✓
E. Assessment of Outcome	Highly Satisfactory	Satisfactory	Unsatisfactory	Highly Unsatisfactory
			✓	

TABLE 2: RELATED BANK CREDITS

Number and Title	Amount (in US\$ million)	Year of Approval	Borrower	Disbursements (in US\$ million)
CREDIT 757-HT Provincial Towns Water Supply Project	6.6	1977	SNEP	6.6

TABLE 3: PROJECT TIMETABLE

Steps in Project Cycle	Date Planned	Date Actual
Identification	January 23-29, 1983	January 23-29, 1983
Preparation	November 9, 1984	October 6-10, 1986
Appraisal	January 15, 1988	July 6, 1988
Negotiations	March 16-20, 1989	March 16-20, 1989
Board Approval	May 12, 1989	June 27, 1989
Signing	August 9, 1989	August 9, 1989
Effectiveness	September 11, 1989	February 14, 1990
Loan Closing	June 30, 1994	June 30, 1999

TABLE 4: CREDIT DISBURSEMENTS: CUMULATIVE ESTIMATED AND ACTUAL (US\$ MILLION)

IBRD Fiscal Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Appraisal Estimate	1.10	6.50	14.20	18.70	20.00	—	—	—	—	—	—
Actual	0.76	0.84	0.84	0.84	0.84	0.84	2.57	7.93	15.80	19.71	20.15
Actual as % of estimate	69.1	12.9	5.9	4.5	4.2						

Date of Final Disbursement: October 30, 1999.

Note: As of October 20, 1999, undisbursed amount of the credit was US\$877,276, i.e. 4.2% of total IDA Credit of US\$21 million (SDR 15.2 million).

TABLE 5: KEY OPERATIONAL PERFORMANCE INDICATORS

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
I. Population (000's)												
Total population in Port-au-Prince area	956	1 058	1 113	1 171	1 250	1 328	1 412	1 500	1 595	1 700	1 794	1 892
Population served by CAMEP	—	542	559	595	609	698	753	852	953	1 364	1 475	1 593
Population directly served through connections	—	255	263	280	286	294	301	307	314	324	331	345
Population served indirectly (neighbors, illegal)	—	287	296	315	322	404	452	498	550	607	662	734
Population served through paying stand pipes	—	—	—	—	—	—	—	47	89	433	482	514
% population directly connected (CAMEP)	—	47.0	47.0	47.0	47.0	42.0	40.0	28.0	33.0	24.0	22.0	22.0
% total population connected	—	24.1	23.6	23.9	22.9	22.1	21.3	20.5	19.7	19.1	18.5	18.2
II. Water Balance												
Water demand (10^6 m ³) (1)	34.5	37.4	39.0	40.6	42.2	44.4	46.8	50.9	54.6	57.6	60.3	63.1
Estimated water consumed (10^6 m ³)	24.2	25.1	25.2	23.2	19.0	20.7	21.1	24.5	30.1	26.3	24.3	34.5
Estimated physical water losses (%)	30	30	30	30	28	28	28	27	27	25	20	20
Water produced (10^6 m ³)	34.6	35.8	36.1	33.1	26.4	28.7	29.4	33.5	41.2	35.1	30.4	43.1
Average production required (m ³ /sec)(2)	1 092	1 185	1 235	1 288	1 336	1 408	1 484	1 610	1 730	1 820	1 912	2 000
Average production capacity (m ³ /sec)(3)	1 097	1 136	1 143	1 050	836	911	950	1 062	1 308	1 113	964	1 367
Excess average production capacity (m ³ /sec)	5	(49)	(238)	(238)	(500)	(497)	(554)	(548)	(422)	(707)	(948)	(633)
Safety margin (%) (4)	—	(4.3)	(8.0)	(22.7)	(59.9)	(54.6)	(59.6)	(51.6)	(32.3)	(63.5)	(98.3)	(46.3)

Source: CAMEP.

(1) Water produced minus estimated losses. (2) Estimated water consumed. (3) Derived from water produced. (4) Margin between production required and production capacity. These numbers are gross estimates, since meter use is not widespread.

TABLE 6: KEY FINANCIAL AND INSTITUTIONAL PERFORMANCE INDICATORS

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Level of accounts receivable (No of days of billing)	107	164	216	184	136	261	361	407	453	518	472	435	355
Ratio of collections to billings (%)	na	na	na	na	na	73.6	83.9	51.0	73.1	83.7	73.6	79.9	77.2
Coverage of operating costs by operating Revenues	1.03	1.01	1.17	1.16	0.83	1.02	0.97	1.52	1.41	1.27	1.32	1.04	1.30
Working ratio (1)	97.0	99.2	85.6	86.5	121.1	97.6	96.6	66.0	71.0	78.5	76.0	96.1	76.7
Operating ratio (2)	117.6	119.5	102.5	102.0	148.1	141.4	139.6	68.6	95.2	85.0	89.1	118.8 (3)	92.3 (3)
Debt/(Debt + Equity) Ratio	54.4	50.9	50.1	57.5	72.9	87.8	97.9	94.9	92.4	76.9	98.6	114.9	107.3
Current ratio (4)	1.27	0.81	1.64	2.07	1.16	1.05	0.98	1.25	1.25	1.32	0.93	1.29	1.46
Number of employees per 1000 connections (domestic)	na	na	18.5	19.9	15.1	17.2	16.1	16.1	14.4	13.5	14.2	13.2	12.6
Personnel costs as % of opera-costs	64.0	60.5	65.6	70.5	53.7	66.7	70.9	72.4	70.5	64.7	60.3	54.8	52.1

Source: CAMEP

(1) Ratio of operating costs (excluding depreciation) to operating revenues. (2) Ratio of operating costs (including depreciation) to operating revenues. (3) Equity became negative in 1998 and in 1999 (– G. 48.77 million in 1998 and – G 37.91 million in 1999). (4) Current assets / current liabilities.

TABLE 7: NUMBER OF WATER CONNECTIONS

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
I. Domestic Connections											
with meters	1 074	1 234	1 221	1 218	1 346	1 311	1 100	1 023	1 013	1 016	946
without meters	24 771	25 677	27 749	28 540	29 549	29 998	31 076	32 062	33 048	34 407	35 848
Sub-total	25 845	26 911	28 970	29 758	30 895	31 309	32 176	33 085	34 061	35 423	36 794
II. Other Connections (Commercial, industrial, etc.)											
with meters	329	334	341	341	339	333	333	336	331	331	332
without meters	5 757	5 630	5 691	5 710	5 529	5 989	5 806	5 847	6 068	5 665	6 042
Sub-total	6 066	5 964	6 032	6 051	5 868	6 322	6 139	6 183	6 399	5 996	6 374
III. Total (I + II)											
with meters	1 403	1 568	1 562	1 559	1 685	1 644	1 433	1 359	1 344	1 347	1 278
without meters	30 508	31 307	35 002	35 809	35 078	35 987	38 315	37 909	39 116	40 072	41 890
Total	31 911	32 75	36 564	37 368	36 736	37 631	39 748	39 268	40 460	41 419	43 168

Source: CAMEP.

Note: A number of connections (specially domestic), have been disconnected for non-payment of bills or various technical factors. Such number was estimated at 9,000 in 1998.

TABLE 8: PROJECT SCOPE AND COSTS (IN THOUSANDS OF US\$)

(Page 1)

I. IDA Financed	SAR Scope	Actual Scope	Costs	
			SAR Estimate	Actual
a) Water Production and Transfer	(i) 1 water spring development	5 wells (2 + 3)	40	168
	(ii) Transmission mains from sources to transmission system (11.2 kilometers)	transmission mains (5.6 kilometers)	2 060	1 040 (est.)
			2 100	1 308
b) Water Transmission, Pumping, Storage Infrastructure	(i) transmission mains (40 kilometers)	transmission mains (19.3 kilometers)	7 205	3 600 (est.)
	(ii) 3 storage reservoirs (5 000 m ³ total)	2 storage reservoirs (5 000 m ³ total)	940	< 4 696
	(iii) 1 pumping station	2 pumping stations	230	
	(iv) regulating equipment	regulating equipment	200	622
			8 575	8 918
c) Distribution, Network and Connections	(i) 60 km pipes	83 km pipes	1 560	< 4 710
	(ii) 10 500 water house connections (1)	2 580 connections (new)	2 130	
	(iii) 2 500 water meters	1 000 water meters	500	183
	(iv) 2 600 flow limiting devices	not done	210	—
	(v) 200 public stand pipes	26 stand pipes (2)	210	na
	(vi) 50 fire hydrants	14 fire hydrants	50	—
			4 600	4 893
d) Equipment, Vehicles, Stocks			1 000	3 401

(1) Of which 5 000 new connections and 5 500 rehabilitations. (2) Excluding stand pipes financed outside the project.

TABLE 8: PROJECT SCOPE AND COSTS (IN THOUSANDS OF US\$)

(Page 2)

			Costs	
I. IDA Financed (Cont'd)	SAR Scope	Actual Scope	SAR Estimate	Actual
e) Building	Operational building	Done	350	603
f) Studies	Sanitation study	Done	200	399
	Other studies	—	—	1 851
g) Miscellaneous	PPF	PPF, training, financial expenses	765	832
TOTAL BASE COST			17 650	22 205
Physical contingencies			1 900	
Price contingencies			2 600	
Sub-total			22 150	22 205 (1)

			Costs	
II. AFD Financed	SAR Scope	Actual Scope	SAR Estimate	Actual
a) Water Production and transfer	6 wells incl.-pumps	8 wells incl.-pumps	1 790	2 521
	Power lines, substations (11 km)	Power lines, substations (4 km)	275	18
	Pressure pipes (10.2 km)	Pressure pipes (19.3 km)	2 170	6 392
	Structures for pumps, electrical equipment	Done	50	—
			4 285	8 931
b) Technical assistance, studies and training	Consultant services	Services provided	2 100	1 954
c) Supervision of construction	Consultant services	Technical assistance provided	1 000	1 996
d) Preparation of follow up project	Consultant services	done (IDA financed)	400	—
TOTAL BASE COST			4 285	12 881
Physical contingencies			600	
Price contingencies			1 100	
Sub-total			9 485	12 881

TABLE 8: PROJECT SCOPE AND COSTS (IN THOUSANDS OF US\$)

(Page 3)

III. CAMEP	SAR Scope	Actual Scope	Costs	
			SAR Estimate	Actual
Purchase of Land	Land acquisition	Land acquisition	400	256 (2)
IV. TOTAL (I+II+III)				
Base Cost			25 070	35 342
Physical contingencies			2 500	—
Price contingencies			3 700	—
Total Project Cost			31 270	35 342

(1) Including OPEC contribution (substitution for CAMEP financing) for US\$ 2 million.

(2) Including US\$ 74 000 contribution by Haitian government.

TABLE 9: PROJECT FINANCING

	Appraisal Estimate		Actual	
	US\$ million	%	US\$ million	%
IDA	20.0	56.3	20.2	57.1
AFD (French)	9.5	26.8	12.9	36.4
OPEC	—	—	2.0	5.6
CAMEP	4.6	13.0	0.2	0.6
Government	1.4	3.9	0.1	0.3
TOTAL	35.5	100.0	35.4	100.0

TABLE 10: ALLOCATION OF IDA CREDIT PROCEEDS (US\$ MILLION)

Category	Appraisal	1998 (July)	Actual (October 99)
Civil Works	7.5	12.7	12.96
Equipment and Materials	8.0	4.4	4.84
Consultant Services	0.2	2.0	1.93
Refund of PPF (1)	0.8	0.8	0.76
Unallocated	3.5	0.1	—
TOTAL	20.0	20.0	20.49

(1) PPF = Project Preparation Facility

TABLE 11: ECONOMIC RATE OF RETURN

Year	Investment	Incremental Operating Costs	Net Benefits Stand Pipes Only	Net Benefits Regular Customers Only	Net Benefits Combined Stand Pipes + Regular Customers
1995	390		(390)	(390)	(390)
1996	4467	573.4	(4452.7)	(4037.3)	(3957.5)
1997	9454	1037.3	(8600.3)	(8023.6)	(7658.5)
1998	9496	2047.2	(9214.9)	(8428.6)	(8024.5)
1999	4439	3116.7	(2721.9)	(585.1)	(154.3)
2000-2024		3116.7	1717.1	3853.9	4284.7

EIRR	4%	14%	16%
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Assumptions

1. No new investment is assumed between 2000-2024.
2. Project incremental operating costs for 2000-2024 use 1995 as the base year.
3. Source of operating costs is financial statements.
4. Source of revenues is financial statements.
5. Projected benefits remain constant between 2000-2024.
6. Benefits included savings experienced by customers when they switch supply from private vendors to CAMEP.
7. Vendor prices are a proxy for willingness-to-pay. Vendor purchases assumed to be equal to 1/10 purchases from CAMEP.

TABLE 12: FINANCIAL RATE OF RETURN

Year	Investment	Incremental Operating Costs	Incremental Financial Benefits	Net Benefits
1995	390			(390)
1996	4467	574.3	640.0	(4400.4)
1997	9454	1037.3	893.3	(9639.0)
1998	9496	2047.2	1422.0	(10121.2)
1999	4439	3116.7	3390.0	(4165.7)
2000-2024		3116.7	3390.0	273.3

FIRR = -8.26%

Assumptions

1. No new investment is assumed between 2000-2024.
2. Project incremental operating costs for 2000-2024 use 1995 as the base year.
3. Source of operating costs is financial statements.
4. Source of revenues is financial statements.
5. Projected benefits remain constant between 2000-2024 and a collection rate of 80% is assumed.

TABLE 13A: ETAT DES RESULTATS 1994 - 1999
(Montant en Million de gourdes)

CAMEP ETATS FINANCIERS	1994	1995	1996	1997	1998	1999
ETAT DES RESULTATS						
Revenus de Facturation	34.02	38.61	45.84	62.37	67.93	109.0
Devis	0	0	0	0	1.09	0.50
Frais de reconnection	0.63	0.49	0.67	0.85	0.20	0.10
Autres	0	0	0	0	0.48	1.0
Revenus d'exploitation	34.65	39.10	47.51	63.22	69.70	111.6
Frais de Personnel	16.55	19.59	24.11	28.98	36.70	44.60
Produits Chimiques	0.03	0.50	0.59	0.97	1.56	1.70
Electricité	0.97	1.21	4.68	4.74	5.00	5.31
Matériel Hydraulique	0.69	2.21	2.73	3.56	8.59	11.05
Mauvaises Créances	1.41	2.04	1.51	2.24	3.97	4.37
Frais d'adminstration	3.21	2.23	3.67	7.54	11.18	18.62
Total des dépenses d'exploitation	22.85	27.78	37.29	48.03	67.00	85.65
Profit avant Amort. & Frais Financiers	11.79	11.32	10.22	15.19	2.70	26.04
Amortissement	9.2	9.46	3.08	8.28	15.81	17.39
Profit avant Frais Financiers	2.59	1.86	7.14	6.91	-13.11	8.65
Frais Financiers	0.56	1.53	1.03	4.18	4.80	5.28
Revenus Exceptionnels	0	0	0	0	0	0
Profit Net	2.03	0.33	5.31	2.73	-17.91	3.37
Rapport de Travail (dép. d'expl/Rev. d'expl)	65.97%	71.05%	70.45%	75.97%	96.13%	76.59%
Rapport Opérationnel	92.53%	95.24%	64.97%	89.07%	118.61%	92.26%
Rate of Return						

TABLE 13B: KEY ELEMENTS OF INCOME STATEMENTS 1993 - 1999
(In Gourdes Millions)

APPRAISAL VERSUS ACTUALS	1993	1994	1995	1996	1997	1998	1999
Total Revenues							
Appraisal Estimate	57.23	68.08	90.73	NA	NA	NA	NA
Actual	22.90	34.65	39.10	47.51	63.22	69.70	111.60
Total Operating Costs							
Appraisal Estimate	27.86	30.78	34.72	NA	NA	NA	NA
Actual	22.13	22.85	27.78	37.29	48.03	67.00	85.65
Operating Profit							
Appraisal Estimate	29.36	37.30	46.01	NA	NA	NA	NA
Actual	-7.07	11.79	11.32	10.22	15.19	2.70	26.04
Depreciation							
Appraisal Estimate	10.14	12.40	14.87	NA	NA	NA	NA
Actual	9.84	9.20	9.46	3.08	8.28	15.81	17.39
Net Profit							
Appraisal Estimate	12.38	17.06	23.30	NA	NA	NA	NA
Actual	-9.75	2.03	0.33	5.31	2.73	-17.90	3.37

TABLE 14: BANK RESOURCES: MISSIONS

Stage of Project Cycle	Month, Year	Number of Persons	Days in Field	Specialty Representation	Financial Performance	Management Performance	Availability of Funds	Development Objective
Preparation	October, 1986	2	5	F				
Appraisal	July, 1988	2	N/A.	F				
Supervision 1	July, 1990	2	6	F	2	1	2	1
2	March, 1991	1	17	C	2	2	2	1
3	Nov., 1995	3	10	F, E	2	2	2	S (1)
4	June, 1996	4	8	F, E	2	2	2	S
5	Sept., 1996	2	5	F	2	2	1	S
6	May, 1997	3	5	F	S	S	S (2)	S
7	Feb., 1998	3	9	F, E	U	U	S	U (3)
8	Oct., 1998	3	5	F, E	U	U	S	U
9	May, 1999	2	7	F, E	U	U	S	U

(1) S = Satisfactory

E = Engineer

(2) Counterpart Funds

F = Financial Analyst

(3) U = Unsatisfactory

C = Consultant

TABLE 15: BANK RESOURCES: STAFF INPUTS

Stage of Project Cycle	Staff Weeks	US\$000
Project Preparation	95.1	232.7
Project Supervision	124.0	331.1
TOTAL	219.1	563.8

TABLE 16. STATUS OF LEGAL COVENANTS

Section	Present Status	Description of Covenant	Comments
2.01 (b)	C	Maintain key managers acceptable to IDA	
2.05 (c)	C	Review IDA the status of project implementation by May 31 in each year	
2.06 (a)	PC	By May 31 in each year furnish to IDA an Institutional Improvement Plan and an operational plan including monitoring indicators and financial projections.	Partially complied Institutional Plan and revised monitoring indicators in December 1998
2.06 (b)	PC	Implement the Action Plan	Action Plan partially implemented in 1997-1999
3.01 (ii)	NC	CAMEP shall pay interest on the outstanding balance of the Subsidiary Loan at a rate of 7% per year	Not complied due to CAMEP financial difficulties
3.04 (a) (i)	C	Furnish to IDA by June 30 1990 a report on the Cul de Sac Aquifer Management study and the CAMEP's Water Supply needs	Complied with in July 1990
3.04 (a) (ii)	CD	Furnish to IDA by June 30 1990 a plan for the development of Water Supply and sanitary facilities outside the Project area	Water supply study completed in December 1996; Sanitary facilities study completed in June 1999
3.04 (c) (i)	CD	Not later than March 31, 1991, take actions to implement the recommendations of the Aquifer Study	Drilling of wells undertaken and protection of springs ensured through fencing in 1999.
3.04 (c) (ii)	PC	Not later than March 31, 1991, take actions to improve water and sanitary facilities sector institutions in the Country	Partially with creation of URSEP (government Unit in charge of water sector reform) in 1997
3.05	C	Review of project performance with IDA of each year June 30	Complied from 1995 to 1999

TABLE 16. STATUS OF LEGAL COVENANTS (CONT'D)

Section	Present Status	Description of Covenant	Comments
3.06	PC	Open account for the purpose of the project by October 15, 1989 and make deposits and expenditures exclusively for the project	Partially complied Special account opened for counterpart funds in February 1996
4.01 (a)	PC	Maintain separate accounts for expenditures related to the Sanitation Study, have those accounts audited and furnish audited reports to IDA no later than 4 months after the end of each fiscal year	Partially complied Separate Accounts maintained for the study but no separate audit.
4.01 (b)	C	Maintain adequate records and accounts, and have them audited annually and submit audit report to IDA, by January 31 of each year	
4.02 (a)	NC	Maintain operating ratio of 90% in 1989, 75% in 1990, 65% in 1991, 50% in 1993 and thereafter	Not complied Revised project restructuring in 1998 not complied with
4.05 (a)	PC	Raise tariffs annually according to inflation plus 4% in 1989-1992 and by a percentage equivalent to inflation rate thereafter	Tariffs raised by 6% in December 1989, in December 1996 and in July 1998 by 90%
4.05(b)	NC	Maintain a ratio of metered and un-metered connections under maximum charges to total connections of: 20% in 1989 30% in 1990 40% in 1991 50% in 1992 55% in 1993 65% in 1994	
4.05 (c)	PC	Maintain a number of employees per 1000 connections, not higher than 19 in 1989, 18 in 1990, 17 in 1991, 16 in 1992, 14 in 1993, 13 in 1994 and thereafter	

C: Covenant complied with
PC: Partially complied with

CD: Complied with delay
NC: Not complied with

TRANSLATION OF SUMMARY OF BORROWER'S CONTRIBUTION

All in all it could be said that the project was executed to the satisfaction of the borrower in spite of the delay encountered at the start of the project. However, with respect to certain components, the scope of implementation could have been less than that specified in the project. These shortfall could be attributed either to the bad financial evaluation of the concerned component by consultants or by a delay in the execution of the project. Unfortunately certain subcomponents of the project could not be executed because the land was not available at the beginning of project implementation. On account of the lack of land, the project had to be modified. The quantities expected in the contracts signed with contractors and suppliers have been supplied and/or executed. The amendments were signed for works and related goods and for studies. In most cases, the project contracts were executed on schedule.

Not all the project objectives were accomplished. The quality of water can be improved, losses reduced, and the network extended to the new service areas. The population served by CAMEP is estimated at 1,593,200. The production during 1999 was 43,106,822 m³. From the perspective of institutional development, progress has been made and certain procedures have been put in place. Thanks to the acquisition of certain equipment, the working conditions at CAMEP have improved.

Presently, an evaluation of the project can be made. However it would be necessary to complete all the installations and allow for a number of years of operations in order to develop an idea about the project's results.

The works of this project included in the master plan for potable water in 1987 for the Port-au-Prince Metropolitan area were executed 10 years after the signing of the Development Credit Agreement. Even if these works did not lead to the expected results envisaged in the master plan, they nonetheless have led to a significant improvement of water supply in Port-au-Prince.

The 30% increase in average daily production, the removal of illegal connections, the rehabilitation of several dozen kilometers of mains and thousands of connections have enabled a significant reduction in technical losses in the network, and the possibility of supplying water to a number of neighborhoods which until recently had very poor service or which did not have any service at all, particularly the spontaneous habitats in which nearly half of the population lives.

These works have especially started a process to enable CAMEP to take charge of its network by putting in place a distribution plan, based on the reconfiguration of networks in isolated sectors which would be progressively put in place.

In the short-term, the "sectorization" of the network will permit a better control of the distribution, the reduction, if not the elimination, of a number of valve operations as well as rapid detection of leaks in the network, and as a result, the improvements of the quality of

water supply, the billing of water consumed by the installation of meters upstream of the distribution networks and micro-meters in house connections.

Thanks to this project and to the new structure of service to our clientele, the management methods at CAMEP have been modernized and the principal indicators of performance have been improved. The master-plan of 1987 was implemented and the feasibility study of the works for the second project have been prepared. The result of this study have indicated that about US\$ 100 million would need to be invested on the network during the next 5 years.

A study undertaken by the French firm "Ingénieurs Conseils et Economistes Associés (ICEA) on the options for the modernization of CAMEP has demonstrated that at the present phase, only a management contract can be envisaged. This study, whose results were presented at the beginning of 1998, in other words, at the end of the works of this project, utilized figures and indicators for the years prior to 1997. They thus merit being updated. Furthermore, this study related progress made under the present management paradigm to the previous years, and has not considered the possibility of maintaining the current status of CAMEP. It did not also propose the methods necessary to improve the performance of a public operator. Instead, its main conclusion is potable water services will need to be privatized!

Management contract implies the participation of a private operator in all levels of decision making at CAMEP. This private operator will be compensated on the basis of performance indicators which have not been clearly defined. Only the state can make this type of commitment to the donors because the state is responsible for investments.

According to this study, the current state of the network and the limited ability-to-pay of the population exclude any possibility of investment by the private sector. In effect, more than half the population live in low income areas and 50% of the other half do not have steady incomes.

The privatization of the provision of potable water has social and political cost for which there must exist the means to pay. This operation must set-up within a framework whereby partners or the private sector can be involved financially as well. International experience has demonstrated that management contract has failed in the majority of cases. The financial commitment of the private operator constitute an important motivating factor in guaranteeing success. At the current circumstances, two scenarios can be envisaged:

(i) Reinforce the means and improve the management capabilities of the public operator by (a) undertaking investments by the state, aimed at improving the condition of the network; and (b) call for a concession (after 5 years).

(ii) Orient the option of modernization toward an affermage, even though this option was not anticipated in the (CMEP) law. Consequently, it would be necessary to amend the law to include the option of affermage and the private operator would need to participate in investment expenditures.

