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IMPLEMENTATION COMPLETION REPORT

KINGDOM OF MOROCCO

GREATER CASABLANCA SEWERAGE PROJECT

December 10, 1997

Infrastructure Development Group
Middle East and North Africa Region

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CURRENCY EQUIVALENTS

	DH equivalent of US\$1	
At appraisal		8.4882
At closing date		9.3040

FISCAL YEAR

January 1 - December 31

ANNUAL AVERAGES

1987	8.3263
1988	8.2029
1989	8.5041
1990	8.2740
1991	8.7497
1992	8.5479
1993	9.3437
1994	9.2339
1995	8.5753
1996	8.8018
1997 (June)	9.3040

PRINCIPAL ABBREVIATIONS AND ACRONYMS USED

APD	<i>Avant projet détaillé</i> (Detailed Engineering Study)
CFD	<i>Caisse française de développement</i> (formerly the CCCE)
DAO	<i>Dossier d'appel d'offres</i> (Bidding Documents)
DCE	<i>Dossier de consultation des entreprises</i> (Request for Proposals - RFP)
DRSC	<i>Direction des régies et des services concédés</i> (Department in charge of the régies)
EIB	European Investment Bank
FEC	<i>Fonds d'Equipement Communal</i> (Municipal Development Fund)
RAD	Régie of Casablanca
RADEEF	Régie of Fes
RADEEM	Régie of Meknes
RADEEMA	Régies of Marrakech
RAID	Régie of Tangier
RAK	Régie of Kenitra
RAMSA	Régie of Agadir
RED	Régie of Rabat
SAR	Staff Appraisal Report
SDAU	<i>Schéma directeur d'aménagement urbain</i> (Urban Development Master Plan)

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KINGDOM OF MOROCCO

GREATER CASABLANCA SEWERAGE PROJECT

IMPLEMENTATION COMPLETION REPORT

TABLE OF CONTENTS

PREFACE

EVALUATION SUMMARY

PART I: Review of Objectives and Assessment of Outcome		Page
A.	Review of Objectives and Assessment of Outcome	1
B.	Achievement of Objectives	2
C.	Major Factors Affecting the Project	5
D.	Project Sustainability	5
E.	Bank Performance	6
F.	Borrower Performance	6
G.	Overall Project Assessment	7
H.	Future Operations	8
I.	Key Lessons Learned	8
 PART II: Statistical Tables		
Table 1.	Summary of Assessments	11
Table 2.	Related Bank Loans/Credits	13
Table 3.	Project Timetable	14
Table 4.	Loan/Credit Disbursements: Cumulative Estimated and Actual	15
Table 5A.	Performance Indicators	16
Table 5B.	Financial Statements	17
Table 6.	Studies Included in the Project	20
Table 7.	Project Costs and Financing	22
Table 8.	Status of Legal Covenants	23
Table 9.	Bank Resources: Staff Input	25
Table 10.	Bank Resources: Missions	26
 Annex:	 Report Prepared by the Borrower	 27
Maps:	No 19884R and 19885	

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KINGDOM OF MOROCCO
GREATER CASABLANCA SEWERAGE PROJECT
(LOAN 2826-MOR)
IMPLEMENTATION COMPLETION REPORT

Preface

This is the Implementation Completion Report (ICR) for the Greater Casablanca Sewerage Project carried out by the *Régie autonome intercommunale de distribution d'eau et d'électricité de Casablanca* (RAD), for which Loan 2826-MOR to the Kingdom of Morocco, onlent to RAD, in the amount of US\$60 million, was approved on June 24, 1987 by the Bank's Board of Directors. The loan was signed on July 27, 1987, became effective on October 14, 1988, and closed on June 30, 1997 after an extension of one year. The last disbursement was made on November 13, 1997. The total amount disbursed was US\$46,855,301.71, or 78 percent of the loan. The undisbursed balance of US\$13,144,698.29 was canceled on that date.

The total disbursement would have been about US\$49 million, or 82 percent if withdrawal requests corresponding to invoices for supplies, services and works carried out before June 30, 1997 in the amount of US\$ 2.5 million, introduced by RAD to the Ministry of Finance, were sent to the Bank. The Ministry of Finance withheld them in order to reduce the debt amount vis-à-vis the Bank. These invoices will be settled by the *Communauté Urbaine de Casablanca* in the framework of the contract made with the *Lyonnaise des Eaux de Casablanca*.

The ICR was prepared by Fathi Ben Slimane (Senior Financial Analyst, MNSID), Sergio Calegari (Principal Sanitary Engineer, MNSID) Mohamed Larbi Khrouf (Consultant Engineer), and Ahmed El-Hamri (Economist, MNSID). An ICR review meeting was held on November 3, 1997 and comments provided during the meeting have been incorporated into the final report. Preparation of the ICR began with a Bank mission from June 18 to July 6, 1997.

The Borrower has prepared its own assessment report. A copy of its summary is included as an annex to this ICR.

KINGDOM OF MOROCCO
GREATER CASABLANCA SEWERAGE PROJECT
(LOAN 2826-MOR)
IMPLEMENTATION COMPLETION REPORT

EVALUATION SUMMARY

Objectives set by the Staff Appraisal Report (SAR)

i. The main objectives of the Greater Casablanca Sewerage Project were to: a) prevent further deterioration of the existing sewer systems in the Casablanca area; b) keep abreast of the growing domestic and industrial demand for sewerage and storm drainage; c) identify the least-cost alternatives for the treatment, disposal and possible reuse of wastewater and reduce the impact of wastewater discharge on the environment; d) provide for effective operation and maintenance of sewerage facilities and standardization in the quality of design and implementation of the sewer extension works; and e) promote the creation and development of appropriate institutional, financial and technical structures to manage sewerage services in urban centers. To achieve these objectives, the project identified a priority program of investment works and master plan studies, as well as actions of an institutional and financial nature, the transfer of sewerage responsibilities to the *régies*, settlement of arrears, budgetary allocations to local governments and municipalities to pay for their water consumption, and sewer charges. The main risk identified in the SAR related to the transfer of sewerage responsibilities from municipalities to the *régies* and the creation of a sewerage department in the *Régie* of Casablanca (RAD). The SAR considered that this risk could be minimized through the technical assistance program, and through financial measures to improve the viability of RAD.

Assessment of development objectives

ii. The objectives were partially met (para. 3 of Part One). The shortcomings of the existing network, the weakness of the institutions, and the lack of human and financial resources to maintain, operate and expand the existing systems were the major causes of RAD's poor performance. The project was the first large-scale operation in Morocco's sewerage sector, and was designed as a pilot project to test an appropriate approach to solve the sector's institutional and financial problems. Three other *régies* were also assigned responsibility for sewerage in their areas of activity during project implementation.

Achievement of project objectives

iii. The physical objectives as defined were substantially achieved. The urgent sewerage works identified in 1994-1995 have been completed in Casablanca and an appropriate system was implemented to clean and reduce pollution in the Mellah river in Mohammedia. However, the scope of initially selected components appears to have been overly ambitious regarding the pressing needs of the Greater Casablanca metropolitan area as well as the absorptive capacity of RAD. This was addressed during implementation by shifting the focus to appropriate rehabilitation works on the existing networks and provision of sewer connections to the population instead of expanding the network to new areas.

Institutional objectives

iv. With respect to institutional and financial aspects, the project objectives were satisfactorily achieved (para. 7). The institutional objective of transferring sewerage responsibility from the municipalities to RAD was met. The training of technical staff, in particular on procurement and transfer of technical know-how to prepare projects, provided through seminars and limited programs, had little impact during the early stage of project implementation. However, this situation was addressed later in the process through improved customer management, introduction of a computerized information system, and supervision of works. In addition, RAD succeeded in setting up its sewerage department, as well as an internal audit and management department.

v. The dialogue between the Bank and the authorities regarding private involvement in development of the sector was successful. The Moroccan authorities themselves took the initiative and signed a management agreement with a private water and sewerage operator, Lyonnaise des Eaux de Casablanca, to manage sewerage, water supply and electricity distribution in the Greater Casablanca area for a period of thirty years, starting August 1, 1997. This initiative will help promote private sector involvement and give the Moroccan authorities an incentive to privatize other *régies'* activities. The Bank has recommended proceeding through international bidding and consultations, and on the basis of well-prepared technical, financial and legal documentation, to subcontract sector activities to private operators.

Financial objectives

vi. Financial performance was satisfactory (para. 6, table 5). Although there were only two increases in sewer charges (the first in 1987 when sewerage activities were transferred to RAD, and the second in 1993), the operating revenues generated from 1987 to 1996 covered RAD's working expenses, and RAD's net internal cash covered about 60 percent of its investments, compared to the 40 percent target. The situation began to deteriorate slightly in 1994 and thereafter due to a lack of sewer tariff adjustment in 1996 and large investments in 1995 and 1996, to build the sea outfall at El-Hank. RAD's performance in recovering arrears was below expectations: the average collection period in 1996 was about 14 months of its annual turnover, compared to the 3 month target. The Government is currently paying regularly, although with

some months delay its water and electricity bills. Several attempts were made to resolve the arrears situation in general and of the *Collectivités locales* in particular, but with very limited success due to insufficient budget allocations to local government. This problem, common to all sectors and all *régies*, is the Borrower's major shortcoming in fulfilling its contractual obligations.

vii. RAD submitted regular audit reports. However, the auditors added disclaimers to their opinions on RAD's financial statements and accounting procedures because of discrepancies in its accounts, poor financial management and lack of internal audits. To overcome this managerial shortcoming, RAD, following the Bank's advice, hired in 1995 an independent consulting firm and auditors to adjust the discrepancies, implement the new accounting procedures, and organize the internal audit. These actions started in 1995 and continued until the newly created private enterprise took over RAD's activities on August 1, 1997.

Achievement of physical objectives

viii. Project components were unevenly carried out, depending on the priority identified during implementation (paras. 8-14). The civil works component was not implemented as defined during appraisal, because of the lack of technical documentation available at the time of appraisal. Instead, RAD and the Bank identified another, more appropriate solution to clean and divert pollution from the Mellah river. In addition, the option of regrouping several lots and simultaneously launching all the bids generated savings on the total amount defined at appraisal. Supply of equipment, technical assistance and consulting services reached a satisfactory level of achievement. At closing date, total disbursement reached 78 percent. The replacement, rehabilitation, and construction of sewers and pumping stations reached 60 percent completion. Supply of equipment reached 56 percent of the allocated amount. Expenses related to sewerage master plans for the nine cities were 84 percent of the SAR estimates.

ix. About 200 km of sewerage network and one pumping station were rehabilitated. Operating equipment was provided to RAD under the project; however, no training equipment was purchased. The Technical Assistance component was completed in the same number of man-months as originally planned. RAD used consultants to carry out sewerage system feasibility studies for future urban settlements. The Wastewater Treatment and Reuse Study for Greater Casablanca was not completed, and the contract was canceled because of the poor performance of the consultant. RAD, in consultation with the Bank, realized that the study was premature and that wastewater reuse in Morocco would be difficult to implement due to the high investment costs and the difficulty of recovering investment and operating costs, estimated at about US\$400 million and DH5/m³, respectively. The sewerage master plan studies for the eight other cities were completed to the satisfaction of the *régies*, despite some disagreement between the consultant and the *régies* of Fes, Rabat and Agadir due to the consultant unsatisfactory performance.

Major factors affecting the project

x. The progress reports highlighted several important issues that delayed implementation of the project (paras. 15-16). The use of land, the focus on future urban development, and the centralized and cumbersome procurement procedures were the major causes of delay, which was exacerbated by the a priori control of the overseeing authorities. Technical assistance, which was an important component of the project, only partially achieved the know-how transfer, consisting mainly of improving RAD's ability to prepare, plan and organize its operations.

Implementation delays

xi. Project implementation was first delayed by 14.5 months due to the delay in loan effectiveness. Other delays were caused by the lengthy procurement process, the weak technical and financial capacities of some contractors, the low performance of some consultants, the land use issues, RAD's disagreement on some basic assumptions that had been discussed during earlier missions, and the lack of commitment of some municipalities.

Project sustainability

xii. The project had significant impact and provided several lessons for the sewerage sub-sector in Morocco (para. 17). It helped define an appropriate approach for addressing the institutional and financial issues in Morocco's sewerage sector. Studies carried out under the project allowed the Moroccan authorities, the Bank, and the *Caisse Française de Développement* (CFD) to undertake a sewerage project with the *régie* of Fes that included a wastewater treatment component and wastewater reuse component (the Second Sewerage and Water Reuse Project, Loan 4010-MOR). It helped the authorities to undertake another project with the European Investment Bank (EIB) for the *régie* of Marrakech. The process of transferring sewerage services from the municipalities to the respective *régies* is already underway, following RAD's experience. Despite the difficulties encountered in implementing the project, the Moroccan authorities appreciate its positive impact on developing the subsector, and the rehabilitation works and planning mechanisms that have been put in place.

Bank performance

xiii. The Bank's performance improved as the project progressed. The Bank focused mainly on improving the existing system and connection to the network, and removing pollution in the Mohammedia area and the Mellah river. On the institutional and financial side, late in project implementation the focus was on implementing internal audit and appropriate accounting and financial management procedures. Discussions on sector development resulted in speeding up the transfer of sewerage responsibilities to the *régies* of Agadir, Fes, Meknes and Marrakech. The Bank allocated an average of 18.5 staffweeks per year for project supervision. The supervision missions concentrated on physical components as well as on institutional, financial and administrative aspects.

Borrower performance

xiv. After almost eight years of implementation, the implementation rate for the project must be regarded as satisfactory. RAD experienced difficulties in managing the project, which caused substantial delays in implementing some of its components. It should also be noted that while implementing the project, the Moroccan authorities, with the French cooperation, built the El Hank outfall, which they considered crucial for the Casablanca sewerage system and for the environmental protection of the Casablanca Bay. The El-Hank outfall, although costing US\$100 million, is by far the least cost solution compared with the alternative, which consisted of treating, pumping and transporting the treated wastewater at a cost of US\$400 million.

Overall project assessment

xv. The project was the first large-scale sewerage investment undertaken in Morocco. It was, then, expected that during implementation some assumptions and options would be reconsidered due to the insufficient information in the very beginning included in the sewerage master plan. However, it is clear that the completed components will facilitate new urban development. The project enabled RAD to improve its capacity to operate a modern system, and to build up a large resource base and database out of the completed studies. In addition, the project has had other benefits: (a) RAD personnel became familiar with implementation of large sewerage works, (b) eight of the country's major cities now have a sewerage planning and management tools in place that have allowed them to transfer sewerage services to the *régies*, (c) two new projects have been launched, and (d) the process of privatizing the *régies* has started. The project increased the number of house connections to the sewerage network by about 15,000, serving 300,000 additional people, partly through the project itself and partly through developers.

Future operations

xvi. Future sewerage operations in Casablanca will be carried out by the newly created private company (*Lyonnaise des Eaux de Casablanca*), which is committed to an investment program of DH 30 billion over the next 30 years. The database and the studies prepared under the project will facilitate the identification and implementation of new projects. The sewerage master plan study for the eight cities has helped to identify two new projects (IBRD 4010-MOR in Fes, and an EIB project in Marrakech).

Key lessons learned

- The institutional development of the sewerage sector in Morocco has been the major objective of the project.
- The local and regional authorities should have been involved since the beginning in making the major decisions, to ensure their commitment and agreement on administrative and land use approvals necessary to carry out the project.
- More realistic assumptions could have been made during the appraisal stage if the sewerage master plan had been available.

- Studies should anticipate potential implementation problems.
- In selecting contractors and suppliers, attention must be paid to their technical, human and financial capacity to carry out the project.

KINGDOM OF MOROCCO

GREATER CASABLANCA SEWERAGE PROJECT

(LOAN 2826-MOR)

PART ONE: IMPLEMENTATION ASSESSMENT

**A. REVIEW OF OBJECTIVES AND
ASSESSMENT OF OUTCOME**

Objectives at Appraisal

1. The principal objectives of the Greater Casablanca Sewerage Project were to: (a) prevent further deterioration of the existing sewer systems in the Casablanca area through an extensive rehabilitation program; (b) keep abreast of the growing domestic and industrial demand for sewerage and storm drainage; (c) identify the least-cost alternatives for the treatment, disposal and possible reuse of wastewater and reduce the impact of wastewater discharge on the environment; (d) provide for effective operation and maintenance of sewerage facilities and standardization in the quality of design and implementation of the sewer extension works; and (e) promote the creation and development of appropriate institutional, financial and technical structures to manage sewerage services in urban centers.

2. To achieve these objectives, the project identified a program of physical investments as well as institutional and financial measures at a total estimated cost of US\$116.91 million, of which US\$33.4 million was in foreign exchange (table 7 of the SAR). The project was financed by a Bank loan in the amount of US\$60 million (Loan 2826-MOR). The physical components related to Greater Casablanca, and included: (a) replacement of 60 km of primary, secondary and tertiary sewers and three pumping stations located in Mohammedia, Ain Sebaa and the Eastern Industrial Zone; (b) rehabilitation and repair of 1 km of two major collectors and 200 km of secondary and tertiary sewers, as well as inspection, cleaning and mapping of 1,000 km of the system; (c) construction of 410 km of new sewers in new development areas and existing unserved areas; (d) provision of operating equipment and training for RAD's sewerage department; (e) technical assistance and training for RAD through a specialized sewerage company, consultants' services for studies and works supervision, and a study to assess wastewater treatment and disposal needs in Casablanca; and (f) preparation of sewerage master plans and feasibility studies, as well as of final design for the first phase sewerage works of Agadir, Fes, Marrakech, Meknes, Nador, Rabat, Settat and Tangiers. Bidding documents for the priority sewerage works for Casablanca was also carried out.

Assessment of objectives and risks

3. These objectives were defined based on the shortcomings of the existing network, weaknesses of the institutions, and the lack of human and financial resources to maintain, operate

and expand the existing systems. The physical objectives, redefined on a realistic basis in 1994 were achieved. The high costs of the unrealistic investments proposed by the consultant to treat and purify water used in Casablanca (400,000 m³ a day, for total cost of US\$400 million), the construction of the outfall in Mohammedia (US\$70 million), the construction of a 10 km gallery and a pumping station under the ocean, and the sewerage charge needed to recover investment and operating costs (DH5 m³) led the Moroccan authorities to cancel the contract and to postpone the proposed schemes and the treatment plant until a later stage. Instead the project focused on two other alternatives that included improvement of the design of the outfall system of El Hank, financed by the French, and construction of an appropriate system to divert sewage from the Mellah river in Mohammedia and direct it to the ocean after preliminary treatment. The project also focused on equipping future urban development areas, and on overcoming the backlog in providing about 15,000 sewer connections to inhabitants. Moreover, the rehabilitation of sewers and pumping stations was completed. Equipment purchased for the cleaning operation and the training provided by the technical assistance enabled RAD to carry out the cleaning and inspection of some segments of the network by its own staff.

4. With respect to the institutional and financial aspects of the project, these were satisfactorily achieved. On the organizational front, technical assistance later in the process provided basic know-how to RAD staff in the design, operation and maintenance of the Casablanca sewerage system. This situation improved in the final years of project implementation through better targeting of technical assistance for customer management, introduction of a computerized information system and construction site supervision and management. RAD did succeed in setting up its sewerage department, as well as an internal audit and management department, in 1993 and 1995, respectively.

B. ACHIEVEMENT OF OBJECTIVES

Assessment of development objectives

5. **Sectoral policy objectives.** This was the first major undertaking in the sewerage sector, and was designed as a pilot project to address sewerage problems in Morocco of both an institutional and financial nature. As the result of the project, three other *régies* have been assigned responsibility for sewerage operations.

6. **Financial objectives.** Financial performance under the sewerage project was more satisfactory (table 5). Although there were only two increases in sewer charges, one at the time responsibility was transferred to RAD and another in 1993, revenues flowing to RAD from 1987 to 1996 were enough to cover all operating costs, and to generate net earnings equal to 60 percent of capital spending, versus the 40 percent called for in the agreements. The situation began to deteriorate in 1994, but was still judged acceptable, when RAD was made responsible for financing and carrying the debt service of the sea outfall at El Hank. Normally the Government should have contributed to the El-Hank outfall investment, as environmental protection of the Casablanca Bay was a joint RAD/Government issue. Furthermore, RAD's performance in terms of recovering arrears was below expectations: the average collection period represented about

14 months of turnover, against the 3 months stipulated in the agreement. This weak performance was due essentially to difficulties in recovering arrears from local governments and municipalities, which in turn were caused by insufficient budget allocation to them. This problem, which was common to all sectors and all *régies*, constituted the Borrower's principal shortcoming in terms of fulfilling its contractual commitments. Several attempts were made to resolve the problems of arrears, but with only sporadic success. RAD met its commitments with respect to audits. The accounts, however, could not be certified, in light of the inadequacies and anomalies found by the auditors. To rectify this situation, the Bank advised RAD to hire an outside accounting expert to help rectify the accounts and to set up a new accounting plan. These steps were initiated in 1995 and will be continued by the newly created enterprise.

7. **Institutional development objectives.** These objectives were substantially achieved. The project succeeded to some extent in strengthening the capacities of the Sewerage Department within RAD, by involving it in the studies and in executing sewerage works. The department was also supplied with modern equipment for operating the system. Some steps were taken to provide training, in cooperation with the company supplying technical assistance services (9 percent of its working time was spent on training activities). The dialogue between the Bank and the authorities regarding encouragement of the private sector as an alternative for developing the sewerage system proved to be useful. The Moroccan authorities themselves took the initiative of launching the process, which resulted in the granting of a management contract by the Casablanca Urban Community for all RAD activities (sewerage, water supply and electricity) to a private company, Lyonnaise des Eaux de Casablanca, for a period of thirty years, on August 1, 1997. This is a promising approach, in the sense that it could serve as a point of departure for other *régies* seeking to involve the private sector in their operations. The Bank, however, has recommended that this be done on the basis of International Competitive Bidding and Requests for Proposals, using carefully prepared technical, financial and legal documentation.

8. **Physical objectives.** Due to the nonavailability and insufficiency of the sewerage master plan, the physical components selected during appraisal were redefined later during implementation, in 1994. Originally 340 km of new sewers in future urban growth areas were proposed. The project replaced 60 km of existing primary sewers and rehabilitated 200 km of secondary and tertiary sewers, which contributed to the development of several Casablanca quarters. In addition, the project allocated US\$3.56 million (net of physical and price contingencies) to clean 1,000 km of sewers, which was done with the cleaning trucks purchased through the loan proceeds.

9. Physical objectives were partially achieved (table 7). The completion rate varied from one component to the next. Generally speaking, implementation of the works components was weaker than expected. The components relating to equipment supply, technical assistance and consulting services were to a large degree completed. The project helped in the construction of an appropriate pollution control system for Mohammedia and its river, Mellah. In addition, 5.5 km of primary sewers and a pumping station were rehabilitated, as were 105 km of secondary and tertiary network sewers (including 1 km of the trunk collector). Furthermore, RAD personnel performed the cleaning work using the operating equipment purchased under the project. Topographical mapping was carried out for 90 km. Some 16.5 km of new main sewers

were laid , and 15.5 km of new secondary and tertiary sewers were completed. RAD completed about 59 km of sewers in zones not initially included in the project. In sum, 200 km of collectors of various sizes were laid and one pumping station in Mohammedia rehabilitated. The project enabled RAD to acquire operating equipment (15 cleaning trucks of differing capacities), light transport vehicles (25 vans and pickup trucks), and heavy transport equipment (6 dump trucks, 8 trucks and 2 tanker trucks) for the Sewerage Department.

10. The Technical Assistance component achieved virtually the same man-month levels as planned (424 man-months versus 420 in the SAR). Of the technical assistance resources, 91 percent was used for technical studies and works supervision, while training accounted for 9 percent. RAD made use of consultant services to prepare prefeasibility studies for sewerage systems in future urban growth zones. These studies were parceled out in 6 lots to three different consulting groups. The wastewater treatment and reuse study for Greater Casablanca was not completed, and the contract was canceled. RAD, in consultation with the Bank, realized that the study was premature and that wastewater reuse in Morocco would be difficult to implement due to the high investment costs, as well as to the difficulties of recovering investment and operating costs, estimated to reach about US\$400 million for DH5/m³, respectively. The sewerage master plan studies for the eight cities other than Casablanca were virtually all completed to the satisfaction of the respective *régies*, although difficulties arose with the consultants doing the work for Fes Rabat and Agadir; in the case of Fes, these problems led to cancellation of the first contract and the selection of another consultant to complete the study. The studies were pursued to the point of preparing implementation plans for priority sections for eight *régies*.

11. Much of the work carried out was based on studies carried out by RAD personnel. As of the closing date of the loan, three of the eight lots of sewerage works for specific sectors of Casablanca had been completed; the others were completed in December 1997.

12. Lags accumulated in implementing some of the project components. Some 14.5 months elapsed between signing of the loan and its effectiveness. Additional delays were due to a priori control of the contract (administrative procedures, affected approval and implementation). The delays varied from 19 to 6 months for studies and 16 to 12 months for civil works. For the 8 lots of sewerage and pollution control works, contracts were launched simultaneously, awarded 2 months after bid opening, and signed 3 months after bid evaluation. The related works started in October 1996. For the studies, six contracts were completed on time, but others took up to 2 to 4 years due to review of consultant conclusions by the Bank and RAD.

13. There were several reasons for these delays: (a) deadlines set for the consultants were often too short, given the scope of the study and/or of the work required; (b) the density of the sewer system within the study zones were identified on a preliminary basis; (c) some of the firms contracted were technically and financially weak; (d) technical problems appeared only during project implementation (soil conditions, subsoil rights); (e) there were administrative problems relating to land use authorizations and construction permits, (the Casablanca Urban Community was slow to provide basic data, and urban development plans were subject to change); f) there were problems with land use and the nature of the works themselves, which involved installing sewers in areas where access roads had to be built or slums had to be removed from the primary

sewer route; and g) there was a lack of commitment to the project on the part of some of the municipalities (Ain Dhiab, Oulfa, and Sidi El Khadir).

14. The cost of the project was originally estimated at US\$116.91 million; of this amount, US\$91.1 million, or 78 percent of the total cost, had been spent by the closing date. RAD purchased operating equipment that allowed for better operation of the systems. The final cost of the studies was US\$10.45 million, against the US\$12.51 shown in the SAR.

C. MAJOR FACTORS AFFECTING THE PROJECT

Factors generally subject to Government control

15. Administrative procedures (a priori control) for awarding contracts held up progress on several components. The financial situation of RAD, due largely to payment arrears on the part of local and central governments, meant that RAD was late in making payments to suppliers, contractors and consultants. The Government's efforts to address the arrears issue did not succeed in resolving the problem completely. It took 14.5 months for the loan to become effective.

Factors generally subject to the control of the implementing agency

16. Technical assistance, an important component of the project (representing 15 percent of the RAD project cost and 26 percent of disbursements under the loan), partially achieved its objectives in terms of training and management assistance. The purpose of the training was to equip RAD in preparing, planning and organizing operations under the project; however, its long duration and the number of man-months devoted to it was not in proportion to the transfer of know-how. Some difficulties arose because of insufficient preparation. Some land use and administrative issues were addressed only after contracts had been awarded.

D. PROJECT SUSTAINABILITY

17. The work carried out under this project represents virtually the first major action of its kind in Morocco's sewerage subsector. While a few objectives were not achieved, the project nonetheless has been a useful experience for Morocco. The national authorities and the Bank have also undertaken another sewerage project in the cities of Fes (Loan 4010-MOR) and Marrakech (EIB loan), incorporating wastewater treatment components as well as treatment of industrial waste. The experiment of transferring responsibility for sewerage services from the municipalities to the respective *régies* is already underway, following the example set by RAD. Currently, a management contract for water, sewerage and electricity services in Casablanca has been awarded to the company *Lyonnaise des Eaux de Casablanca*. Other major Moroccan cities are expected to take a similar approach.

18. **Environmental impact.** This project has had a major and beneficial impact on environmental policy, since the *régies* have undertaken technical and economic studies to determine the ecological effects of installing wastewater treatment facilities. These studies have resulted in the introduction of environmental protection measures. The measures adopted for Mohammedia and Mellah river will improve the water sewerage system as well the environment in the region. About 500 ha of land located along the Oued Mellah, which were a "non aedificandi zone", are being transformed into a residential area.

E. BANK PERFORMANCE

19. Bank performance was satisfactory. However, the conceptual approach adopted during the project identification phase did not identify the optimal solution for the sewerage network in the Casablanca area due to absence of a master plan. The situation led the Bank and RAD to redesign investment priorities for civil works, and eight lots were defined between 1993 and 1994. The related works are expected to be completed in December 1997. In view of the shortcomings of the *régies* in managing bidding and contracting procedures and techniques, the Bank could have held training seminars from the beginning of the project (1987) to help the Borrower manage this key aspect more effectively (such seminars were in fact introduced later on). In addition, the Bank could have included a training component (completely separate from the technical assistance component) to prepare RAD personnel to manage the project and equip them with the techniques for implementing a water distribution and sewerage project. A total of 236 staffweeks was devoted to the project, of which 137 were for supervision, characterized by efficiency of effort and frequent visits (table 10). As part of its supervision, the Bank was also careful to organize some important training seminars and to ensure adherence to financial and accounting conditions. This aspect of the supervision produced an improvement in project implementation and management.

F. BORROWER PERFORMANCE

20. An assessment of RAD's performance shows that the project completion rate, after nearly 9 years of implementation, reached 78 percent. RAD's and Government's commitment to the project improved during project implementation. Rad's management capacities were deficient when implementation began, but improved gradually as the project progressed. In addition, the limited commitment of other interested parties (ministries, municipalities, administration and industries) tended to delay project implementation.

21. Over the period 1988-1995, RAD experienced a number of difficulties in establishing and managing the structures needed to ensure proper implementation of the project. These difficulties had several consequences: (a) RAD's organizational structure never underwent the changes needed to reflect the largely successful deconcentration and decentralization of technical and administrative management at the municipal level; (b) some serious institutional and organizational problems (such as the autonomy of RAD, the relationship between the *régie* and the supervisory authorities and financial controls) held back development of the *régie* and

hampered its short-and medium-term operations; (c) RAD had great difficulty developing a computerized information system for administering its billing system and its customer accounts, which are essential to effective business and accounts management (the handling of arrears proved to be a particularly difficult problem); (d) RAD's lack of experience in contracting procedures led to significant delays in the implementation of some of the project's components.

22. In retrospect, the project has helped RAD to improve its financial management, due mainly to the continuous dialogue with the Bank's task team and the introduction of an internal audit system which has given the *régie* the capacity to manage its accounts effectively. RAD has also acquired a computerized information management system for its business transactions, which has enabled it to improve administration of customer accounts and arrears with a view to reestablishing its financial and economic viability.

G. OVERALL PROJECT ASSESSMENT

23. Since this was the first large-scale sewerage project to be undertaken in Morocco, the search for a suitable method and approach was naturally an integral feature of the experience. Although the completion rate for the Casablanca project was relatively low, the work accomplished will allow new urban development areas to be opened up. About 15,000 sewerage house connections were established under the project itself, and through developers and private concessionaires. The project has enabled RAD to acquire new, up-to-date operating equipment for the system. RAD has built up substantial capital in the form of a database of feasibility studies for some 6,835 ha, involving 420 km of sewers. However, the usefulness of these studies will depend on the progress of urbanization programs. The project has also succeeded in familiarizing RAD personnel with the demands of large and complex sewerage works. It has provided eight of the country's largest cities with a solid tool for planning and managing sewerage projects. The sewerage master plans have already been of help to some municipalities in transferring sewer services to the *régies*.

24. An interceptor was built under this project to intercept the sewage flow and to divert it toward the ocean after preliminary treatment through an appropriate rocky discharge coastal zone. This solution eliminated existing pollution and transformed about 500 ha of "non aedificandi" zone into a residential area.

25. Most importantly, the project, and the other sewerage works that have been undertaken, have allowed Casablanca to increase the rate of residential sewer connections, which rose from 60 percent in 1985 to 62.6 percent in 1996. By contrast, the rate of potable water connections has gone from 64 percent in 1985 to 78 percent in 1995.

26. On the institutional front, the project has certainly promoted the concept of granting management contract for sewerage services in Casablanca to private operators. The company that provided the technical assistance to RAD under the project is in fact the guiding force of the group that has taken over the management contract. The municipalities of Agadir, Fes, Meknes,

and Marrakech have already transferred their sewerage services to their respective *régies*, and Tangier, Marrakech and Meknes are preparing to do so in the near future.

H. FUTURE OPERATIONS

27. Future sewerage operations in Casablanca will be in the hands of the newly created private company, which is committed to an investment program with the Moroccan authorities of about US\$30 billion over 30 years. The studies prepared under the present project will certainly serve as a useful basis for other projects. The studies for sewerage master plans for the eight cities have already led to a new IBRD project, 4010-MOR, Second Sewerage and Waste Water Treatment and Reuse Project for the City of Fes, and to the identification of the proposed National Water Supply and Sewerage Project. Marrakech and Agadir have issued invitations to bid for sewerage works resulting from these studies.

I. KEY LESSONS LEARNED

Development objectives

28. The issues relating to development objectives, including the institutional and organizational structures needed to promote the sewerage sector, should be identified at the project preparation stage, along with the appropriate actions and measures for achieving them. The project focused essentially on the physical components for Casablanca and on sewerage master plans for 9 cities. For example, there was no program for transferring sewerage services from the municipalities involved in the project to the eight corresponding *régies*. There was no organizational component for the RAD sewerage department.

29. The SAR should have provided criteria for evaluating the technical assistance component, which was a major part of the project in terms of the funds devoted to it.

30. **Implementation.** The rehabilitation program, which was an important part of the project, would have been more effective if it had been based on the results of a TV cameras inspection campaign and a topographical mapping exercise.

31. **Project ownership.** The ownership of the project and its objectives is very important to the success of any project. In the case of this project, the local and regional authorities (i.e., interested parties or stakeholders) should have been involved since the beginning in making the major project decisions, to ensure their commitment and avoid obstacles when it came to securing administrative approvals. Land use problems should have been settled as soon as the sites were identified, to avoid delays in project implementation.

32. **Financial capacity.** During the project appraisal stage steps should have been taken to assess the financial capacity of RAD and to verify that its cash flow was sufficient to finance the local counterpart contribution not covered by the loan. Such an assessment requires cautious

assumptions about self-financing capacity and the contributions of customers and housing developers.

33. **Organization of technical assistance.** Technical assistance should not have been the direct responsibility of the Director General of RAD, as the SAR recommended (see SAR para. 4.12), but rather should have been assigned to a specially designated official responsible for its implementation. As it turned out, the Director General did not have the time to make effective use of the experts nor to evaluate and follow up on their work.

34. **Adapting objectives to capacities.** No specific goal was set in terms of the number of residential connections, which is surely a major target for any sewerage project. However, about 15,000 sewerage house connections were created by the project, partly through the project itself and partly through developers. The implementation study zones under future loans should coincide with the zones where works are to be financed, or else the studies will be obsolete when it comes to implementation. Time limits on contractors and consultants must be realistic and commensurate with the scale and difficulty of the services and works required. Steps should be taken to ensure that the studies are of high quality and that they anticipate implementation difficulties. Pre or post-qualification procedures should follow the project's example, so that only contractors with sufficient technical, human and financial capacities are deemed eligible to carryout the project.

PART II

STATISTICAL TABLES

Table 1.	Summary of Assessments
Table 2.	Related Bank Loans/Credits
Table 3.	Project Timetable
Table 4.	Loan/Credit Disbursements: Cumulative Estimated and Actual
Table 5A.	Performance Indicators
Table 5B.	Financial Statements
Table 6.	Studies Included in the Project
Table 7.	Project Costs and Financing
Table 8.	Status of Legal Covenants
Table 9.	Bank Resources: Staff Input
Table 10.	Bank Resources: Missions

**Implementation Completion Report
Kingdom of Morocco
Greater Casablanca Sewerage Project
(Loan 2826-MOR)**

Table 1: Summary of Assessments

A. Achievement of Objectives	<i>Substantial</i>	<i>Partial</i>	<i>Negligible</i>	<i>Not applicable</i>
Macro Policies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sector Policies	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Financial Objectives	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Institutional Development	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Physical Objectives	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Poverty Reduction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Gender Issues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other Social Objectives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Environmental Objectives	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Public Sector Management	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Private Sector Development	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
B. Project Sustainability		<i>Likely</i>	<i>Unlikely</i>	<i>Uncertain</i>
		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C. Bank Performance	<i>Highly satisfactory</i>		<i>Satisfactory</i>	<i>Deficient</i>
Identification	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
Preparation Assistance	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
Appraisal	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
Supervision	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
D. Borrower Performance				
Preparation	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Implementation	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Covenant Compliance	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
Operation (if applicable)	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>

Table 1: Continued

E. Assessment of Outcome	<i>Highly Satisfactory</i>	<i>Satisfactory</i>	<i>Unsatisfactory</i>	<i>Deficient</i>
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Implementation Completion Report
Kingdom of Morocco
Greater Casablanca Sewerage Project
(Loan 2826-MOR)**

Table 2 : Related Bank Loans/Credits

<i>Loans/Credits & Title</i>	<i>Purpose</i>	<i>Year of Approval</i>	<i>Status</i>
	<i>Preceding Operations</i>		
Loan 850-MOR First Water Supply Project	Construction of first tranche of production facilities in Central Atlantic Coast (between Kenitra and Casablanca). It includes extension of existing treatment plant; construction of dam; pumping station; mains; institutional strengthening. Loan amount was US\$ 48 millions	1972	Completed in 1980 PPAR N° 3721 du 16 dec 1981
Loan 1724-MOR Second Water Supply Project	Construction of additional facilities to increase production capacity in the Atlantic Coast. Construction of production facilities in Grand Agadir. Revolving funds for social connections. Further action for institutional strengthening of ONEP (management, finance etc...). Loan amount was US\$ 49 millions	1979	Completed 1987 PPAR N° 8725 du 8 juin 1990
Loan 2006-MOR Third Water Supply Project	Construction of regional water supply systems, as well as in the mid-size town.. Strengthening of the Revolving funds for social connections for ONEP and 3 Regies. Strengthening ONEP's structure. Loan amount was US\$ 87 millions	1981	Completed in 1989 PCR N° **** du juin 1993
Loan 2825-MOR National Water Rehabilitation Project	Introduce policy reforms to strengthen the sector; rehabilitation and improvement of the efficiency of the existing production and distribution systems; strengthen the financial policy of the sector to increase cost recovery; Loan amount was US\$ 60 millions	1987	Completed in juin 1996
Loan 3664 & 3665-MOR Fifth Water Supply Project	Rehabilitation, extension et reinforcement of water distribution system of ONEP and six Régies (RAD-Casablanca, RADEEF-Fes, RADEM-Meknes, RADEEMA-Marrakech, RAK-Kenitra et RED-Rabat Salé). Strengthening of managerial capability as well as the efficiency of these institutions. Loan amount is US\$ 128 millions & US\$ 32 millions	1993	Under implementation
Loan S-7-MOR First Sewerage Project	Sewerage study for the Great Casablanca Etude d'assainissement du Grand Casablanca	1977	PCR 14 of June 1984
Loan 4010-MOR Second Sewerage Project	Rehabilitation and extension of sewerage networks in Fès. Construction of treatment plant in Fès. Provision for equipment for monitoring pollution. Technical Assistance, to improve and strengthen RADEEF's institutional, financial and technical structure for new sewerage activities Loan amount is US\$ 40 millions. CFD cofinancing amount is US\$ 23,6 millions.	1996	Under implementation
Loan 2272-MOR Pilot Project Municipal development Funds "FEC"	To improve among others FEC's capacity to finance sewerage and water supply systems; training of FEC' staff to improve their lending capacity management.		
Loan 3616/17-MOR First Project for Municipal Finance	Technical Assistance to improve Municipal capacity to invest in water and sanitation sectors		

**Implementation Completion Report
Kingdom of Morocco
Greater Casablanca Sewerage Project
(Loan 2826-MOR)**

Table 3 : Project Timetable

	<i>Date Planned</i>	<i>Date Actual</i>
Identification	n.a	First Bank mission June, 1982
Preparation	preparation time: 4 years	1982-86
Appraisal	N/A	June 1986
Negotiations	N/A	April 20-23, 1987
Board Presentation	N/A	June 2, 1987
Signing	N/A	July 27, 1987
Effectiveness	October 1, 1987	October 14, 1988
Loan Closing	June 30, 1996	June 30, 1997
Project Completion	June 30, 1996	June 30, 1997

**Implementation Completion Report
Kingdom of Morocco
Greater Casablanca Sewerage Project
(Loan 2826-MOR)**

Table 4 : Loan Disbursements-Cumulative Actual (in US \$ millions)

Fiscal Year	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Appraisal Estimate-annual	6.23	6.36	9.25	9.83	8.68	7.50	5.77	4.63	1.75	0.00	0.00
Appraisal Estimate-cumulative	6.23	12.59	21.84	31.67	40.35	47.85	53.62	58.25	60.00	60.00	60.00
Actual annual	0.00	0.63	0.68	8.04	4.76	6.01	8.00	9.20	4.03	2.89	2.57
Actual cumulative	0.00	0.63	1.31	9.34	14.10	20.12	28.11	37.32	41.35	44.24	46.81
Actual as % of Estimate	0.00	0.05	0.06	0.30	0.35	0.42	0.52	0.64	0.69	0.74	0.78
Date of Final Disbursement	31-Oct-97										

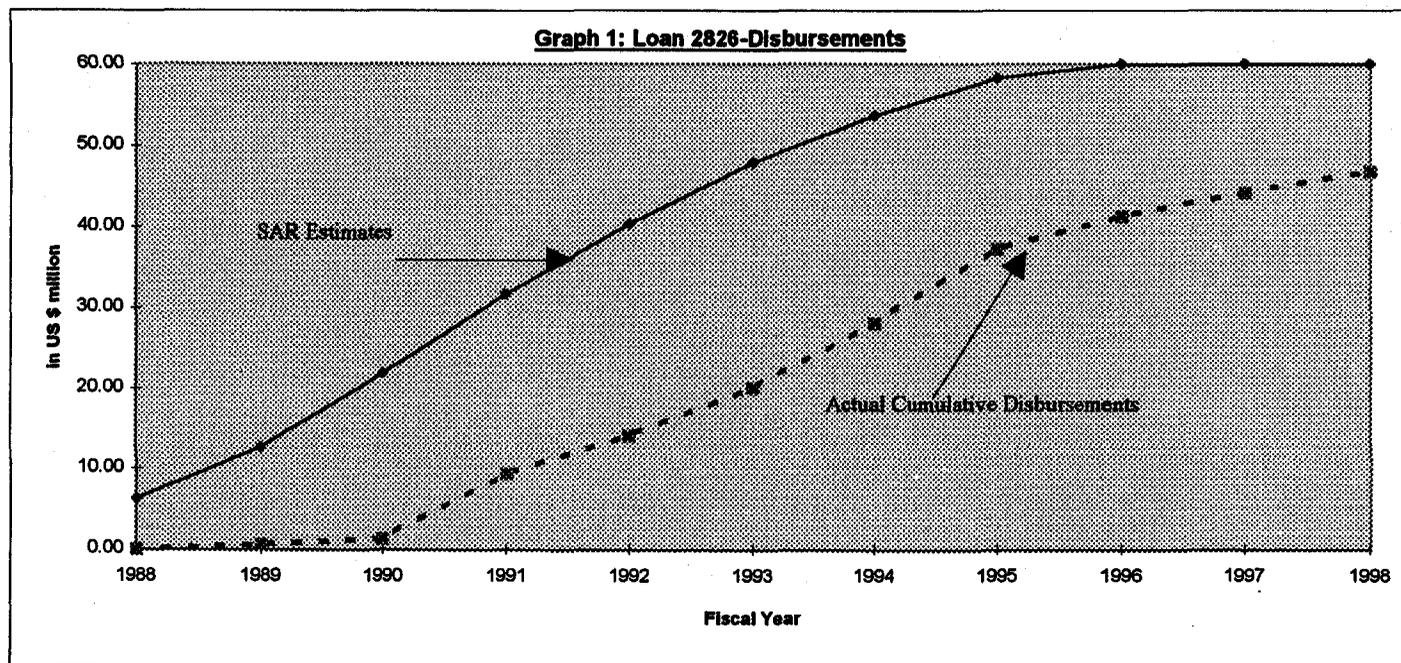


Table 5 A: Performance Indicators

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	
Production 000m3	165.42	171.87	173.03	174.38	185.71	193.80	182.98	178.93	174.35	175.76	
Consommations	110.55	111.17	119.61	114.68	130.63	130.34	124.65	121.83	121.70	120.58	
Rendement	66.83%	64.68%	69.13%	65.76%	70.34%	67.25%	68.12%	68.09%	68.50%	69.80%	
Tarifs moyens vente (DH/m3)				3.07	3.22	3.51	4.51	4.74	5.38	5.69	
Tarif d'achat eau (DH/m3)	1.40	1.55	1.58	1.76	1.80	1.92	5.42	2.70	3.08	3.17	
Redevances Assainissement DH/m3)	0.37	0.81	0.86	0.89	0.84	5.66	2.72	0.94	1.42	1.50	
Ratio d'exploitation 1 (avant amortiss.) %	45.00	4.61	47.89	69.19	67.26	69.30	60.69	53.70	44.62	53.04	
Ratio d'exploitation 2 (après amortiss.)%	71.81	36.54	50.09	72.98	76.78	82.05	84.7	93.47	73.45	90.04	
Ratio de liquidité	1.43	7.52	8.83	8.49	9.49	5.06	2.72	0.94	1.42	1.80	
Dettes à Long Terms/Capitaux Permanents %	N/A	N/A	1.98%	5.48%	10.28%	11.98%	34.12%	48.85%	48.28%	34.81%	
Autofinancement											
*avec contribution des abonnés	←-----				60.60%	-----→					
*sans contribution des abonnés	←-----				16.49%	-----→					
Service de la Dette	←-----				1.9	-----→					
Population desservie par Branchements privés	2,530,000			2,940,000			3,140,000				
Population totale desservie par assainissement	1,612,000			1,881,000			2,260,000				
Taux de raccordement	64%			64%			72%				
Longueur du Réseau d'Assainissement (en Km)	3,100			3,200			3,500				
Milieu Récepteur	Mer, Oueds			Mer, Oueds			Mer, Oueds				
Réutilisation des eaux usées non-traitées pour l'Agriculture	non			non			non				

Table 5 B-1: Financial Statements**Compte de Gestion: Assainissement (en millions de DH)**

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Total Produits	60.37	101.00	156.98	191.51	245.73	221.25	146.56	151.65	243.84	252.74
Variation des Stocks		-1.27	-3.42	-0.90	-4.00	-36.80	10.92	-14.59	4.24	25.32
Achats de Matieres et Fournitures	2.07	2.49	16.11	19.32	27.70	57.82	24.69	40.81	7.65	76.59
Services consommés	15.70	20.85	43.70	94.70	111.06	105.58	26.12	22.60	61.01	10.49
Autres frais d'exploitation										
Total charges Prod.	17.77	22.07	56.39	113.12	134.76	126.60	61.72	48.82	72.90	112.40
Valeur Ajoutée	42.60	78.93	100.59	78.39	110.97	94.65	84.84	102.83	170.95	140.34
Frais de Personnel	12.66	12.87	18.79	19.37	25.11	26.71	27.23	32.61	37.22	63.03
Impôts et Taxes	0.03	0.02	0.00	0.00	5.41	0.02	0.00	0.01	0.01	0.40
Frais financiers										
Resultat Brut d'Expl.	29.91	66.04	81.80	59.02	80.45	67.92	57.61	70.21	133.71	76.91
Dotations aux Amortissements	1.32	1.95	3.45	7.28	11.11	28.21	23.62	48.74	58.71	81.93
Dotations aux Provisions	11.57						11.58	11.57	11.58	11.58
Resultat Net Exploit.	17.02	64.09	78.35	51.74	69.34	39.71	22.41	9.90	63.42	-16.60
Charges Financières				6.92	5.92	9.86	20.51	54.98	49.59	58.22
P&P sur Ex. Ant. ou Exc.	-10.40	-3.30	-0.24	3.60	0.36	0.94	27.59	-10.73	18.05	-55.13
Resultat net Exercice	27.42	67.39	78.59	41.22	63.06	28.91	-25.69	-34.35	-4.22	-19.70
Impôts sur resultats						0.61	0.07	0.34	0.53	1.16
Resultat net après Impôts	27.42	67.39	78.59	41.22	63.06	28.30	-25.76	-34.69	-4.76	-20.86

Table 5 B-2: Financial Statements
Comptes de Bilan: Assainissement (en millions de DH)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Immobilisations	247.43	256.81	302.66	380.14	493.02	581.18	1105.98	1584.96	1454.29	1972.24
Valeurs d'Exploitation	0.00	1.27	4.68	5.58	9.58	46.39	35.47	50.06	45.82	20.50
Valeurs Realisables (Compte Clients)	78.38	103.09	177.06	223.98	317.52	314.60	161.73	105.22	233.80	223.54
Autres Valeurs Realisables							0.51	247.19	240.49	211.61
Total Valeurs realisables	78.38	104.36	181.74	229.56	327.10	360.99	197.71	157.47	279.88	244.30
Total Valeurs Real.& Dispo.	78.38	104.36	181.47	229.56	327.10	360.99	197.71	402.47	520.10	455.65
Total Actifs	325.81	361.17	484.13	609.70	820.12	942.17	1303.69	1987.49	1974.39	2427.89
Capital Social	233.80	233.56	233.32	233.08	233.08	244.65	256.22	256.22	256.22	256.22
Participations des Abonnes	9.62	18.93	47.90	103.31	194.10	215.81	274.48	296.06	335.15	941.34
Reports a Nouveau	27.52	94.81	173.40	214.62	277.68	305.97	280.22	245.53	240.77	219.91
Totaux Fonds Propres	270.94	347.30	454.62	551.01	704.86	766.43	810.92	797.81	832.14	1417.47
Dettes a Long Termes		0.00	9.20	31.65	80.80	104.36	420.01	762.03	776.75	757.01
Dettes à court terme	54.97	13.87	20.58	27.04	34.47	71.38	72.76	427.33	365.48	253.39
Total DCT .	54.97	13.87	20.58	27.04	34.47	71.38	72.76	427.33	365.48	253.39
Total Passifs	325.91	361.17	484.40	609.70	820.70	942.17	1303.69	1987.43	1974.43	2427.88

Table 5 B-3: Cash Flow-Assainissement- (en millions de DH)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	88/96
Resultats nets apres impots	27.42	67.39	78.59	41.22	63.06	28.30	-25.76	-34.69	-4.76	-20.86	192.50
Plus Dotations aux Amortissements	1.32	1.95	3.45	7.28	11.11	28.21	23.62	48.74	58.71	81.93	265.00
Plus charges Financieres	0.00	0.00	0.00	6.92	5.92	9.86	20.51	54.98	50.91	99.99	249.09
Generation interne de fonds	28.74	69.34	82.04	55.42	80.09	66.37	18.37	69.03	104.86	161.06	706.58
Variation des besoins en F.R.	78.38	25.98	77.38	47.82	97.54	33.89	-163.28	-395.08	184.52	76.51	-14.72
Service de la Dette	0.00	0.00	0.00	6.92	5.92	9.86	23.72	76.21	130.17	122.92	375.72
Participation des Abonnes	9.62	9.31	28.97	55.41	90.79	21.71	58.67	21.58	21.58	606.19	931.72
Generation nette de fonds	-40.02	52.67	33.63	56.09	67.42	44.33	216.60	409.48	-170.73	567.82	1277.31
Emprunts	54.97	-41.10	6.71	6.46	7.43	36.91	315.66	363.24	93.98	31.39	820.68
Subventions	232.48	-0.87	-1.74	-4.07	-3.83	-5.53	16.16		134.93	-28.20	106.85
Autres ressources (reintegrations)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	115.05	0.00	115.05
Total Fonds disponibles	247.43	10.70	38.60	58.48	71.02	75.71	548.42	772.72	173.23	571.01	2319.89
Nouveaux Investissements	247.43	24.71	73.97	46.92	93.54	104.80	548.42	527.72	178.01	599.88	2197.97
Autres Emplois	0.00	-14.01	-35.37	11.56	-22.52	-29.09					-89.43
Variation de tresorerie	0.00	0.00	0.00	0.00	0.00	0.00	0.00	245.00	-4.78	-28.88	211.35
								245.00	240.22	211.35	

**Implementation Completion Report
Kingdom of Morocco
Greater Casablanca Sewerage Project
(Loan 2826-MOR)**

Table 6: Studies Included in the Project

RAD: Technical assistance

<i>Study and Purpose</i>	<i>Status</i>	<i>Impact</i>
TA and training for RAD personnel by a sewerage specialist company to help RAD develop its sewerage management capacity	TA was provided to RAD by an operating company from 1987-1994, for 425 man-months, same as called for in SAR (420)	Helped RAD to manage project. Training component was weak (only 9 percent of total time). Informal training effect resulted from direct contact between experts and RAD personnel.
Study for Greater Casablanca Antipollution System Master Plan	3 of 5 tasks were achieved. Task relating to Master Plan itself was not achieved, and that relating to supporting measures was not undertaken. Project manager, on advice of TA company, rejected basic assumptions already accepted by previous mission. Contract canceled after 4 ½ years	Promoted thinking on waste water discharge elimination but did not resolve problem. Not only was study not finished (basic assumptions were rejected) but urban data were changed (mosque district and Mohammedia). RAD has assigned study to another consultant to determine discharge elimination options. Rest of study must be updated.
Study of priority section of Greater Casablanca Antipollution System	Study not completed. Contract canceled after 3 years, due to changes in mosque district and Mohammedia.	No positive impact.
Environmental impact study of Greater Casablanca Antipollution System	Not done	
Topographical mapping for sewer rehabilitation in low-lying areas of Mohammedia - Ain Sebaa - Bernoussa	Done	Improved knowledge of network in areas studied, but not followed by any major rehabilitation program. No provision for updating maps.
APS + DCE sector study for Hay Hassani Northwest-Route d'El Jadida-Dar Bouazza-East. Lot N°1.	Underway. Two first tasks completed. Third (last) task more than 90 percent complete.	Part of study was used for work in Sidi El Khadir, Dar Bouazza East and Oulfa sectors. Rest of study is in projects bank.
APS + DCE sector study for Sidi Moumen East - Mellil North. Lot N° 2.	Completed.	Minor portion of study was used for works at Sidi Barnoussi. Rest of study is in projects bank.
APS + DCE sector study for Ain Harrouda. Lot N° 3.	Completed.	Part of study used for Ain Harrouda transfer project. Rest of study is in projects bank.
APS + DCE sector study for Mohammedia - Ben Yakhlef. Lot N° 4	Underway. Pending preparation of final bidding documents.	Projects bank.
APS + DEC sector study for Dar Bouazza Coastal sector. Lot N° 5.	Study suspended at provisional APS stage	No positive impact
APS + DCE study of Bouskra-Oueled Salah sector. Lot N° 6.	Study suspended at provisional APS stage.	No positive impact.

Table 6: Continued

Regies

RED - Sewerage master plan study for Rabat	Completed	Sewerage works planning and management document in hand. Some rehabilitation work has been based on study.
RAMSA - Sewerage master plan study for Agadir	Completed	Sewerage service transferred from municipality to <i>Régie</i> in Jan. 1992. Sewerage works about to begin. Sewerage works planning and management document in hand.
RAID - Sewerage master plan study for Tangier	Completed	Sewerage works planning and management document in hand. Sewerage service will soon be transferred to the <i>Régie</i> .
RADEEC - Sewerage master plan study for Settat	Completed	Study underway to prepare detailed design, financed outside loan 2826-MOR.
RADEEN - Sewerage master plan study for Greater Nador	Completed	Sewerage works planning and management document in hand
RADEEMA - Sewerage master plan study for Marrakech	Completed	Study underway to prepare bidding documents for a sewerage project. Loan negotiated with EIB. Sewerage works planning and management document in hand. Sewerage service will soon be transferred to the <i>Régie</i> .
RADEM - Sewerage master plan study for Meknes	Completed	Sewerage works planning and management document in hand. Sewerage service will soon be transferred to the <i>Régie</i> .
RADEEF - Sewerage master plan study for Greater Fes.	Completed: Institutional study and cost recovery component not accepted.	Work for one sewer section is at implementation study stage, for financing under IBRD Second Project and CFD. Sewerage works planning and management document in hand. Sewerage service was transferred to the <i>Régie</i> in Jan. 1996.
RAMSA: Consultant services to evaluate waste water treatment proposals for Agadir	Completed	Study provided a further opinion on the question.
RAD: Consultant services to evaluate waste water treatment proposals for Casablanca	Completed	Study provided a further opinion on the question

Task A: Research and critical analysis of existing data

Task B: Identification of variants.

Task C: Comparison of variants.

Task D: Master Plan

Task E: Preliminary design study of priority section.

Task F: Institutional and cost recovery study.

Table 7 : Project Costs and Financing
(in US \$ millions)

	<i>Appraisal estimate</i>			<i>Actual</i>			Completion Rates	Bank Loan
	<i>Local</i>	<i>Foreign</i>	<i>Total</i>	<i>Local</i>	<i>Foreign</i>	<i>Total</i>		
Greater Casablanca	<u>78.12</u>	<u>26.28</u>	<u>104.40</u>	<u>57.54</u>	<u>23.11</u>	<u>80.65</u>	<u>77.25%</u>	<u>37.21</u>
I - Replacement of Sewers & Pumping Stations (RAD)	67.14	16.64	83.78	52.03	3.70	55.73	66.52%	28.05
II - Supply of Equipment (RAD)	4.57	3.88	8.45	4.21	5.23	9.44	111.72%	-0.99
III - Technical Assistance	6.41	5.76	12.17	1.30	14.18	15.48	127.20%	-3.31
Régies Sewerage Studies	<u>5.39</u>	<u>7.12</u>	<u>12.51</u>	<u>0.75</u>	<u>9.70</u>	<u>10.45</u>	<u>0.84</u>	<u>9.70</u>
RED	1.51	1.95	3.46	0.06	1.83	1.89	54.62%	1.83
RAMSA	0.58	0.77	1.35	0.03	1.17	1.20	88.89%	1.17
RAID	0.63	0.83	1.46	0.04	1.90	1.94	132.88%	1.90
RADEEC	0.28	0.39	0.67	0.06	0.57	0.63	94.03%	0.57
RADEEN	0.28	0.39	0.67	0.14	0.60	0.74	110.45%	0.60
RADEEMA	0.63	0.84	1.47	0.04	0.98	1.02	69.39%	0.98
RADEEM	0.66	0.87	1.53	0.08	1.10	1.18	77.12%	1.10
RADEEF	0.82	1.08	1.90	0.30	1.55	1.85	97.37%	1.55
Total	83.51	33.40	116.91	58.29	32.810	91.10	77.92%	46.90

**Implementation Completion Report
Kingdom of Morocco
Greater Casablanca Sewerage Project
(Loan 2826-MOR)**

Table 8: Status of Legal Covenants

Loan Reference	Covenant type	Present Status	Fulfillment Date	Description	Comments
Loan Agreement II b	Financial	NC	N/A	Special Account to be at Central Bank.	GOM responsible for S.A
L.A IV (b.ii)	Audit/Accounts	CD	N/A	Submission of audit reports not later than six months after the end of each fiscal year.	Ministry of Interior, Régies responsible for audit reports
L.A. Sc 1(b) (i)	Implementation Operational	C	03/88 09/88 1989 1994	Agreement between GOM and every Régie involved in the project.	GOM & Régies were responsible for such an agreement. However subject to delays.
L.A. Sc 1 (b) (ii)	Financial	NC	N/A	Loan agreements to be signed between Régies and FEC	
L.A. Section 3.03	Implementation Operational	CD	04/89 06/89,09/89 11/89,01/90 01/91,02/94 04/95.	Recruiting of Consultants for project and feasibility studies	Delays in studies and selection of consultants
L.A Section 3.03 & P.A section 2.03	Implementation Operational	CD	06/30/1990. 05/93 07/95	Studies included in section B of L.A are to be completed and sent to the Bank including all recommendations	Régies were responsible for studies. Delays occurred.
L.A Section 3.03	Implementation Operational	C	01/91	The Borrower shall implement all recommendations (of studies)as mentioned in L.A Sc 3.03 & PA Sc 2.03	Implementation of management and accounting study recommendations

Table 8: Continued

L.A Section 4.02	Financial account/audit	C	covenant fulfilled yearly	The Borrower must make sure that municipalities include, in their accounts and budgets, the debt service of the loan	Régies provided counterpart funds and bear the debt service of the loan.
L.A Section 4.03	Financial	CD	Complied with in 1988 and 1993	Payables dues to RAD by institutions and Public enterprises must be settled by 04/30/88	delays in compliance, new procedures implemented. C.L arrears are building up
L.A Section 4.03	Financial	CD, CP.		Public Enterprises must pay RAD's sewerage services within 90 days	Complied with
P.A Section 2.04	Management and operations	CD	Quarterly	RAD shall provide the Bank as well as the GOM, a progress report on project operations (quarterly).	Complied with
P.A IV (b) (ii)	Financial review account/audit	CD	Yearly	Submission of audit reports not later than six months after the end of each fiscal year.	RAD and GOM responsibility. Compliance was delayed. Ad hoc audit unit created. Audit reports up to date. Reserve opinion
P.A Section 4.02	Financial performance	C	Yearly	Internal cash generation ratio should equal or greater than 40 percent,	Complied with

Covenant types that apply:

1. Accounts/audits
2. Financial performance
3. Flow and utilization of project funds
4. Counterpart funding
5. Management aspects of the project or the executing agency
9. Monitoring, review and reporting
10. Project implementation not covered by categories 1-9
11. Sectoral or cross sectoral budgetary or other resource allocation
12. sectoral or cross sectoral policy/regulatory/institutional action
13. Other.

Status:

- C = Complied with
- CD = Compliance after delay
- CP = Complied with partially
- NC = Not complied with

**Implementation Completion Report
Kingdom of Morocco
Greater Casablanca Sewerage Project
(Loan 2826-MOR)**

Table 9: Bank Resources: Staff Input

Stage of Project Cycle	Estimated weeks	Actual weeks	Estimated US \$	Actual US \$
Through Appraisal	N/A	40	N/A	37,600.00
Appraisal-Board	N/A	33.4	N/A	79,900.00
Board Effectiveness	N/A	7.1	N/A	29,800.00
Supervision	N/A	137.5	N/A	469,000.00
Completion	6.0	6.0	7,900.00	6,900.00
Total	236.4	224	674,800.00	623,200.00

**Implementation Completion Report
Kingdom of Morocco
Greater Casablanca Sewerage Project
(Loan 2826-MOR)**

Table 10: Bank Resources -- Missions

Stage of Project Cycle	Fiscal Year	No. of Persons	Staff-Weeks in Field	Specialized Staff Skills Represented
Through Appraisal	1985-87	15	53.9	Financial Analyst, Economist, Sanitary Engineer, Procurement Specialist, Financial Specialist, Consultants,
Appraisal through Board Approval	1987	9.	48.9	Procurement Specialist, Financial Specialist Economist, Financial Analyst, Consultants.
Supervision	1987	2	0.9	Consultants, Project TM Procurement Specialist
	1987-88	6	24.1	Financial Analyst, Consultants, Procurement Specialist, Economist, Sanitary Engineer.
	1989	3	18.5	Financial Analyst (TM), Procurement Specialist, Sanitary Engineer,
	1990	3	11.2	Procurement Specialist, Financial Specialist, Sanitary Engineer.
	1991	2	16.6	Task Manager (Financial Analyst). Procurement Specialist
	1992	6	15.6	Financial Analyst (TM), Sanitary Engineer, Procurement Specialist Consultants
	1993	3	10.0	Financial Analyst (TM), Sanitary Engineer, Consultant
	1994	3	8.9	Financial Analyst (TM), Sanitary Engineer, Procurement Specialist
	1995	2	9.7	Financial Analyst (TM), Sanitary Engineer,
	1996	3	7.3	Financial Analyst (TM), Sanitary Engineer, Procurement Specialist
	1997	2	14.7	Financial Analyst (TM), Sanitary Engineer,
Completion/ Closing	1998	5	2.7	Financial Analyst (TM), Sanitary Engineer, Consultants

ANNEX: Borrower's Contribution to the Report

INTRODUCTION

Face à l'urbanisation et le développement industriel rapides que connaissent certaines agglomérations, les autorités gouvernementales, en association avec les collectivités locales, ont mené une réflexion tendant à définir une politique globale et cohérente en matière d'assainissement liquide au Maroc, l'objectif étant de doter ce secteur de moyens techniques et de ressources financières nécessaires à son développement et à sa bonne gestion. Ces tendances ont été confirmées dans la déclaration de politique générale adressée par le Gouvernement Marocain à la Banque Mondiale en 1987 dans le cadre des négociations relatives au financement du projet d'assainissement liquide: Prêt 2826 MOR.

1°/ DESCRIPTION DU PROJET

Ce projet comprend deux parties :

Partie A : RAD

Renouvellement des égouts et des stations de pompage:

Renouvellement d'environ 60 Km d'égout primaire, secondaire et tertiaire et de 3 stations de pompage à Mohammedia, Ain Sebai et dans la zone industrielle Est de Casablanca.

Réhabilitation des réseaux d'égout:

Réhabilitation et réparation d'environ 1 Km des deux grands collecteurs dans le centre de la ville de Casablanca.

Inspection, nettoyage et recollement d'environ 1.000 Km de réseaux d'égout et d'ouvrages annexes dans le Grand Casablanca.

Construction de réseaux d'égout:

Construction d'environ 410 Km de nouveaux égouts et de déversoirs d'orage.

Acquisition de matériel et d'équipement:

Acquisition de matériel et d'équipement d'exploitation et d'entretien, de matériel didactique et de véhicules et engin requis par le service d'assainissement de la RAD.

Assistance Technique:

Exécution d'un programme d'assistance technique et de formation professionnelle pour aider à développer les compétences de la RAD dans le domaine de la gestion de l'assainissement.

Réalisation d'études de faisabilité d'assainissement.

Partie B : Régies

Préparation d'études de faisabilité et de plans directeurs d'assainissement, de projets d'exécution, de documents d'appels d'offres et d'études financières, institutionnelles et de formations professionnelles pour les agglomérations de Fès, Marrakech, Méknes, Rabat, Tanger, Agadir, Settat et Nador.

2°/ OBJECTIFS DU PROJET

Ce projet a pour objectifs:

Eviter une détérioration des réseaux d'égouts existants dans la région du grand Casablanca.

Répondre progressivement à l'augmentation de la demande des particuliers et des industriels pour la collecte des eaux usées et pluviales.

Identifier la solution optimale du point de vue technique, économique et financier, l'interception, l'épuration, le rejet et la réutilisation éventuelle des eaux en vue de réduire l'effet induit de pollution sur l'environnement.

Prévoir une exploitation et un entretien efficace des installations d'assainissement ainsi que la normalisation de la conception et de l'exécution des travaux y afférents.

Promouvoir la création et le développement de structures institutionnelles, financières et techniques appropriées pour gérer les services d'assainissement dans les centres urbains.

3°/ ENTREE EN VIGUEUR ET DEMARRAGE DU PROJET

SIGNATURE DU PRET

La signature de l'accord de prêt entre le Gouvernement Marocain et la Banque Mondiale a eu lieu le 27 Juillet 1987.

CONTRATS SUBSIDIAIRES

Les contrats subsidiaires, entre le Gouvernement et chacune des régies bénéficiaire du prêt, ont été signés au courant du mois de Septembre 1988.

ENTREE EN VIGUEUR

L'accord de prêt est entré en vigueur le 14 Octobre 1988.

DEMARRAGE DU PROJET

Le projet a démarré à partir du mois de Juin 1989 avec le commencement des études des schémas directeurs d'assainissement des villes d'Agadir et Settat. Les dates de démarrage ainsi que les délais d'exécution pour chacune des régies sont comme suit:

REGIE	DEMARRAGE	DELAIS	DUREE
RADEEM	14/04/1995	15 mois	17 mois
RADEEC	26/06/1989	12 mois	47 mois
RAMSA	26/06/1989	12 mois	26 mois
RAID	29/09/1989	18 mois	30 mois
RADEEMA	01/11/1989	18 mois	26 mois
RED	15/01/1990	22 mois	56 mois
RADEEN	01/02/1990	14 mois	41 mois
RADEEF	14/01/1991	20 mois	30 mois

Délais= délais contractuel

Durée= durée réelle d'exécution

Cependant, le calendrier d'exécution des projets a varié d'une régie à une autre en fonction de son organisation interne d'une part et de son environnement externe d'autre part.

Concernant la RADEEF, le groupement BALFOUR - MAUNSELL - MAGHREB PROJET n'a pas terminé l'étude du schéma directeur d'assainissement. En effet, elle a été reprise par SEM-ISKANE en date du 1er septembre 1994 pour un délai contractuel de huit mois.

S'agissant de la RED, l'étude du plan directeur qui a été confiée au groupement LAVALIN INTERNATIONAL - MAROC DEVELOPPEMENT - EQUITER a connu plusieurs arrêts à cause du non respect du cahier des charges.

Pour la RADEEM, le retard enregistré dans le démarrage des études est dû essentiellement au retard de la municipalité pour confier les études à la RADEEM.

4°/ COUT DU PROJET

REGIE	MONTANT DU PROJET		TOTAL EN DIRHAMS
	DIRHAMS	DEVISES	
RAID	5.480.086,00	40.225.178,4BEF	16.246.473,00
RED	6.643.914,78	1.315.990,25 \$C	15.786.054,00
RADEEF	6.061.569,99	448.400,57 £S 382.673,16 FF	13.905.657,14
RAMSA	6.920.789,36	986.078,29 FH 6.631,90 \$US	11.318.940,04
RADEEM	7.651.842,34	899.453,10 FS	14.107.499,04
RADEEMA	3.986.980,02	3.082.178,59 FF	8.842.212,12
RADEEN	3.759.004,00	246.794,23 FS	5.091.695,00
RADEEC	2.282.833,96	429.831,21 FS	4.989.826,99

Ces coûts sont hors taxes et droits de douane.

BEF: Franc Belge

\$C: Dollar Canadien

£S: Livre Sterling

FF: Franc Français

FH: Florin Hollandais

FS: Franc Suisse

\$US: Dollars US

5°/ SITUATION DES DECAISSEMENTS

Les décaissements cumulés au 31 Juillet 1997 ont atteint un montant de 9.598.209,44 \$US, soit 86,47% du montant alloué. La situation par régie est comme suit:

REGIE	MONTANT ALLOUE	DECAISSEMENT	RELIQUAT	%
RAID	2.600.000,00	1.876.438,29	765.562,11	72
RED	2.530.000,00	1.838.917,61	691.082,39	73
RADEEF	1.550.000,00	1.547.849,28	2.150,72	100
RAMSA	1.140.000,00	1.121.670,53	18.329,47	98
RADEEM	1.110.000,00	1.104.342,93	5.657,07	99
RADEEMA	1.000.000,00	982.293,37	17.706,63	98
RADEEN	600.000,00	599.023,78	976,22	100
RADEEC	570.000,00	569.674,05	325,95	100
TOTAL	11.100.000,00	9.598.209,44	1.501.790,56	86

Il est à signaler que le montant non affecté s'élève à 170.000,00 \$ US.

6°/ SOURCES DE FINANCEMENT

Les études des schémas directeurs ont été financées principalement par le biais du prêt 2826 MOR. Cependant, pour certaines régies, l'enveloppe qui leur a été allouée a été insuffisante par rapport au coût ce qui a ramené les régies à faire appel à leur financement propre. A noter également que la RADEEM a épuisé sur le prêt 3664 MOR relatif au SPEP pour compléter l'étude du schéma directeur d'assainissement

EN DH

REGIE	COUT DU PROJET HT	PART BIRD	AUTOFINANCEMENT
RAID	16.246.473,00	16.246.473,00	0,00
RED	15.786.054,00	15.786.054,00	0,00
RADEEF	13.905.657,14	7.844.087,15	6.061.569,99
RAMSA	11.318.940,04	9.350.735,05	1.968.204,99
RADEEM	14.107.499,04	9.516.646,41	4.590.852,63
RADEEMA	8.842.212,12	8.842.212,12	0,00
RADEEN	5.091.695,00	5.091.695,00	0,00
RADEEC	4.989.826,99	4.989.826,99	0,00

7°/ TRANSFERT DE LA GESTION D'ASSAINISSEMENT A LA REGIE

A l'exception de la RAD de Casablanca, de la RAMSA d'Agadir et de la RADEEF de FES qui assurent actuellement la gestion du réseau d'assainissement, les autres régies n'ont pas encore pris en charge ce service dans les villes concernées.

Néanmoins, pour la RADEEMA de Marrakech, la RAID de Tanger et la RADEEM de Meknes, les cahiers des charges ont été approuvés par les communes concernées et sont actuellement en cours d'approbation par le Ministère de l'Intérieur.

Pour la RED de Rabat-Salé, 15 communes ont délibéré pour le transfert de l'assainissement à la régie et pour les 4 autres communes la décision a été reportée.

S'agissant de la RADEEC de Settat, la commune a donné son accord de principe pour le transfert de la gestion d'assainissement à la régie à condition de procéder à l'actualisation des études institutionnelles, organisationnelles et tarifaires.

8°/ IMPACT SUR L'ENVIRONNEMENT

Les études des schémas directeurs d'assainissement ont porté sur:

- la protection de la ville contre les inondations;
- l'amélioration des conditions sanitaires des citoyens;
- la protection de la nappe phréatique;
- la protection des sites touristiques;
- la dépollution des oueds;
- la réutilisation des eaux épurées.

9°/ RELATIONS AVEC LA BANQUE MONDIALE

Les relations avec la BIRD ont permis, durant les différentes phases du projet (identification, évaluation et exécution), d'établir une certaine collaboration entre les différents intervenants dans le secteur. En outre, les régies ont bénéficié de l'assistance de la BIRD dans les domaines techniques et financiers par le renforcement des structures institutionnelles ce qui va leur permettre de gérer leur programme de développement dans de bonnes conditions d'économie et d'efficacité et d'atteindre les objectifs fixés au niveau des performances techniques, administratives et financières.

Cependant, le coût des charges financières reste excessif en ce qui concerne les commissions d'engagement et les taux d'intérêt. En effet les commissions d'engagement sont calculées à partir du montant global du prêt non décaissé, alors que des prévisions annuelles de décaissement sont établies avant les négociations et pourrait être la base du calcul de ces commissions. Il est de même pour le coût des intérêts financiers qui ne sont pas assortis de bonification malgré le caractère social du projet.

En outre la procédure de décaissement est lourde puisqu'elle fait appel à plusieurs intervenants (Ministère des Finances, Bank Almaghrib, Trésorerie Générale ... etc) ce qui entraîne des surcoûts.

RAPPORT D'ACHEVEMENT
PRET 2826 MOR
NOTE DE SYNTHESE

I/ PRESENTATION DU PROJET:

Le prêt 2826 MOR octroyé par la B.I.R.D à la R.A.D a pour objet de financer les rubriques suivantes:

- Remplacement des égouts et stations de pompage:
- Réhabilitation des égouts;
- Construction de réseaux d'égouts
- Fourniture de matériel;
- Services de consultants .

Le coût total de ces projets était évalué à: 116,91 MDH .

II/ EXECUTION DU PROJET

Le projet devait s'étaler de 1987 à 1995. Sa réalisation a accusé beaucoup de retard au début pour des raisons principalement d'ordre administratif (lancement des appels d'offres, approbations des dossiers par la BIRD, délai de signature des marchés par le contrôleur financier...).

Nous passons en revue, ci-après, les différentes composantes du projet:

- **Remplacement des égouts et des stations de pompages:**

L'avant projet sommaire relatif à la réhabilitation des zones basses d'Ain Sebaâ , Sidi Bernoussi et Mohammedia a été achevé.

Par contre, l'avant projet détaillé et le dossier de consultation des entreprises nécessaires au commencement des travaux, sont tributaires des travaux topographiques, qui ont accusé un retard considérable , ce qui a entravé le lancement des appels d'offres relatifs aux travaux de réhabilitation.

- **Réhabilitation d'égouts:**

* La réhabilitation et la réparation qui d'environ un Kilomètre de deux grands collecteurs dans le centre ville de Casablanca n'a pas été réalisé.

- * Le marché relatif à l'inspection , le nettoyage et les levé de cartes d'environ 1000 Km de réseau d'égout dans le Grand Casablanca n'a pas été adjugé.
- * Le projet concernant la réhabilitation d'environ 200 Km d'égouts secondaires et tertiaires a été abandonné à cause de l'acquisition des hydrocureuses et du matériel d'exploitation nécessaire à cette opération.
- Aménagement de réseaux d'égouts:

Dans le cadre de cette rubrique, la Rad a entamé des travaux importants relatifs à la fourniture et construction de nouveaux collecteurs et des ouvrages annexes dans les secteurs suivants:

1. Travaux achevés:

- centre de Médiouna
- centre de Tit Mellil
- centre de Sidi Maârouf
- piste Taddert à Ain Chock
- secteur de Sidi Moumen : Collecteur U14 Fet U141F
- secteur Alia Mohammedia : collecteur G
- secteur Ain Chock sud: Collecteur 201B
- Marché cadre: Préfecture Casa Anfa
- Marché cadre: Préfecture Ain Chock Hay Hassani
- Marché cadre : Préfecture Ben M'sick Sidi Othmane
- Marché cadre: Préfecture Ain Sebaâ- Hay Mohammadi
- Marché cadre: Préfecture Mohammedia

2. Travaux en phase finale:

- Secteur Ain Diab
- Secteur Sidi El khadir
- Secteur Oulfa
- Secteur Sidi El bernoussi Est
- Secteur Ain Harrouda
- Antipollution de la ville de Mohammedia .

Les projets de cette composante sont accomplis.

- Fournitures de matériel:

Dans cette composante du prêt, la RAD a pu acquérir du matériel d'exploitation et des véhicules pour renforcer les moyens techniques du département assainissement:

1. Véhicules de transport et d'entretien:

- 8 camions Bennes
- 25 fourgons de transport
- 6 véhicules Pick up
- 15 hydrocureuses
- 5 cureuses
- 6 camions multibennes
- 2 camions citernes

2. Fournitures de tyaux de fonte:

- Tuyaux CAO de diamètre 300mm à 1000mm
- Tuyaux Amiante ciment de diamètre 150mm à 300mm
- Pièces en fonte

● Services:

- **Prestation de services d'assistance technique et de formation:**

La RAD a passé une convention avec la Lyonnaise des Eaux pour aider la Régie à développer sa capacité de gestion de l'assainissement et la mise en place d'une structure administrative et technique du département assainissement.

Cette convention a duré sept ans.

- **Réalisation d'étude de faisabilité de l'assainissement :**

La RAD a fait appel à un certain nombre de consultants pour la réalisation des études d'exécution et de préparation des dossiers de consultation des entreprises:

- Etude du schéma directeur du système anti pollution du grand casablanca
- Etude de la tranche prioritaire du système antipollution
- Etude d'assainissement du secteur Hay Hassani Nord et Dar Bouazza est (1500ha)
- Etude d'assainissement du secteur Sidi Moumen est - Tit Mellil nord (600ha)
- Etude d'assainissement Ain Harrouda (1200ha)
- Etude d'assainissement Mohammedia est - Beni Yakhlef (800ha)
- Etude d'assainissement zones côtières Dar Bouazza (900ha)
- Etude d'assainissement du secteur Bouskoura Ouled Saleh (600ha)

III/ FINANCEMENT DU PROJET:

Le financement du projet R.A.D devait être assuré par le prêt BIRD 2826 MOR à concurrence de 45.000.000 \$ U.S. une allocation supplémentaire de 3.730.000,00\$ a porté ce montant à 48.730.000,00\$.

Le contrat de prêt global a été signé le 27 Juillet 1987 et le contrat subsidiaire le 31 Mai 1988.
La clôture du prêt arrêtée initialement au 30 Juin 1995 a été reportée successivement au 30 Juin 1996 et 30 juin 1997.

* **TAUX DE FINANCEMENT**

les taux de financement varient entre 35% et 100% en fonction des composantes et de la monnaie du projet.

Des modifications de ces taux ont été accordées aux Régies :

- * service de consultant : 100% H.T au lieu de 65%
- * travaux prévus à la partie A (b) du projet: 60% au lieu de 35% . ce taux a été porté en 1997 à 70%.
- * fournitures part locale: 80 % au lieu de 35% en 1997.

* **MODALITES DE REMBOURSEMENT:**

Durée: 14 ans

Taux d'intérêt: variable

Commissions d'engagement: 0,75 %

Délai de grâce: 5 ans

* **FINANCEMENT REALISE:**

Le montant décaissé au 30 juin 1997 est de 34.765.177,19 \$.

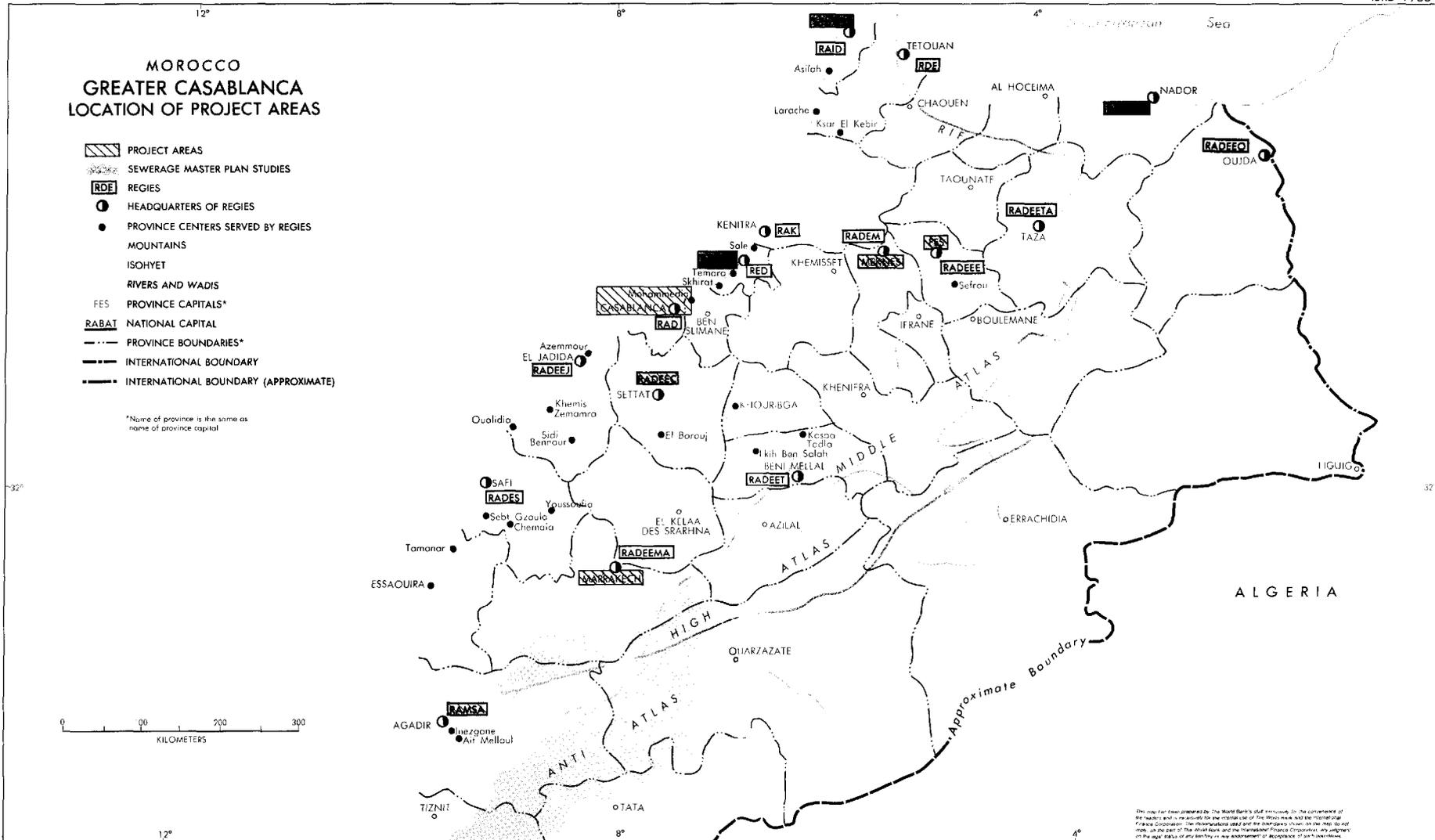
Ce montant peut évoluer jusqu'au 30 Octobre 1997 .

MAP SECTION

MOROCCO GREATER CASABLANCA LOCATION OF PROJECT AREAS

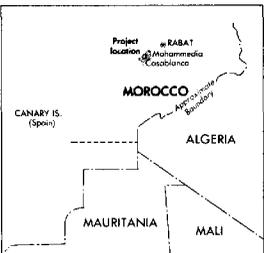
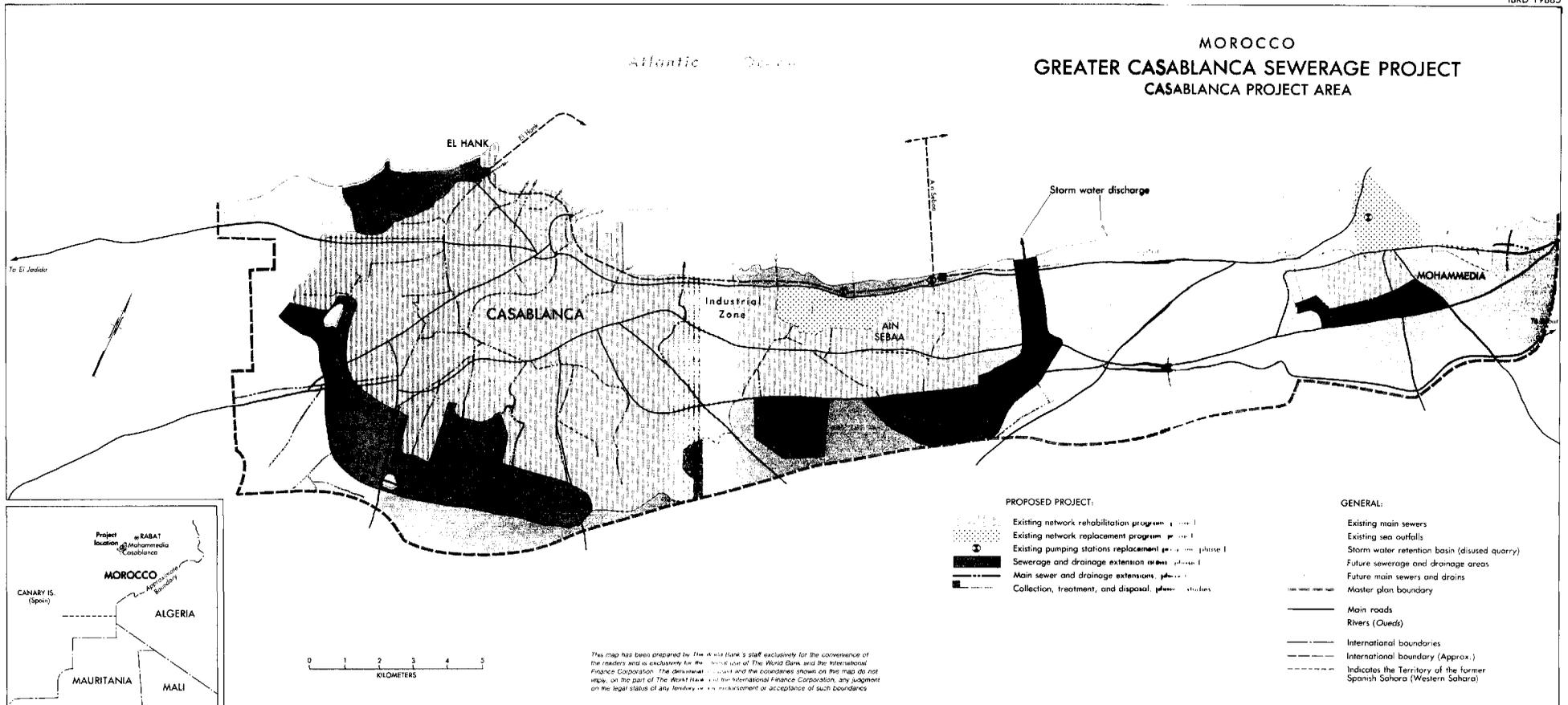
-  PROJECT AREAS
-  SEWERAGE MASTER PLAN STUDIES
-  REGIES
-  HEADQUARTERS OF REGIES
-  PROVINCE CENTERS SERVED BY REGIES
-  MOUNTAINS
-  ISOHYET
-  RIVERS AND WADIS
-  PROVINCE CAPITALS*
-  NATIONAL CAPITAL
-  PROVINCE BOUNDARIES*
-  INTERNATIONAL BOUNDARY
-  INTERNATIONAL BOUNDARY (APPROXIMATE)

*Name of province is the same as name of province capital



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MOROCCO
GREATER CASABLANCA SEWERAGE PROJECT
 CASABLANCA PROJECT AREA



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PROPOSED PROJECT:

- Existing network rehabilitation program (phase I)
- Existing network replacement program (phase I)
- Existing pumping stations replacement program (phase I)
- Sewerage and drainage extension areas (phase I)
- Main sewer and drainage extensions (phase I)
- Collection, treatment, and disposal plants (phase I)

GENERAL:

- Existing main sewers
- Existing sea outfalls
- Storm water retention basin (disused quarry)
- Future sewerage and drainage areas
- Future main sewers and drains
- Master plan boundary
- Main roads
- Rivers (Oueds)
- International boundaries
- International boundary (Approx.)
- Indicates the Territory of the former Spanish Sahara (Western Sahara)