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COMBINED PROJECT COMPLETION REPORT

SYRIAN ARAB REPUBLIC

FIRST AND SECOND DAMASCUS WATER SUPPLY PROJECT

CREDIT 401-SYR AND LOAN 1241-SYR

December 14, 1983

Water Supply and Sewerage Division
Europe, Middle East and North Africa Regional Office

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SYRIAN ARAB REPUBLIC

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COMBINED PROJECT COMPLETION REPORT

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MAP - First and Second Damascus Water Supply Projects

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PREFACE

This is the combined Completion Report of the First and Second Damascus Water Supply Projects for which Credit 401-SYR and Loan 1241-SYR were approved in May 1973 and April 1976 for US\$15 million and US\$35 million respectively. These became effective in February 1974 and January 1977 and were closed in December 1980 and May 1983 respectively when US\$0.1 million and US\$3.1 million were cancelled.

The Project Completion Report was prepared by the Europe, Middle East and North Africa Region Office on the basis of the findings of a project completion mission which visited Syria in April 1981, and a review of the President's Report, the Development Credit, Loan and Project Agreements and other reports related to project implementation.

Following normal procedures, a draft copy of the report was sent to the Borrower, the Executing Agency (Etablissement Public des Eaux de Damas (FIGEH) and the Arab Fund for Economic and Social Development for their comments. Comments were received only from FIGEH, which is in concurrence with the findings of the PCR, and they are reproduced in the Appendix to the report.

The above projects have not been subjected to an audit by the Operations Evaluation Department.

SYRIAN ARAB REPUBLIC
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BASIC DATA SHEET

KEY PROJECT DATA		
Item	Appraisal Estimate	Actual
<u>Credit 401-SYR</u>		
Total Project Cost (US\$ million)	32.6	-
Cost of Revised Project (US\$ million)	27.7	25.4
Overrun %	-	(8.3)
Credit Amount (US\$ million)	15.0	15.0
Disbursed	15.0	14.9
Cancelled	-	0.1
Date of Physical Completion	12/77	06/78
Proportion Completed by above Date (%)	80	100
Time Overrun (%)	-	13
Financial Performance	mixed	
Institutional Performance	good	
<u>Loan 1241-SYR</u>		
Total Project Cost (US\$ million)	136.9	125.8
Overrun %	-	(8.1)
Loan Amount (US\$ million)	35.0	35.0
- Disbursed	35.0	31.9
- Cancelled	-	3.1
Date of Physical Completion	12/79	04/80
Proportion Completed by above Date (%)	85	100
Time Overrun (%)	-	10
Financial Performance	mixed	
Institutional Performance	good	

BASIC DATA SHEET (Cont'd.)

Fiscal Year	CUMULATIVE DISBURSEMENTS (US\$ million)			
	Credit 401-SYR		Loan 1241-SYR	
	Appraisal Estimate	Actual	Appraisal Estimate	Actual
1974	0.4	-	-	-
1975	4.2	-	-	-
1976	9.0	1.0	2.0	-
1977	13.1	7.5	7.4	8.4
1978	15.0	12.7	14.9	15.1
1979	-	13.9	23.0	21.8
1980	-	14.6	33.6	27.1
1981	-	14.9 ^{1/}	35.0	27.8
1982	-	-	-	31.2
1983	-	-	-	31.9 ^{2/}

OTHER PROJECT DATA			
Item		Appraisal Estimate	Actual
<u>Credit 401-SYR</u>			
First Mention in Files		-	12/70
Government Application		-	08/71
Negotiations		-	04/73
Board Approval		-	05/03/73
Credit Agreement Date		-	06/22/73
Effectiveness Date		12/31/73	02/25/74
Closing Date		12/31/78	12/31/80
Borrower		Syrian Arab Republic	
Executing Agency		Etablissement Public des Eaux de Fiegh	
Follow-on Project		Second Damascus Water Supply (Loan 1241-SYR)	

^{1/} US\$0.1 million cancelled December 31, 1980

^{2/} US\$3.2 million cancelled March 31, 1983

BASIC DATA SHEET (Cont'd.)

Loan 1241-SYR

First Mention in Files	-	05/75
Government Application	-	06/75
Negotiations	-	03/76
Board Approval	-	04/13/76
Loan Agreement Date	-	06/09/76
Effectiveness Date	09/08/76	01/31/77
Closing Date	12/31/80	05/31/83
Borrower	Syrian Arab Republic	
Executing Agency	Etablissement Public des Eaux de Fiegh	

BASIC DATA SHEET (Cont'd.)

<u>MISSION DATA</u>					
Item	Month/Year	No. of Weeks	No. of Persons	Manweeks	Date of Report
Identification	08/71	2	1	2	12/01/71
Preappraisal I <u>a/</u>	03/72	2	4	8	05/08/72
Preappraisal II <u>b/</u>	09/72	1	2	2	10/26/72
Appraisal I <u>b/</u>	11/72	3	3 (1 P/T)	7	12/26/72
Supervision I	06/73	1	1	1	06/26/73
Supervision II	03/74	1	4	4	03/26/74
Supervision III	10/74	1	2	2	10/21/74
Supervision IV <u>c/</u>	06/75	1	3	3	06/27/75
Supervision V + Appraisal II	09/75	3	5 <u>f/</u>	15	09/27/75
Supervision VI <u>d/</u>	04/76	1	2	2	05/05/76
Supervision VII <u>e/</u>	12/76	2	2	4	12/15/76
Supervision VIII	06/77	1	2	2	06/28/77
Supervision IX	09/77	1	2	2	10/11/77
Supervision X	05/78	2	3	6	05/19/78
Supervision XI <u>g/</u>	10/78	1	2	2	11/10/78
Supervision XII	02/80	1	2	2	03/13/80
Supervision XIII	10/80	1	2	2	11/03/80
Supervision XIV	09/81	1	1	1	10/16/81
Supervision XV	01/83	1	1	1	02/25/83
Total				68	

EXCHANGE RATES

Currency Unit	Credit 401-SYR Loan 1241-SYR	
	----- Syrian Pound (LS)-----	
Appraisal Year Average 1972 and 1975	US\$1= LS 4.00	LS 3.70
Average over Project Period	US\$1= LS 3.925	LS 3.925
Completion Year Average 1981 and 1983	US\$1= LS 3.925	LS 3.925

- a/ Mission accompanied by WHO observer. Also included sector Reconnaissance and Identification of possible water and sewerage projects.
- b/ Also included discussions on Damascus sewerage studies.
- c/ Also included Identification/Preappraisal of Second Water Supply Project.
- d/ Included Identification of Aleppo Water Supply Project.
- e/ Included Appraisal of Aleppo Water Supply Project.
- f/ Included one consultant.
- g/ Included Supervision of Aleppo Water Supply Project.

BASIC DATA SHEET (Cont'd.)

ABBREVIATIONS AND ACRONYMS

EPEF	-	Etablissement Public des Eaux de Fige
USAID	-	United States Agency for International Development
PU	-	Project Unit
AFESD	-	Arab Fund for Economic and Social Development
SU	-	Special Unit

SYRIAN ARAB REPUBLIC

FIRST AND SECOND DAMASCUS WATER SUPPLY PROJECTS

CREDIT 401-SYR AND LOAN 1241-SYR

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HIGHLIGHTS

In August 1971, the Syrian Government requested the Association's assistance to finance a project whose objectives consisted of (i) augmenting the water supply of Damascus through improvement to the existing groundwater source at Figeih some 15 km from the city, increase of the transmission capacity from Figeih to Damascus and improvement and extension of the distribution system; and (ii) carrying out water pollution control studies for the Barada and Orontes rivers (para. 2.02).

Development Credit 401-SYR was approved in May 1973 for an amount of US\$15.0 million. With the conditions which prevailed in the Middle East from 1973 onwards, EPEF had difficulty recruiting qualified personnel for its Project Unit and the project was very slow starting (para 2.04). This situation was compounded by the magnitude of the bids received for major components in late 1974 and early 1975 which showed prices as much as five times appraisal estimates. The major contributing factors (para. 2.05) were mostly beyond the control of EPEF and the Government.

In order to overcome the staffing problems of the Project Unit and more importantly to address the severe cost overrun problems, the Government rapidly created a Commission with extraordinary powers in early 1975 (para. 2.06). A thorough review of the project composition and a reassessment of the economic viability of the proposed underground tunnel were undertaken. Thus in May 1975, the Association agreed to the Syrian Government's request to amend the project description and to restrict the use of Credit proceeds to urgently required distribution rehabilitation work and to pollution control studies (para 2.07).

In June 1975, the United States Agency for International Development (USAID) agreed to lend to the Syrian Arab Republic US\$48.0 million to help finance the foreign exchange component of the remainder of the distribution works (para. 2.08). The Government then requested the Bank to help finance the remaining components of the original project. These constituted the elements of the Second Damascus Water Supply Project for which Loan 1241-SYR for US\$35.0 million was approved in June 1976. Co-financing amounting to US\$40.0 million was provided by the Arab Fund for Economic and Social Development (para. 2.09).

Once the project had been amended, implementation progress was good (para. 3.01). The distribution works included in the First Project was completed in 34 months, within the time foreseen in the contract (para. 3.03). Completion of the pollution control studies were delayed because of staff shortage. Final drafts were submitted to the Government in December 1978, about two years behind appraisal estimates (para. 3.04). Construction work on the source development, tunnel and terminal reservoir contract -- all part of the Second Project -- started in July 1976 with retroactive financing and was completed in April 1980 with about four months delay due to poorer than anticipated rock conditions (para. 3.05).

The actual cost of the water supply infrastructure of the First and Second Projects was slightly less than the cost reestimated during the 1976 appraisal of the Second Project, while the cost of the studies was about 44% higher than original estimates due to slow start-up and additions to their scope (para. 3.06).

Disbursement of proceeds from Development Credit 401-SYR took eight instead of five years mainly because of long start-up delays and late release of retention money for the pipeline contract due to a dispute on additional services provided (para. 3.07). Disbursements of proceeds from Loan 1241-SYR were on schedule until June 1979 when the major civil works contractor presented a substantial claim which took two years to settle. As the Bank Loan financed consultants' services for the entire project, final disbursement had to await completion in mid-1983 of the components financed by the Arab Fund for Economic and Social Development (para. 3.08).

Unaccounted-for water which in 1973 amounted to over 50% of water produced has been dramatically reduced through measures introduced during project implementation. It is now estimated at about 26% of total water produced (paras. 4.02 and 4.03).

EPEF's financial performance has been mixed. EPEF in effect met its financial objectives (para. 5.02) up to 1979. Thereafter, delay by Government in ratifying tariff increases left EPEF with a tight cash position (para. 5.03). EPEF's current organization structure which dates from 1981 is satisfactory (para. 6.03). Its 1982 staff totalled 965, or the equivalent of 5.3 per thousand connections. It was short of mid-level qualified personnel and somewhat overstaffed at the lower levels (para. 6.04). Its accounting system and procedures have improved and are mostly computerized (para. 6.06).

The major project objectives have been met (paras. 7.01 and 7.02) and EPEF has been strengthened. Conditions seemed rather unpromising in early 1975. The projects illustrate particularly well that solutions can often be found to apparently desperate situations. Decisive and timely action on the part of the Government in 1975 was crucial in keeping the project alive. The resolve, dedication and cooperation of the Borrower, EPEF and the Bank were also essential in ensuring that the original project objectives would be maintained (para. 9.02).

SYRIAN ARAB REPUBLIC

FIRST AND SECOND DAMASCUS WATER SUPPLY PROJECTS

(CREDIT 401-SYR AND LOAN 1241-SYR)

COMBINED PROJECT COMPLETION REPORT

I. INTRODUCTION

1.01 For centuries Damascus had an abundant supply of cheap and high quality water from the Fiegh Spring in the neighboring hills above the city. In the early nineteen seventies, about 80% of the population was served by house connections and the remainder by public taps, but the average per capita consumption was modest at 110 litres per day. The yield of the Fiegh Spring had fallen to alarmingly low levels during drought years while the capacity of the transmission system had been barely sufficient to meet the peak demand. Another cause for concern had been rising pollution problems especially in the Barada river basin which received the sewage from Damascus, and in the Orontes river basin where the industrial towns of Homs and Hama are located.

1.02 During the nineteen sixties, Etablissement Public des Eaux de Fiegh (EPEF) had commissioned studies for the expansion of the Damascus water supply system from two French consulting firms. The first had studied the hydrology and possible development of the Fiegh spring. The second had prepared a master plan for the expansion of the Damascus water supply distribution system and a feasibility study for distribution works.

1.03 In August 1971, the Government requested IDA's assistance to help finance a water supply project for Damascus and water pollution control studies.

II. PROJECT PREPARATION

Preparation of First Damascus Water Supply Project

2.01 The project was identified in August 1971, and preparation work was carried out without special difficulties during the remainder of 1971 and part of 1972. Appraisal took place in November/December 1972, negotiations were held in late April 1973 and the Board of Directors approved Development Credit 401-SYR on May 17, 1973.

2.02 The objectives of the project were: (i) to augment the water supply of Damascus by improving the groundwater source, increasing the transmission capacity to the city and improving and extending the distribution system; and (ii) to carry out water pollution control studies for the Barada and Orontes rivers and sewerage studies for Damascus.

Original Project Description

2.03 The project originally consisted of: (i) the construction of an underground cut-off wall and the installation of pumps at the Fiegh Spring to improve its yield; (ii) the construction of a 15 km tunnel from the spring to Damascus; (iii) the construction of storage reservoirs; (iv) the installation of 530 km of water mains in the Damascus water distribution system, including supporting equipment, training and consultant services; and (v) pollution control studies for Damascus, Homs and Hama and related equipment and training.

Implementation Start-up of First Damascus Water Supply Project

2.04 Project implementation was very slow starting. This stemmed mainly from the conditions which prevailed in the Middle East from 1973 onwards and from the difficulty for the Project Unit (PU) -- which had been created within EPEF to supervise project implementation -- to recruit qualified staff. The situation was compounded by the result of the bids received in late 1974 and early 1975 for the major water source, conveyance works and distribution works which showed prices as much as five times those of the appraisal estimates.

2.05 The major factors having contributed to these cost increases were:

- (a) a delay of about two years in the start of project construction in the period of rapidly rising inflation ^{1/} which followed the 1973 increase in oil prices;

^{1/} According to the World Bank November 12, 1980 issue of International Index - Commodity Price Forecasts Updating, the prices of foreign manufactured goods increased by 19.3% and 24.0% respectively during 1973 and 1974, while according to the Syrian Central Bureau of Statistics the Wholesale Price Index showed increases of 32.5% and 14.0% respectively for the same years.

- (b) a sharp increase in construction activity in the Middle East between 1973 and 1976 resulting in keen competition for foreign as well as domestic goods and services, with attendant pressure on construction prices;
- (c) deep concern for renewed hostilities in the Middle East in the aftermath of the 1973 war; and
- (d) underestimation in the 1973 cost figures due to insufficient cost data pertaining to actual working conditions, and the fact that estimates were based on preliminary designs.

Amendment to the First Damascus Water Supply Project

2.06 In order to address PU's staffing difficulties and to expedite action to resolve cost overrun problems, a five-member Commission was created by Presidential Decree on January 5, 1975. The Commission's extraordinary powers enabled it as needed to cause the hiring of expatriates, the detachment of qualified personnel from other Government Departments, and the establishment of sufficient incentives for PU to attract and retain staff. It also enabled the Commission to react rapidly to implementation problems, the most severe being the inability of the Government to carry out the project with the then available financing.

2.07 The cost overruns prompted a thorough review of the composition of the project. Additional studies were requested by the Association to determine whether an underground tunnel remained the least cost means of supply. At the same time, EPEF was compelled to revise its financing plan for the project. Thus on May 12, 1975, at the request of the Syrian Government, IDA agreed to a revision of the original project description and to restricting the use of Development Credit proceeds to urgently required distribution rehabilitation work and to pollution control studies.

2.08 In June 1975, the United States Agency for International Development (USAID) agreed to lend Syria US\$48.0 million to help finance the foreign exchange component of the remainder of the distribution works. At about the same time, the additional studies requested by IDA (para. 2.07) confirmed that an underground tunnel was still the least cost solution for supply.

Preparation of Second Damascus Water Supply Project

2.09 The Major components of the Second Damascus Water Supply Project had thus been prepared and bids received when the Government requested further assistance from the Bank. The second project, which covered the remaining components of the original project, was appraised in August/September 1975, and Loan 1241-SYR for US\$35.0 million was approved in June 1976. Co-financing amounting to US\$40.0 million was provided by the Arab Fund for Economic and Social Development (AFESD). The two Bank Group and the USAID projects would ensure that the original project objectives (para. 2.02) would be achieved.

Revised Project Description

2.10 The revised projects to be carried out with the Bank Group assistance consisted of:

(a) The First Damascus Water Supply Project:

- (i) installing 130 kilometers of pipeline in the old town of Damascus as an urgent measure to improve the undersized and badly leaking distribution system; and
- (ii) conducting pollution control studies for the Barada and Orontes rivers and preparing master plans and preliminary design for sewerage and sewage treatment facilities in Damascus and along the Orontes river, and detailed engineering design and bid documents for the proposed systems in the cities of Homs and Hama; and

(b) The Second Damascus Water Supply Project:

- (i) improving facilities at Fiegh Spring to augment yield from $3\text{m}^3/\text{second}$ to about $5\text{m}^3/\text{second}$;
- (ii) constructing a pumping station at Fiegh Spring to increase low season flows;
- (iii) constructing a 15 kilometer long tunnel from Fiegh to Damascus with a flow capacity of $5\text{m}^3/\text{second}$;
- (iv) constructing a $60,000\text{ m}^3$ underground storage reservoir at the receiving end of the tunnel;
- (v) constructing distribution system reservoirs with a combined capacity of about $44,800\text{ m}^3$;
- (vi) constructing a new pumping station and renovating existing pumping stations;
- (vii) installing a telecommunications system for data transmission, water flow control and leak detection; and
- (viii) instituting a training program.

Special Conditions

2.11 The following special conditions were specified in the legal agreements:

- (a) the Government would establish a Special Unit (SU) to direct and coordinate the water control pollution and sewerage studies (Development Credit Agreement, Section 3.02). This was done;

- (b) EPEF would establish a Project Unit (PU) to administer the implementation of the water supply component of the project (Project Agreement, Section 2.02). This was done;
- (c) the Government and EPEF would employ consultants satisfactory to the Bank for carrying out the project (Development Credit Agreement, Section 3.03 and Project Agreement, Section 2.03). Consultants were employed;
- (d) EPEF would undertake a program to reduce the quantity of unaccounted-for water (Project Agreement, Section 2.10). Such a program was successfully carried out (para. 4.02);
- (e) EPEF would study its organization, operating procedures and accounting Systems (Loan Agreement, Section 3.04). This study was carried out and its recommendations implemented (paras. 6.02 and 6.06);
- (f) EPEF would have its accounts audited and submitted to the Bank within four months after the end of its fiscal year (Project Agreement, Section 4.02). This has been done;
- (g) EPEF would record all extensions and renewals in its fixed assets and would inventory and establish the value of its physical assets. (Project Agreement, Section 4.03). This was done (para. 6.06); and
- (h) EPEF would operate within the bounds of the two financial covenants described in para. 5.02 of this report (Project Agreement, Sections 4.04 and 4.05). EPEF's financial performance was mixed (para. 5.03).

III. PROJECT IMPLEMENTATION

Effectiveness and Start-Up

3.01 The first project was slow starting (para. 2.04). However, once the project had been amended (para. 2.07) progress was good. Effectiveness of Loan 1241-SYR was delayed about five months while the Loan Agreement between the Government and AFESD which co-financed the second project was being ratified. Retroactive financing had been provided in the Bank Loan and implementation was therefore not held up.

Procurement

3.02 Contracts financed under the Development Credit and the Loan were procured through international competitive bidding, according to World Bank procurement guidelines. All contracts were awarded to foreign firms.

Implementation of First Damascus Water Supply Project

3.03 The contractor for the distribution pipeline started work in August 1975. The actual length of pipe laid was 160 km instead of 130 km as originally estimated and about 15% more water consumption meters were installed. The work was completed in 34 months, within the time allowed for in the contract.

3.04 Shortage of staff in the Special Unit set up to supervise the pollution control studies, caused severe delays in their implementation. Work on the studies actually started only in January 1977. To remedy the situation an Advisory Committee composed of representatives from various ministries interested in pollution control was set up in mid 1977 to review and coordinate the progress of the studies. A panel of international experts was also invited with the Association's help at Government request to advise the Committee on the consultant's work. Final drafts of the study (35 volumes) were submitted to the Government in December 1978, about two years behind appraisal estimate. The reports were approved and printing authorized in December 1980 and the final payment to the consultant was made in June 1981.

Implementation of Second Damascus Water Supply Project

3.05 Construction work on the source development, tunnel and terminal reservoirs contract started in July 1976, with retroactive financing. The entire work was completed in April 1980 only about four months behind original contract schedule despite the fact that rock conditions were much poorer than anticipated. Because of the boring machine used by the contractor, the tunnel was about 40% larger in carrying capacity than foreseen in the original design. The configuration and location of the terminal reservoirs were also changed to facilitate cutting and to provide easier egress of excavated material. The tunnel was put into operation in July 1980. Work to augment spring flows at Figeih was also completed satisfactorily. Additional pumping

equipment has been installed to carry out tests to determine the optimum yield of the improved sources. The quality of workmanship of the contractor was good throughout.

Costs and Disbursements

3.06 The actual cost of the urgently required distribution works amounted to LS 93.9 million, or 8.7% less than the LS 102.8 million cost reestimated during the 1976 appraisal of the Second Damascus Water Supply Project. Likewise, the actual cost of the source and transmission works totalled LS 493.9 million, or 2.5% less than the 1976 appraisal estimates of LS 506.4 million. The actual cost of the studies amounted to LS 5.8 million, or 44.2% higher than the 1973 appraisal. This increase stemmed from execution delays associated with the slow start up, the factors described in paras. 2.04 and 2.05, and from additional work requested by SU. This overrun was financed by the Government.

3.07 Disbursements of proceeds from Development Credit 401-SYR took eight instead of five years, although over 75% was disbursed at the end of five years. The major reasons include the start-up delays and related project amendment (paras 2.04 and 2.07), and the late release of the retention money for the pipeline contract due to a dispute concerning additional services.

3.08 Disbursements of proceeds from Loan 1241-SYR were on schedule until about June 1979, when the major civil works such as the tunnel and the underground reservoirs were nearly completed. This was the time when the major contractor presented a substantial claim to cover additional costs resulting from design changes and working conditions. It took about two years to settle the dispute satisfactorily. The Bank Loan also financed the consultants' services for the reservoirs financed by AFESD. Construction of these reservoirs progressed more slowly than the components financed by the Bank, and were only completed in mid-1983.

Performance of Consultants and Contractors

3.09 EPEF's consultants did a satisfactory job on the design of work in the two major contracts. They also provided valuable assistance to EPEF in the implementation and supervision of the Project. The difficulties which arose as a result of cost underestimating cannot be imputed to the consultants, as the major causes of price increases were beyond normal expectation at the time. EPEF's staff has benefitted from its association with experienced consultants.

3.10 Considering the very difficult working conditions inside the old district of Damascus, the successful completion of the work for the Urgent Phase of the distribution pipeline without serious problems and within the contract schedule is commendable. EPEF maintained an excellent working relationship with the contractor.

3.11 The tunnel contractor had good experience in his field and the work force and construction equipment employed were adequate and efficient.

Quality of the workmanship was excellent and despite difficult rock conditions, work completion was only delayed by about four months. A substantial claim raised by the contractor was settled to mutual satisfaction (para. 3.08).

3.12 The staff of the Special Unit consider the quality of the work performed by the consultant for the pollution control studies to be satisfactory.

IV. OPERATING PERFORMANCE

Water Consumption and State of Water Supply

4.01 Water consumption in Damascus (Annex 1, Page 1) has increased faster than anticipated in the first appraisal report (1973), and the estimates were revised during the second appraisal (1975). Despite delays in completing the new system, water supply conditions in Damascus did not deteriorate too badly. This was made possible by a general improvement in the distribution system, several successive years of good yield at the Fiqeh Spring, and additional water from about one hundred wells which the municipality and EPEF have constructed. With the completion in 1980 of the source improvement works at Fiqeh and the construction of the new Fiqeh-Damascus tunnel and reservoirs under the Second Project the threat of water supply shortages within the city itself has been removed for a number of years, and except in a few areas where the distribution system still requires strengthening, Damascus enjoys uninterrupted water supply. The present sources will enable the water demand of Damascus to be met up to 1985. Additional development to utilize the Barada river flow at Fiqeh is already in EPEF's development plans. This should increase the capacity of the system to about $7m^3$ per sec., which would be sufficient to meet the demand up to about 1991 (Annex 6).

Unaccounted-for Water

4.02 In 1973, unaccounted-for water was over 50% of water produced. During Project execution, EPEF launched a major effort to reduce unaccounted-for water. Increased effort was made to detect leaks, particularly in the older parts of the city. Leakage was also reduced when many old mains were replaced under the urgent phase of distribution system improvements. From 1975 to date over 88,000 defective meters and 22,000 defective connections were replaced. Meters were also installed at all public hydrants and administration buildings. Furthermore, in 1981, electronic leak detection equipment was purchased and a systematic leak detection program was set up.

4.03 EPEF's unaccounted-for water -- before taking into account the volume of water consumed through illegal connections -- currently stands at 34% (Annex 1, page 1). Since 1980 the rapid growth of palestinian refugees and the presence of military personnel with their families in the suburbs of Damascus caused the Government to build 26 new wells in the vicinity of the city limits to serve this additional population. Nevertheless, water remained in short supply in these areas and some of the inhabitants have connected illicitly to EPEF's distribution system. Their annual water consumption is currently estimated at 10.8 million cubic meter or about 8% of EPEF's water production, so that unaccounted-for water is really only about 26% of total production. In order to address this problem the Government has given to EPEF the responsibility for supplying these outlying areas, and EPEF is preparing a program to extend its distribution system to those parts and to make house connections.

V. FINANCIAL PERFORMANCE

5.01 EPEF's appraisal forecast and actual income statements, sources and applications of funds statements and balance sheets for the period 1973-82 appear in Annex 1. In view of the amendment of the First Damascus Water Supply Project in May 1975 (para. 2.07) and of the updating of EPEF's financial projections during the appraisal of the Second Damascus Water Supply Project in August/September 1975 (para. 2.09), the appraisal forecast of the first project has been shown for 1973 and 1974 and that of the second project for 1975 through 1982. However, as the implementation of both projects was carried out virtually entirely in the years 1975-1982 (paras. 303 to 305), the review which follows covers only this period.

EPEF's Financial Objectives

5.02 EPEF's financial objectives were mainly embodied in two financial covenants: (i) EPEF was to set its water charges so that its net revenues would finance at least 10% of its investments during 1977-80, and not less than 35% in years thereafter (Project Agreement, Section 4.04); and (ii) EPEF was not to incur debt, other than for carrying out the projects, unless its net operating revenues covered its maximum future debt service at least 1.5 times (Project Agreement, Section 4.05).

5.03 The above objectives were met until 1979. Indeed in the period 1975-79 (Annex 1, page 4), EPEF contributed about 13.8% (appraisal 9.4%) of its investment financing requirements from internally generated funds and was able to borrow normally under existing agreements. However, in the 1980-82 period, the covenanted 35% contribution was not met. Instead there was an apparent cash generation shortfall equivalent to about 2.7% of investments. The question of EPEF's financial performance has been intimately linked to the magnitude of its debt service which in turn depends on the relative shares of borrowings and equity contributions in the total financing package. The Government can thus at its discretion greatly influence the financial ratios by which EPEF's performance is judged. This is basically what happened when the Government decided contrary to what had been foreseen at appraisal, to make a total of LS 117.7 million of its contributions by way of loans instead of equity. In the event, EPEF has not been servicing this debt and has been seeking clarification from the Government on how it should be treated. Concurrently, together with the Ministry of Housing and Public Utilities, EPEF is in the process of formulating a long-term financial policy. EPEF's proposal aims at avoiding a recurrence of the recent situation. Details of EPEF's financial performance in the period 1980-82 are presented below.

Revenues

5.04 In the period 1980-82, gross revenues amounted to LS 130.4 million, or slightly less than 60% of the level forecast at appraisal (Annex 1, Page 2). This stemmed from the fact that new connections and water rights were

only about 50% of appraisal estimates and that average revenues per m³ of water billed were only about 70% of appraisal projections.

5.05 The connection rate was mainly affected by unexpected difficulties in implementing the general phase for distribution works financed by USAID (para. 2.08). Arrangements with USAID to recruit two advisors to coordinate project implementation and to select an acceptable contractor for pipe laying took about two and one-half years. In the period 1975-82 only about 221 thousand people were connected (appraisal, 460 thousand), the remainder of about 239 thousand being served through standpipes (Annex 2).

5.06 The lower than forecast average revenues per m³ of water billed resulted from delays on the part of the Government to approve increases in the water charges. Proposals of EPEF and the Ministry of Housing and Public Utilities for an immediate doubling, followed by gradual increases, of water charges have been in abeyance since 1980.

Operating Expenses

5.07 In the period 1980-82, operating expenses other than depreciation amounted to LS 58.8 million, or about 81% of appraisal estimates (Annex 1, page 2). However, because unbilled water (i.e., the sum of free metered water at mosques and public taps and unaccounted-for water) was about 43% of water produced (appraisal, 28%), average expenses other than depreciation per m³ of water billed was only 1.1% lower than appraisal.

Net Operating Revenues and Contribution to Investments

5.08 In the period 1980-1982, EPEF's net operating revenues before depreciation combined with consumers' contributions amounted to LS 73.3 million (appraisal LS 158.9 million) and would have been insufficient to cover the debt service which totalled LS 80.8 million (appraisal LS 48.2 million), had EPEF been obliged to service existing Government loans (para. 5.03)

Financing Plan

5.09 EPEF's financing plan for 1980-82 (Annex 1, page 4) may be summarized as follows (in LS millions):

<u>Requirements:</u>	<u>Appraisal</u>		<u>Actual</u>	
	<u>Amount</u>	<u>%</u>	<u>Amount</u>	<u>%</u>
Investments and Working Capital	263.0	84	347.2	81
Debt Service	48.2	16	80.8	19
	<u>311.2</u>	<u>100</u>	<u>428.0</u>	<u>100</u>
<u>Financed by:</u>				
Internally Generated Funds	158.9	51	73.3	17
Government Contributions	134.2	43	219.5	51
Borrowings	18.1	6	135.2	32
	<u>311.2</u>	<u>100</u>	<u>428.0</u>	<u>100</u>

5.10 From the above it can be seen that while financing requirements increased a hefty 37.5% from LS 311.2 million to LS 428.0 million, internally generated funds dropped by 53.9% from LS 158.9 million to LS 73.3 million which resulted in substantially higher than anticipated borrowings and Government contributions. About 44.7% of the borrowings were from the Bank Group (20.1%), USAID (7.8%) and AFESD (16.8%), and the remainder from the Government. All major borrowings having either originated before Loan 1241-SYR or been made in conjunction with the projects, no exceptions have had to be invoked under the debt service coverage covenant (para. 5.02).

Water Charges

5.11 In May 1977, the first tariff increase since 1940 was approved. The flat rate of LS 0.20 per m³ was raised to LS 0.50 per m³. However, in light of massive public opposition, the increase was suspended for further study. In September, 1977, the existing two-step tariff for domestic consumption was introduced. It consisted of a first 15 m³ per month at LS 0.20 per m³ with additional consumption at LS 0.50 per m³. At the same time, Government and industries were charged LS 0.75 per m³ and the value of the water rights was doubled, i.e., from LS 2,000 to LS 4,000 for the right to consume up to one m³ per day in perpetuity. These new tariffs coupled with annual fees tacked on to water rights and other fees for new services have enabled EPEF to meet its financial objectives through 1979 (para. 5.03). In March 1980, the Ministry of Housing and Public Utilities supported EPEF's proposal for substantial tariff increases. However, the Prime Minister's office held up the final approval of EPEF's proposal until a national water tariff review is completed by the Government. EPEF's cash shortfall has in the meantime been financed by the Government (para. 5.03).

Financial Position

5.12 EPEF's financial position was uneven during the period 1975-82 (Annex 1, page 5). EPEF started out with no debt and ended up with a reasonable debt/equity ratio of 43:57 as compared with an appraisal forecast of from 5:95 to less than 20:80, which appears abnormally low for this type of undertaking. Its current ratio oscillated between a high of 4.8 and a low of 1.3 (appraisal, 5.2 and 1.3). Receivables have been too high, arrears representing 3.2 months of billing after taking into account a backlog of roughly nine months in bills distribution. Corrective actions taken by EPEF include the reorganization of its customers files in 1981 and the creation of 17 collection centers throughout Damascus during 1982. It is estimated it will take about one year to clear up the backlog of bills to be distributed for payment. Inventories are excessive at the equivalent of 5.5% of net fixed assets in operation. A large part is considered obsolete. EPEF has computerized its inventories in mid-1982 and has created a committee to implement consultants' proposals for an inventory management system and to dispose of obsolete material.

VI. INSTITUTIONAL PERFORMANCE

Organization and Management

6.01 EPEF was created as a state enterprise by Ministerial Decree in 1958 to replace the previous communal syndicate. The General Manager was a member of the Board of Directors. Four Department Managers, namely: Financial, Administrative, Statistics and Planning, and Technical reported to him. The top management group was dedicated but its effectiveness was impaired by excessive paperwork. Under Development Credit 401-SYR EPEF agreed to commission a study of its organization and operating procedures and to implement mutually agreed recommendations.

6.02 In March 1977, the consultants recommended an organization structure in which the four previous Departments no longer reported directly to the General Manager but to two Deputy General Managers, one for technical matters and one for administration and finance. Furthermore, the consultants recommended the creation of three new Divisions (Data Processing, Internal Audit, and Planning and Economic Studies) reporting directly to the General Manager. A shortage of candidates and insufficient incentives resulted in some of these positions not being filled. This impaired the implementation of these recommendations.

6.03 In early 1980, a Presidential Decree prohibited the use of more than one Deputy Director General in public enterprises and as a result, in March 1980, EPEF commissioned the University of Damascus to review the consultant's study and come up with a detailed implementation program with staff requirements and job descriptions. The organization which ensued in 1981 is still in place (Annex 3). It is superior to any of the previous ones in that each of the important functions, namely: Planning, Studies and New Works, Operations, Customer Service, Finance and Accounting, and Administrative, Legal and Personnel report directly to the General Manager. The number is neither too large nor too small, and the number of reporting levels has been kept to a minimum.

Staffing

6.04 EPEF's number of employees grew at an average of about 5% per year in the period 1975 and 1982 while the number of connections increased by only about 2.8% per year. By 1982, EPEF's staff totalled 965, which was equivalent to 5.3 employees per thousand connections. Of this total about 14% were engineers and qualified technicians, 13% had secondary education, and the remaining 73% had received primary or lower education. There was a shortage of qualified operating staff at the mid-level while some overstaffing existed at the lower levels.

Training

6.05 From the inception of the project, EPEF recognized the importance of training its personnel in waterworks operations. This is reflected in the efforts it has been putting into its in-house training activities which include two to four week familiarization courses for newly recruited staff and a training program for mechanics. The skills of the technical personnel at the intermediate level were also substantially increased through on-the-job training by the contractor's expatriate staff during project implementation. Some staff also went abroad for training. Three engineers were sent to France for various courses, two engineers went to Holland for six-month courses, and the chief accountant went to the USA for one year to study cost accounting and computer programming. Finally, the Division Chief for operations visited the water supply company of the city of Marseilles to learn about its operations.

Accounting and Auditing

6.06 EPEF's accounting system and procedures and more generally its internal control have improved substantially since appraisal. A Cost Accounting Division and an Internal Audit Section were set up in March 1980, and the computerization of the accounting work was completed by the end of 1981. Extensions or renewals of distribution mains which hitherto had not been recorded, have been inventoried. Existing fixed assets records had also been computerized by the end of June 1982. However, additional work is still needed to update these records. EPEF's Accounting Department is still short of personnel at the mid-level of the skills spectrum. Progress in staffing the required positions has been slow.

6.07 EPEF has employed the same local firm of external auditors since 1975. Both the quality of their work and the time spent on the audit have been acceptable.

VII. PROJECT JUSTIFICATION

Project Achievements

7.01 The first objective of the Projects of increasing the productivity of the Figeih Spring and of conveying the additional water to Damascus was accomplished. In the 1975-82 period the quantity of water produced was about 3% higher than forecast at appraisal (Annex 1, page 2). However, the population was about 14.5% higher than anticipated (Annex 2), while only about 60% of the total population was served through house connections (appraisal 80%), and the average effective consumption per capita was about 147 lcd ^{1/} (appraisal 164 lcd).

7.02 The second objective of the Projects of carrying out pollution control studies has also been accomplished. The studies for the Orontes river basin led to the preparation of a sewerage project for the cities of Homs and Hama. The project was shelved, however, after it had been appraised in 1978, because of the insufficient commitment of the Government to the cost recovery and institutional aspects of the project. For similar reasons, the preparation of detailed engineering designs for a Damascus Sewerage Project (Barada river basin) has been held up. It is believed these issues can be resolved and the Bank is maintaining its sector dialogue with the Government in the hope a mutually acceptable solution will be found.

Least Cost Solution

7.03 The projects constitute the least cost solution for achieving the objectives contemplated.

Reevaluation of Project Costs and Benefits

7.04 The reevaluation of the costs and benefits of the projects has been done using the methodology employed at appraisal. The costs necessary to obtain full benefits include project expenditures, the investments related to the distribution system, and the cost of other future investments needed to fully utilize the system constructed by the project. The benefits consist of the incremental water sales deriving from the projects (Annex 4). On this basis the rate of return is 5. If, however, credit is taken for the quantity of water delivered free at mosques and public taps or as explained in paragraph 4.03 for the substantial quantity consumed illicitly until regular connections are provided, the rate of return is 6.

7.05 Annex 5 shows the average incremental cost of water computed at various discount rates compared with the appraisal estimates of the Second Damascus Water Supply Project of 1975. A reasonable agreement can be observed between the two estimates.

^{1/} Liters per capita per day.

VIII. ASSOCIATION AND BANK PERFORMANCE

8.01 The Association and the Bank responded rapidly to the needs of the Borrower and provided valuable assistance particularly in the early stages of project implementation when the need arose to reshape the project and to provide additional financing along with other lenders to ensure the original project objectives would be met.

8.02 Supervision missions averaged about two a year. This appears to have been adequate. The working relationship of the Association and the Bank with the Government and EPEF were excellent throughout the preparation and implementation of the projects.

IX. CONCLUSIONS AND LESSONS LEARNED

Conclusions

9.01 The major project objectives which consisted in augmenting the water supply of Damascus and in carrying out water pollution control studies (para. 2.02) have been met, albeit at substantially higher cost than originally envisaged (para. 2.04). However, the bulk of the cost increases between the 1973 original and the 1975 revised estimates was beyond the control of EPEF and the Government (para. 2.05). Institutionally, EPEF has been strengthened as a result of the projects (paras. 6.03, 6.05 and 6.06), although its financial performance has seriously deteriorated since 1980 due to the Prime Minister's office delay in ratifying new tariffs (paras. 5.03 and 5.11).

Lessons Learned

9.02 The situation looked pretty grim and the odds that the original project would be carried out appeared very low in early 1975 when bids as much as five times appraisal estimates were received (para. 2.04). The projects illustrate particularly well that solutions can be found to apparently desperate situations by cooperative efforts. The resolve, dedication and cooperation of the Borrower, EPEF and the Bank were essential in ensuring that the original project objectives would be maintained. In this respect also, the appointment by the Government of a Commission with extraordinary powers (para. 2.06) was crucial and decisive in keeping the project alive.

9.03 Finally, the project confirms the importance of the practice now generally used to appraise only on the basis of advanced engineering studies (para. 2.05 (d)).

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Fiscal Year Ending December 31	1973		1974		1975		1976		1977		1978		1979		1980		1981		1982	
	1st APR Estimate	Actual	1st APR Estimate	Actual	2nd APR Estimate	Actual	2nd APR Estimate	Actual	2nd APR Estimate	Actual	2nd APR Estimate	Actual	2nd APR Estimate	Actual	2nd APR Estimate	Actual	2nd APR Estimate	Actual	2nd APR Estimate	Actual
Total Population Served (Thousands)	1,095	1,070	1,089	1,140	1,200	1,215	1,254	1,294	1,310	1,379	1,369	1,469	1,431	1,565	1,545	1,667	1,563	1,750	1,631	1,670
Number of Connections at Year End	117,000	141,622	143,000	146,467	152,000	151,287	157,000	155,366	161,000	162,371	165,000	167,768	177,000	172,245	182,000	175,942	201,000	179,671	223,000	183,318
Number of New Connections in Year	6,000	5,594	6,800	4,845	5,000	5,820	5,000	4,079	4,000	7,000	4,000	5,197	12,000	4,411	15,000	1,287	15,000	1,699	16,000	1,704
Number Having Water Rights																				
Additional (Cumulative)	2,200	2,591	2,300	2,438	2,400	2,744	2,000	2,256	2,000	3,353	2,000	2,885	6,000	2,560	7,500	1,878	6,000	1,942	8,000	1,506
Water Production (Million m ³)	69,700	70,187	72,000	72,623	76,500	75,167	78,500	77,623	80,500	80,976	82,500	83,861	88,500	86,421	96,000	88,294	102,000	90,241	111,000	91,882
Water Production Billed (Million m ³)	84.00	89.00	85.80	92.60	96.40	95.40	98.60	108.00	100.70	113.60	101.50	114.40	102.20	111.70	118.40	118.70	124.20	131.40	131.80	135.78
Water Rights Holders (Million m ³)	28.70	28.57	31.70	31.93	32.56	35.20	38.00	41.50	44.10	44.60	49.50	47.60	53.90	46.60	69.40	47.30	72.50	54.70	76.80	96.70
Fee From Water (Taps and Meters) (Million LS)	11.10	11.71	11.50	11.67	12.06	12.10	12.40	12.80	12.80	13.40	13.10	14.30	14.20	15.30	15.70	15.30	17.00	16.00	18.30	16.80
TOTAL WATER ACCOUNTED FOR	42.70	42.40	45.40	45.10	47.20	47.50	51.50	51.00	60.60	59.50	64.40	65.70	70.60	68.30	87.60	68.80	91.90	82.30	97.50	89.50
Average Water Tariffs (LS/m ³)	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Annual Fee of Water Rights Holders (LS of Day)	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
----- LS THOUSANDS -----																				
REVENUES																				
Billed Consumption	5,740	5,478	6,240	6,999	6,513	7,041	7,179	8,416	23,367	14,016	31,239	25,671	33,874	25,567	43,147	25,069	48,708	32,039	65,098	36,000
Water Rights Sales	2,200	2,595	2,300	2,479	2,000	2,799	2,000	2,641	2,000	3,166	2,000	2,632	6,000	8,143	8,000	4,611	7,000	4,100	5,000	5,010
Meter Rentals	810	808	865	880	988	880	1,094	1,021	1,208	2,064	1,320	2,659	1,505	2,809	1,728	2,924	1,863	2,614	2,007	3,176
Distribution System Maintenance Fees	480	476	500	494	547	479	565	525	580	614	594	637	691	1,000	765	1,228	765	1,228	803	1,170
Connection Charges	475	331	470	365	460	482	484	546	425	1,306	467	2,160	1,546	1,906	2,124	1,679	2,340	1,166	2,384	2,430
Annual Fees	425	430	440	460	532	679	1,950	512	4,920	1,301	6,520	1,374	6,997	1,475	7,633	1,481	9,115	2,235	12,876	2,400
Other Fees and Charges	95	231	95	43	142	105	156	138	172	263	180	396	208	20	228	79	251	93	276	100
TOTAL	10,225	10,369	10,910	11,691	11,162	12,265	18,433	13,801	32,672	26,737	42,329	40,838	50,217	40,875	63,551	36,623	70,022	43,245	91,799	50,380
EXPENSES																				
Personnel	3,180	3,390	3,470	3,821	4,354	4,785	5,806	5,974	7,067	6,574	8,175	7,217	9,550	7,572	12,759	10,515	15,356	13,312	19,100	15,178
Maintenance and Materials	180	134	200	154	232	349	288	407	489	417	882	1,128	1,357	752	1,802	956	4,457	1,149	4,721	3,453
Pumping	770	643	865	714	743	801	769	560	776	588	787	513	866	661	1,100	995	2,577	1,007	2,750	2,750
New Connections	190	268	190	165	220	392	242	128	213	268	234	257	275	260	1,062	256	1,170	346	1,370	400
Administration	490	454	564	621	708	620	944	903	1,169	971	1,329	897	1,553	1,217	2,074	1,159	2,496	1,548	3,105	1,850
Depreciation	1,848	1,837	2,273	1,921	2,108	2,125	3,130	2,566	5,234	3,200	7,084	4,047	10,060	4,748	17,940	9,539	25,020	15,831	26,300	18,340
TOTAL	6,638	6,726	7,561	7,403	8,365	8,782	11,350	10,516	14,928	12,031	18,486	14,059	24,104	15,010	36,620	21,745	49,494	36,763	55,663	42,087
OPERATING INCOME	3,587	3,643	3,349	4,288	2,797	3,483	7,083	3,285	17,744	14,719	27,843	26,779	26,611	25,865	26,931	12,878	20,528	6,682	36,196	8,293
Other Income Net	40	180	40	285	269	(278)	296	482	326	1,526	359	1,737	395	(456)	434	344	477	(8,578)	525	550
NET INCOME BEFORE INTEREST	3,627	3,803	3,389	4,533	3,066	3,205	7,379	3,767	18,070	16,245	29,202	28,516	27,008	25,409	27,365	13,222	21,005	(1,896)	36,681	8,843
Interest Charged	4	--	76	--	150	--	1,866	73	4,866	112	2,963	17,118	10,998	10,213	13,032	16,081	13,596	24,470	33,330	26,812
NET INCOME	3,623	3,803	3,313	4,533	2,916	3,205	5,513	3,674	13,204	16,133	16,239	11,398	16,010	15,196	14,333	(2,859)	7,409	(26,166)	33,351	(17,969)
Operating Ratio (After Depreciation)	65	65	69	63	75	72	62	76	66	65	66	68	67	58	65	71	65	61	61	84
Average Net Fixed Assets (Million LS)	40	34.4	36.2	36.4	41.7	40.1	40.8	47.7	33.6	60.3	35.3	103.5	106.6	111.5	711.0	320.7	1,022.5	512.6	1,004.2	800.0
Rate of Return on Average Net Fixed Assets (%)	9.0	10.6	6.0	11.8	6.8	8.7	11.6	1.7	33.5	35.3	9.4	15.4	6.9	19.7	1.7	7.0	7.0	3.0	3.4	1.5

1/ Estimated

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	1975-79		1980-82		Total	
	Appraisal	Actual	Appraisal	Actual	Appraisal	Actual
New Connections	30,000	25,718	46,000	11,133	76,000	36,851
New Water Rights	17,500	13,798	21,500	5,406	39,000	19,204
Water Produced (10 ⁶ m ³)	499.40	543.10	374.40	385.88	873.80	928.98
Water Billed (10 ⁶ m ³)	218.06	215.60	218.70	173.70	436.76	389.30
Water Rights Billed (10 ⁶ m ³)	64.54	68.10	51.10	47.30	115.64	115.40
Metered Free (10 ⁶ m ³)	12.90	31.00	7.20	19.80	20.10	50.80
Accounted-for (10 ⁶ m ³)	295.50	314.70	277.00	240.80	572.50	555.50
Unaccounted-for (10 ⁶ m ³)	203.90	228.40	97.40	145.08	301.30	373.48
Unaccounted-for (%)	40.8	42.1	26.0	37.6	34.5	40.2
Average Revenue per m ³ billed (LS)	0.550	0.474	0.835	0.590	0.689	0.525

----- LS Thousands -----

	Inc(Dec)			Inc(Dec)			Inc(Dec)		
Revenues									
Billed Consumption	107,122	80,443	(26,679)	156,953	93,128	63,825	264,075	173,571	(90,504)
Water Rights	14,000	28,381	14,381	23,000	13,521	(9,479)	37,000	41,902	4,902
Meter Rentals	6,120	9,435	3,315	5,598	8,668	3,070	11,718	18,103	6,385
Distribution System Maint.	2,920	3,594	671	2,239	3,498	1,259	5,162	7,092	1,930
Connect Charges	3,362	6,600	3,238	7,203	5,275	(1,928)	10,565	11,875	1,310
Annual Fees	20,919	5,141	(15,778)	29,624	6,116	(23,508)	50,543	11,257	(39,286)
Other Fees & Charges	867	922	55	755	242	(513)	1,622	1,164	(458)
Total	155,313	134,516	(20,797)	225,372	130,448	(94,924)	380,685	264,964	(115,721)
Expenses									
Personnel	34,952	32,122	(2,830)	47,215	39,005	(8,210)	82,147	71,127	(11,040)
Maintenance & Materials	1,213	3,053	(1,840)	10,980	7,570	(3,410)	14,193	10,623	(3,570)
Pumping	3,907	2,923	(984)	2,985	6,627	3,642	6,892	9,550	2,658
New Connection	1,682	1,015	(667)	3,602	1,047	(2,555)	5,284	2,062	(3,222)
Administration	5,683	4,608	(1,075)	7,675	4,563	(3,112)	13,358	9,171	(4,187)
Depreciation	27,796	16,664	(11,132)	69,300	43,783	(25,517)	97,096	60,447	(36,649)
Total	77,233	60,385	(16,848)	141,757	102,595	(39,162)	218,990	162,980	(56,010)
OPERATING INCOME	78,080	74,131	(3,949)	83,615	27,853	(55,762)	161,695	101,984	(59,711)
Other Income	1,645	2,989	1,344	1,436	(7,684)	(9,120)	3,081	(4,695)	(7,776)
Interest	25,843	27,516	1,673	39,967	69,363	29,396	65,810	96,872	31,069

SYRIAN ARAB REPUBLIC
FIRST AND SECOND DAMASCUS WATER SUPPLY PROJECTS
CREDIT 401-SYR AND LOAN 1261-SYR
COMBINED PROJECT COMPLETION REPORT
EPEF'S SOURCES AND APPLICATIONS OF FUNDS

Fiscal Year Ending December 31

	1973		1974		1975		1976		1977		1978		1979		1980		1981		1982	
	1st APR Estimate	Actual	1st APR Estimate	Actual	2nd APR Estimate	Actual	2nd APR Estimate	Actual	2nd APR Estimate	Actual	2nd APR Estimate	Actual	2nd APR Estimate	Actual	2nd APR Estimate	Actual	2nd APR Estimate	Actual	2nd APR Estimate	Actual
-----THOUSANDS LS-----																				
SOURCES OF FUNDS																				
Net Income Before Interest and Depreciation	3,627	3,803	3,389	4,533	3,066	3,705	7,379	3,747	18,076	16,243	24,202	28,516	27,008	25,409	27,365	13,222	21,005	(1,896)	36,001	8,643
Internal Cash Generation	5,475	5,640	5,661	6,459	5,174	5,330	10,709	6,291	23,304	19,443	31,286	32,563	37,048	30,157	45,305	22,781	46,025	20,220	63,021	22,236
Consumers' Capital Contributions	495	466	510	432	500	433	500	500	400	1,092	400	170	1,200	2,223	1,500	1,092	1,500	895	1,600	1,061
Working Capital	(196)	(2,268)	4,065	(978)	4,239	1,133	(1,276)	4,533	(108)	(45,807)	3,574	(7,787)	1,174	1,690	911	(21,118)	2,832	(49,257)	1,597	(6,097)
Other contributions	--	(450)	--	23	--	(276)	--	11	--	307	--	(3)	--	--	--	--	--	(1,137)	--	--
NET CASH GENERATION FROM OPERATIONS	3,776	3,388	10,236	5,936	9,913	7,172	9,933	13,335	23,596	(24,965)	35,262	24,943	39,424	36,120	47,216	2,755	50,357	(26,953)	66,218	26,200
Government Contributions	7,000	--	18,000	--	--	34,772	71,774	73	165,319	18,474	700,199	51,774	193,308	68,424	101,209	34,113	23,437	139,163	9,519	66,196
Proceeds of Credit and Loans																				
Government's Loan	--	--	--	--	--	--	--	5,927	--	20,000	--	11,000	--	6,000	--	12,000	--	28,000	--	34,800
IDA Credit (401-SYR)	400	--	8,040	--	5,000	--	9,800	14,369	11,840	25,431	12,580	9,426	8,880	833	--	3,089	--	13	--	--
IMRD Loan (1261-SYR)	--	--	--	--	--	--	20,290	--	77,841	50,248	33,670	18,346	29,569	31,672	18,130	9,044	--	12,362	--	2,655
USAID	--	--	--	--	--	--	--	--	--	170	--	600	--	5,468	--	3,020	--	1,657	--	5,888
Arab Fund	--	--	--	--	--	--	--	--	--	57,334	--	21,121	--	35,923	--	10,099	--	11,467	--	2,122
TOTAL EXTERNAL SOURCES OF FUNDS	7,400	--	26,040	--	5,000	34,772	101,314	20,369	205,000	171,857	246,449	112,272	231,257	148,320	119,339	71,365	23,437	192,638	9,519	90,660
TOTAL SOURCES OF FUNDS	13,176	3,388	36,276	5,936	14,913	41,944	111,247	33,704	228,596	146,892	281,711	137,215	271,181	182,440	167,055	74,120	73,794	165,703	75,737	114,860
APPLICATION OF FUNDS																				
Construction Expenditures:																				
First Project - Urgent Phase	8,470	--	13,500	--	5,000	--	23,743	23,382	26,958	36,798	29,793	22,385	17,296	8,796	--	2,248	--	258	--	--
Second Project - Tunnel, Reservoirs and pumping stations	--	--	--	--	--	34,772	79,550	7,071	109,237	109,987	132,186	84,318	115,358	140,832	70,086	29,346	--	57,601	--	30,620
General Phase: Distribution Pipeline	--	--	--	--	--	7,851	--	7,851	--	82,535	--	111,132	13,259	124,197	21,274	62,565	--	18,381	--	40,666
Other Investments	4,700	3,388	2,100	5,936	4,000	7,172	4,000	3,251	--	--	--	135	--	1,325	15,000	--	37,500	63,680	58,200	5,281
TOTAL INVESTMENT	13,170	3,388	36,200	5,936	9,000	41,944	115,164	33,704	223,230	146,780	273,111	120,097	258,851	172,227	152,651	58,039	57,500	139,920	58,200	75,947
Debt Service - Interest	4	--	76	--	150	--	1,866	--	4,866	112	7,963	17,118	10,998	10,213	13,032	16,081	13,595	24,470	13,339	28,812
- Repayments	--	--	--	--	--	--	--	--	--	--	637	--	1,332	--	1,372	--	2,698	1,313	4,198	10,101
Total Debt Service	4	--	76	--	150	--	1,866	--	4,866	112	8,600	17,118	12,330	10,213	14,404	16,081	16,293	25,783	17,537	38,913
Surplus (Deficit) of Funds	--	--	--	--	5,763	--	(5,763)	--	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL APPLICATION OF FUNDS	13,174	3,388	36,276	5,936	14,913	41,944	111,247	33,704	228,596	146,892	281,711	137,215	271,181	182,440	167,055	74,120	73,794	165,703	75,737	114,860
Debt Service Coverage (excl. Water Right Sales)	818.8	n/a	44.7	n/a	21.2	n/a	4.7	n/a	4.6	109.6	1.1	1.5	2.5	2.2	2.6	1.1	2.4	0.6	3.1	0.6

1/ Estimated
2/ Include LS 6,335 million from previous years
3/ Erroneous allocations 1976-77 corrected 1978

SYRIAN ARAB REPUBLIC
FIRST AND SECOND DAMASCUS WATER SUPPLY PROJECTS
CREDIT 401-SYR AND LOAN 1241-SYR
COMBINED PROJECT COMPLETION REPORT
SEEP'S SOURCES AND APPLICATIONS OF FUNDS

	<u>1975-79</u>				<u>1980-81</u>				<u>1975-82</u>			
	<u>Appraisal</u>	<u>Actual</u>	<u>% Total</u>	<u>Actual</u>	<u>Appraisal</u>	<u>Actual</u>	<u>% Total</u>	<u>Actual</u>	<u>Appraisal</u>	<u>Actual</u>	<u>% Total</u>	<u>Actual</u>
(LS Thousands)												
SOURCES												
Net Income before Interest	79,725	77,120	9	13	85,051	20,169	27	5	164,776	97,289	13	10
Add: Depreciation	27,296	16,664	3	3	69,300	50,118	22	11	97,096	66,282	8	6
(1)	<u>107,521</u>	<u>93,784</u>	<u>12</u>	<u>16</u>	<u>154,351</u>	<u>70,287</u>	<u>49</u>	<u>16</u>	<u>261,872</u>	<u>164,071</u>	<u>21</u>	<u>16</u>
Contributions												
- Consumers	3,000	4,468	-	1	4,600	3,048	2	1	7,600	7,516	1	1
- Government	630,050	173,722	70	29	134,165	219,472	43	51	764,215	393,190	63	39
	<u>633,050</u>	<u>178,190</u>	<u>70</u>	<u>30</u>	<u>138,765</u>	<u>222,520</u>	<u>45</u>	<u>52</u>	<u>771,815</u>	<u>400,710</u>	<u>64</u>	<u>40</u>
Borrowings												
- Government	-	42,927	-	7	-	74,800	-	18	-	117,727	-	12
- IDA Credit 401-SYR	48,100	50,059	5	9	-	3,102	-	1	48,100	53,161	4	5
- IsRD Loan 1241-SYR	111,370	100,266	13	17	18,130	24,061	6	6	129,500	124,327	11	12
- USAID	-	6,238	-	1	-	10,561	-	2	-	16,799	-	2
- Arab Fund	-	114,378	-	20	-	22,687	-	5	-	137,065	-	13
	<u>159,470</u>	<u>313,868</u>	<u>18</u>	<u>54</u>	<u>18,130</u>	<u>135,211</u>	<u>6</u>	<u>32</u>	<u>177,600</u>	<u>449,079</u>	<u>15</u>	<u>44</u>
TOTAL SOURCES	<u>900,041</u>	<u>585,842</u>	<u>100</u>	<u>100</u>	<u>311,246</u>	<u>428,018</u>	<u>100</u>	<u>100</u>	<u>1,211,287</u>	<u>1,013,860</u>	<u>100</u>	<u>100</u>
APPLICATIONS												
Investments												
- 1st Damascus	102,790	91,361	11	16	-	2,506	-	1	102,790	93,867	8	9
- 2nd Damascus	436,331	376,975	49	64	70,086	116,967	22	27	506,417	493,942	42	49
- General Distribution	332,715	34,533	37	6	67,565	85,492	22	20	400,280	120,025	33	12
- Other	8,000	11,883	1	2	130,700	68,941	42	16	138,700	80,824	12	8
(3)	<u>879,836</u>	<u>514,752</u>	<u>98</u>	<u>88</u>	<u>268,351</u>	<u>273,906</u>	<u>86</u>	<u>64</u>	<u>1,148,187</u>	<u>788,658</u>	<u>95</u>	<u>78</u>
Working Capital	(7,607)	43,647	(1)	7	(5,340)	73,335	(2)	17	(12,947)	116,982	(1)	12
Debt Service												
- Interest	25,843	27,443	3	5	39,967	69,363	13	16	65,810	96,806	5	9
- Principal	1,969	-	-	-	8,268	11,414	3	3	10,237	11,414	1	1
(2)	<u>27,812</u>	<u>27,443</u>	<u>3</u>	<u>5</u>	<u>48,235</u>	<u>80,777</u>	<u>16</u>	<u>19</u>	<u>76,047</u>	<u>108,220</u>	<u>6</u>	<u>10</u>
TOTAL APPLICATIONS	<u>900,041</u>	<u>585,842</u>	<u>100</u>	<u>100</u>	<u>311,246</u>	<u>428,018</u>	<u>100</u>	<u>100</u>	<u>1,211,287</u>	<u>1,013,860</u>	<u>100</u>	<u>100</u>
Contribution to Investments Lines (1)-(2) : (3) (2)	9.4	13.8			41.3	(2.7)			16.8	8.0		

SYRIAN ARAB REPUBLIC
FIRST AND SECOND DAMASCUS WATER SUPPLY PROJECTS

CREDIT 401-SYR AND LOAN 1241-SYR
COMBINED PROJECT COMPLETION REPORT

RFRP'S BALANCE SHEETS

Fiscal Year Ending December 31.

	1973		1974		1975		1976		1977		1978		1979		1980		1981		1982	
	1st APR Estimate	Actual	1st APR Estimate	Actual	2nd APR Estimate	Actual	2nd APR Estimate	Actual	2nd APR Estimate	Actual	2nd APR Estimate	Actual	2nd APR Estimate	Actual	2nd APR Estimate	Actual	2nd APR Estimate	Actual	2nd APR Estimate	Actual
-LS Thousands-																				
ASSETS																				
Fixed Assets	63,254	53,011	87,854	58,071	66,878	64,359	102,472	68,032	216,965	105,844	357,774	161,020	501,024	170,513	1,076,705	553,781	1,126,845	626,178	1,179,919	650,248
Less Depreciation	18,227	18,162	20,499	20,068	22,176	22,193	25,506	24,737	30,740	27,937	37,824	31,984	47,864	36,732	65,804	46,290	90,824	68,456	117,164	86,609
Net Fixed Assets	45,027	34,849	67,355	38,003	44,702	42,166	76,966	43,295	186,225	77,907	319,950	129,036	453,160	133,781	1,010,901	507,491	1,036,021	557,722	1,062,755	563,639
Work in Progress	3,170	2,931	14,970	3,807	4,000	39,463	83,550	69,494	192,787	178,462	325,089	263,383	460,690	466,017	19,660	80,888	25,020	148,411	30,146	200,308
TOTAL FIXED ASSETS	48,197	37,780	82,325	41,810	48,702	81,629	160,516	112,789	379,012	256,369	645,039	372,419	893,850	539,898	1,028,561	588,379	1,061,041	706,133	1,092,901	763,947
Transfers to Government	19,027	27,678	1,156	27,655	27,655	27,931	27,655	27,920	27,655	27,725	27,655	44,846	27,655	55,059	27,655	46,214 ^{2/}	27,655	69,549	27,055	98,361
Current Assets																				
Cash and Banks	1,059	1,082	636	1,462	7,940	1,225	2,903	1,127	3,534	2,339	4,088	12,688	4,773	10,737	1,996	12,472	5,294	10,310	5,156	9,453
Accounts Receivable Water (net)	4,700	5,028	4,440	5,962	4,109	7,220	8,178	6,208	11,710	16,839	9,439	28,768	10,205	36,661	12,695	40,330	14,456	48,397	19,494	55,334
Accounts Receivable Connections/ w. Rights	2,700	13,968	2,300	12,039	13,243	2,669	14,567	2,267	16,024	4,534	17,626	6,601	17,389	5,409	21,328	4,434	23,460	2,909	23,806	2,645
Advance Payments and Miscellaneous Inventories	5,800	2,026	6,100	3,071	3,378	7,122	3,716	45,953	4,087	59,256	4,496	26,026	4,946	22,947	5,440	30,255	5,984	68,238	6,583	99,645
	11,880	14,860	9,920	14,781	12,781	15,123	10,781	13,151	8,781	21,899	9,656	28,715	10,625	37,664	11,687	37,685	12,838	32,413	16,181	31,217
TOTAL CURRENT ASSETS	25,639	36,959	23,396	37,315	41,451	33,359	40,145	68,706	44,136	104,867	45,305	102,378	49,938	112,218	56,146	125,176	62,050	164,267	71,190	198,274
TOTAL ASSETS	93,063	102,437	106,877	106,780	117,808	142,919	228,316	209,415	450,803	368,961	712,999	519,643	971,443	702,125	1,112,362	759,269	1,150,746	937,849	1,191,746	1,060,322
EQUITY AND LIABILITIES																				
Equity																				
Capital	29,340	29,340	29,340	29,340	29,304	85,000	100,564	85,000	265,883	85,000	466,082	85,000	659,390	85,000	760,599	85,000	784,036	85,000	793,555	65,000
Retained Earnings	21,204	21,408	22,217	23,471	24,387	4,672	27,900	5,778	39,104	14,855	54,363	35,739	63,353	53,005	69,686	38,890 ^{2/}	70,095	30,894	85,437	34,727
Sale of Water Rights	33,177	33,675	35,477	36,145	38,145	2,799	40,145	5,440	42,145	12,404	44,145	20,238	50,145	78,381	48,145	32,743	65,145	36,893	73,145	41,903
Consumers' Contributions	3,983	4,560	4,493	4,992	5,492	5,475	5,992	5,975	6,392	7,017	6,792	7,187	7,992	9,460	9,492	10,552	10,992	11,447	12,592	12,508
Advance from Government ^{1/}	--	--	149	--	--	36,722	--	34,869	--	52,519	--	102,298	--	172,722	--	202,835	--	346,998	--	393,194
TOTAL EQUITY	87,704	88,983	91,676	93,948	97,264	132,608	174,601	136,988	353,224	172,997	570,362	253,462	780,880	349,568	897,922	373,070	930,268	511,232	964,729	507,332
Long Term Debt ^{2/}																				
Government's Loans	--	--	--	--	--	--	--	5,927	--	25,927	--	36,927	--	42,927	--	54,927	--	82,927	--	117,927
IDA Credit	400	--	8,444	--	5,000	--	14,800	14,369	26,640	39,800	38,583	49,226	46,131	50,059	44,755	53,148	43,346	53,161	41,891	52,497
IBRD Loan	--	--	--	--	--	--	20,290	--	48,131	50,248	81,801	68,594	117,370	100,296	129,500	107,997	128,215	117,380	125,472	116,881
USAID Loans	--	--	--	--	--	--	--	--	--	170	--	--	--	6,238	--	9,258	--	10,911	--	16,399
Arab Fund Loan	--	--	--	--	--	--	--	--	--	52,334	--	28,455	--	116,378	--	124,677	--	126,816	--	122,370
TOTAL LONG TERM DEBT	400	--	8,444	--	5,000	--	35,090	20,296	74,771	173,429	120,384	232,972	157,501	313,808	174,259	349,807	171,561	393,201	167,363	426,274
Current Liabilities																				
Accounts Payable	1,160	7,752	2,400	7,307	9,134	1,517	11,417	43,225	14,271	31,000	17,839	19,441	22,299	30,390	27,874	14,515	34,842	19,851	43,553	19,456
Deposits and Advance Payments	3,300	4,746 ^{1/}	3,940	4,652	5,350	7,864	6,152	7,851	7,075	10,647	8,116	11,862	9,357	12,477	10,760	21,497	12,374	12,261	14,230	49,872
Retirement Provisions	499	956	421	873	960	1,070	1,056	1,055	1,162	838	1,278	906	1,406	872	1,547	860	1,701	1,398	1,872	1,390
TOTAL CURRENT LIABILITIES	4,959	13,454	6,761	12,832	15,444	10,251	18,625	52,131	22,508	42,485	27,253	32,209	33,067	43,239	40,181	36,892	48,917	33,216	59,654	69,716
TOTAL EQUITY AND LIABILITIES	93,063	102,437	106,877	106,780	117,808	142,919	228,316	209,415	450,803	368,961	712,999	519,643	971,443	702,125	1,112,362	759,269	1,150,746	937,849	1,191,746	1,060,322
Debt/Equity Ratio	0:100	0:100	8:92	0:100	5:95	0:100	17:83	13:87	17:83	50:50	17:83	48:52	17:83	47:53	16:84	48:52	16:84	43:57	15:85	43:57
Current Ratio	5.2	2.7	3.5	2.9	2.7	3.3	2.2	1.3	2.0	2.5	1.7	3.2	1.5	2.6	1.4	3.4	1.3	4.8	1.8	3.0

1/ Including outstanding interest
2/ Net of current maturities
3/ After transfer of LS 24,924 million to Government.

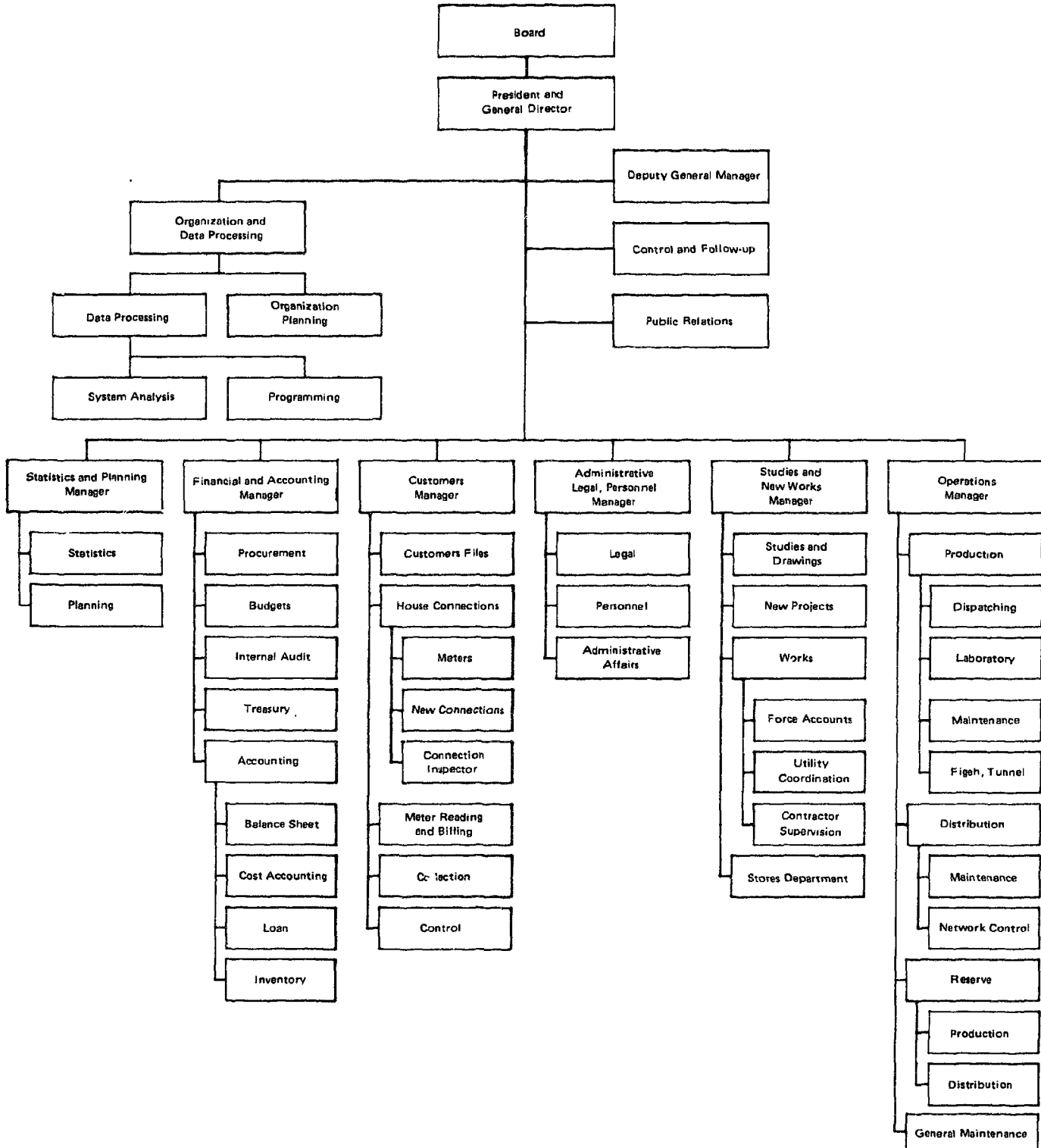
SYRIAN ARAB REPUBLIC
FIRST AND SECOND DAMASCUS WATER SUPPLY PROJECTS
CREDIT 401-SYR AND LOAN 1241-SYR
COMBINED PROJECT COMPLETION REPORT
ESTIMATED AND ACTUAL POPULATION SERVED

Year	Estimated Total Population		Estimated Persons Directly Served (000)		Estimated Persons Served by Public Hydrants and Mosques (000)		Number of Connections (000)		Number of Connections with water rights (000)	
	SAR (1973) (1976)	Ln 1241 (1976)	SAR (1973) (1976)	Ln 1241 (1976)	SAR (1973) (1976)	Ln 1241 (1976)	SAR (1973) (1976)	Ln 1241 (1976)	SAR (1973) (1976)	Ln 1241 (1976)
1970	914	920	Not	736	Not	184	116.6	122.3	63.0	59.3
1971	968	960	Estimated	768	Estimated	192	123.3	128.6	65.1	63.5
1972	1,007*	1,000	810	810	190	130.1*	136.0	136.0	67.5*	68.4
1973	1,046	1,070	856	850	214	220	136.3	142.6	69.7	72.4
1974	1,089	1,140	878	879	262	261	142.8	146.5	72.0	73.8
1975	1,132	1,200*	900*	908	300	307	149.5	152.3*	74.4	76.0*
1976	1,177	1,250	938	932	312	362	156.5	157.0	76.9	78.5
1977	1,224	1,300	962	974	338	405	163.8	161.0	79.5	81.0
1978	1,273	1,355	996	1,007	369	462	171.4	165.8	82.2	83.9
1979	1,324	1,430	1,072	1,053	358	532	179.3	177.0	85.0	86.4
1980	1,376	1,500	1,170	1,056	330	611	187.5	192.0	87.9	96.0
1981	1,563	1,760	1,242	1,078	321	682	207.0	179.7	102.0	90.2
1982	1,633	1,870*	1,338	1,100*	295	770	223.0	183.3*	111.0	91.8
1985	1,670	1,860	1,670	1,490	190	560	277.0	248.0		
1990	2,020	2,300	2,110	2,074	190	486	372.0	345.0		
1995	2,460	2,860	2,670	2,862	190	318	498.0	477.0		

Note: figures with asterisks (*) are forecasts.

SYRIAN ARAB REPUBLIC
FIRST AND SECOND DAMASCUS WATER SUPPLY PROJECT
CREDIT 401-SYR AND LOAN 1241-SYR
COMBINED PROJECT COMPLETION REPORT
EPEF'S CURRENT ORGANIZATION STRUCTURE

ANNEX 3



SYRIAN ARAB REPUBLIC
FIRST AND SECOND DAMASCUS WATER SUPPLY PROJECTS
CREDIT 601-SYR AND LOAN 1241-SYR
COMBINED COMPLETION REPORT
PROJECT COSTS AND BENEFITS IN 1983 PRICES

YEAR	Incremental Consumption of Paying Customers (million m ³)	New Water Right Holders in Year (thousands)	Capital Costs (LS Millions)				Incremental Operating Cost	Incremental Revenue from Tariffs /2	Revenue from Sale of water Rights /3	Project Net Cash Flow
			Fijeh Springs Dev., Tunnel & Distrib. Mains /1	R. Barada Development	Other Investments	Total				
1975	-	-	81.438			81.438			(81.438)	
1976	-	-	61.820			61.820			(61.820)	
1977	-	-	253.377			253.377			(253.377)	
1978	3.7	2.90	191.079			191.079	4.070	3.625	(183.384)	
1979	3.7	2.50	234.106			234.106	4.070	3.125	(226.911)	
1980	4.4	1.90	72.558			72.558	4.220	4.860	(69.563)	
1981	9.6	5.75	155.289			155.289	9.690	2.375	(152.154)	
1982	15.0	6.70	80.788			80.788	8.490	2.000	(70.778)	
1983	20.9	7.15					8.710	9.500	23.780	
1984	27.4	7.70		22.2		22.20	9.660	10.250	8.530	
1985	36.3	8.20		22.2		22.20	10.650	37.730	16.005	
1986	41.6	8.55			5.55	5.55	11.820	45.760	12.000	
1987	49.4	9.10			5.55	5.55	13.040	54.340	13.125	
1988	57.9	9.75			5.55	5.55	14.300	63.690	14.125	
1989	67.0	10.45			5.55	5.55	15.610	73.700	15.250	
1990	76.9	11.15			5.55	5.55	16.980	84.590	16.300	
1991-2035	87.5	-				0	18.820	96.250	77.430	

IRR = 5%

Notes:

- /1. Project expenditures prior to 1983 have been escalated to 1983 price levels using factors based on the International Price Index for foreign exchange costs and the General Price Index prepared by the Syrian Central Bureau of Statistics for local costs.
- /2. Based on tariff of LS 1.10/m³
- /3. Assuming a charge of LS 2,000 per water right (for one-half m³ per day), less credit for water use at LS 60 per year capitalized at 8% interest

SYRIAN ARAB REPUBLIC

ANNEX 5

FIRST AND SECOND DAMASCUS WATER SUPPLY PROJECTS

CREDIT 401-SYR AND LOAN 1241-SYR

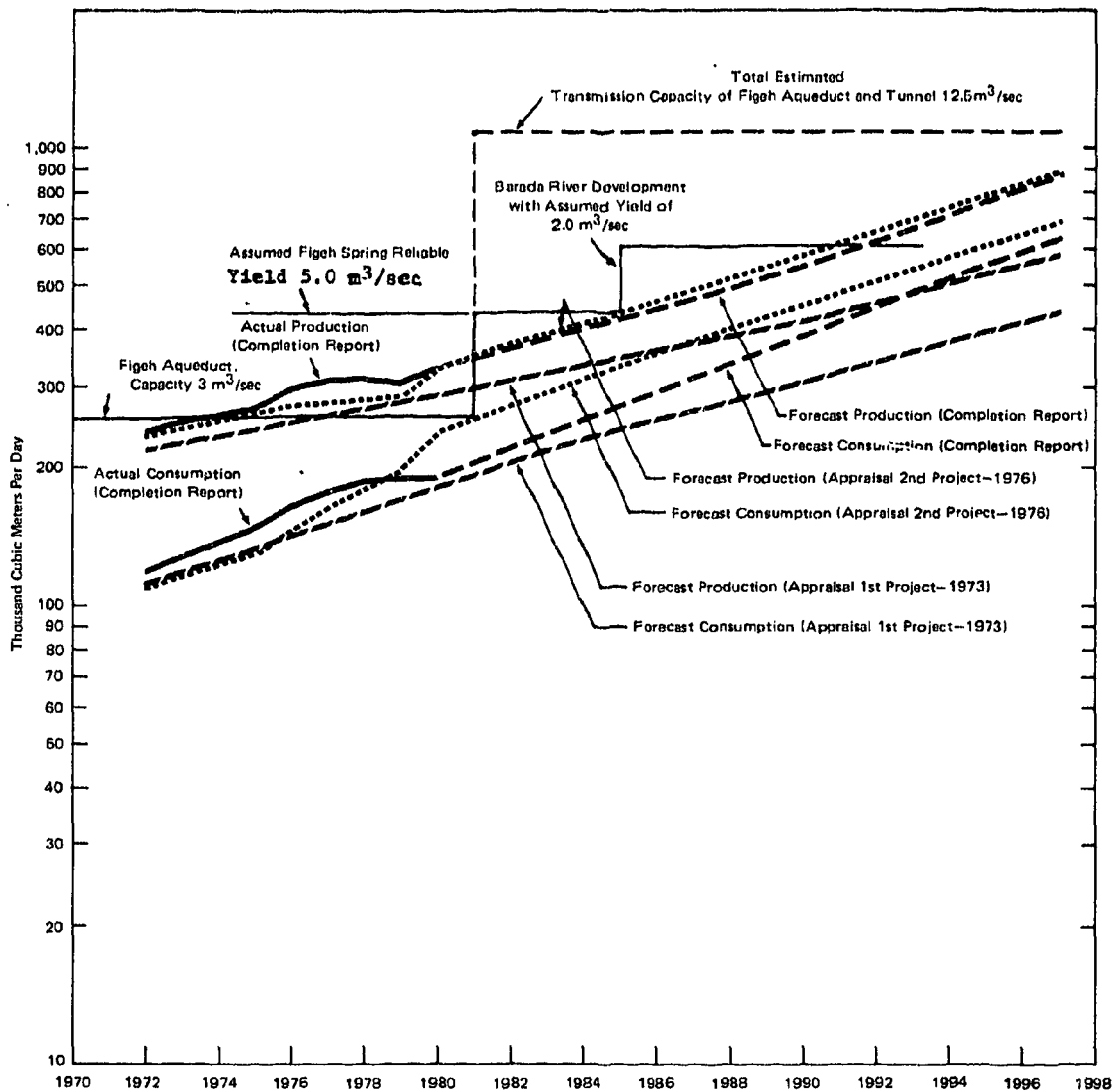
COMBINED PROJECT COMPLETION REPORT

AVERAGE INCREMENTAL COST (LS PER M³)

<u>Discount</u> <u>Rate</u>	<u>Value in Completion Report</u>		<u>Value in Second</u> <u>(1975) Appraisal</u> <u>Report</u>
	<u>In 1983 prices</u>	<u>Adjusted to 1975 Prices</u> ^{1/}	
3%	0.83	0.35	0.60
6%	1.42	0.59	0.89
8%	1.95	0.82	1.09
9%	2.26	0.95	1.19
12%	3.38	1.41	1.50

^{1/} Deflator of 2.39 is used. This is based on the general price indices obtained from the Central Bureau of Statistics, Syria.

SYRIAN ARAB REPUBLIC
FIRST AND SECOND DAMASCUS WATER SUPPLY PROJECTS
CREDIT 401-SYR
LOAN 1241-SYR
COMBINED PROJECT COMPLETION REPORT
WATER PRODUCTION AND CONSUMPTION



APPENDIX

COMMENTS FROM THE BORROWER

ZCZC DIST3926 RCA2497

DIST

WHEN REPLYING TO THIS MESSAGE REFER TO: TCP

OEDDR HC

248423 WORLDBANK

FIGDAM 411312SY

TELEX NO 407

ATT: MR. SHIV S. KAPUR, DIRECTOR, OPERATIONS EVALUATION DEPARTMENT

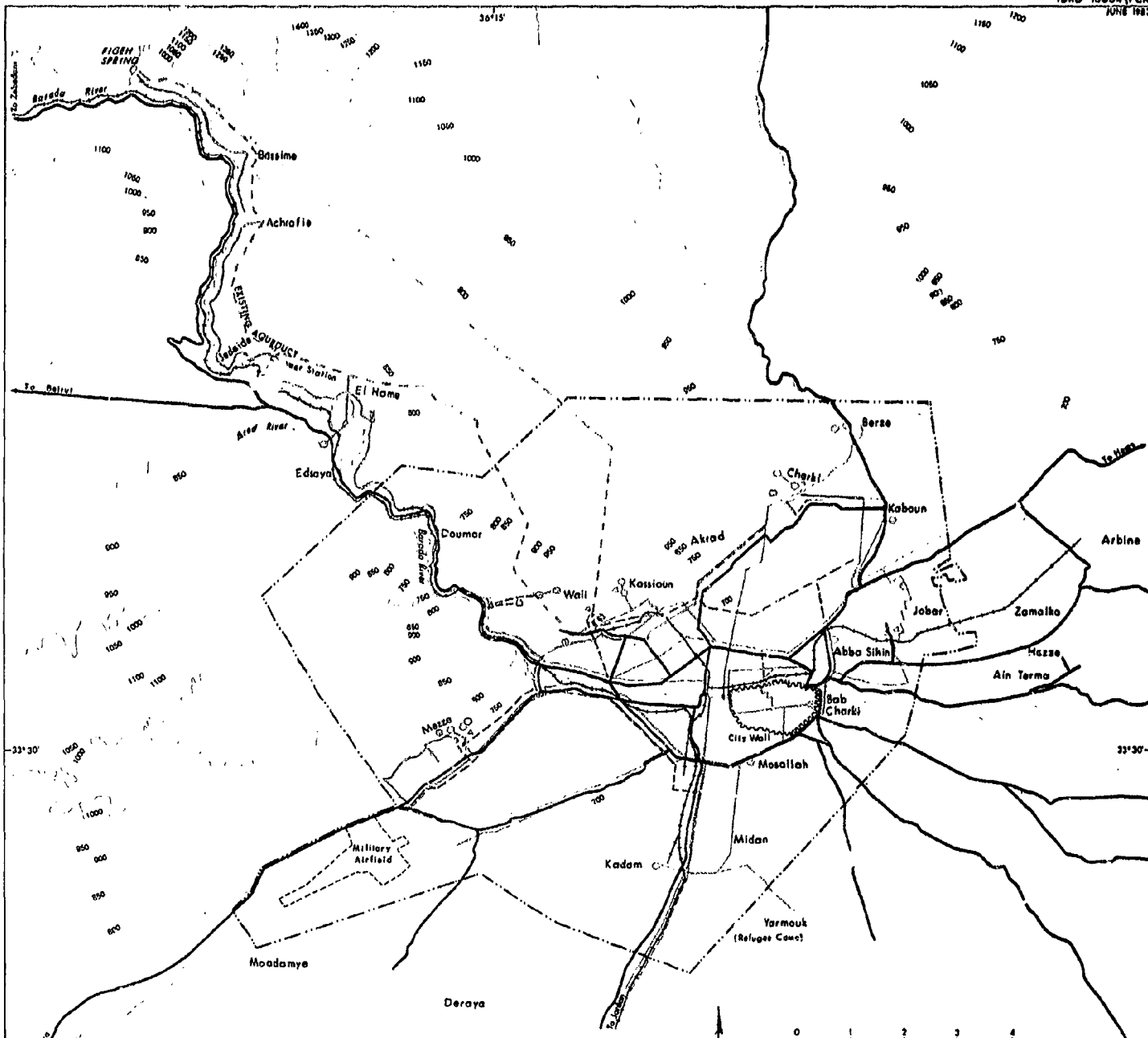
TKS YCABLE DD 4 INSTANT REQUESTING OUR REMARKS, IF ANY, ON PROJECT
COMPLETION REPORT FOR CREDIT 401-SYR AND LOAN 1241-SYR.

KINDLY PLS NOTE THAT FROM THE TECHNICAL OR FINANCIAL ASPECTS THERE
ARE NO REMARKS ON WHICH WE WANT TO COMMENT. WE ARE GLAD TO
FIND OUT THAT THE REPORT IS IN FULL COMPLIANCE WITH THE PROJECTS AND
IT INDICATES THE FRUITFUL SUCCESS OF THE COOPERATION BETWEEN THE
WORLD BANK AND OUR ESTABLISHMENT. RGDS

P S G OF EPEF ENG. RIDA MOURTADA

248423 WORLDBANK

FIGDAM 4111312SY



SYRIAN ARAB REPUBLIC
FIRST AND SECOND DAMASCUS WATER SUPPLY PROJECTS
CREDIT 401-SYR
LOAN 1241-SYR

COMBINED COMPLETION REPORT
METROPOLITAN AREA OF DAMASCUS

- General Renewal of System (First Project)
- Mains under IDA 401-SYR (First Project)
- Tunnel (Second Project)
- Underground Reservoir (Second Project)
- Mains Financed by USAID
- △ Pumping Station Financed by USAID
- Reservoirs Financed by Arab Fund
- Existing Pumping Stations
- Existing Reservoirs
- Existing Water Mains
- Roads
- Railways
- Boundary of Damascus Municipality
- Contours, 50 Meter Interval

The map has been prepared by The World Bank in collaboration with the Syrian Arab Republic and the International Finance Corporation. The boundaries shown on this map do not imply, on the part of The World Bank and the International Finance Corporation, any judgment on the legal status of any territory or any endorsement or acceptance of such boundaries.

