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Report No. 5764

PROJECT PERFORMANCE AUDIT REPORT

**SYRIAN ARAB REPUBLIC SECOND HIGHWAY PROJECT
(CREDIT 298-SYR)**

June 28, 1985

Operations Evaluation Department

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COUNTRY EXCHANGE RATES

Name of Currency: Syrian Pound (SP)
Appraisal Year Average: US\$1 = SP3.82

The official rate of exchange of US\$1 = SP3.9 has not changed during the project implementation period. In early 1981, the Government established a so called "parallel currency market" under which the exchange rate has been fluctuating on a ratio of between SP5.3 - 6.0 to the US\$. This exchange rate, however, is mostly applied to tourist transactions.

PROJECT PERFORMANCE AUDIT REPORTSYRIAN ARAB REPUBLIC SECOND HIGHWAY PROJECT
(CREDIT 298-SYR)TABLE OF CONTENTS

| | <u>Page No.</u> |
|--|-----------------|
| Preface..... | i |
| Basic Data Sheet..... | ii |
| Highlights..... | iv |
| <u>PROJECT PERFORMANCE AUDIT MEMORANDUM</u> | |
| I. PROJECT BACKGROUND | 1 |
| II. PROJECT IMPLEMENTATION | 3 |
| III. POINTS OF SPECIAL INTEREST..... | 7 |
| Role of the Association..... | 7 |
| Economic Justification and Design Changes..... | 8 |
| IV. CONCLUSIONS..... | 10 |
| Bank Group Leverage..... | 10 |
| Institutional Improvements..... | 10 |
| Changes in Project Scope..... | 11 |
| Road Construction Standards..... | 11 |
| <u>PROJECT COMPLETION REPORT</u> | |
| I. Introduction..... | 15 |
| II. Project Identification, Preparation, Appraisal and Negotiations | 16 |
| III. Project Implementation..... | 18 |
| IV. Cost Estimates and Disbursements..... | 26 |
| V. Economic Reevaluation..... | 27 |
| VI. Performance of the Borrower | 29 |
| VII. Role of the Association | 32 |
| VIII. Conclusions..... | 32 |
| <u>TABLES</u> | |
| 2.1 Appraisal Project Cost Estimate..... | 34 |
| 2.2 Amended Project Cost Estimates and Credit Allocations... | 35 |
| 4.1 Credit Allocations..... | 36 |
| 4.2 Final Cost and Disbursements..... | 37 |
| 5.1 Traffic Projections on Damascus-Zabadani Junction Road.. | 38 |
| 5.2 Vehicle Operating Costs by Vehicle Types..... | 39 |
| 5.3 Streams of Cost and Benefits for Selected Years..... | 40 |

MAP

IBRD 17360R (PCR)

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PROJECT PERFORMANCE AUDIT REPORT

SYRIAN ARAB REPUBLIC SECOND HIGHWAY PROJECT
(CREDIT 298-SYR)

PREFACE

This is the performance audit report on the Second Highway Project in Syria Arab Republic (Credit 298-SYR) of US\$13.8 million, signed on April 17, 1972. The Credit became effective on February 2, 1973, and was fully disbursed on June 2, 1983. This document consists of a Project Performance Audit Memorandum prepared by the Operations Evaluation Department (OED), and of a Project Completion Report (PCR), prepared by the Europe, Middle East and North Africa Regional Office.

OED studied the project documentation in the Records Center and reviewed the project against the Appraisal and President's Reports, the legal documents, and the transcripts of the Executive Directors' meetings which considered the project. Discussions were held with Association staff on project formulation, implementation and follow-up. An OED mission visited Syria in July 1984, had discussions with Government authorities and travelled on the roads financed under the project.

OED has found that the PCR provides an adequate record of the experience under the project and the Audit Memorandum elaborates primarily on project objectives and implementation.

The draft report was sent to the Borrower for comments; however, none were received.

PROJECT PERFORMANCE AUDIT REPORT

SYRIAN ARAB REPUBLIC SECOND HIGHWAY PROJECT
(CREDIT 298-SYR)

BASIC DATA SHEET

| <u>Item</u> | <u>KEY PROJECT DATA</u> | | |
|---|------------------------------|----------------------------------|-----------------------------------|
| | <u>Appraisal Expectation</u> | <u>Credit Amendment Estimate</u> | <u>Actual or Current Estimate</u> |
| Total Project Cost (US\$ million) | 28.7 | 38.5 | 41.0 |
| Overrun (%) | - | | |
| Credit Amount (US\$ million) | 13.8 | 13.8 | 13.8 |
| Disbursed as of 12/31/82 (US\$ million) | - | - | 13.7 |
| Date Physical Components Completed | 12/77 | 6/81 | 6/83 |
| Economic Rate of Return | 18% | 18% | - |

CUMULATIVE ESTIMATED AND ACTUAL DISBURSEMENTS
(US\$ million)

| | <u>FY74</u> | <u>FY75</u> | <u>FY76</u> | <u>FY77</u> | <u>FY78</u> | <u>FY79</u> | <u>FY80</u> | <u>FY81</u> | <u>FY82</u> | <u>FY83</u> |
|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Appraisal Estimate | 2.3 | 5.2 | 8.4 | 12.0 | 13.8 | - | - | - | - | - |
| Actual | - | - | - | 0.7 | 5.4 | 6.8 | 8.1 | 9.1 | 11.4 | 13.8 |

OTHER PROJECT DATA

| <u>Item</u> | <u>Original Plan</u> | <u>Actual or Est. Actual</u> |
|-------------------------------------|---------------------------------|------------------------------|
| First Mention in Files or Timetable | - | 11/63 |
| Negotiations | 10/71 | 11/29 - 3/12/71 |
| Board Approval Date | 12/71 | 3/07/72 |
| Credit Agreement Date | - | 04/17/72 |
| Effectiveness Date | 10/16/72 | 02/02/73 |
| Closing Date | 6/30/78 | 12/31/82 |
| Borrower | Syrian Arab Republic (SAR) | |
| Executing Agency | Department of Roads and Bridges | |
| Fiscal Year of Borrower | January 1 - December 31 | |
| Follow-on Project Name | Third Highway Project | |

MISSION DATA

| <u>Item</u> | <u>Month/ Year</u> | <u>No. of Weeks</u> | <u>Persons</u> | <u>Man-Weeks</u> | <u>Date of Report</u> |
|-------------------|------------------------|-------------------------|----------------|------------------|---------------------------|
| Identification | 11/69 | n.a. | 3 | - | 11/25/69 |
| Preappraisal | 02/70 | 1 | 2 | 2 | 04/15/70 |
| Appraisal | 05/71 | <u>2.9</u> | 2 | <u>5.8</u> | 06/11/71 |
| Subtotal | | <u>3.9</u> | | <u>7.8</u> | |
| Supervision I | 07/09 - 14/72 | .71 | 1 | .71 | |
| Supervision II | 09/72 | n.a. | 1 | - | |
| Supervision III | 02/12 - 17/73 | .71 | 1 | .71 | |
| Supervision IV | 09/23/73 | n.a. | 1 | - | |
| Supervision V | 04/23 - 26/74 | .57 | 2 | 1.14 | |
| Supervision VI | 09/30 - 10/04/74 | .71 | 2 | 1.42 | |
| Supervision VII | 02/04 - 06/75 | .43 | 1 | .43 | |
| Supervision VIII | 09/27 - 10/05/75 | 1.29 | 2 | 2.58 | |
| Supervision IX | 06/01 - 11/76 | 1.43 | 3 | 4.29 | |
| Supervision X | 09/76 | 1.71 | 1 | 1.71 | |
| Supervision XI | 10/26 - 11/04/76 | 1.43 | 2 | 2.86 | |
| Supervision XII | 05/10 - 06/02/77 | 3.29 ^{1/} | 2 | 6.58 | |
| Supervision XIII | 09/77 | 2.29 | 2 | 4.58 | |
| Supervision XIV | 01/15 - 24/78 | 1.29 | 1 | 1.29 | |
| Supervision XV | 07/07 - 13/78 | .86 | 1 | .86 | |
| Supervision XVI | 07/79 | .71 | 3 | 2.13 | |
| Supervision XVII | 12/79 | .43 | 1 | .43 | |
| Supervision XVIII | 06/80 | 2.14 | 2 | 4.28 | |
| Supervision XIX | 02/81 | 1.71 ^{2/} | 1 | 1.71 | |
| Supervision XX | 06/81 | 1.71 | 1 | 1.71 | |
| Supervision XXI | 03/82 | 1.14 ^{2/} | 2 | 2.28 | |
| Supervision XXII | 01/83 | <u>1.29</u> | 2 | <u>2.58</u> | |
| Subtotal | | <u>25.88</u> | | <u>44.28</u> | |
| Total | | <u>29.78</u> | | <u>52.08</u> | |

COUNTRY EXCHANGE RATES

| <u>Name of Currency (Abbreviation)</u> | <u>Syrian Pound</u> | <u>(SP)</u> |
|--|---------------------|-----------------|
| Year: | | |
| Appraisal Year Average | Exchange Rate: | US\$1 = SP 3.82 |
| Intervening Years Average | 1981 | US\$1 = SP 3.9 |
| Completion Year | 1982 | US\$1 = SP 3.9 |

1/ In conjunction with preappraisal of proposed Highway III.

2/ In conjunction with supervision of Highway III.

PROJECT PERFORMANCE AUDIT REPORT

SYRIAN ARAB REPUBLIC SECOND HIGHWAY PROJECT
(CREDIT 298-SYR)

HIGHLIGHTS

The project was appraised in May 1971, approved by the Board in March 1972, became effective in February 1973, and was scheduled for completion by December 1977. In April 1978, the project scope was amended and the planned completion date was postponed to June 1981. The project was declared substantially completed and was closed in December 1982. The final disbursement was made in June 1983 (PPAM para 5).

Project objectives were not clearly stated and may be assumed to have aimed at the modernization of the primary network (PPAM para. 8). The audit feels that had they been set, specific targets may have led to a more successful project execution (PPAM para 9).

Project components originally included about 150 km of road improvements, plus consulting services for construction supervision, and feasibility studies. In April 1978, the road construction component was reduced to about 58 km and the list of studies was modified. A total of about 30 km (20% of the original target) was completed but at a standard much higher than proposed at appraisal (PPAM para 11). The secondary components, providing for consultancy services, were satisfactorily completed (PPAM para. 14 and PCR, paras. 3.16-3.27).

Project implementation was long: twelve years from appraisal to completion. Delays were due partly to unsettled conditions in the area and partly to changes in the project scope.

Comparisons between appraisal and final project costs are not possible, because of the substantial changes in project scope (PCR, para. 4.01). The audit feels that under the circumstances prevailing in the area, assessments of economic viability based on estimates of future traffic are bound to be conjectural and that the results of any economic reevaluation would be debatable (PPAM para. 16).

Covenants have not been scrupulously observed (PPAM paras. 17-19). However, the audit feels that open-ended covenants in the Development Credit Agreement could not have contributed, as intended, to organizational and institutional improvements. It might have been more fruitful to identify one basic problem (for example, the damage done to road pavements by overloaded vehicles) and to concentrate on its resolution, leaving other problems for subsequent projects (PPAM para. 31).

The audit has concluded that collaboration between the Government and the Bank Group was productive during the First Highway Project which improved infrastructure, laid the basis for the reorganization of the Department of Highways and Bridges, strengthened road maintenance, and supported pre-investment studies leading to the further development of the highway sector (PPAM para. 4). Increased financing made available to Syria by a variety of sources from 1973 onwards, led the Government to maintain amicable relations with the Bank Group while, at the same time, embarking on courses of action not completely sanctioned in the view of the audit but not of the Region, by economic rationalism. These included extensive changes in the scope of the Second Highway Project (PPAM para. 11), and exclusive reliance upon State-owned contractors for road construction and maintenance (PCR, para. 8.02). Under the circumstances, further Bank Group lending to Syria for highways (which the audit assumes to be concerned with institution-building and policy reform primarily, and only secondarily with infrastructural improvements), ought to be made conditional upon the resolution of the prevailing differences of opinion concerning the desirable level of engineering preparation prior to submission of a project to the Bank's Board of Directors (PPAM paras. 6 and 7), work procurement methods (PCR, para. 8.02), and functions to be performed by consultants (PPAM para. 15). The Region feels that this is not appropriate with regard to the Second Highway Project, for which, as it is recognized in para. 7, detailed engineering was available before presentation to the Board of Directors.

PROJECT PERFORMANCE AUDIT MEMORANDUM

SYRIAN ARAB REPUBLIC HIGHWAY PROJECT
(CREDIT 298-SYR)

I. PROJECT BACKGROUND

1. The frequent political and economic changes which took place since Syria became independent in 1946 made it difficult for the country to prepare projects meeting Association criteria.^{1/} Until the early 1960's only one lending operation was consummated, the US\$8.5 million IDA Credit for the First Highway Project (Credit 46-SYR of 1963). OED has issued a Project Performance Audit Report (No. 1259 of August 11, 1976) whose main points are summarized below because of their relevance to the preparation and implementation of the Second Highway Project.

The First Highway Project (Credit 46-SYR)

2. Discussions between the Association and the Government concerning a highway project (and comprising most of the components subsequently financed under Credit 46-SYR) began in the early 1950s. Negotiations for a US\$10 million loan were completed in 1956 but political reasons prevented the Government from signing the loan agreement. Six years later, in 1962, a new Government reestablished contact with the Association and requested finance for a highway construction project. A January 1963 appraisal mission identified a possible project including reconstruction and resurfacing of the Damascus-Aleppo-Raqqa Road. In the absence of detailed engineering studies, rough estimates were made by the Department of Highways and Bridges (DHB) and, on that basis, it was assumed that reconstruction would cost about US\$16,000/km. The Association was aware that this estimate might be unrealistic but viewed the financing of the project's physical elements as a fixed contribution towards an open-ended construction job which would both be justified by itself and give the necessary leverage to bring about broader institutional improvements.

3. Project completion was delayed from June 1967 to March 1975 by wars, delays in the selection of consultants, lack of coordination among the consultants after they had been appointed, delays in completing detailed engineering, and delays in the award of construction contracts. The absence of even preliminary engineering for the Damascus-Aleppo-Raqqa Road was largely responsible for the increase of total project costs from US\$14 million equivalent to US\$35.3 million equivalent. Even so, the audit rates of return remained satisfactory, operational and administrative procedures were strengthened and the project was regarded as a good example of substantial institutional improvements achieved under difficult conditions.

^{1/} The Region objects that, as mentioned at the end of Highlights (page v) the Second Highway Project was prepared in full accordance with the Association's requirements.

4. When the First Highway Project was launched, there was no overall road construction plan, the country had only limited experience with modern road construction methods, and maintenance operations were ineffective. It was argued within the Association that progress should be made in these areas before any road construction was attempted. But it was recognized that the Government would not accept a technical assistance program only, without a sizeable physical component. By remaining flexible about the project's composition, the Association was able to maintain good relation with officials in the country, and Syria was receptive to advice on institutional issues. The net outcome was encouraging; traffic conditions on the project roads improved; a basis was laid for the reorganization of the DHB; staff training and road maintenance procedures were strengthened; and preinvestment studies financed under the project not only assisted in the further development of the highway network but also led to the Second Highway Project. In sum, IDA and the Government accepted cost increases and delays in project implementation for the sake of long-term institutional and organizational benefits.

The Second Highway Project

5. The project arose out of Credit 46-SYR which contributed to the preparation of feasibility studies for the Damascus-Lebanese Border, the Kiswe-Jordanian border, and the Homs-Tartous roads. The Region emphasizes that Credit 46-SYR financed also the preparation of detailed engineering for these roads. In view of the financing problems that had to be resolved (PCR, para. 2.01), the period between first discussions in November 1969 and appraisal in May 1971 was not excessive. Similarly, the interval between appraisal and Board presentation (March 1972) was not unreasonably long. However, the eleven months between Board approval and effectiveness reflect the need for Government actions that ought to have been completed under the First Project (PCR, para. 2.03). Physical completion of the Second Project, originally estimated at December 1977, was postponed to June 1981 when the Credit Agreement was amended in April 1978. The Credit was closed on December 31, 1982 and works were declared to have been substantially completed at that time.

6. The staff appraisal report (SAR) for the Second Project contains a number of comments regarding implementation of the First:

"Inadequate engineering preparation led to delays and problems" (Summary, para. iii).

"Tensions in the Middle East also had their effect upon international bidding" (para. 1.04).

"The problem of overloading continues and is aggravated by transit of heavy foreign-owned trucks" (para. 2.20).

7. Comments such as the above apply just as much in 1984 to the implementation of the Second Project as they did in 1972 to that of the First.

Paragraph 1.07 of the SAR states "Although the Government must (with the consultants, contractors and the Association) bear its share of the blame for the slowness of implementation of the First Project, most problems have now been overcome". The PCR for the Second Project gives the impression that, on the contrary, the old problems have not been overcome and that new ones have been added. For example, while it is true that detailed engineering was available for the roads to be constructed to two-lane standard under the original project scope, work went ahead without detailed engineering for the items included in the amended project (PCR, para. 3.04). Furthermore, the Government policy, implemented since 1981, of using only State-owned contractors for all major road construction and maintenance works is in conflict with the Bank's policy of international competitive bidding. Although the Bank has tried to be flexible, not much progress seems to have been made in resolving the fundamental differences of opinion (PCR, para. 8.02).

II. PROJECT IMPLEMENTATION

Project Objectives

8. Neither the SAR nor the President's Report contain an explicit description of project objectives, possibly because Bank-wide instructions to include such statements came after 1972. Para. 2.17 of the SAR suggests that the project's aim is to help "modernize the primary road network composed largely of roads built over 30 years ago", an intention manifested by the project's composition which is almost exclusively concerned with infrastructural improvements.

9. The SAR discusses in some detail the problems encountered during implementation of the First Project (SAR, Annex A), as well as the shortcomings of highway planning in Syria (SAR, paras. 1.04, 2.20, 2.22, 3.06, 3.13, and 3.14). It is therefore surprising that measures to tackle directly at least some of these problems were not put forward as specific project objectives. At the very least, the Development Credit Agreement (DCA) might have included appropriate measures to ensure that the difficulties encountered during implementation of the First Project would not recur. The broad and open-ended requirements contained in the DCA (Sections 3.01 through 4.03) should not have been expected to provide sufficient safeguards. It would have been preferable to be more specific and to arrange for firm agreement on Terms of Reference for consultants, as well as for detailed provisions for the type and amount of traffic and engineering data to be used in project planning and design. Fulfillment of such requirements by the time of negotiations would probably have delayed Board presentation by a year but might have resulted in earlier physical completion of the project with easier implementation than actually occurred. The Region points out that feasibility and detailed engineering studies were completed by appraisal. Therefore, the TOR and data to be used in project planning and design had been fixed and agreed upon long before negotiations. The comment that these elements should have been agreed upon by the time of negotiations is, therefore, not valid.

Project Components

10. The project consisted of: (a) Improvement and/or construction of three highway sections (including about 40 km of the Damascus-Lebanese Border Road, about 85 km of the Kiswe-Jordanian Border Road, and about 28 km of the Homs-Tartous Road), and (b) Consulting services (including supervision of (a); feasibility studies; and a study of maintenance needs).

11. Primary road improvement or construction was originally proposed for a total of 153 km (SAR, para. 4.01.1). In April 1978, the Credit Agreement was amended and the project now included: (a) construction of the Damascus-Zabadani Junction section of the Damascus-Lebanese Border Road (about 24 km); (b) construction of the Tall Kalakh section of the Homs-Tartous Road (about 34 km); and (c) consulting services for works supervision and feasibility studies (PCR, para. 2.07). When the last disbursement was made in June 1983, only 18 km. were fully completed between Damascus and the Lebanese Border (with a further 6 km 90% completed), plus about 6 km of the Homs-Tartous Road. This makes a total of approximately 30 km, or about 52% of the length in the amended project and 20% of the length of road in the original project.^{2/} However, the standard of design was significantly higher than proposed at appraisal (SAR, Table 9), a change to which the Association agreed after some protests. In the case of the Damascus-Lebanese Border Road, agreement was given after receipt of the Damascus-Lebanon Autoroute Study of May 1976. The study shows that the higher capacity design is economically justifiable for the sections financed by the Association but the central assumption upon which the Study is based (that conditions in the area would return to "normal" within a few years) was optimistic at the time it was put forward,^{3/} was proved by events to have been incorrect, and may well continue to be inapplicable for some time to come.

12. Both road sections financed by the project have been in use for some three years under heavy traffic, though at volumes inferior to those estimated at appraisal. In spite of heavily loaded trucks forming a large part of the traffic,^{4/} the pavement is performing well so far: there are some signs of surface deformation on the "up" carriageway which carries most of the loaded vehicles, but no serious cracking is to be seen. Work is in progress to form flatter slopes in cut sections and this will help avoid the problem of debris falling into the side ditches. Close to Damascus, dangerous conditions exist due to the illegal practice of dumping excavated material from building development on the roadside shoulders.

^{2/} The Region comments that the roads originally included in the project have been built with Government and bilateral financing, excluding the Kiswe-Jordanian border road, which is being currently constructed with Government and EIF financing. The project objective regarding road construction is, therefore, largely fulfilled.

^{3/} In the Region's opinion this is to be considered an easy hindsight.

^{4/} Including, the Region points out, heavy military traffic, which was not foreseen at the time of feasibility study.

13. At the time of the audit, traffic on both the Damascus-Lebanese Border and the Homs-Tartous roads was well below capacity, which at present rates of traffic growth is unlikely to be reached within the next decade. The audit was shown 1983 traffic counts for the Damascus-Lebanese Border Road amounting to 3,000-4,000 vehicles per day on the new road, with even more traffic on parts of the old route, leading to the impression that the figures are unreliable.^{5/} The audit requested results of axle-load surveys said to have been carried out on some routes other than this road, but the data were not forthcoming.

14. Secondary components of the project provided consultancy services for construction supervision, feasibility studies and a study of maintenance needs. A detailed discussion of the progress of the first two is in paras. 3.16 through 3.27 of the PCR. The maintenance needs study was dropped during the project (Letter of 13 July 1976 from the Association to the Minister of Communications).

15. Apart from the desirability of having suitable Terms of Reference agreed early in the project, and preferably before Board presentation, the delay in appointing supervising consultants weakened their position vis-a-vis the contractors and may have contributed to the subsequent implementation problems (PCR, paras. 3.20-3.21). The audit found that MOC staff still expect supervising consultants to take an active part in contract management and to direct the contractor in his work. This is a position not in accord with the duties usually described in Terms of Reference for consultants, nor is it in accord with FIDIC-type specifications and conditions of contract. Review of the correspondence in the files indicates that much of the trouble that took place in supervision of the Damascus-Lebanese Border Road arose because the different parties concerned held different views on the role of supervising consultants.

Project Costs and Economic Reevaluation

16. The PCR states (para. 4.01) that "a comparison between appraisal cost and disbursement estimates and final costs and disbursements is meaningless because of the substantial changes in project scope during execution". During its visit to Syria, the audit mission attempted to collect consolidated final cost figures for the entire lengths of the Damascus-Lebanese Border and for the Homs-Tartous roads. This turned out not to be possible and the statement quoted from the PCR must therefore stand. In addition, the audit feels that under the circumstances prevailing in the area, assessments of economic viability based on estimates of future traffic are bound to be conjectural. Consequently, the results of any economic reevaluation, such as was done in the PCR and showed an ERR of 15%, would be debatable. In a somewhat similar case in Lebanon on the Second Highway Project there (Loan

^{5/} The Region stresses that the PCR's economic evaluation of the Damascus-Zabadani Junction road is based on actual costs supplied by the Ministry of Communications and actual counts carried out in 1980 and 1982 by consultants (PCR, para. 5.02). No counts were available for Homs-Tartous and no economic evaluation was carried out (PCR, para. 5.02).

944-LE) the Bank in its PCR was not able to carry out an economic reevaluation of the construction component because there was so little traffic on the road and it was not known when conditions would return to normal (see Paras. 20, 25 and 26, PPAM for Loan 944-LE dated November, 1984). The Region comments as follows: the two roads in Lebanon and Syria do not represent similar cases. Firstly, the traffic on the Lebanon road was practically inexistent, which is not the case for the Syrian road. Secondly, the latter serves not only transit traffic to Lebanon, but also local traffic to Zabadani, while the former is a local road only.

Covenants

17. The project attempted to control overweight axles (PCR, para. 6.06) by means of covenants in the DCA and the unrewarding results were similar to those in other highway projects worldwide. The audit saw no evidence that, so far, there is any effective control on axle loadings, although main routes carry a heavy proportion of heavily loaded trucks. Data from axle load surveys, said to have been carried out on several main roads, were requested from MOC but were not provided.

18. History suggests that the main roads of Syria will always carry a high proportion of long distance freight traffic between Mediterranean ports and countries to the east. This means that transporters wishing to quote low transport rates will, if possible, overload their vehicles. Covenants in Bank or IDA projects for Government action to restrict axle loadings usually prove to be unenforceable. In view of these facts, it is likely that the optimum economic solution under the circumstances would probably be to build pavements which are designed to take greater loads. As a general rule, pavement design ought to be based on the prevailing axle load spectrum, unless and until axle load controls have been shown to be enforceable. A study of current axle loadings and road transport rates ought to be one of the prerequisites to future lending for highways in Syria. The enforcement of axle-load control was not successful because of the reasons outlined in para. 6.06 of the PCR and the issue was taken up under the Third Highway Project.

19. In addition to the major covenants in Sections 4.02 and 4.04 of the DCA mentioned in the PCR (para. 6.04), a review of project files has shown that at various times during the project, most of the covenants in the DCA were not observed.

Section 3.02 required the Borrower to employ consultants to assist with prequalification of contractors, analysis of bids and supervision of highway construction. In spite of assurances given in October 1974 (para. 5 of Back-to-Office Report), contracts were let without consultants being appointed. A year later, (Supervision Report of September/October 1975 Mission), construction was in progress without supervision by consultants, and a contract was not concluded with a French consulting firm until January 1976 (PCR,

paras. 3.16 and 3.18). Even after that, supervision was incomplete and unsatisfactory, largely because of the attitude of the contractors (PCR, paras. 3.10 and 3.21).

Section 3.03(a) required that contractors acceptable to the Association be employed. Schedule 3 of the DCA notes that: "If the Contract shall be awarded over the Association's reasonable objection, no expenditure thereunder shall be financed out of the proceeds of the Credit." The Association objected to the selection of the Contractor for the Homs-Tartous Road and although, as a result, this work was not financed by the Association, the funds were not cancelled, as the audit feels they should have been, but were used for other purposes (PCR, para. 3.08).

Section 3.03(b) required that agreed design standards be used. Although in some instances, design changes did have some justification, in the main they did not, because they were based on traffic growth assumptions which the audit cannot accept as being reasonable at the time they were made.^{6/} Furthermore, design changes were sometimes carried out without previous consultation with the Association and although withdrawal applications were not submitted before the issue of road design standards was resolved (PCR, para. 6.02) the fact remains that communication between the two parties could have been better.

20. Imperfect exchange of views also took place during the First Project (Back-to-Office Report dated 3 February 1973, and letter from Bank to Government dated 28 July 1972), and it is regrettable that a better understanding had not developed between the Association and the MOC by the time the Second Project started.

III. POINTS OF SPECIAL INTEREST

Role of the Association

21. Since the basic objectives of the Second Highway Project were not spelled out during the preparation and appraisal stages, it is unclear what role the Association expected to play in the development of the highway sub-sector. Judging by comments made in the appraisal report for the First Highway Project, the Association might very well have expected to improve highway design and planning in the long run, and to encourage better use of consultants. If a key objective was the rigorous application of economic criteria in decisions leading to highway investments (PCR, para. 7.01), it cannot be said that the results have been satisfactory. Equally unclear is why the Government wished, and apparently still wishes, the Association to be involved in highway development, since its financial contribution has been

^{6/} The Region feels again that this sentence might be influenced by an eight-year hindsight.

small, and alternative sources of finance have been easy to find (PCR, paras 2.06-2.08). If the reason was that contractors and MOC staff would benefit from the presence of consultants working on Association-approved Terms of Reference, and from the periodic visits of Association missions, then a more cooperative approach on the part of the Government would have produced better results.

22. The audit mission would have liked to discuss these matters with Government but key staff were not available. However, MOC staff expressed the opinion that the Association had played a useful part because once a particular road had been included in a Bank-assisted project, it was more likely to proceed without major changes and with adequate provision of local funds, than would works financed exclusively by Government.

23. Judging from reports in the file and from comments in the PCR, the audit feels that the Association has made a worthwhile contribution in development of the State-owned contractors. Whatever may have been their shortcomings originally, at least some of them are now well enough equipped to carry out major engineering works to acceptable standards. The audit understands that the State-owned contractors operate normal commercial accounting systems, including the repayment of initial capital advances from Government with ten percent interest, and that they are generally profitable. The fact remains that Government has declared itself to be against the principle of international competitive bidding for civil works (PCR, para. 8.02), and this runs counter to Bank and IDA policy. During its Syria visit, the audit mission was told that State-owned contractors are now hoping to compete for work in other countries. The mission asked what would be the Government's reaction if other countries declared themselves against the principle of international competitive bidding but received no reply.

Economic Justification and Design Changes

24. All segments of the Syrian road network serving international traffic (and the Damascus-Lebanese Border Road specifically) are transport arteries whose importance has been sanctioned by history. The audit does not question whether or not they should be improved. The issue is: what should have been the level of improvement during the volatile conditions of the 1970s.

25. The economic justification for building the Damascus-Lebanese Border Road to higher standards than proposed at appraisal was debatable at the time when it was first put forward, and conditions since have caused traffic to grow to levels significantly lower than those forecast in 1976.^{7/} The decision to provide a dual carriageway on Section 3 (which was adjacent to the Lebanon Border and not funded by the Association) could conceivably be defended on the grounds that the Lebanese authorities

^{7/} The Region feels that the decision to increase standards was correct since it was reached after extensive study and after protracted discussions within the Bank and with the Government.

intended to improve their section of the road to similar standards. These, however, are not economic grounds and, at any event, Lebanon has been unable to build its own section to the planned standards. Thus, under present conditions, the Damascus-Lebanese Border Road provides a greater traffic capacity than is needed or is likely to be needed for some years to come. As indicated in the the November 1984 PPAM on the Lebanon Second Highway Project, it is pure speculation to discuss if "normal" commercial activities will resume in Beirut, and when they do, what the traffic levels on this road would be.

26. Although there are perfectly valid reasons why traffic has not increased as forecast (SAR, Table 13), the events which have prevented traffic growth had already commenced when the decision was made to build to motorway standards (mid-1975), and continued while a reassessment of costs and benefits was made in the first half of 1976. In the reassessment, the assumption was made that conditions would quickly return to "normal" but eight years later, they show little sign of doing so. Still, the PCR (para. 5.07), assumes increased traffic volumes from 1985, following the restoration of "normal" conditions in the region.

27. The audit considers that in the unsettled circumstances of 1976, it would have been proper for the Association to consider with some scepticism the assumptions put forward regarding traffic growth expectations and to insist on a standard of road improvement which either minimized the investment at risk, or brought the highest rate of return, or preferably both. The solution involving construction to motorway standards increased the amount of investment at risk rather than reducing it and, in the case of the Damascus-Lebanese Border Road, no comparison seems to have been made, using latest data, of the rates of return associated with the original standard of improvement and with the proposed higher standard. On the whole, the audit gathered the impression that the Association was somewhat too aquiescent regarding Government initiatives with respect to construction standards. For example, in 1980 the Government requested that Association financing be used for part of the Damascus Beltway, which substituted for a 2.6 km section of the Damascus-Lebanese Border Road. The Beltway section, financed by Government, had been built to eight-lane standard. In the audit's opinion, the Association used rhetorically intricate arguments (PCR, para. 3.14) to concur with the Government's proposal and to convince itself that although an eight-lane road was not justified, the Association could nevertheless finance the cost of the equivalent of a four-lane road.^{8/}

^{8/} The Region feels that the decision to concur with the Government's proposal was based on a careful analysis and that it was justified on the long-term transport needs that the works were expected to serve.

IV. CONCLUSIONS

Bank Group Leverage

28. Significant delays plagued the first two highway projects supported by the Association in Syria. The First Project of 1963 was completed in 1975. The Second Project of 1972, reduced to 20% of its original scope, was declared completed in 1982. In both instances, a large part of the delay was due to wars but an equally large part must be attributed to unclear objectives, insufficient planning, and extensive changes in project scopes.

29. The audit has been unable to find in the record a clear statement of Association objectives against which lending strategy for the highway sub-sector could be evaluated. For the Second Project, the implied objective seems to have been the modernization of the primary road network (para. 8, above). If this were indeed the case, the audit feels that the Bank Group overestimated the potential influence of the project on the course of events

30. There is no evidence that Syria was at any point dependent upon Association financing for the modernization of its road network. Cost overruns in both the First and the Second Projects were borne, with no noticeable strain, by Government. During implementation of the Second Project, Government decided to double the carriageway of the Damascus-Lebanese Border Road and this hardly suggests a shortage of funds. The opportunity thus was limited for the support of physical components to earn the goodwill needed for the promotion of operational and institutional improvements (para. 2, above). Moreover, the Association appears to have had limited persuasiveness generally with respect to the actions of the Government in the road sub-sector. One reason may have been that the Association itself was not very clear as to which were the most desirable improvements and how they were to be pursued.

Institutional Improvements

31. Difficulties encountered during implementation of the First Project should have pointed during preparation and appraisal of the Second Project to high-priority areas for institutional and operational improvements. These included measures for better engineering preparation, for the reduction of damage done to road pavements by overloaded vehicles, and for more efficient use of consultants. All of these topics encompass administrative, technical and political issues whose resolution would require persistence, diplomatic skills, and a period of time much longer than the five or six years usually associated with the implementation of an Association-assisted project. Inserting in the DCA a number of open-ended covenants (para. 9, above), should not have been expected to produce the desirable changes and, in fact, did not. A more effective approach would have been to identify one issue (for example, the effects of vehicle overloading and their implications for pavement design) and to concentrate on its resolution (para. 18, above). Subsequent projects could focus on other issues, but always on one at a time, because in environments as complex as that of Syria it is counterproductive to confront many problems at once.

Changes in Project Scope

32. The original project description envisaged the financing to two-lane standard of the Damascus-Lebanese Border, of the Damascus-Jordanian Border, and of the Homs-Tartous roads (SAR, para. 4.03 and Table 9). However, the Terms of Reference for consultants reflected the Government decision to upgrade the primary road network to international motorway standard with a four-lane divided carriageway. The Association requested that MOC prepare detailed economic justifications for the proposed upgrading. Useful as this exercise might have been in helping the Association to decide whether or not to finance specific road segments, the audit feels that, in a larger sense, it was pointless work since the Government decision was not prompted by economic considerations, and would not be easily reversed on the strength of feasibility studies. This was demonstrated by the MOC instruction to contractors to start earthworks to four-lane standards (PCR, para. 3.04).

33. The project was amended in April 1978 due to the upgrading of primary roads to four-lane standard; to the availability of new financing for the Homs-Tartous Road, for part of the Damascus-Lebanese Border Road, for the Damascus-Jordanian Border Road; and to the Association's agreement to modify the list of studies (PCR, para. 2.06). Changes in project scope were extensive enough to warrant a re-appraisal but the record does not indicate that this was even considered. In the audit's opinion, the major issues that should have emerged from such a re-appraisal were how the Association should react to the Government's non-observance of Association procedures and how the Association should react to the Government's decision to increase construction standards for the primary network in general and for the project roads in particular.

Non-observance of Association Procedures

34. By the time of possible re-appraisal, the Government had not observed several major agreements in regard to project implementation, such as having roads built to agreed standards (PCR, para. 3.09), failing to arrange for satisfactory supervision of State-owned contractors (PCR, para. 3.20), and awarding a contract to other than the qualified low bidder (PCR, para. 3.08). As shown in the PCR, these were not mere legal niceties but matters which raised questions whether the project was being executed with due regard for economy and efficiency. A re-appraisal would have provided the occasion for restating the Association's position on these points and would have added the views of the Board on what was perceived to be an unsatisfactory pattern of project execution.

Road Construction Standards

35. It is Syria's, as any other Government's, prerogative to adopt the road construction standards which would best serve its interest. The final choice depended in considerable measure on availability of funds. The ample financing placed at Syria's disposal from several sources between the 1971 appraisal and the 1978 project amendment encouraged the Government to upgrade drastically the relatively modest standards of a project for which it had secured Association assistance. The Government's attitude is understandable

but does not explain the Association's acquiescence to an uneconomic design standard by the continued provision of concessionary funds to a country not visibly short of foreign exchange.

36. The audit does not question that road networks serving large volumes of through international traffic require standards higher than those appropriate for local transport purposes. Viewed against the overall pattern of Middle East transport flows, the role of the Syrian highway network has always been significant (para. 18, above), and will doubtless continue to be significant in the future. However, the designs adopted by the Government provide much more capacity than is needed even on the basis of Syria's role as a major international transit country.^{9/} Finally, the designs could become totally in excess of needs if the political situation did not rapidly become "normal".

Uncertainty and Economic Situation

37. The Second Highway Project was approved at a time when socio-political conditions in the area were unsettled enough to suggest they would not be resolved in the very short run. Even so, the appraisal report for the Second Project (para. 5.07) confidently assumed traffic volumes on the Damascus-Lebanese Border Road to grow by 13% per annum during the first ten years, and by 7% per annum during the subsequent decade. These rates were reduced in the economic analysis which preceded the project amendment in 1978 (President's Report, Credit 298-SYR amendment, para. 4) but the assumptions related to "normalization" continued to be unrealistic in relation to these prevailing conditions.

38. Table 5.1 of the PCR shows that revised traffic projections are significantly below the original ones (8200 vehicles per day (vpd) in 1982, reestimated at 6725; 10600 vpd in 1986, reestimated at 7670; 32100 vpd in 2000, reestimated at 17600). This shows that the hopes for "normalization" are now even more restrained than they had been at the time when the original project was amended. Nevertheless, the audit feels that the PCR forecasts continue to make similarly unrealistic assumptions as did previous analyses:

"The 1976 economic analysis was carried out at a time of uncertainty with regard to events in Lebanon. The study assumed that, while a return to the status quo ante in the region was unlikely, a political settlement would be achieved in 1977. On this basis, traffic projections were made and project benefits were estimated. The reevaluation of the project road is, similarly, carried out against an uncertain background with respect to political stability in the region. The earlier assumptions regarding a return to normality in 1977 proved to be too optimistic. As a result, the expected growth in traffic did not materialize. Since

^{9/} The Region maintains that the highways' standards and capacity were determined after full-fledged economic feasibility and engineering studies, based on traffic growth projections which looked reasonable at the time.

the political issues are still very much alive, the economic re-evaluation assumes that the political stability would be established by 1985." (PCR, para. 5.04).

While unrealistic assumptions at this point will affect no more than the judgment of an investment already in place, better assumptions before the money was spent could have influenced whether and how the investment would be made. Uncertainties with respect to political developments are perhaps difficult to measure but they have a decisive influence on economic outcomes. Prudence requires that investment decisions adequately take these uncertainties into account not only by methodological tools, such as sensitivity and probability analyses, but by investment design (minimal improvements, stage construction, emphasis on maintenance).

39. Two facts are undisputable. First, the road has been built and the quality of the finished product is satisfactory. Second, present traffic cannot possibly justify the investment expenditures made on the Damascus-Lebanese Border Road and it is doubtful whether the traffic volumes that would justify it will materialize in the foreseeable future. The audit believes that lack of reliable traffic counts (para 13), and the prevailing political uncertainties render futile any attempt to forecast traffic volumes which would demonstrate the finished product to be not only technically sound but, also, economically justified.

-14-

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SYRIAN ARAB REPUBLIC

PROJECT COMPLETION REPORT

SECOND HIGHWAY PROJECT - CREDIT 298-SYR

I. INTRODUCTION

1.01 Its geographical location on the eastern shore of the Mediterranean sea has made Syria the transit route between Europe and Asia for many centuries. Today, Syrian highways serve traffic between Jordan, Kuwait, Saudia Arabia, Iraq (suspended about two years ago) and other points to the east as well as its own and Lebanese ports. The Syrian highway system, which has served the traffic - both local and transit - reasonably well for long time, has become insufficient in the last decade or so because of increased traffic and the creation of new economic centers. This has lead to the necessity of upgrading most of the existing highways and constructing new arteries.

1.02 The Bank involvement in the road subsector began in 1963 with the First Highway Project (Highway Improvement Project, Credit 46-SYR, US\$8.5 million). In addition to the Second Highway Project, which is the object of this Completion Report, a Third Highway Project is being carried out with financing under Loan 1546-SYR (May 1978, US\$58 million, reduced to US\$52.1 million August 10, 1981). Finally, a proposed Fourth Highway Project, whose preliminary discussions started in 1978, is presently in abeyance until an essential issue concerning the capability of State-owned contractors is solved. It is estimated that specific discussions on this project can be re-started in early 1984 if the solution of the above issue, which has materialized just recently, will be confirmed in the few coming months.

1.03 The First Highway Project included the improvement of the Damascus-Aleppo-Raqqa highway, the purchase of road maintenance equipment, and consulting services for (i) a study on the reorganization of the Department of Highways and Bridges, (ii) a survey of the road network, and (iii) the design of the improvement on about 520 km of economically justified roads. The planned road improvement, for which no detailed engineering was available and construction cost estimates were only approximate, proved to be inadequate. The higher standard roads which resulted necessary delayed project implementation by more than six years to March 1975, that is after the final Credit closing date of December 31, 1974. Specifically, the designed improvements for the Damascus-Aleppo-Raqqa highway resulted insufficient and new engineering design was needed; road standards had to be upgraded and major realignments had to be studied resulting in a construction time double that agreed under the contracts. In addition, the war of 1967 and its aftermath contributed much to delaying the project implementation. It was the experience with this and other similar projects that prompted the Bank's policy of lending for highways only when detailed engineering is substantially completed. In substance, and despite the many shortcomings, the ex-post rate of return remained satisfactory, and the Project Performance Audit Report (No. 1259) states that the project is a good example of institutional improvements achieved in very difficult conditions.

II. PROJECT IDENTIFICATION, PREPARATION,

APPRAISAL AND NEGOTIATIONS

2.01 The project composition is based on the studies carried out under the First Highway Project (para. 1.03). The first discussions on possible components were held in Damascus in November 1969, and a preappraisal mission of March 1970 had satisfactory results. A preliminary agreement was reached that the proposed project would include: (i) construction and/or improvement of up to 500 Km of roads; (ii) feasibility study and, if economically justified, detailed engineering, of about 375 Km of roads; and (iii) supervision of construction. However, a major issue surfaced from this mission, namely that the Government expected the financial assistance from IDA and not from IBRD, as programmed. Project appraisal was then delayed until May 1971 when IDA agreed to make available an amount on the order of US\$10 million for this project.

2.02 Highlights of the appraisal were:

- (i) various financing alternatives—one of which would require the participation of the Kuwait Fund, which, in the meantime, had expressed interest in the project—to take into consideration the limited IDA funds allocated;
- (ii) the Government request to construct earthworks and drainage structures for four lanes, instead of the two lanes taken into consideration in the economic study under the First Highway Project, on about 10 km of a difficult section of the Damascus-Lebanese border road between Damascus and Dimas;
- (iii) the Government had not made good yet some engagements undertaken under the First Highway Projects, such as the creation of a Central Highway Maintenance Department, and the revision of the vehicle licensing system to increase the number of transport vehicles, thus reducing overloads; and
- (iv) the Government was preparing a new law on vehicle loads (without having solved the problem under the preceding item).

2.03 Negotiations took place in Washington between November 29 and December 3, 1971, and on March 7, 1972, the Board of Directors approved a Credit of US\$13.8 million to finance the Second Highway Project. The delay between negotiations and Board presentation was due to the need for firming up the cost of the additional works, which included the works indicated in para. 2.03 (ii) and an additional 10 km of a dual 2-lane carriageway agreed during negotiations. The Credit Agreement was signed April 17, 1972, under the No. 298-SYR and was expected to become effective October 16, 1972. The condition that the Government establish a Central Maintenance Department (which was in effect already obligatory under the First Highway Project), however, delayed Credit effectiveness until February 2, 1973, when the Association was satisfied that the action taken by the Government responded substantially to the objective set during negotiations (para. 6.05).

2.04 The project, as described in the Credit Agreement, comprised:

Part A:

- (1) improvement or construction of sections of the Damascus-Lebanese border highway (about 40 Km);
- (2) improvement of the Kiswe-Jordanian border section of the Damascus-Jordanian border highway (about 85 Km); and
- (3) construction of a 28 Km section - Tall Kalakh detour - in the Homs-Tartous Highway.

Part B: Services of consultants to assist in:

- (1) prequalifying bidders and analyzing bids for, and supervising the execution of, Part A above;
- (2) carrying out feasibility studies and, if justified on the basis of such studies, detailed engineering for:
 - (a) bypasses for the cities of Homs, Hama, Aleppo and Deraa (about 70 Km); and
 - (b) the Aleppo-Manbij-Tall Tamir-Tall Kojak road (about 470 Km);
- (3) updating the maintenance study prepared by consultants and partly financed under the First Highway Project (para. 1.03).

2.05 Total cost of the project was US\$28.7 million equivalent (Table 2.1), of which the Credit was to finance the foreign exchange component of US\$13.8 million. The project was to start in early 1973 and be completed by December 1977. Amendments in project composition (paras. 2.06-2.08) and difficulties in implementation, however, brought substantial changes in costs and credit allocations, and in the envisaged completion period.

Credit Agreement Amendments

2.06 Following (i) the Government's decision to upgrade the primary roads to a 4-lane standards (para. 3.04); (ii) the new availability of financing for the Tall Kalakh detour (Kuwait Fund, para. 3.08), for part of the Damascus-Lebanese border road (Saudi Fund, para. 3.11) and the Damascus-Jordanian border road (USAID, para. 3.05), and (iii) the Association agreement to delete the study of the Deraa bypass and the road maintenance needs from the project (the road maintenance organization had been improved after appraisal), the Government advanced a formal request to the Association to amend the project description accordingly. It also requested the addition of a study to prepare a highway development plan for northeastern Syria, which originally was to be included in the forthcoming Third Highway Project.

2.07 The Credit amendment sent to the Government on April 4, 1978, therefore, included the following project description:

Part A:

- (1) construction of the Damascus-Zabadani junction section of the Damascus-Lebanese border highway (about 24 km); and

- (2) construction of the Tall-Kalakh section of the Homs-Tartous highway (about 34 km).

Part B:

- (1) carrying out of additional feasibility studies and detailed engineering for upgrading the highways under Part A above and the Damascus-Jordanian border highway, prequalifying bidders and analyzing bids for, and supervising the execution of Part A above;
- (2) carrying out of feasibility studies and, if justified on the basis of such studies, detailed engineering for:
 - (a) bypasses for the cities of Homs, Hama and Aleppo (about 70 km); and
 - (b) the Aleppo-Manbij-Tall Tamir-Tall Kojak road and connecting feeder roads (about 600 km);
- (3) preparing a highway network development plan for northeast Syria, including feasibility studies for highway sections selected to the satisfaction of the Borrower and the Association (about 400 km) and, if justified in the opinion of the Borrower and the Association on the basis of such studies, detailed engineering for selected highway sections (about 300 km).

The project was expected to be completed by June 30, 1981. A revised Credit closing date was not set in the Credit Amendment. The Association, however, established this date as December 31, 1981, in its correspondence with the Government (Telex of 03/18/81 and 07/31/81). The percentage of expenditures to be financed for the civil works under the project was reduced to 15% (previously 52%) because of the increased total cost shown on Table 2.2. The design standards for the project roads were also upgraded to four lanes. It should be noted that Part A (2) of Project Description was not correct because the Association had declared misprocurement in the award of the contract extension for that road construction before the Credit Agreement (para. 3.08). Mentioning only the 6 km executed by the Greek contractor (para. 3.08) would have been more appropriate since there was no possibility to finance the entire Tall Kalakh detour.

2.08 Minor amendments to the Credit Agreement were also made with letter of July 7, 1982. The disbursement percentage for ongoing civil works included in the amendment of April 4, 1978, was increased from 15% to 20% (retroactive from July 31, 1981, the date of the Government's request regarding such increase). In addition, the Association approved the Government's request to finance retroactively the Damascus-Mezze section of the Damascus-Lebanese border road (para. 3.14 and Table 4.1).

III. PROJECT IMPLEMENTATION

Delays in Start-up

3.01 Several factors contributed to delaying the project's start-up: (i) the effectiveness condition; (ii) the updating of engineering studies of the Damascus-Lebanese border road to expand to four lanes the 20 km sections

agreed at negotiations, which took more time than envisaged; (iii) new investigations required to solve a difficult soil stabilization problem on the Kiswe-Jordanian border section of the Damascus-Jordanian border road; and (iv) for the Tall Kalakh detour, a number of alternative alignments, were under study with a view to reducing construction costs and facilitate land acquisition. These studies, financed by the Ministry of Communication (MOC), took until about end-1973 to be completed. The events of October 1973 had a bearing on the delay. The additional engineering studies on the Damascus-Lebanese border road indicated that about SL 3.3 million could be saved, which the MOC wished to use to pave the second dual carriageway on about 10 Km. which were supposed to be limited to earth and drainage works. The discussions on this issue increased the delay. Finally, the Association indicated that, although a first check on economic return was satisfactory, it would be able to give its final opinion only on the basis of the bids which would be submitted later.

Procurement of Civil Works

3.02 Bidding documents were ready in May 1974, and the invitation to submit bids for the Damascus-Lebanese border road set July 10, 1974, as closing date. Three bids were received from 17 prequalified contractors, but only one was declared responsive. According to Syrian laws, this meant that there had been no competition and the bidding was declared unsuccessful. A new bidding of September 2, 1974, produced four bids for the Damascus-Lebanese border road, three for the Tall Kalakh detour, and none for the Kiswe-Jordanian border section of the Damascus-Jordanian border highway. For the latter, a new invitation to submit bids was set for October 10, 1974. The MOC recommended the following firms, which had submitted the least evaluated offers, for contract award:

- Damascus-Lebanese border road: a Syrian, State-owned contractor, contract amount SP 52,057,099.15; and
- Homs-Tartous road (Tall Kalakh detour): a Greek Corporation, contract amount SP 20,800,205.30.

IDA approved the MOC's recommendations on November 26, 1974. The cost increase over appraisal estimates for those two roads was therefore about SP 17 million, or US\$4.8 million. Clearly, a revision of disbursement rates was in order as soon as the costs of the other contracts under the project would be known.

3.03 Regarding the Kiswe-Jordanian border section of the Damascus-Jordanian border highway, however, a second and third biddings did not receive any response as the first one (para 3.02). The MOC indicated that, according to its investigations among some of the invited contractors, these were afraid that the poor terrain on which the road was implanted was a big problem which would have made impossible any reliable offer. The MOC, therefore, suggested to entrust the consultants for work supervision, who were going to be selected, with the design of a new road alignment connecting Damascus with the Jordanian border. IDA, however, rejected this request on

grounds that there was already a large cost overrun for the other two roads, and a new alignment would cost much more than the reconstruction/improvement provided under the project.

3.04 The Terms of Reference (TOR) for consultants, which the MOC sent to IDA for comments, however, included not only the design of a new Damascus - Jordanian border road, but also the upgrading of all three project roads to four lane standards. The MOC explained that it was the Government's decision to construct the primary roads network to international standards of motorways with two divided carriageways. The MOC added that any increased cost beyond the Credit amount for studies and/or construction would be borne by the MOC itself which had received the necessary funds under the 4th Five Year Development Plan 1976-80. In return, IDA requested that MOC prepare detailed economic justifications and cost estimates for the proposed road upgrading. In the meantime, the Government had instructed the contractors to start the earthworks for the two roads under construction to four-lane standards, pending redesign by consultants, who were still to be appointed. Meanwhile supervision of construction was being carried out by MOC's engineers.

3.05 In April 1976, the United States Agency for International Development (USAID) showed its interest in financing the Damascus-Jordanian border road. The negotiations between USAID and MOC were successfully completed in July 1976 and the latter requested that IDA cancel that road from the project as well as the study on the bypass of Deraa, which was at the Jordanian end of the road, but about 10 km distant from the new alignment.

3.06 With the upgrading of the project roads to 4-lane standards, the only exception being the last 13 km of the Damascus-Lebanese border road which were not economically justified, the project cost increased sharply. A new estimate made in 1976 indicated a fourfold increase over the appraisal estimate, and the Government requested that the Credit amount be reallocated to take into consideration the different impact of various increases. The Association agreed in principle with this request provided that (i) the Government agreed to provide all additional necessary local and foreign funds to complete the project, and (ii) the final contract prices for the upgraded roads would still leave those components economically justified. The amendment to Credit Agreement, however, could not be finalized because of the lack of final cost estimates of some components and final data on price revision. Meanwhile, the execution of civil works was proceeding slowly on the basis of instructions from the MOC. Pending agreement on the Credit amendment, the Government had met all construction and consultants costs without submitting any withdrawal application to the Association. It had also started contacts with the Saudi Fund and the Kuwait Fund to secure the large extra amount needed to finance the upgraded project.

The Tall Kalakh Detour

3.07 Negotiations with the Greek contractor for a new contract to construct the Tall Kalakh detour to 4-lane standards were not successful. The Government, while calling new bids as previously agreed, proposed to increase

the existing contract with the Greek firm by 15% to SL 23.8 million to avoid interruption of works during the time needed to award the new contract. Following the evaluation of bids, the MOC proposed to award the new contract to a French contractor, the lowest evaluated bidder (SP 86.9 million, net of taxes). The Association agreed to the Government's proposal. In September 1977, however, the Government withdrew its recommendation and proposed another State-owned contractor for contract award. The MOC based its new recommendation on the judgement that the French contractor, despite a regular prequalification, would be overcommitted, and the State-owned contractor had accepted to sign a contract for an amount SP 0.5 million lower than the former's bid. This Government attitude of favoring State-owned contractors made its first appearance in this occasion and will continue under the Third Highway Project. Since 1981, the Government has totally excluded private contractors from Government-financed road construction (para. 8.02).

3.08 The Association warned the Government that the award of the Tall Kalakh contract to the State-owned contractor would be considered a misprocurement and the relevant amount cancelled from the Credit fund, but the Government awarded the contract to the already proposed public contractor. In the end, however, the Association decided not to cancel the involved amount from the Credit, but to use it for a road development study for Northeast Syria, which was being considered for inclusion in a future Third Highway Project (December 21, 1977). The misprocurement of the Tall Kalakh contract also cancelled the possibility of the Association increasing the Credit amount by US\$14.5 million to finance the additional works, which had been already agreed in principle. The Tall Kalakh detour was then financed by the Kuwait Fund (para. 3.18). The Association decision and the proposed Credit amendments were sent to the Government on January 13, 1978. The Association's participation in financing the construction of the Tall Kalakh detour, therefore, ended de facto in November 1977 when the Greek contractor had only constructed about 6 km of road to 4-lane standards at a cost of SP 29.4 million (US\$7.5 million).

The Damascus-Lebanese Border Road

3.09 The original project description included the financing of a 2-lane road between Damascus and the Lebanese border (about 40 km). As indicated in para. 3.02, the construction contract, which included about 20 km with a dual, two-lane carriageway, was awarded to a State-owned contractor on November 26, 1974, for an amount of about SP 52.1 million. The MOC, however, instructed this contractor as well as the Greek contractor for the Tall Kalakh detour, to start all earthworks for a dual, two-lane carriageway. The State-owned contractor took much time to mobilize and started the works in October 1975, but it went on very slowly for two main reasons. First, the final re-design to 4-lane standards was not available because the supervising consultant was appointed in January 1976 (para. 3.18); it would be only ready in December 1976 because of the time needed to prepare the economic justification and other delays. Second, it showed managerial and organizational difficulties which delayed the progress of works. In addition, disputes over work organization arose between the MOC, the contractor and the supervising consultants (para. 3.20) which made it impossible to assess the work performed with any sufficient degree of accuracy.

3.10 The situation on the Damascus-Lebanese border road did not show substantial improvements, and in May 1977, the MOC requested the Association's agreement to subcontracting part of the works to two other State-owned contractors. The Association agreed and the progress of work improved, although slightly. Subsequently, a third State-owned contractor joined the others, but the output was still low. Finally in 1981, only the last subcontractor remained on the work, because the Government had assigned this company to carry out all road works in the southern part of the country, and the other two companies to the central part, and to the north-eastern part respectively. These frequent changes in work assignment may look to be somehow against both technical soundness and work efficiency, but it should be viewed in the context of the reorganization of the State-owned contractors which had only been established around 1972.

3.11 The unclear situation of this road, and the whole project for this matter, from the Credit Agreement's point of view, was finally cleared up in the Credit Amendment dated April 4, 1978 (para. 2.07) by which the Association agreed to finance a 4-lane road from Damascus (Mezze) to the junction with the road to Zabadani (about 24 km), leaving the rest to the Lebanese border (13 km) to be financed by the Saudi Fund.

3.12 Construction of the road went on slowly and only the first section between Damascus (Mezze) and Dimas (18 km) was open to traffic in June 1980, although finishing works were needed and the wearing course was only partially laid down. The remaining part of the road to the Zabadani junction (6 km), which was relatively more difficult to build because of the hilly nature of the terrain, was expected to be completed by end-1981, the Credit closing date. By this date, however, a substantial part of the works was still to be completed, and the Association extended the closing date to December 31, 1982, making it clear to the Government that it could not consider further extensions. The new closing date, however, found again the works not completed, since a major bridge was only partially built, and finishing works were to be carried out all along the road. It was estimated that about 10% of the total amount of work was still to be carried out under Government financing.

3.13 Although the project description of the road to the Lebanese border in the original Credit Agreement indicated that it was to start at Damascus, its construction actually started at Mezze, a Damascus suburb. The Government decided so because it had planned to construct a beltway around Damascus, to which the road to Lebanon would connect at Mezze. This discrepancy was partly corrected in the Credit Amendment of April 4, 1978, which included the design standards for a road from Damascus (Mezze) to the Zabadani junction. Because of financial problems, however, the Damascus municipality did not construct the beltway on schedule, and the MOC built a section of a highway which connected Damascus with the road to Lebanon at Mezze and, in the future, would extend its connection to Quneitra, a farther suburb. The Damascus-Mezze section will then be part of the Damascus beltway when entirely constructed.

3.14 In June 1980, the MOC requested that the Association finance, retroactively because already constructed, the 2.6 km of the Damascus-Mezze link. The Association had no objections in principle, as the objective of the original Credit Agreement was to construct a road between Damascus and the Lebanese border. A main issue, however, was that the Damascus-Mezze link had been constructed as a dual, 4-lane highway, which appeared excessive. A review of the economic and engineering documents supplied by the MOC in 1982, indicated that the construction of the Damascus-Mezze section was a sound decision and the engineering design was acceptable. On the other hand, instead, a 8-lane highway appeared excessive at least until 1987, when the adjoining section to Quneitra would be opened. The Association, therefore, accepted the MOC's request to finance the section in question but limited its financing to the cost of a four-lane highway, which was estimated to be 55% of the total cost of 8 lanes. This was reflected in the amendment dated July 7, 1982 (para. 2.08).

3.15 The quality of work executed on the Damascus-Zabadani road was acceptable, although it sometimes shifted away from contractual technical specifications (para. 3.20). In view of the limited capability of a still young contracting firm, which had been prequalified with the Association's agreement, however, the overall results are satisfactory, except for the long time required to carry out the works (para. 6.03).

Consulting Services for Construction Supervision

3.16 The MOC sent an invitation to submit a proposal to six prequalified consultants in May 1975, that is six months after the contracts for road construction had been awarded (para. 3.02). The Terms of Reference (TOR) were different from those agreed with the Association in that they requested the upgrading of all project roads to 4-lane standards, as well as the economic evaluation and the design of a new alignment for the Damascus-Jordanian border road, that the Association had already rejected (para. 3.03). The Association, however, in view of the fact that the Government's decision would involve a significant change in the project concept, requested to have an opportunity to review the related economic and financial implications before withdrawal applications from the Credit proceeds could be processed.

3.17 Another comment raised by the Association on the documents sent to the short list of consultants concerned the fact that bid bond and performance bond or bank guarantee were to be submitted by the consultants. The MOC answered that the Syrian laws governing all contracts with the Government required such guarantees and they could not act against the law. The Association accepted the explanation.

3.18 In September 1975, the MOC started negotiations with a joint venture of two French consultants and a contract was signed in October 1975 but was ratified only in January 1976. It should be noted that the contract provided, inter alia, for supervision of construction of the entire Damascus-Lebanese border and Homs-Tartous highways, while the Association was financing only part of those roads. The Association, however, acceded to the Government's

request that the entire road supervision be financed under the Credit because (i) a unified quality control of the works would be beneficial to their implementation, and (ii) the State-owned contractors executing the adjacent sections would derive substantial experience from the supervision by expert consultants. It should also be mentioned that the part of the consultants' contract concerning the economic and engineering studies connected with the road upgrading was to be financed from the MOC's own budget, but the Credit amendment of April 1978 reinstated these studies under Credit financing.

3.19 The first job of the consultant was to evaluate the economic feasibility of upgrading the project roads to 4-lane standards, which was completed by May 1976. These studies confirmed that the upgrading of the Tall-Kalakh detour and the Damascus-Zabadani section of the Damascus-Lebanese border road was economically justified, while the remaining Zabadani-Lebanese border section should have only two lanes. The Association did not concern itself with the studies on the new Damascus-Jordanian road because the Government had not included it in its request for financing to upgraded standards because it had been already contacted by USAID for financing the road (para. 3.05). Detailed engineering of the two roads was completed in September 1976, but the Association did not agree officially to financing four lanes until final cost estimates were available in December.

3.20 Construction of the Damascus-Lebanese border road was hampered from the start by managerial and organizational problems. Although the Association was generally aware that the performance of the State-owned contractor was not fully satisfactory, the lack of an independent supervision until the French consultants were appointed in January 1976 did not expose these problems fully. It even took some time after the consultants' appointment to take stock of the status of the works because the consultants were mainly engaged in carrying out the new economic studies and detailed engineering until December 1976. The State-owned contractor, a public company, which by law was not subject to supervision by any other Government agency, often refused to comply with the consultants' recommendations. Communications between contractor and consultants were almost non-existent for a long period. When the MOC added, with the Association agreement, two public companies to share the works with the first one, which was encountering major difficulties in carrying out the works (para. 3.10), the collaboration between the consultants and the sub-contractors was satisfactory, but the dialogue between the consultants and the main State-owned contractor did not improve. Several planning and organizational proposals by the consultants were rejected by the contractor. Although the MOC was advised of the difficulties by the Association and the consultants, it did not wish to take action against a public company and failed to support the consultants' recommendations. The acme of the disagreement between the main contractor and the consultants occurred in early 1978, when the consultants refused to accept a number of culverts because of their non-compliance with contractual technical specifications. The MOC, upon higher instructions, overruled the consultants and authorized the acceptance of the contested culverts. During 1976-77, some consultants' personnel were changed several times because the problems were considered to be, at least in part, personality-related.

3.21 In May 1978, during a supervision mission, the problem was discussed with the State Planning Commission (SPC), the Council of Public Companies (CPC, the Agency within the Prime Minister's Office responsible for public companies), the MOC, the contractor and the consultants. The need for full respect of technical specifications was confirmed, but it was also decided that, in some special circumstances, a committee composed of MOC and CPC representatives could decide to simplify certain specifications, or to overrule the consultants' decisions. After this meeting, the friction between the two parties eased, but the effectiveness of supervision was shaken.

3.22 The original consultants' contract of January 1976 expired in May 1980, but was extended with the Association's agreement by 24 months until April 30, 1982. The supervision work went on with minor disagreements until the expiring date. At this point, however, invoking a law which stipulated that the Administration was entitled to extend the quantities included in a contract up to 25% without changing the contract's conditions, the MOC requested the consultants to continue the supervision for an additional six months. The consultants were prepared to accept this extension provided that some requests they advanced were accepted, but no agreement was reached and the consultants left the worksite at the end of May 1982. Despite the difficulties spread over most part of their assignment, the consultants' supervision was good and contributed as far as possible to the implementation of the works.

3.23 The consultants prepared regularly the monthly progress reports, but the MOC sent them irregularly especially from 1980 on. During 1981-82, only few reports were made available and only after repetitive requests from the supervising missions.

3.24 Following the departure of the French consultants, the MOC informed the Association that it had appointed its own supervising teams for the Damascus-Lebanese border road and the Tall Kalakh detour, each composed of four engineers and four surveyors, but the full teams were not always available on site. The Association agreed to this solution in view of the short time left before the Credit closing date and because the major engineering problems had been solved. During the seven months until the Credit closing date, however, the MOC did not send progress reports to the Association and, therefore, the effectiveness of the supervision by MOC engineers is not known. The absence of progress reports from MOC supervising teams has been confirmed under the ongoing Third Highway Project.

Other Feasibility Studies and Detailed Engineering

3.25 The MOC awarded the contract for the feasibility study and detailed engineering of the Aleppo-Tall Kojak road (about 500 km) to a consultant from Lebanon on October 29, 1975. After contract signature, the MOC requested, and the Association agreed, to include about 70 km of feeder roads in the studies to ensure that the northern agricultural area be connected to the main road with an adequate feeder system. The studies were carried out satisfactorily and were completed in December 1978, with some delay on the agreed timing.

The Aleppo-Tall Kojak road is now being constructed. The Bank is financing the Qantari-Tall Tamir section (111 km) under the Third Highway Project, while the remaining sections are being financed by the Kuwait Fund, the Saudi Fund and the European Investment Bank, in addition to the Government itself.

3.26 The MOC awarded the contract for the economic and engineering studies of the bypasses of Aleppo, Hama and Homs on March 23, 1976, with the Association's concurrence, to the same consultants who had been awarded the studies in para. 3.25. The studies were completed satisfactorily in August 1979 with a ten-month delay because of changes in alignment of the bypasses needed for environmental and technical reasons, and because of problems created by intersections with other roads and railways under construction. The Homs bypass is being constructed under the Third Highway Project, while the Aleppo and Hama bypasses were found not of first priority. The latter, however, is under construction with Government financing.

3.27 In March 1978, the unusual number of 104 consultants from 22 countries requested to be prequalified for the highway development study for northeast Syria. The MOC shortened the list to eight consultants with the Association's concurrence. Six consultants sent their proposal and the Government selected again a Lebanese consultant. The contract provided for three phases: the master plan phase, the economic feasibility phase and the detailed design phase. All three phases were completed according to the timetable with submission of final documents in October 1982. The consultants' performance was very good.

IV. COST ESTIMATES AND DISBURSEMENTS

4.01 A comparison between appraisal cost and disbursement estimates, and final costs and disbursements is meaningless because of the substantial changes in project scope during execution. In addition, the Damascus-Zabadani junction section of the Damascus-Lebanese border road, which was the major item financed under the project, was not completed by December 31, 1982, when the Credit was closed (para. 3.12). Also, because of the long pending issue of the upgraded design standards requested by the Government, the disbursement for civil works did not start until May 1978, or after the first Credit amendment. As a matter of record only, the following table shows the disbursement trend compared with the appraisal estimates and a revised disbursement estimate prepared in January 1981. The latter limited the disbursement to June 1981, the estimated project completion date, as the Amendment of April 1978 did not set a revised Credit closing date (para. 2.07).

DISBURSEMENTS
(US\$ Million)

| FY | Appraisal Estimates | Estimates 01/31/81 | Actual | Actual as % of | |
|------|------------------------|-----------------------|--------|------------------------|-----------------------|
| | | | | Appraisal Estimates | Estimates 01/31/81 |
| 1974 | 2.3 | - | - | 0 | 0 |
| 1975 | 5.2 | - | - | 0 | 0 |
| 1976 | 8.4 | - | - | 0 | 0 |
| 1977 | 12.0 | 0.7 | 0.7 | 0 | 100 |
| 1978 | 13.8 | 2.0 | 5.4 | 0 | 337 |
| 1979 | - | 7.0 | 6.8 | - | 97 |
| 1980 | - | 11.0 | 8.1 | - | 74 |
| 1981 | - | 13.8 | 9.1 | - | 66 |
| 1982 | - | - | 11.4 | - | - |
| 1983 | - | - | 13.8 | - | - |

4.02 The allocation of Credit proceeds and the percentages of expenditures to be financed were amended twice in accordance with relevant Credit amendments (paras. 2.06-2.08), Table 4.1 shows the changes brought to these elements. Finally, Table 4.2 shows final costs and disbursements from Credit proceeds for the elements which were kept in the project. At the Credit closing date of December 31, 1982 a balance of about US\$145,000 was available in the Credit amount, but it was disbursed by June 2, 1983.

V. ECONOMIC REEVALUATION

5.01 The economic reevaluation of the Second Highway Project is based on the road components included in the amended version of the project as defined in the Credit Amendment dated April 4, 1978 (para. 2.06), i.e. construction of the Damascus-Zabadani junction section of the Damascus-Lebanese border highway and the Tall Kalakh detour section of the Homs-Tartous highway. The cost of consultancy services for feasibility studies and engineering are included in the quantitative re-evaluation as part of construction cost of the roads constructed under the project. Other consulting services resulted in various studies which provided the basis of a number of projects, including the Bank's Third Highway Project (paras. 3.25 - 3.27). Therefore, the resources allocated to these services have proved to be worthwhile and achieved the objectives sought from them.

Tall Kalakh Detour

5.02 The amended project included the construction of a 34 km section (Tall Kalakh detour) of the Homs-Tartous highway. However, after about 6 km of this road had been constructed (without the top layer), the Association discontinued its participation in this component of the project because of some procurement issues (para. 3.08). The partially completed works, therefore, do not represent a definable transport facility, thus rendering its economic evaluation a meaningless exercise. In any event, after the

discontinuation of the Association's participation in this project component, no data was supplied by the Government on the construction costs. Therefore, it is not possible to carry out an economic reevaluation of this component.

Damascus-Zabadani Junction

5.03 The project road is an important link in one of the main international transport routes in the Middle East. It serves transit traffic between Beirut, which traditionally has been a major transit node and traffic generator in the area, and the other important Middle Eastern centers. In addition, the road between Damascus and Zabadani junction runs through a densely populated part of the country. Therefore, it is an important link for internal movements. The corridor, prior to the project, was only served by a narrow road (6.5 m pavement and 1.5 m shoulders) with poor horizontal and vertical alignments. This road runs through several towns and numerous villages and has several level-crossings with a narrow-gauge railway line and village roads, which create serious bottlenecks for traffic. It is totally unsuited for the requirements of the international transit traffic and inadequate for the present and projected local movements. Therefore, the project road was well conceived and timely.

5.04 The economic evaluation of the project road which provided the basis for the Credit Amendment of 1978 (see memo to files dated July 9, 1976) arrived at an economic rate of return (ERR) of 18%, excluding travel time savings. The 1976 economic analysis was carried out at a time of uncertainty with regard to events in Lebanon. The study assumed that, while a return to the status quo ante in the region was unlikely, a political settlement would be achieved by 1977. On this basis, traffic projections were made and project benefits were estimated. The reevaluation of the project road is, similarly, carried out against an uncertain background with respect to political stability of the region. The earlier assumptions regarding a return to normality by 1977 proved to be too optimistic. As a result, the expected growth in traffic did not materialize. Since the political issues are still very much alive, the economic reevaluation assumes that the political stability would be established by 1985.

5.05 The reevaluation, based on the methodology discussed in the following sections, resulted in an estimated ERR of 15% for the road from Damascus to the Zabadani junction. In benefit estimates only the savings in vehicle operating costs were included, and, despite various exogenous factors which adversely affected the project, the ERR obtained is satisfactory. This result is primarily due to the considerable increases which occurred in vehicle operating costs between the time of the original economic analysis and that of the reevaluation. With the high proportion of medium and heavy vehicles (trucks and buses) on the project road, about 55% of the total (see Table 5.1), it is likely that project benefits are being reasonably distributed among all segments of the economy. The Syrian economy is capturing much of the benefits accruing to the transit traffic through transit fees and other taxes imposed on fuel.

5.06 For purposes of the economic reevaluation, all costs and benefits were expressed in constant 1980 prices. Project expenditures, which include the connected consulting services, incurred prior to 1980 were converted into 1980 prices utilizing the rate of inflation which occurred during this period. Vehicle operating costs were derived from the "Highway Development Study for North East Syria" prepared by Consultants (para. 3.27). The study was completed in 1982 and included a detailed and up-to-date estimate of vehicle operating costs for various vehicle types and road conditions. The vehicle operating costs used in the reevaluation are shown in Table 5.2. The composition of traffic is based on the traffic counts carried out by the Ministry of Communications. The only other benefit which was quantified and included in the benefit calculations is the avoidance of maintenance costs on the existing road in the event that the project road is not constructed.

5.07 Traffic projections are based on the actual traffic volumes in 1980 and 1982. It must be noted that 1982 was not a typical year because the events which took place in the region. Despite this, however, there was a modest increase in the traffic during this period. As it is assumed that the political stability would be attained by 1985 (para. 5.04), growth in transit traffic volume is expected to be only 2% per annum between 1982 and 1985. With the normalization of the political situation in the area, transit traffic is expected to upsurge; it is estimated that the annual growth will be 7% during the period between 1985-1990 and to settle to 5% thereafter. Similarly, the local traffic is expected to increase rather modestly until 1985. During the 1985-1990 period, it will also experience a rapid annual growth, 8%, and then settle to 6% increase per year. Table 5.1 compares the new traffic projections with those used in the original economic evaluation of 1976.

5.08 The estimated stream of costs and benefit of the project for selected years, shown in Table 5.3, yield a satisfactorily ERR of 15% (para 5.05). A sensitivity analysis has been carried to test the result of the economic reevaluation. A 10% reduction in the traffic volume would still yield an economic rate of return of about 14% and 20% reduction in traffic about 12%, which are still satisfactory. These results indicate that the project was a well-conceived undertaking and, despite unfavorable conditions, it is yielding a satisfactory return to the economy. Furthermore, the rate of return understates the total value of the project in that it does not include other benefits, i.e. travel time savings and reduction in accidents.

VI. PERFORMANCE OF THE BORROWER

6.01 The performance of the Borrower was mixed, but, under the circumstances which accompanied the long project implementation, can be rated as generally fair. One main cause, which could have brought to a difficult situation in project implementation, was the abrupt change in MOC's decision regarding the award of contract for upgrading the Tall Kalakh detour (para. 3.07 and 3.08). The Government, however, recognized the Association's position on this matter and did not include that upgrading in its request for Credit amendment.

6.02 The Government should be credited with delaying the submission of withdrawal applications until the issue of road design standards was solved. In fact, although the first road construction works started officially in mid-1975, the MOC sent the first application for expenditures for civil works in April 1978, that is after the Credit amendment including 4-lane construction had been finalized. The Government, however, paid the contractors, as well as the consultants, from its own resources during that period.

6.03 The least satisfactory performance was given by the State-owned contractors -- and, therefore, the Government -- which took part in the construction of the Damascus-Lebanese border road. They took about eight years (1975 - mid 1983) to construct the Damascus (Mezze)-Zabadani junction section (24 km) financed by the Association. This is a very long period, and it would be hard to find plausible justifications, which, anyway, would be differently accepted by a technician used to the myriad of day-to-day problems to be faced at a worksite or a layman who can only understand the results. A large portion of the problem was due to the inexperience of the contracting companies which had been only working for a few years (in fact, this contract was one of the very first road construction contracts carried out by State-owned contractors), the lack of adequate management and the draw of Syrian engineers to work in other Middle East countries with large construction plans (a Bank report prepared in 1976 indicated that 3,000 Syrian engineers, out of a total of 8,000 registered to the National Association, were practicing in other countries). It is, however, worth mentioning the change, during construction, of standards from a 2-lane to a 4-lane carriageway requesting ex novo economic studies and engineering design which took until December 1976 to be completed, the nature of State-owned contractors which are subject to sudden and urgent requests from high place to perform some works, important at time, where the national interest calls, the unfortunate repetition of war outbreaks, which drafted part of the work force including management, and the unstable conditions in the Middle East, which makes the supply of imported materials rather irregular. If one includes these parameters, as well as the contribution that the construction of this road has, no doubt, added to the experience of the various State-owned contractors which took part in the works, to the economic equation relating costs and benefits, the final result would not be as inconspicuous as it appears to be.

6.04 There were only two major Credit covenants; one regarding the establishment of a maintenance department, and the other repeating the standard clause regarding vehicle axle-load control. They are quoted in paras. 6.05 and 6.06 with comments.

6.05 "Section 4.02. The Borrower shall establish and thereafter maintain, within the Directorate of Highways and Bridges, a Central Maintenance Department which shall be responsible to the General Director of Highways and Bridges for the proper and efficient maintenance of the primary highway network."

Comments:

This covenant, which was specified as a condition of Credit effectiveness (Section 8.01 of Credit Agreement), delayed Credit effectiveness from October 16, 1972 to February 2, 1973 (para. 2.03). The Central Maintenance Department (CMD) was actually established on November 7, 1972, according to a Government telex of December 12, 1972, which announced also that a letter with copy of the relevant decree and CMD's organizational chart was following. However, when the announced letter (dated 01/11/73) arrived, it included an unsigned copy of the legal opinion of the Council of State on the Decree ratifying the Credit Agreement (which the Association accepted with the request to receive a signed copy), but the Decree on CMD was missing. This was sent with letter dated January 23, 1973, which arrived, handcarried, January 29. Although part of that Decree (the definition of the CMD's function) had not been fulfilled yet, the Association decided to declare the Credit effective with telex of February 2, 1973, which expressed the trust that the prescriptions of that Article would be implemented shortly. The Government then sent the Bank a Ministerial decree establishing the GMD's functions with letter of March 22, 1973.

6.06 "Section 4.04 (b). The Borrower shall enforce regulations and take all measures reasonably necessary to ensure at all times that the dimensions and axle loads of the vehicles using its roads do not exceed limits consistent with the structural and geometric design standards of such roads."

Comments

The Government did not comply with this covenant as it was not in a position to comply with it. Firstly, the Credit Agreement did not provide for the purchase of weighing equipment, which, despite the assertions of the Syrian delegation at negotiations that it was available at the outskirts of main cities, was very limited and practically in a non-usable status. This equipment is being procured under the ongoing Third Highway Project, and steps have been taken on the organization of vehicle axle-load control. Secondly, although at negotiations the Government undertook to enforce traffic laws regulating vehicle loads, the Association probably did not consider the extent of the task requested from the Government since there was not an organization set up to carry out this control, and even the assignment of control responsibility had not been established. Truck traffic on the road network was increasing rapidly and the needs to ensure a relatively sufficient control were enormous amid other priorities such as road maintenance, whose needs were only ensured under this project after having been a major issue under the First Highway Project. The Bank should monitor the implementation of vehicle axle-load control under the Third Highway Project, where there is already a start, although much delayed on the agreed date. A major obstacle to a full implementation of vehicle axle-load control appears to be a shortage of trucks, which favors overloading. The Government is aware of this situation and has

started to study the needs in road transport. However, the required amount of foreign currency to purchase the additional trucks and solve the problem is very high. Because of the difficult financial situation of the Government, it will take much time before the trucking overloading problem can be solved.

VII. THE ROLE OF THE ASSOCIATION

7.01 The country's priorities in the road subsector were well reflected in the project's composition, although the events which took place repetitiously in the area have given a particular importance to the Damascus-Lebanese border road which had not been, and could not be, envisaged at appraisal. The main role of the Association was to ensure that the Credit proceeds be used according to sound economic criteria. This was reflected in the close monitoring of feasibility studies from the preparation of terms of reference to the implementation of the studies by consultants and the analysis of final recommendations. This attention is particularly commendable in view of the large increase in project scope and cost requested by the Government when it decided to construct all roads to 4-lane standards (para. 3.04).

7.02 Another important role of the Association during project implementation was to sustain the principle of international competitive bidding as a means to provide all prospective and prequalifiable bidders an equal opportunity to bid on the goods and/or works to be financed under Bank Group's Loans and Credits. The case of the contract for the Tall Kalakh detour (paras. 3.07 - 3.08) was a clear cut case of misprocurement and the Association stood by its position although the consequences to the Government were heavy in that it lost a supplemental Credit amount of US\$14.5 million, already agreed in principle, which was required to complete the construction to the upgraded standards.

7.03 A significant contribution by the Association to the institution building of the Roads and Bridges Department was the carrying over of the necessity of establishing a Central Maintenance Department from the First Highway Project, which had been completed without setting up that department (para. 2.03). This was included as a condition for Credit effectiveness (para. 6.05). Although this decision caused a delay in Credit effectiveness, it prompted the Government to act more expeditiously than under the previous project.

VIII. CONCLUSIONS

8.01 Although the project took about ten years to be concluded, its contribution to Syria's economy is positive. The project's main objective -- improvement of local and international traffic -- was achieved with the construction and/or study of major roads. Some of the roads studied under this project are already being constructed under either Bank financing (Third Highway Project, Homs bypass and Qantari-Tall Tamir section of the Aleppo-Tall Kojak road), or other financing sources (remaining sections of the Aleppo-Tall Kojak road, Hama bypass and the Damascus-Jordanian border road). Highway

maintenance also improved with the creation of a Central Maintenance Department, which received increased budgetary allocations. Given the circumstances pertaining at the time of appraisal and the subsequent events, and the satisfactory rate of return confirmed a posteriori despite the large increase in cost, the project components were rightly chosen. The Third Highway Project which is progressing at a seemingly increased speed after a slow and lengthy beginning, is the logical next step in the Bank Group's highway operations in Syria.

8.02 The possibility of continuation of Bank Group financing highway projects in Syria is aleatory at this stage. Following initial discussions in 1978, the Government put aside the idea of a Fourth Highway Project in 1980 on grounds that it could not engage itself before the 1981-1985 Development Plan was ready. In 1981, the Government indicated that it had decided to use only the State-owned contractors, on which it had invested many efforts and much money, to execute all major road constructions and maintenance works. Based on that, the Government requested that the Bank consider indirect financing of road contracts to be executed by those contractor through the financing of road construction equipment. The Bank position was that it was prepared to consider this solution, provided that the State-owned contractors gave proof of their capability, which would correspond to a kind of prequalification. The Bank indicated the construction of the Homs bypass as a benchmark to assess their capability, and any decision will depend on the results at that worksite. The recently improved performance of the public contractors working at the Homs bypass under the Third Highway Project leaves the hope that a dialogue on future highway projects could be restarted with the Government shortly. It is estimated that specific discussions on a possible Fourth Highway Project could start in early 1984 if the improved performance of state-owned contractors, which has led to a substantial extension of the closing date of Loan 1546-SYR (Third Highway project), is confirmed during the coming months.

8.03 There are no particular lessons to learn from this project except, perhaps, that in a developing country the needs in the highway subsector may change after appraisal and that the Bank Group should be prepared to consider these changes favorably, even major ones and after appraisal, provided they could be justified. The results of this project prove that the Government's decision to change the project's scope was sound, and the Association's approval of that decision proved to be right.

SYRIAN ARAB REPUBLIC

SECOND HIGHWAY PROJECT - CREDIT 298-SYR

PROJECT COMPLETION REPORT

APPRAISAL PROJECT COST ESTIMATE

| | <u>-----SP Million-----</u> | | | <u>US\$ Million Equivalent</u> | | | <u>% Foreign Exchange</u> |
|---|-----------------------------|----------------|---------------|--------------------------------|----------------|--------------|-----------------------------------|
| | <u>Local</u> | <u>Foreign</u> | <u>Total</u> | <u>Local</u> | <u>Foreign</u> | <u>Total</u> | |
| 1. Highways construction | 30.11 | 32.62 | 62.73 | 7.88 | 8.54 | 16.42 | 52 |
| 2. Consulting Services for: | | | | | | | |
| i) construction supervision | 0.65 | 2.61 | 3.26 | 0.17 | 0.69 | 0.86 | 80 |
| ii) feasibility and engineering studies | 1.16 | 4.65 | 5.81 | 0.30 | 1.22 | 1.52 | 80 |
| iii) maintenance study | 0.16 | 0.64 | 0.80 | 0.04 | 0.16 | 0.20 | 80 |
| Sub-total | 1.97 | 7.90 | 9.87 | 0.51 | 2.07 | 2.58 | 80 |
| 3. Contingencies (on Item 1) | | | | | | | |
| Sub-total | 11.14 | 12.06 | 23.20 | 2.88 | 3.19 | 6.07 | 52 |
| TOTALS | <u>43.22</u> | <u>52.58</u> | <u>95.80</u> | <u>11.27</u> | <u>13.80</u> | <u>25.07</u> | 55 |
| 4. Right-of-Way | 13.90 | - | 13.90 | 3.63 | - | 3.63 | - |
| GRAND TOTALS | <u>57.12</u> | <u>52.58</u> | <u>109.70</u> | <u>14.90</u> | <u>13.80</u> | <u>28.70</u> | 48 |

SYRIAN ARAB REPUBLIC
SECOND HIGHWAY PROJECT - CREDIT 298-SYR

PROJECT COMPLETION REPORT

AMENDED PROJECT COST ESTIMATES AND CREDIT ALLOCATIONS

| | -----SP Million----- | | | -----US\$ Million 1/----- | | | Credit 1/ Allocation | % of Expenditures to be financed |
|--------------------------------------|----------------------|--------------|--------------|---------------------------|-------------|-------------|-------------------------|--|
| | Local | Foreign | Total | Local | Foreign | Total | | |
| 1. <u>Civil Works</u> | | | | | | | | |
| (a) Damascus-Zabadani junction | 58.1 | 60.9 | 119.0 | 14.9 | 15.6 | 30.5 | 4.4 | 15% of total 1 |
| (b) Tall Kalakh section | 76.0 | 79.6 | 155.6 | 19.5 | 20.4 | 39.9 | 4.1 2/ | 52% of total 35 |
| 2. <u>Consulting Services</u> | | | | | | | | |
| (a) Studies and supervision | 12.9 | 12.5 | 25.6 | 3.3 | 3.2 | 6.5 | 3.2 | 100% of Foreign |
| (b) Feasibility studies | 1.6 | 2.3 | 3.9 | 0.4 | 0.6 | 1.0 | 0.6 | 100% of Foreign |
| (c) Network study | 1.6 | 5.8 | 7.4 | 0.4 | 1.5 | 1.9 | 1.5 | 100% of Foreign |
| TOTAL | 150.2 | 161.1 | 311.3 | 38.5 | 41.3 | 79.8 | 13.8 | |

1/ US\$1 = SL 3.9. Includes contingencies

2/ Total for works executed before item deletion

SYRIAN ARAB REPUBLIC
SECOND HIGHWAY PROJECT - CREDIT 298-SYR
PROJECT COMPLETION REPORT
CREDIT ALLOCATIONS

| Category | Original 04/17/72 | Percent of Expenditures to be Financed | Amendments | | Percent of Expenditures to be Financed |
|-----------------------------------|----------------------|--|----------------------|----------------------|--|
| | | | First 04/08/72 | Second 07/07/82 | |
| I. Civil Works | | | | | |
| (a) Damascus (Mezze)- Zabadani | | | 3,620 | (3,750) | 20 |
| (b) Tall-Kalakh | | | 3,180 | 3,912 | 52 |
| (c) Damascus-Mezze | | | | (1,430) | 31 |
| Subtotal | 8,540 | 52 | <u>6,800</u> | <u>9,092</u> | |
| II. Consultants Services | 2,070 | 100 | 5,000 | 4,708 | 100 |
| III. Unallocated | <u>3,190</u> | | <u>2,000</u> | - | |
| TOTAL | <u><u>13,800</u></u> | | <u><u>13,800</u></u> | <u><u>13,800</u></u> | |

SYRIAN ARAB REPUBLIC

SECOND HIGHWAY PROJECT - CREDIT 298-SYR

PROJECT COMPLETION REPORT

FINAL COSTS AND DISBURSEMENTS

(US\$1 = SL 3.9)

| Category | ---Contract Amount--- | | -----Final Cost----- | | Total IDA Disbursements | |
|--------------------------------------|-----------------------|---------------|----------------------|---------------|-------------------------|------------|
| | SL'000 | US\$'000 | SL'000 | US\$'000 | US\$'000 | % of Total |
| A. <u>Civil Works</u> | | | | | | |
| 1. Damascus-Mezze 1/ | 9,928 | 2,546 | 9,928 | 2,546 | 0,713 | 28 |
| 2. Mezze-Zabadani junction | 83,327 2/ | 21,366 | 102,327 3/ | 26,238 | 4,661 4/ | 18 |
| 3. Tall Kalakh detour | 23,920 5/ | 6,133 | 29,340 | 3,912 | 3,912 | 52 |
| Subtotal | <u>117,175</u> | <u>30,045</u> | <u>141,595</u> | <u>32,696</u> | <u>9,286</u> | <u>29</u> |
| B. <u>Consulting Services</u> | | | | | | |
| 1. Studies and supervision | | | | | | |
| (a) Contract dated 10/16/75 | 19,305 | 5,289 6/ | 15,851 | 4,064 | 1,829 | 45 |
| (b) Contract dated 04/05/80 | 6,257 | 1,584 7/ | 4,567 | 1,171 | 0,761 | 65 |
| 2. Aleppo-Tall Kojak | 6,428 | 1,648 | 6,409 | 1,643 | 0,986 | 60 |
| 3. Bypasses | 1,989 | 0,510 | 1,820 | 0,467 | 0,280 | 60 |
| 4. Northeast network | 3,666 | 0,940 | 3,666 | 0,940 | 0,658 | 70 |
| Subtotal | <u>39,645</u> | <u>9,971</u> | <u>32,313</u> | <u>8,285</u> | <u>4,514</u> | <u>54</u> |
| TOTAL | <u>154,820</u> | <u>40,015</u> | <u>173,908</u> | <u>40,981</u> | <u>13,800</u> | <u>34</u> |

- 1/ 55% of contract amount for 8-lane standards (see para. 3.14).
2/ Total cost of 1982 revised contracts.
3/ Estimated by MOC. Works not completed.
4/ Total disbursed against about 90% of works (see para. 3.11).
5/ Original Greek contract plus 15% (see paras. 3.02 and 3.07).
6/ US\$1 = SL 3.65
7/ US\$1 = SL 3.95

SYRIAN ARAB REPUBLIC

SECOND HIGHWAY PROJECT - CREDIT 298-SYR

TRAFFIC PROJECTIONS ON DAMASCUS-ZABADANI JUNCTION ROAD
(Average Daily Traffic)

| Years | Original Projections | REEVALUATION PROJECTIONS | | | | | | Total |
|-------|----------------------|--------------------------|---------|--------|-------|--------|-------|--------|
| | | Local | Transit | Total | Light | Medium | Heavy | |
| 1982 | 8,200 | 3,460 | 3,265 | 6,725 | 3,025 | 1,860 | 1,840 | 6,725 |
| 1983 | | 3,530 | 3,330 | 6,860 | 3,090 | 1,900 | 1,870 | 6,860 |
| 1984 | | 3,600 | 3,400 | 7,000 | 3,150 | 1,940 | 1,910 | 7,000 |
| 1985 | | 3,670 | 3,470 | 7,140 | 3,220 | 1,970 | 1,950 | 7,140 |
| 1986 | 10,600 | 3,960 | 3,710 | 7,670 | 3,450 | 2,120 | 2,100 | 7,670 |
| 1987 | | 4,280 | 3,970 | 8,250 | 3,710 | 2,280 | 2,260 | 8,250 |
| 1988 | | 4,600 | 4,250 | 8,850 | 3,980 | 2,440 | 2,430 | 8,850 |
| 1989 | | 5,000 | 4,550 | 9,550 | 4,300 | 2,640 | 2,610 | 9,550 |
| 1990 | | 5,400 | 4,870 | 10,270 | 4,620 | 2,830 | 2,820 | 10,270 |
| 1995 | 22,900 | 7,230 | 6,220 | 13,450 | 6,050 | 3,710 | 3,690 | 13,450 |
| 2000 | 32,100 | 9,670 | 7,930 | 17,600 | 7,920 | 4,880 | 4,800 | 17,600 |

Table 5.2

SYRIAN ARAB REPUBLIC

SECOND HIGHWAY PROJECT - CREDIT 298-SYR

VEHICLE OPERATING COSTS BY VEHICLE TYPES
(Sealed Roads, (SP/1000 Km))

| Vehicle Type | Uniform Speed (Km/Hr) | | | | | | | | |
|------------------|-----------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
| Car | 1,396 | 1,083 | 922 | 806 | 742 | 713 | 701 | 685 | 690 |
| Pick-up | 1,124 | 853 | 681 | 655 | 639 | 636 | 654 | 676 | 718 |
| Bus | 3,158 | 2,600 | 2,145 | 2,054 | 2,006 | 2,019 | 2,048 | 1,941 | 1,942 |
| 2 Axle | 2,973 | 2,181 | 1,864 | 1,738 | 1,672 | 1,667 | 1,698 | 1,717 | 1,737 |
| More than 2 Axle | 3,734 | 2,964 | 2,508 | 2,077 | 2,008 | 2,001 | 2,045 | 2,215 | 2,330 |

Source: Highway Development Study
for North East Syria, October 1981

SYRIAN ARAB REPUBLIC

SECOND HIGHWAY PROJECT - CREDIT 298-SYR

STREAMS OF COSTS AND BENEFITS FOR SELECTED YEARS
(In SP Million)

| | Costs | B ₁ | B ₂ | B ₃ | B ₄ | Total Benefits |
|------|-------|----------------|----------------|----------------|----------------|----------------|
| 1976 | 5.31 | - | - | - | - | - |
| 1977 | 21.90 | - | - | - | - | - |
| 1978 | 29.39 | - | - | - | - | - |
| 1979 | 33.96 | - | - | - | - | - |
| 1980 | 10.26 | - | - | - | - | - |
| 1981 | 10.25 | - | - | - | - | - |
| 1982 | 13.61 | 2.32 | 5.76 | 5.22 | 11.14 | 24.44 |
| 1983 | 8.36 | 0.07 | 5.87 | 5.35 | 11.39 | 22.68 |
| 1984 | - | 0.07 | 5.99 | 5.45 | 11.61 | 23.12 |
| 1985 | - | 0.07 | 6.11 | 5.54 | 11.79 | 23.51 |
| 1990 | - | 1.86 | 8.78 | 7.97 | 16.98 | 35.59 |
| 1995 | - | 0.19 | 11.52 | 10.44 | 22.28 | 44.43 |
| 2000 | - | 0.19 | 15.08 | 13.68 | 29.16 | 58.11 |

B₁ = Savings in maintenance costs.

B₂ = Vehicle operating cost savings: Small Vehicles.

B₃ = Vehicle operating cost savings: Medium Vehicles.

B₄ = Vehicle operating cost savings: Large Vehicles.



