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IMPLEMENTATION COMPLETION REPORT

REPUBLIC OF YEMEN

TAIZ FLOOD DISASTER PREVENTION AND MUNICIPAL DEVELOPMENT PROJECT

(Credit 2160-YEM)

June 29, 1999

Infrastructure Development Group
Middle East and North Africa Regional Office

CURRENCY EQUIVALENTS

Currency Unit = Yemeni Riyal (YR)

EXCHANGE RATES

	Official Rate	Market Rate
1991	US$1 = YR 12	US$1 = YR29
1992	US$1 = YR12	US$1 = YR33
1993	US$1 = YR12	US$1 = YR49
1994	US$1 = YR12	US$1 = YR81
1995	US$1 = YR50	US$1 = YR122
1996	US$1 = YR100	US$1 = YR126
1997	US$1 = YR133	US$1 = YR134
1998	US$1 = YR141	US$1 = YR141

ACRONYMS

ERR	=	Economic Rate of Return
CPPR	=	Country Portfolio Performance Review
GOY	=	Government of Yemen
ICR	=	Implementation Completion Report
IDA	=	International Development Association
MCHUP	=	Ministry of Construction, Housing and Urban Planning
MMH	=	Ministry of Municipalities and Housing
PIU	=	Project Implementation Unit
UDPU	=	Urban Development Project Unit
YAR	=	Yemen Arab Republic (refers to North Yemen prior to unification)
YDR	=	Yemen Democratic Republic (refers to South Yemen prior to unification)
YEM	=	Yemen (refers to Republic of Yemen after the unification)

FISCAL YEAR

January 1 to December 31

Vice President:	Kemal Derviş
Country Director:	Inder K. Sud
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PREFACE

1. This is the Implementation Completion Report (ICR) for the Taiz Flood Disaster Prevention and Municipal Development Project in the Republic of Yemen, for which Credit 2160-YEM in the amount of SDR 11.70 million, or US$15.00 million equivalent, was approved on June 14, 1990 and declared effective on May 14, 1991.

2. The Credit was closed on December 31, 1998, the original closing date. As of April 29, 1999, an amount of SDR11.65 million, or US16.4 million equivalent, had been fully disbursed.

3. The ICR was prepared by Mr. Uruj Kirmani, Senior Implementation Specialist, Mrs. Josephine Masanque, Financial Management Specialist (MNSID); and Mr. Srinivasa Rangachar, Economist (Consultant). The ICR was reviewed by Mr. Jean-Claude Villiard, Sector Director, Mr. Amir Al-Khafaji, Lead Operations Specialist; Ms. Sonia Hammam, Sector Leader, (MNSID); Mr. Somin Mukherji, Operations Officer, and Mr. Ali Khamis, Project Officer (MNCYE); and Ms. Tufan Kolan, Portfolio Manager (MNCMS). The mission is grateful to the officials of Ministry of Construction, Housing and Urban Planning (MCHUP) and the Taiz Flood Project Implementation Unit (PIU) for their assistance.

4. Preparation of this ICR began during IDA's final supervision/completion mission in December 1998. The report is based on material in the project file, discussions with the Borrower, and project data provided by the PIU. Comments from the Government on the ICR are contained in Annex C. Also attached is a Completion Report prepared by the Borrower (Annex B).

IMPLEMENTATION COMPLETION REPORT

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EVALUATION SUMMARY

Introduction

1. Rapid urbanization of the city of Taiz began in the early 1970s as result of growing inflow of workers' remittances, stagnation of agriculture, and growth of Government services. Personal income and the urban population increased during the 1970s and 1980s, as did the uncontrolled sprawl of informal (but fairly well built) housing in the urban areas. The demand for municipal infrastructure grew as well. However, the provision of urban services lagged despite the Government's efforts, particularly in Taiz, and the provision of municipal infrastructure was hampered by recurrent floods in many parts of old Taiz. Addressing this problem had become a major priority for the city by the late 1980s. Thus, the Government requested the support of the International Development Association (IDA) in this effort.

Project Objectives

2. The main objectives of the project were: (a) to provide flood control structures to protect private and public buildings and infrastructure, and to minimize disruptions to the local economy and reduce the risks to human life of flooding; (b) to implement a project cost recovery mechanism at the municipal level and to promote implementation of a national municipal resource mobilization policy; (c) to strengthen the urban management capabilities at the main branch offices; and (d) to strengthen the Ministry of Construction, Housing and Urban Planning's [(MCHUP) formerly the Ministry of Municipalities and Housing (MMH)] institutional capacity to address urban problems more effectively.

3. The total project costs were estimated at US$22.25 million, of which IDA was to finance the foreign exchange component (US$15.00 million) and the Government all local costs (US$7.25 million). No cofinancing was envisaged. The economic rate of return (ERR) was estimated at 12 percent. At the time of appraisal, financial constraints at the country and local level restricted the scope of the project to the most essential investments. Other possible works were deferred until additional resources became available.

Implementation Experience and Results

4. When the Credit closed, the principal objectives had been achieved. All major flood control structures had been built. Some inner city roads were improved, and upstream slopes were stabilized. Equipment to maintain the flood control structures and roads has been procured and is being used effectively in the project area. The institutional effectiveness of MCHUP and its local branch in Taiz has been strengthened through staff training in Yemen and abroad. The Project as

completed has provided a least-cost solution in terms of yielding maximum benefits and providing adequate safeguards for the protection of both human life and property, improving environment, diminishing health hazards, particularly in the rainy/flood seasons, and providing economic benefits to the citizens of Taiz. The credit agreement was amended and the clauses relating to the cost recovery and a national policy for resource mobilization were deleted, as this subject was being addressed through macro-economic and fiscal reforms under the Economic Recovery Credit (Cr. 2840-YEM).

5. A follow-on urban project is being prepared, as well as the feasibility study, designs, cost estimates and tender documents that have been completed. GOY is seeking IDA's assistance for the second project extending the recently completed Taiz Flood Prevention Phase I Project. Although the formal action by the Government of Yemen (GOY) for implementing these reforms is awaited, realizing the importance of cost recovery, the Governor of Taiz has taken the initiative by imposing a surcharge on all household electricity bills. In September 1998, the GOY established a "Cleaning Fund" to pay for the services of private contractors to be utilized for maintaining flood channels.

6. The actual costs of the project are US$26.3 million equivalent, exceeding appraisal estimates by 17 percent. It is attributed to higher construction costs and changes in the scope of work. The IDA credit is expected to be fully disbursed. Because of a more favorable SDR/US$ rate the Credit financed the equivalent of US$16.5 million, covering most of the foreign exchange component of the project costs. The Government paid for most of the remaining costs. Japan and Netherlands financed some technical assistance.

7. About 21,000 households and 820 small businesses are benefiting from the project, three to four times the number estimated at appraisal. In addition, environmental health, social and economic benefits, not foreseen at appraisal are being derived by Taiz citizens after completion of this project. The project already demonstrated its usefulness in late 1996 and 1997 when major flood waters from heavy rains were safely channeled to an irrigation dam built under the Southern Region Agriculture Project (Cr. 1772-YEM) and utilized for irrigation purpose.

Economic Rate of Return

8. The most important benefit streams arise from: (i) a reduction in damage to private property (94 percent of incremental benefits); (ii) a reduction in interruptions to road traffic, electricity, telephone services and associated repair costs (4 percent of benefits); and (iii) an increase in commercial activities due to improved flood protection in the project areas (2 percent of the benefits).

9. The re-estimated net present value of the project is US$ 31.4 million, and the economic rate of return of the project is 26 percent, or over twice the return of 12 percent estimated in the SAR. Principal reasons for the increased ERR are thought to result from two factors: (i) an increase in the number of houses in the project area over that used in the SAR; and (ii) an increase in the cost of houses used in the SAR.[1]/

10. Principal assumptions used in the re-estimation of the ERR are: (i) that without the project about 80 percent of the houses in the project area are affected by floods, and that the

[1] Very little information about the SAR ERR analysis was available for the preparation of the ICR. For example, the number of houses in the project area used for purposes of the appraisal ERR estimate is not known. Similarly, no details were available on what assumptions were used for housing costs in the SAR.

average annual damage is 15 percent of the house value; (ii) with the project, about 10 percent of the houses are affected, and the average damage is estimated at 10 percent of the house value; (iii) without the project a "severe flood" would take place once every five years destroying five small bridges and 6 km of asphalt roads; (iv) actual investment costs were 20 percent higher than estimated in the SAR; (v) maintenance costs for the removal of boulder and sediments from the "traps" are estimated at 2 percent of investment costs per annum; and (vi) a 10 percent discount rate is used in the NPV calculation.

11. Avoided property damage, as a result of the project, accounts for the vast majority of the benefit streams in the ERR analysis. Thus, a sensitivity analysis was undertaken to analyze the impact of different housing damage estimates assumptions. It showed that, if the average damage incurred without the project was only 10 percent of the house value (instead of 15 percent assumed above), the ERR would still be 19 percent. However, below 6 percent, the rate of return falls below 10 percent. On the other hand, if the damage was raised to 20 percent of the value, the rate of return would increase to32 percent.

12. Project implementation was at times delayed by factors beyond the control of MCHUP, such as the unification of North and South Yemen in May 1990, the Gulf Crisis in 1990-1991, and the Civil War in 1994. Overvalued exchange rates and high domestic inflation caused serious shortages of local currency funds. Despite earlier delays in implementation, with the cooperation of the Government in restructuring the project and the provision of adequate counterpart funds, and close interaction with the Implementation Team of the Resident Mission the project was completed within the agreed timeframe, and the original closing date was not extended. The achievement of project objectives was facilitated by strong support from the Government, the Governor of Taiz, and local residents, adequate institutional arrangements, and an effective implementation unit, as well as close supervision and guidance from IDA staff. During implementation the project was restructured without changing its basic concept. The Credit Agreement was amended twice to adjust the disbursement schedule and to modify the cost recovery covenant, which was being handled by the Government under a macroeconomic reform program.

13. The overall performances of IDA and the Borrower are rated satisfactory. Most Credit covenants have been complied with. The cost recovery program needs to be followed up with the Government and the Governor of Taiz, who is fully supportive of such programs. Audit reports were submitted to IDA and were found to be of acceptable quality.

Summary of Findings and Key Lessons Learned

14. Findings. The project achieved its principal objective of providing essential flood protection to the city of Taiz, improving urban roads, and strengthening the institutional capacity of MCHUP. Residents have participated and benefited from the project, which greatly improved their neighborhoods and quality of life, reduced health hazards, and enabled them to pursue economic activities that were earlier entirely disrupted during the flood season. The overall benefits of the project are expected to be higher than estimated at appraisal. Adequate maintenance and a viable cost recovery program would ensure the long-term sustainability of project benefits. The ERR has been re-estimated to be 26 percent, which exceeds the SAR estimate of 12 percent.

15. Future Operations: Under the reform program, the local branch of MCHUP is now directly working under the Governor of Taiz. It will be given full responsibility for operation and maintenance of the existing infrastructure, for staff training and community participation, and the

preparation of future development plans. To raise funds for current operations, a surcharge on electricity bills will be imposed. A special "Cleaning Fund" established in September 1998 will pay for the maintenance of floodwater channels. The Government has prepared Phase II Project and has requested IDA's support to ensure sustainability of the benefits emerging from the completed project.

16. Key Lessons Learned. The following lessons can be drawn from the experience of this project:

(a) Good project preparation and design, as well as strong political and local support for the project objectives are essential for the successful outcome of an operation.

(b) Adequate provisions for maintenance, institutional strengthening, and a viable cost recovery program help to ensure the long-term sustainability of project benefits.

(c) Overvalued exchange rates in an inflationary environment can cause serious shortages of local currency funds, resulting in protracted implementation problems.

(d) IDA made a deliberate decision to continue to support this project despite prolonged implementation delays in civil works. It was done in the large interest of the country, which was passing through difficult phases after unification and Civil War in 1994. This decision was later justified with the successful outcome.

(e) The strengthening of the implementation team in the Resident Mission effectively contributed in the satisfactory completion of this project.

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PART I: PROJECT IMPLEMENTATION ASSESSMENT

A. Introduction

1. Rapid population growth in urban areas during the 1970s and 1980s stimulated private housing development and created a strong demand for municipal infrastructure. In Taiz, one of the country's major cities, the provision of municipal infrastructure was hampered by recurrent floods. Addressing that problem therefore had become a major priority for the city by the late 1980s.

2. IDA lending for urban development in Yemen started in 1974 with a water supply and sewerage project in Sana'a (Credit 670-YAR). This was followed by an urban sector review, which formed the basis for the Sana'a Urban Development Project (Credit 1202-YAR) approved in January 1982. A Second Urban Development Project (Credit 1441-YAR) was approved in February 1984. All three projects were completed and their stated objectives were largely achieved (see Part II, Table 2).

B. Project Objectives and Design

3. The project evaluated in this ICR was prepared by the Urban Development Project Unit (UDPU) established under Credit 1202-YAR. Supporting consultants were financed from resources of the Second Urban Development Project (Credit 1441-YAR). The principal objectives of the project were to: (a) provide urgently needed flood control structures to minimize physical damage and reduce the risks to human life of flooding; (b) strengthen the institutional capacity of central and local administrations responsible for urban development; and (c) initiate cost recovery mechanisms and promote a national municipal resource mobilization policy.

4. To achieve these objectives, the project included the following components:

(a) construction of flood control structures protecting about 5,100 households and of 280 small businesses;

(b) restoration of street pavement, terracing of unstable slopes, construction of surface drainage and footpaths, and land acquisition;

(c) purchase of maintenance equipment for roads and flood control structures;

(d) institutional strengthening and staff training of the Ministry of Construction, Housing and Urban Planning (MCHUP) and its main branch offices;

(e) preparation of a follow-on urban development project; and

(f) promotion of project cost recovery and municipal resource mobilization policy.

5. The total project costs were estimated to reach US$22.25 million (Table 8A), of which IDA would finance the foreign exchange component (US$15.0 million) and the Government all local costs (US$7.25 million). No cofinancing was envisaged. The main benefits envisaged from the project would be: (a) protection of public and private properties against economic losses due to flood damages; (b) reduce the risk of human life (several persons lost their life during flood storms occurring 5 to 10 times annually lasting for several hours); (c) improve environment by elimination of pollution caused by sediments and municipal refuse deposited by flood waters on major street intersections; (d) strengthen the capacity and skills of the staff of Ministry of Construction, Housing and Urban Planning (MCHUP) formerly Ministry of Municipal Housing (MMH). The costs of such were estimated to average about US$2.7 million per annum. Other important benefits, e.g., removal of traffic disruption during flood season, improved access roads under this project, ensured uninterrupted access to houses, schools, mosques, and health centers, etc., uninterrupted and enhanced commercial activities, expansion of business (over 1,100 street vendors in the areas which was previously inaccessible due to the floods) were not quantified. The ERR based on a project life of 45 years was estimated at 12 percent, which does not truly reflect the economic benefits provided for the citizens of Taiz.

6. At the time of appraisal, the project design represented the least-cost solution while providing adequate safeguards for the protection of both human life and property. Financial constraints at the country and local level restricted the scope of the project to the most essential investments. Other possible works were deferred until additional resources became available. Project structures were to be built in public rights-of-way. Only seven private homes located in the project area were to be expropriated through purchase at market prices. In June 1990, when the Board approved the project, final designs of the flood control works had been completed, and drafts of the tender documents had been prepared.

7. During implementation, the project was restructured, making modifications to the original design and adding some components that had earlier been deferred to the next stage (para. 20). These changes further strengthened the effectiveness of the project in diverting flash floods and protecting property and people.

C. Achievement of Objectives

8. In spite of several implementation delays, the project was completed within the original closing date (December 31, 1998) of this Credit. All flood control structures had been completed. Roads have been paved, easing traffic flows and access to health centers, schools and mosques. Improvements were also made in the sewage system by provision of new sewerage lines along the wadis. The issue of solid waste management, which was not addressed in the SAR, was taken up. Improvements have been made in the solid waste management activities of Taiz office of MCHUP. The improvements made in the roads network (e.g., new 5.4 Km asphalt roads, 3.2 stone pavements, new North-South asphalt road beside Wadi Seena to provide efficient route through Taiz City), and easy road access to the households, provision of waste collectors at appropriate places, have significantly contributed towards improving environment and reducing health hazards. About 21,000 households and 820 small businesses benefit from the project, three to four times the number estimated at the appraisal stage. The project demonstrated its

usefulness during seasonal rains in late 1996, 1997, and 1998, when major flood waters were safely channeled to an irrigation dam built under the Southern Region Agriculture Development Project (Cr. 1772-YAR) and there was no loss of life and properly and no disruption to the activities of Taiz citizen in the area covered by this project. The equipment procured through international bidding is being used effectively in the project area by the local office of MCHUP to maintain the project structures.

9. The institutional capacity of MCHUP staff has been strengthened through improvement of skills and training in Yemen and abroad. The staff of MCHUP have prepared a follow-on development project, as well as related feasibility study, designs, cost estimates. The bidding documents for Phase II have been prepared. Local consultants are undertaking a supporting socio-economic survey. The project is under consideration for future IDA supports.

10. Environmental.

(a) Health Impact. This project has significantly improved the environment, first, by eliminating the problems caused by sediments and municipal refuse deposited by floodwaters on major street intersections. Prior to the project, the sewerage flowed with the floodwaters and stagnated causing environmental and health hazards. The project has also provided 100 percent protection against erosion, which was a major cause of damage to the houses.

(b) Social Impact. The project has provided direct benefits to over 21,000 households as compared with 5,134 households estimated at appraisal providing mitigation from the flood damaged. In addition, the annual loss to the property (amounting to about US$3.0 million) have been mitigated. The regular loss of life to the people and the cattle has been prevented. Significant reduction in the maintenance cost of public and private property has resulted after completion of this project. The economic activity has spurred with easier flow of traffic through the access roads built in this project (1,100 street vendors and over 900 shops are doing business in the project area). The development of vehicle parking area in the city center (over a box culvert built under this project) has provided a great facility to the citizens. It can be concluded that the project has significantly contributed in improving economic, environmental, health and social benefits to the citizens of Taiz.

11. Cost Recovery. As regards cost recovery, notwithstanding the fact that it was deleted from the legal covenants, the IDA Resident Mission continued to pursue the dialogue with the GOY and Governor of Taiz on the need of establishing a cost recovery plan for the infrastructure investments. Both the Government and the Governor appreciated its importance. The GOY initiated a study "Social and Economic Study for the Identification of the Best Method of Cost Recovery in Taiz." Separately, the Governor of Taiz has taken the initiative towards cost recovery by imposing a "surcharge" on the electricity bills of all households in Taiz. However, the institutional and legal arrangements for cost recovery in Taiz Governorate are awaiting formal instructions by the GOY. In addition, GOY set up a "Cleaning Fund" in September 1998. The proceeds from this fund would be utilized for maintaining the flood channels and other solid waste management activities in Taiz. On a longer-term basis, GOY has plans to involve the private sector in this area.

12. Project Costs and Financing. The actual costs of the project have reached the equivalent of US$26.3 million (Table 8A), about 17 percent higher than the appraisal estimate (US$22.5 million). Most of the project costs were paid for in local currency. The increased costs are

attributed to the implementation delays (e.g., four major ICB contracts were completed 66 months behind original SAR schedule), modifications in the scope of civil works, and higher cost of construction material due to inflation, and severe decline in $/YR parity (e.g. $1 = YR 12 prior to 1994 Civil War and $1 = YR 160 after the war).

13. The IDA Credit will be fully disbursed. Because of a more favorable SDR/US$ rate, the Credit financed the equivalent of US$16.4 million (Table 8B). The Government paid for most of the remaining costs. The municipality of Taiz and local residents also contributed to the project. Japan and Netherlands financed some technical assistance.

14. Economic Rate of Return. The SAR contained few details about how benefits were calculated. Therefore, for the ICR the borrower provided supplemental data on the population and the number of shops in the inner city. These data were complemented by a survey conducted in 1998 (Social and Economic Study for the Identification of the Best Means for Cost Recovery for Taiz Flood Disaster Prevention and Municipal Development Project Phase II), and by current house construction cost estimates provided by IDA's Public Works Project Implementation Unit in Sana'a.

15. The economic analysis for the ICR uses a with and without project methodology. The most important benefit streams arise from: (i) a reduction in damage to private property (94 percent of incremental benefits); (ii) a reduction in interruptions to road traffic, electricity, telephone services and associated repair costs (4 percent of benefits); and (iii) an increase in commercial activities due to improved flood protection in the project areas (2 percent of the benefits). As in the SAR, additional benefits due to the saving of lives were not calculated, thereby understating the project's overall benefits.

16. The re-estimated net present value of the project is US$ 31.4 million, and the economic rate of return of the project is 26 percent, or over twice the return of 12 percent estimated in the SAR. Principal reasons for the increased ERR are thought to result from two factors: (i) an increase in the number of houses in the project area over that used in the SAR; and (ii) an increase in the cost of houses used in the SAR.[2]/ The population in the inner city of Taiz has quadrupled from 5,000 to 21,000 since early 1990, which is a much faster rate of growth than what was predicted at the time of appraisal. This increased is, in large part, a result of the massive return of Yemeni migrant workers from the Gulf countries which could not have been predicted when the project was prepared. The result is a substantial increase in the number of houses in the project area versus what was likely to have been the estimate at appraisal. In addition, the value of an average house in 1998 is estimated at about US$ 11,000, which is almost certainly higher than the cost that would have been used in the SAR.[3]/

17. Principal assumptions used in the re-estimation of the ERR are: (i) that without the project about 80 percent of the houses in the project area are affected by floods, and that the average annual damage is 15 percent of the house value; (ii) with the project, about 10 percent of the houses are affected, and the average damage is estimated at 10 percent of the house value; (iii) without the project a "severe flood" would take place once every five years destroying five small bridges and 6 km of asphalt roads; (iv) actual investment costs were 20 percent higher than

[2] Very little information about the SAR ERR analysis was available for the preparation of the ICR. For example, the number of houses in the project area used for purposes of the appraisal ERR estimate is not known. Similarly, no details were available on what assumptions were used for housing costs in the SAR.
[3] Higher house costs are assumed because of: (i) larger houses to accommodate more population; and (ii) the sharp devaluation of the RY from the mid-1990s to date.

estimated in the SAR; (v) maintenance costs for the removal of boulder and sediments from the "traps" are estimated at 2 percent of investment costs per annum; and (vi) a 10 percent discount rate is used in the NPV calculation.

18. Avoided property damage, as a result of the project, accounts for the vast majority of the benefit streams in the ERR analysis. Thus, a sensitivity analysis was undertaken to analyze the impact of different housing damage estimates assumptions. It showed that, if the average damage incurred without the project was only 10 percent of the house value (instead of 15 percent assumed above), the ERR would still be 19 percent. However, below 6 percent, the rate of return falls below 10 percent. On the other hand, if the damage was raised to 20 percent of the value, the rate of return would increase to32 percent.

D. Project Implementation

19. The project had a slow start. Although well prepared, it took almost one year from Board approval to Credit effectiveness (Table 3). Two factors contributed to the delay: The unification of North and South Yemen in May 1990, and the Gulf Crisis in late 1990 and early 1991. By October 1991, however, the Borrower had awarded contracts for the major elements of flood control, and bids for the maintenance equipment had been received. A few months later, the main contractor had started work; a supplier for the equipment had been selected; a construction advisor and financial analyst had been appointed; the Borrower had drafted legislation to improve cost recovery; and consultants had been selected to prepare the follow-on project.

20. But in the following year, new problems arose. Opposition to the relocation of people envisaged under the project led to riots during which all records of MCHUP's local office in Taiz were burned. To restore calm, the project design was modified so as to minimize any relocation. More importantly, high domestic inflation made it increasingly difficult for the Borrower to provide local counterpart funds, slowing down work at the construction site. Growing political tensions between the northern and southern parts of the country caused administrative delays and eventually led to the Civil War (May/June 1994) that brought implementation to a complete halt. By that time the original contract period had expired with only about half of the civil works completed. All maintenance equipment, on the other hand, had been delivered and was safely stored in the project area.

21. To overcome these bottlenecks and facilitate project completion, IDA and the Borrower agreed to restructure the project. The changes included:

(a) Modifications in the design of major civil works, resulting in cost saving that were utilized to finance part of the remaining works as well as some elements that had been deferred to the follow-on project.

(b) The city government rehabilitated and resurfaced roads draining into the main flood diversion channel.

(c) Local residents support in stabilizing upstream slopes.

(d) Japan and Netherlands financed some technical assistance (the latter paid for an advisor for urban development and housing policies).

22. The principal contractor (a public sector company based in Aden), who had lost much of his equipment during the hostilities resumed work in late 1994. But progress was slow mainly

due to a continuous shortage of local counterpart funds, as the Government could not release these funds due to severe economic difficulties faced in the period following the Civil War. The severe decline in $/YR, parity and consequent cost escalation further exacerbated issues relating to the timely availability of adequate counterpart funds. Moreover, project management was weakened as new staff unfamiliar with the project became involved in the implementation process. Notwithstanding, these difficulties some project work was continued. In this respect, the support by the citizens of flood affected area to the Project Implementation Unit (PIU) was commendable. For example, they assisted PIU in the tasks related to the stabilization of the upstream slopes; and in spite of disruption in their daily activities fully cooperated with the PIU staff.

23. Amendments to the Credit Agreement. The credit agreement was amended to reflect changes in the project scope. Further, the covenants relating to the introduction of a national municipal resource mobilization policy and implementation of the project cost recovery were deleted.

24. The rational for deletion of the above covenants was the unstable economic situation in the country, particularly after the Civil War in 1994, when physical implementation of all IDA-financed projects had come to a grinding halt, due to various institutional and economic reasons. (In that period, all contractors with contracts in YR refused to honor these contracts, and later, IDA's intervention through Country Portfolio Performance Review (CPPR) in June 1995 led to the resolution of these issues.) It was agreed between IDA and GOY that such issues would be addressed under the ongoing macroeconomic reform program being discussed with IDA.

25. The pace of project implementation accelerated in 1996 after active follow-up by the Resident staff and the support provided by the Minister in releasing additional counterpart funds. By October 31, 1996 all major floor protection works had been completed, safely diverting floodwaters in the rainy season. Thereafter, the implementation proceeded efficiently. The PIU team worked very diligently to complete complex tasks as scheduled.

E. Project Sustainability

26. The project is generating larger benefits than originally expected at appraisal. These benefits are likely to be sustained over the longer term, provided that the flood control structures are maintained by MCHUP and its local branch using equipment procured under the project.

(a) The cost recovery program is formally in effect to generate the financial means required for both maintenance and capital expenditures.

(b) Phase II of the project is taken in hand as soon as possible. The existing project was appraised in 1990, and the project was divided in two phases due to financial constraints. Phase I of this project as completed, addressed the most critical aspects of the flood prevention and mitigation in the city area of Taiz. However, in order to ensure sustainability of Phase I component, it is essential that Phase II of this project, which deals with upper section of the wadis to control flood hazards, and extension work in the wadis (not completed in Phase I) is completed. In the absence of Phase II, the boulders and sediments during floods will effectively diminish the efficiency of the flood channels completed in Phase I, and over a period of time, adversely affect the sustainability of the investments already made.

(c) Based on the actions being taken by GOY for the maintenance of the flood channels and other facilities built under this Project, and the expectation of IDA financing Phase II of this Project, the sustainability is ranked "likely".

F. Future Operations

27. Under the reform program, the local branch of MCHUP is now directly working under the Governor of Taiz. It will be given full responsibility for operation and maintenance of the existing infrastructure, for staff training and community participation, and the preparation of future development plans. To raise funds for current operations, a surcharge on electricity bills will be imposed. A special "Cleaning Fund" established in September 1998 will pay for the maintenance of floodwater channels. The Government has prepared Phase II Project and has requested IDA's support to ensure sustainability of the benefits emerging from the completed project.

G. IDA Performance

28. IDA assisted the Government in preparing this project. However, it is not clear as to why IDA team included the issue of "national resource mobilization policy" in the SAR, without focussing on it in the project scope, and only provided for some technical assistance to the MMH. Secondly, the inclusion of "municipal development" in the project's title without a distinct component in the project could be questionable.

29. During implementation, IDA supervised this project closely during the period March 1991 to November 1993. There was no supervision between November 1993 and May 1995 (Table 13), when implementation suffered adversely. After the GOY and IDA agreements during Country Portfolio Performance Review (CPPR) in June 1995, IDA strengthened its supervision efforts by locating implementation staff at the Resident Mission, at Sana'a. Thereafter, IDA's close cooperation with the government agencies, Governor of Taiz and the Project Implementation Unit (PIU) contributed in the timely resolution of major problems, e.g., counterpart funds availability and in spite of the earlier delays, resulted in successful completion of this Project within the original closing date of the Credit.

H. Borrower Performance

30. The project was strongly supported by both central and city governments, as well as the people of Taiz. The responsible technical ministry (MCHUP) and its local branch were highly motivated and cooperative. Much of the implementation delay was caused by political factors beyond their control. The Project Implementation Unit (PIU) performed well despite occasional staff constraints. The staff of MCHP has developed its skills in the project management during the execution of this project.

31. Most Credit covenants have been complied with (Table 10). The PIU maintained accurate records of project accounts that were audited by private auditors. The audit reports were submitted to IDA, and were found to be of acceptable quality. The overall performance of the Borrower was satisfactory (Table 1).

I. Assessment of Outcome

32. The project achieved its principal objective of providing essential flood protection to the city of Taiz. The physical structures built under the project proved their effectiveness in 1996 and 1997, when these structures saved human life, public infrastructure, and private property from heavy floodwaters. Other benefits are road improvements that ease the flow of traffic and facilitate access for waste collection units as well as benefit local traders. The institutional effectiveness of MCHUP and its local branch in Taiz has been strengthened. Residents have welcomed the project, which greatly improved their neighborhoods and mitigated health hazards, as well as facilitated access from their homes to the main city areas.

33. Benefits. Some of the significant benefits resulting from this project are illustrated as under:

(a) Environmental. Disposal of floodwater and provision of waste storage and removal facilities have minimized pollution and health hazards.

(b) Urban. Constructions of stone pavements and side roads have provided access to remote dwellings, and have contributed to the quality of life.

(c) Economic. By provision of additional roads along the wadis, the in city communication has been improved and has contributed to increased economic activities.

(d) Agriculture. The floodwater flows into an earth filled dam which channels the water into the irrigation canals for increased water supply.

J. Key Lessons Learned

34. The following lessons can be drawn from the experience of this project:

(a) Good project preparation and design, as well as strong political and local support for the project objectives are essential for the successful outcome of an operation.

(b) Adequate provisions for maintenance, institutional strengthening, and a viable cost recovery program help to ensure the long-term sustainability of project benefits.

(c) Overvalued exchange rates in an inflationary environment can cause serious shortages of local currency funds, resulting in protracted implementation problems.

(d) IDA made a deliberate decision to continue to support this project despite prolonged implementation delays in civil works. It was done in the larger interest of the country, which was passing through difficult phases after unification and Civil War in 1994. This decision was later justified with the satisfactory economic progress being achieved in Yemen.

(e) The strengthening of the implementation team in the Resident Mission effectively contributed in the satisfactory completion of this project.

IMPLEMENTATION COMPLETION REPORT

REPUBLIC OF YEMEN

TAIZ FLOOD DISASTER PREVENTION AND MUNICIPAL DEVELOPMENT PROJECT

(Credit 2160-YEM)

PART II. STATISTICAL TABLES

ANNEXES

Table 1: Summary of Assessments

A. ACHIEVEMENT OF OBJECTIVES	SUBSTANTIAL	PARTIAL	NEGLIGIBLE
Financial Objectives		✓	
Institutional Development	✓		
Physical Objectives	✓		
Social Objectives	✓		
Environmental Objectives	✓		
B. PROJECT SUSTAINABILITY	**LIKELY**	**UNLIKELY**	**UNCERTAIN**
	✓		
C. IDA PERFORMANCE	**HIGHLY SATISFACTORY**	**SATISFACTORY**	**DEFICIENT**
Identification		✓	
Preparation Assistance		✓	
Appraisal		✓	
Supervision	✓		
D. BORROWER PERFORMANCE	**HIGHLY SATISFACTORY**	**SATISFACTORY**	**DEFICIENT**
Preparation	✓		
Implementation		✓	
Covenant Compliance		✓	
Operation	✓		
E. ASSESSMENT OF OUTCOME	**HIGHLY SATISFACTORY**	**SATISFACTORY**	**DEFICIENT**
		✓	

Table 2: Related IDA Credits

CREDIT NO./ TITLE	PURPOSE	YEAR OF APPROVAL	STATUS
287a-YAR Sana'a Water Supply Project	To meet the basic water supply needs of Sana'a and to remove health hazards problems and to meet the future development of the city.	1974	Completed
1202 YAR Sana'a Urban Development Project	This is the first urban development project which aims to provide services to the urban areas and develop institutional capacity of the Ministry of Municipalities and Housing (MMH).	1982	Completed
1441 YAR Second Urban Development Project-	To strengthen MMH's capacity to plan, design and execute integrated urban development programs at the local level and to provide affordable infrastructure services to the low-income population at minimal cost.	1984	Completed

Table 3: Project Timetable

STEPS IN PROJECT CYCLE	DATE PLANNED	DATE ACTUAL/LATEST ESTIMATE
Identification	April 1989	April 1989
Preparation	July-December 1989	July/December 1989
Appraisal	October 1989	January/February 1990
Negotiations	April 1990	April 1990
Board Approval	May 1990	June 14, 1990
Signing	November 1990	November 16, 1990
Effectiveness	February 1, 1991	May 14, 1991
Project Completion	June 30, 1998	December 31, 1998
Credit Closing	December 31, 1998	December 31, 1998

Table 4A: Cumulative Credit Disbursements
(US$ Million)

	FY91	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Appraisal Estimate	1.0	3.8	7.5	10.2	12.3	13.2	14.0	14.7	15.0
Actual	-	4.2	7.5	9.5	10.2	12.3	14.3	15.9	16.5
Actual as % of Estimate	0.0	111.0	100.0	93.0	83	93.0	102.0	108.0	110.0 [1/]

[1/] Increased figures in US$ due to SDR/US$ exchange rate variations.

Table 4B: Allocation of Credit Proceeds
(SDR Million)

CATEGORY	ORIGINAL	REVISED	DISBURSED
Civil Works	8.20	9.75	9.42
Equipment	0.80	1.25	1.18
Consultants	1.80	0.70	1.10
Unallocated	0.90	-	-
Total	11.70	11.70	11.70

Table 5A: Key Indicators For Project Implementation

INDICATORS	IMPLEMENTATION DATE	
	ESTIMATED	ACTUAL
1. Establish Project Management Team	12/31/90	12/31/90
2. Open Special Account	02/14/91	04/21/91
3. MCHUP Appoint Advisors:		
a) to Housing Directorate	09/30/91	12/31/91
b) to Projects Department	12/31/91	12/31/91
c) for Disaster Preparedness and Relief	12/31/91	03/14/92
4. Complete Civil Works Contracts	12/31/96	10/31/98
5. Procure Maintenance Equipment	12/31/92	10/31/93
6. Prepare Future Urban Development Project	12/31/94	09/30/96

Table 5B: Performance Indicators

Indicators	Target Date	Responsible Authority	Comments
1. Provide IDA with a copy of Annual work program and budgetary allocation for the Project	10/30/90	MMH	Done
2. Provide IDA with a copy of approved budgetary allocations for the project.	12/31/90	MMH	Done
3. Appoint an advisor to the Urban Development Dept.	12/31/90	MMH	Not needed
4. Appoint municipal engineer to assist MMH in strengthening its branch offices.	12/31/90	MMH	Done
5. Acquire land and relocate families.	12/31/90	MMH	Done
6. Submit to IDA the first quarterly progress report.	12/31/90	MMH	Done
7. Appoint construction engineer advisor and Yemeni Counterpart.	12/31/90	MMH	Done
8. Open a Special Account.	02/14/91	MMH	Done
9. Submit to IDA a draft national policy for municipal resource mobilization.	05/31/91	MMH	Under way
10. Appoint a consultant to prepare a future urban development project.	06/30/91	MMH	Done by PIU

Table 6: Key Indicators For Project Operation

INDICATORS	ESTIMATED	ACTUAL
1. Flood control structures, including street pavement and terracing of unstable slopes protecting an area of:	180 ha	180 ha
Including – households	5,134	21,000
shops/workshops	280	820
Beneficiaries (people)		90,000
2. Maintenance equipment, including		
bulldozer	1	1
tractor	1	1
front and loader	1	2
excavator	1	1
truck	5	5
power tool	3	3
3. Technical Assistance and Training		
Consultant months	78	84

Table 7: Studies Included in Project

STUDY	STATUS	IMPACT
Feasibility study, engineering design and tender documents for future urban project.	Study completed; supporting socio-economic survey under preparation.	Project being considered for IDA financing.

Table 8A: Project Costs
(US$ Million)

ITEM	APPRAISAL ESTIMATE	ACTUAL/LATEST ESTIMATE
Civil Works	13.14	22.38
Equipment	0.95	1.60
Land Acquisition	0.70	-
Technical Assistance	2.30	2.32
Contingencies	5.16	-
Total	22.25	26.30
of which		
Foreign costs	15.00	17.20
Local costs	7.25	9.10

Table 8B: Project Financing
(US$ Million)

SOURCE	APPRAISAL ESTIMATE	ACTUAL
IDA	15.00	16.45
Domestic Contribution	7.25	9.10
Japan/Netherlands		0.75
Total	22.25	26.30

Table 9: Economic Analysis

Cash Flow Table in 1990 YR m

	Investment Costs	Incremental O&M Costs	Benefits	Net Benefits
1991				0.00
1992	152.60			-152.60
1993	116.75			-116.75
1994	69.14			-69.14
1995	23.75			-23.75
1996	70.19			-70.19
1997	67.41		244.07	176.66
1998	52.87		244.21	191.34
1999		11.05	244.35	233.30
2000		11.05	244.35	233.30
2001		11.05	244.35	233.30
2002		11.05	244.35	233.30
2003		11.05	244.35	233.30
2004		11.05	244.35	233.30
2005		11.05	244.35	233.30
2006		11.05	244.35	233.30
2007		11.05	244.35	233.30
2008		11.05	244.35	233.30
2009		11.05	244.35	233.30
2010		11.05	244.35	233.30
2011		11.05	244.35	233.30
2012		11.05	244.35	233.30
2013		11.05	244.35	233.30
2014		11.05	244.35	233.30
2015		11.05	244.35	233.30
2016		11.05	244.35	233.30
2017		11.05	244.35	233.30
2018		11.05	244.35	233.30
2019		11.05	244.35	233.30
2020		11.05	244.35	233.30
2021		11.05	244.35	233.30
2022		11.05	244.35	233.30
2023		11.05	244.35	233.30
2024		11.05	244.35	233.30
2025		11.05	244.35	233.30
2026		11.05	244.35	233.30
2027		11.05	244.35	233.30
2028		11.05	244.35	233.30
2029		11.05	244.35	233.30
2030		11.05	244.35	233.30
2031		11.05	244.35	233.30
2032		11.05	244.35	233.30
2033		11.05	244.35	233.30
2034		11.05	244.35	233.30
2035		11.05	244.35	233.30
NPV at 10%				$920.83
ERR				26.0%

Table 9
Page 2

Total Benefits in 1990 YR

% of Benefit:	94%	2%	1%	1%	2%	1%	
Year	Property Damage	Road Repairs	Other Infr. Repairs	Road Traffic	Commercial Benefits	Other Infr. Lost Benefit	**Total ICR**
1997	230.42	3.92	1.31	2.22	4.79	1.41	244.07
1998	230.42	3.92	1.31	2.36	4.79	1.41	244.21
1999	230.42	3.92	1.31	2.50	4.79	1.41	244.35
2000	230.42	3.92	1.31	2.50	4.79	1.41	244.35
2001	230.42	3.92	1.31	2.50	4.79	1.41	244.35
2002	230.42	3.92	1.31	2.50	4.79	1.41	244.35
2003	230.42	3.92	1.31	2.50	4.79	1.41	244.35
2004	230.42	3.92	1.31	2.50	4.79	1.41	244.35
2005	230.42	3.92	1.31	2.50	4.79	1.41	244.35
2006	230.42	3.92	1.31	2.50	4.79	1.41	244.35
2007	230.42	3.92	1.31	2.50	4.79	1.41	244.35
2008	230.42	3.92	1.31	2.50	4.79	1.41	244.35
2009	230.42	3.92	1.31	2.50	4.79	1.41	244.35
2010	230.42	3.92	1.31	2.50	4.79	1.41	244.35
2011	230.42	3.92	1.31	2.50	4.79	1.41	244.35
2012	230.42	3.92	1.31	2.50	4.79	1.41	244.35
2013	230.42	3.92	1.31	2.50	4.79	1.41	244.35
2014	230.42	3.92	1.31	2.50	4.79	1.41	244.35
2015	230.42	3.92	1.31	2.50	4.79	1.41	244.35
2016	230.42	3.92	1.31	2.50	4.79	1.41	244.35
2017	230.42	3.92	1.31	2.50	4.79	1.41	244.35
2018	230.42	3.92	1.31	2.50	4.79	1.41	244.35
2019	230.42	3.92	1.31	2.50	4.79	1.41	244.35
2020	230.42	3.92	1.31	2.50	4.79	1.41	244.35
2021	230.42	3.92	1.31	2.50	4.79	1.41	244.35
2022	230.42	3.92	1.31	2.50	4.79	1.41	244.35
2023	230.42	3.92	1.31	2.50	4.79	1.41	244.35
2024	230.42	3.92	1.31	2.50	4.79	1.41	244.35
2025	230.42	3.92	1.31	2.50	4.79	1.41	244.35
2026	230.42	3.92	1.31	2.50	4.79	1.41	244.35
2027	230.42	3.92	1.31	2.50	4.79	1.41	244.35
2028	230.42	3.92	1.31	2.50	4.79	1.41	244.35
2029	230.42	3.92	1.31	2.50	4.79	1.41	244.35
2030	230.42	3.92	1.31	2.50	4.79	1.41	244.35
2031	230.42	3.92	1.31	2.50	4.79	1.41	244.35
2032	230.42	3.92	1.31	2.50	4.79	1.41	244.35
2033	230.42	3.92	1.31	2.50	4.79	1.41	244.35
2034	230.42	3.92	1.31	2.50	4.79	1.41	244.35
2035	230.42	3.92	1.31	2.50	4.79	1.41	244.35

Table 10: Status of Credit Covenants

Agreement	Section	Covenant Type	Present Status	Original Fulfillment Date	Revised Fulfillment Date	Description of Covenant	Comments
DCA	Art.4 Sec.4.01	01	C	NA	NA	Provide IDA with audited accounts, i.e., project accounts, special accounts, SOEs, by 9/30 of each year.	Complied With.
DCA	Sched.4 Para.5	07	C	12/31/90	NA	Acquire land I drainage channel right-of-way and relocate and compensate affected households.	Complied With.
DCA	Sched. 4 Para.2(a)	04	C	10/30	NA	Submit proposed annual work program and budget due by October 30 of each year.	Complied With.
DCA	Sched. 4 Para.4	09	C	Quarterly	NA	Submit quarterly progress reports.	Complied With.
DCA	Sched. 4 Para.3	05	C	12/31/90	NA	Establish a project management team.	Complied With.
DCA	Sched. 4 Para.9	05	C	12/31/91	NA	Hire advisor to establish a section on public works design and material testing and research.	Complied With.
DCA	Sched. 4 Para.6	05	C	6/30/92	NA	Hire municipal engineer to strengthen MCHUP's branch offices in Sana'a, Hodeidah and Taiz.	Complied With.
DCA	Sched. 4 Para.10	12	NC	12/31/91	NA	Hire advisor on mitigation of natural disasters and early warning systems.	Not Complied With.
DCA	Sched. 4 Para.7	05	C	9/30/91	NA	Hire advisors for the Housing Directorate.	Complied With.
DCA	Sched. 4 Para.8	12	NA	5/31/91	NA	Provide IDA with a draft national policy for municipal resource mobilization, including billing and collection mechanism.	Deleted & Amended Per Letter of 6/30/97
DCA	Sched. 4 Para.8	12	NA	1/31/92	NA	Approve a national policy for municipal resource mobilization.	-do-
DCA		12	NA	9/30/92	NA	Submit a national policy on municipal resource mobilization to the Legislature.	-do-
DCA	Sched. 4 Para.11	02	NA	1/1/96	NA	Implement a system of differential cost recovery in Taiz.	-do-

Covenant Types:

1. Accounts/audit
2. Financial performance/generate revenue from beneficiaries
3. Flow and utilization of project funds
4. Counterpart funding
5. Management aspects of the project or executing agency
6. Environmental covenants
7. Involuntary resettlement
8. Indigenous People
9. Monitoring, review, and reporting
10. Project implementation not covered by categories 1-9.
11. Sectoral or cross-sectoral budgetary or other resource allocation
12. Sectoral or cross-sectoral policy/regulatory/institutional action
13. Other

Status: C - Complied; NC - Not in Compliance; NA – Not Applicable/Not Available

Table 11: Compliance with Operational Manual Statements

Project operations fully complied with IDA's operational guidelines.

Table 12: IDA Resources: Staff Inputs
(US$ Thousand)

Stage of Project Cycle	Planned		Revised		Actual	
	Weeks	US$	Weeks	US$	Weeks	US$
Through Appraisal	N. A.	N. A.	N. A.	N. A.	80	220
Appraisal – Board	N. A.	N. A.	N. A.	N. A.	22	62
Board – Effectiveness	N. A.	N. A.	N. A.	N. A.	8	22
Supervision	N. A.	N. A.	N. A.	N. A.	90	334
Completion	N. A.	N. A.	N. A.	N. A.	11	28
Total	N.A.	N.A.	N.A.	N.A.	211	666

Table 13: IDA Resources: Missions

Stage of Project Cycle	Month/ Year	Number of Persons	Days in Field	Specialized staff skills represented	Performance Rating		Type of Problems
					Implementation Status	Development Objectives	
Through Appraisal	7/89-2/90	3	66	FN/SE/UP	-	-	-
Appraisal – Board	2/90-6/90	2		FN/SE	-	-	-
Board – Effectiveness	6/90-5/91	1	-	SE	-	-	-
Supervision	3/91	1	10	OO/UP	S	S	-
	9/91	2	8	OO/UP	S	S	-
	3/92	3	14	FN/ME/OO	S	S	-
	10/92	3		FN/ME/OO	HS	HS	CF
	2/93	2	10	OO/SE	S	S	CF
	8/93	1	8	00	S	S	CF/FC/PR
	11/93	2	12	OO/SE	S	S	CF/FC/PR
	5/95	2	13	EC/OO	U	S	CF/FC/PR/ OLC
	11/95	1	11	SE	U	S	FC/PR
	5/96	1	15	IS	S	S	FC
	10/96	1	3	IS	S	S	FC
	5/97	2	3	IS/PO	S	S	None
	9/97	1	3	IS	S	S	None
	1/98	1	3	IS	S	S	None
Completion	12/98	3	6	EC/IS/FN	S	S	None

Staff Skills Key:

EC - Economist
FN- Financial Analyst
IS- Implementation Specialist
OO- Operations Officer
PO- Project Officer
SE- Sanitary Engineer
UP- Urban Planner
ME- Municipal Engineer

Type of Problems Key:

CF - Counterpart Funds
FC- Financial Covenant
OLC- Other Loan Covenant
PR- Procurement

ANNEX A

IMPLEMENTATION COMPLETION REPORT

REPUBLIC OF YEMEN

TAIZ FLOOD DISASTER PREVENTION AND MUNICIPAL DEVELOPMENT PROJECT

(Credit 2160-YEM)

MISSION's MEMORANDUM OF UNDERSTANDING

Republic of Yemen
Taiz Flood Disaster Prevention and Municipal Development Project (Cr. 2160-YEM)
Aide-Memoire
November 29 to December 20, 1998

A. Introduction:

1. An IDA mission comprising Messrs. Somin Mukherji , Uruj Kirmani, Ali Khamis, and Sergio Calegari carried out the completion supervision of the above project during the period November 29 to December 20, 1998. Messrs. Kirmani and Rangachar carried out the necessary preparatory work for the Implementation Completion Report (ICR). The mission went for field visits to Taiz during this period and reviewed the status of physical implementation of project works.

2. The mission would like to thank the officials and staff of the Ministry of Planning and Development (MOPD), the Ministry of Construction, Housing & Urban Planning (MCHUP) and the project authorities for all the courtesies and assistance extended to the mission. This aide-memoire summarizes the mission's findings and the agreements reached with the MCHUP regarding the above project and is subject to IDA management's review and concurrence.

B. Background:

3. A Credit of SDR 11.7 million (US$ 15.0 million equivalent) was approved by the IDA on November 16, 1990 and became effective on May 14, 1991. This project was designed to provide the city of Taiz with essential flood control works, to implement a cost recovery mechanism at the municipal level, to promote implementation of a national municipal resource mobilization policy, to strengthen the urban management capabilities, and to strengthen the capacity of the Ministry of Municipality and Housing (now MCHUP) to address effectively the urban problems. The Credit is scheduled to close as planned on December 31, 1998.

C. Summary of Project Objectives:

4.a. To provide urgently needed flood control works to protect property and minimize disruptions to local economy and reduce risks to human life.

4.b. To provide institutional strengthening to the MCHUP

D. Status of Project Implementation :

5. Overall, implementation of the physical works has been satisfactory and the mission wishes compliment the implementing agency (MCHUP) and the project management unit (PMU) for the efficient implementation of the project works in a timely manner. Because of favorable SDR/US$ exchange rate, additional funds were available. This was utilized in carrying out additional work by increasing the scope of contracts. Some of the major highlights related to project implementation are discussed below.

6. Physical components: (Flood control works): The construction/rehabilitation of flood control structures in four wadis; Seena, Al Nassar, Madam and Al Kamet is complete. The control structures covered under the project include the construction of open channels, box culverts at street crossing , drop structures and sediment traps, footpath and street pavement, and surface drainage.
Equipments: All maintenance equipments required under the project were procured in strict accordance with approved Guidelines.

7. While the responsibility for the maintenance of wadis 1 and 4 is with the local office of the MCHUP; the responsibility for the maintenance of wadis 2 and 3 is still entrusted with to the contractor (as part of his contractual obligations) until mid-1999; upon completion of this period, this responsibility will be assumed by the local office of the MCHUP. As the PIU has sufficient leverage on the contractor (5% retention money), it was agreed that the PIU would ensure adequate maintenance of wadis 2 and 3 through the contractor until mid-1999. Meanwhile, the local office of the MCHUP would mobilize necessary resources to ensure that all four wadis are maintained appropriately once the hand-over is complete

8. The mission visited the project site and brought to the attention of the PIU that more emphasis is needed to clean up the sedimentation, boulders and solid waste (dumped by the people) that have accumulated in the open channels. MCHUP assured the mission that corrective actions would be taken soon in co-ordination with H.E. the Governor of Taiz who is ultimately responsible for the MCHUP's branch at Taiz. IDA would be informed by MCHUP of actions taken by end January 1999. To ensure sustainability of the project, IDA will continue to monitor the operational plan (Annex - 7) prepared and agreed between MCHUP and the mission.

9. On this issue of maintaining the infrastructure, the mission was informed that within the decentralization policy of the Government of Yemen (GOY), each and every department of the Government falls under the overall control of the Governor. In this case, the Governor of Taiz has the responsibility to ensure maintenance and sustainability of the project through the Municipal office of Taiz. The Governor is also responsible to recover a reasonable cost from the users according to the "New Cleaning Law" which was approved by the Cabinet in September 1998. In this context a proposal (including the formation of a "Maintenance Unit") for ensuring the sustainability of project works has been approved by H.E. the Governor of Taiz and necessary budgetary provisions are being made to ensure sustainability of the project. The mission requested more details including budgetary provisions made; MCHUP agreed to provide to IDA all necessary details by the end of January 1999.

10. Follow-on Project: In order to ensure sustainability of the project, the MCHUP urged IDA to consider a follow-on project (Phase-2) that is aimed at extending the channels upstream and build boulder traps along the way in accordance with the feasibility study. Final construction design and bidding documents for all five contracts of the follow-on project were handed over to the mission. The mission noted with satisfaction that all these documents were prepared by the PIU engineers and technicians, without any outside assistance. The mission indicated that a follow-on project of this nature was not currently envisaged in IDA's lending program and that the MOPD will have to take it up separately. The follow-on project is crucial for the sustainability of the current project works. The mission however wishes to remind that the lack of maintenance of project works will rapidly make the current project unsustainable and the follow-on project unjustifiable.

E. Technical Assistance:

11. Implementation of the technical assistance component provided under the project has not been completed satisfactorily. The TA components were mainly related to the strengthening of staff capabilities within the MCHUP through the provision of advisors (as needed) in the following four areas:

(a) to minimize harm caused by natural disasters through appropriate planning and development policies, including provision of early warning systems for major urban population - not done;
(b) to provide municipal engineering services, procurement, construction management, urban development and housing services for the Borrower's growing urban population - done;
(c) to improve field survey, design, materials testing and research - accomplished; and
(d) to manage, operate and maintain flood control works, roads, buildings and other municipal properties- not done.

At the time of appraisal, the above components were included within the project scope to strengthen the institutional capacity of MCHUP. Some of the above components were not accomplished and accordingly, the mission requested necessary communication from MCHUP on their plans to complete the above activities; it was agreed that MCHUP's plan would be sent to IDA by end February 1999.

12. Finance and Accounts: The status of submission of audited accounts and audit reports is as follows: (a) Audit of project accounts: The PIU has submitted the 1997 audit report on time; (b) Audit of Special Accounts (including withdrawals made against statements of expenditures) - these have been audited and included in the audit report of project accounts. Thus, in terms of timely submission of audited accounts, MCHUP is in total compliance.

13. Compliance with Covenants: The status of compliance with covenants is included in Annex 5.

14. Disbursement: The Credit will close on December 31, 1998 and a grace period for the submission of withdrawal expenditures against eligible expenditures incurred before December 31, 1998 will be allowed in accordance with standard practice. The latest disbursement status is included in Annex 4.

15. ICR Mission and Future Operation Plan: In accord with IDA guidelines, after completion of each project, an Implementation Completion Report (ICR) is required to be completed. The mission was provided with the Borrower's contribution to the ICR. All necessary information and data for completing the ICR were provided to the mission.

16. Other issues: After Credit Closing, closing of all accounts, supervision of contractor's performance and other related work will need some staff time and resource allocation. The PIU will be disbanded after Credit closing and there will be no money that can be made available from the Credit. The MCHUP thus made a request to the mission to consider financing the PIU expenses (preferably on a lumpsum basis) after Credit Closure for a bare minimum staff to facilitate closure of all accounts. The mission expressed its inability to financing such needs, but acknowledged that it was more of a countrywide need for every such closing project. The mission indicated that until such time any proper mechanism can be identified, the responsibility of managing (and financing) the project immediately after project closure would be the responsibility of the line ministry.

List of Annexes:

Annex 1	List of People met
Annex 2	Agreements reached
Annex 3	Procurement Status
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Annex 5	Covenant Compliance
Annex 6	Performance Indicators
Annex 7	Operation Plan

ORIGINAL COPY signed by H.E. Ahmad Hasan Udayni, Vice-Minister, Ministry of Construction, Housing and Urban Planning; Mr. Anwar Al-Harazi, Deputy Minister, Ministry of Planning and Development, and Mr. Somin Mukherji, Operations Office, World Bank Resident Mission Office, Sana'a, Republic of Yemen.

Annex 1

List of People Met

H.E. Abdullah Hussein Da'ffi
Minister of Construction, Housing & Urban Planning

H.E. Ahmad Hasan Udayni
Vice Minister of Construction, Housing & Urban Planning

Mr. Anwar Al-Harazi
Deputy Minister of Planning & Development

Mr. Ibrahim H. Othman
Project Manager

Mr. Al-Tawani
Assistant Project Manager

Annex 2

Agreements Reached

Agreement	Target Date	Responsibility
1. PIU to ensured adequate maintenance of wadis 2 and 3 through the contractor until mid-1999	Immediate	PIU
2. Local office of the MCHUP to mobilize resources to ensure that all four wadis are maintained appropriately once the hand-over is complete.	Immediate	MCHUP
3. MCHUP to inform IDA about budgetary provisions made to ensure sustainability of of the project.	January 31, 1999	MCHUP
4. Plan to complete the actions included under the Technical Assistance	February 1999	MCHUP

YEMEN
TAIZ FLOOD DISASTER PREVENTION PROJECT, Cr. 2160-YEM
PROCUREMENT STATUS

Reporting month Nov/Dec' 98

Tenders			Dates of						Contract			Execution		
Description	Procure-ment Method	Bid Doc sent to IDA	IDAs NO Objection to Bid Doc	Prequali-fication	Bid Invitation	Bid Opening	Bid Evaluation Recommend to IDA	IDAs No Objection	Award Date	Contract Amount (in millions)	Consultants/ Contractors Name & Country	Completion Date		
												original	Revised	Actual
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Civil Work Component included the construction of flood control structures i.e. bo culverts masonny open channels, sediment and boulder traps etc.,	ICB	08.03.91	31.03.91	08.09.91	05.01.91	23.04.91	20.06.91	22.08.91	12.09.91	YR248,792,205	Public Corp.	31.04.93	30.09.95	30.06.98
The LCB contract were reviewed and simplified by modifying the	LCB	16.02.97	20.02.97		19.11.96	08.01.97	16.02.97	20.02.97	06.30.97	US$325,254.30	Rayman 1&4	05.03.98	30.06.98	31.10.98
designs from concent bo culverts to masonny open channel etc.,	LCB	23.10.96	18.02.97	07.08.96	26.05.96	07.08.96	23.10.96	26.10.96	06.11.96	US$480,828.00	Rayman 2&3	05.11.98	30.06.98	31.10.98
a. Equipment	LCB	31.10.92	12.11.92	11.12.91	15.07.91	22.09.91	17.02.93	12.11.92	18.12.92	Yen.146,645,500	Marubini			01.10.94
b. Survey Equipment	LCB	24.07.96	24.07.96		11.08.96	03.09.96	27.07.97	27.07.97	07.08.97	Yen.6,520.500	Topcon			24.12.97
c. Lab. Equipment	LCB	04.05.97	06.05.97		03.03.97	19.03.98	04.05.97	06.05.97	22.06.97	li 74,997,261.00	Controls			03.08.98
d. Computers	LCB	02.10.97	23.11.97		15.12.97	05.01.98	16.03.98	19.03.98	13.03.98	US$48,615.70	CEW			27.07.98
e. Photo copy	LCB	25.09.97	30.09.97		09.08.97	16.08.97	25.09.97	30.09.97	11.10.97	US$11,848.00	Red Sea			13.10.97
f. Bule printing machine	LCB	24.07.96	12.08.96				24.07.96	12.08.96	25.08.96	US$10,601.00	Bin Thabet			20.08.98
g. Cars	LCB										Bazara			
Toyota L. Crusier Prado		01.12.97	06.01.98				07.12.97	06.01.98	16.12.97	US$27,500.00				21.05.98
Pajero		01.12.97	06.01.98				07.12.97	06.01.98	16.12.97	US$18,000.00	Adhban			21.05.98

ANNEX 3

YEMEN
Taiz Flood Disaster Prevention and Municipal Development Project (Cr. 2160-YEM)
Disbursement Forecast

Fical Year & Quarter Ending	Quarter Ending	Cumulative Disbursement as Per SAR US$M	Cumulative Disbursement Actual and Forecast US$M
FY1991	1stQrt.	0.00	0.00
	2ndQrt.	0.00	0.00
	3rdQrt.	0.00	0.00
	4thQrt.	1.00 /a	1.00
FY1992	1stQrt.	1.50	3.79
	2ndQrt.	2.25	4.20
	3rdQrt.	3.00	4.68
	4thQrt	3.75	6.00
FY1993	1stQrt.	4.80	6.95
	2ndQrt.	6.00	7.95
	3rdQrt.	6.75	8.70
	4thQrt	7.50	9.13
FY1994	1stQrt.	8.25	9.98
	2ndQrt.	9.00	9.98
	3rdQrt.	9.60	9.98
	4thQrt	10.20	10.23
FY1995	1stQrt.	10.80	10.56
	2ndQrt.	11.70	10.93
	3rdQrt.	12.00	11.24
	4thQrt	12.30	11.39
FY1996	1stQrt.	12.60	11.88
	2ndQrt.	12.90	12.56
	3rdQrt.	13.05	13.02
	4thQrt	13.20	13.40
FY1997	1stQrt.	13.35	13.55
	2ndQrt.	13.50	13.70
	3rdQrt.	13.80	14.00
	4thQrt	13.95	14.30
FY1998	1stQrt.	14.25	14.60
	2ndQrt.	14.40	14.75
	3rdQrt.	14.55	14.90
	4thQrt	14.70	15.00
FY1999	1stQrt.	14.85	15.20
	2ndQrt.	15.00	15.35
	3rdQrt.		
	4thQrt		

/a Includes an initial deposit of US$1.0 million to a Special Account.

YEMEN
Taiz Flood Disaster Prevention and Municipal Development Project (Cr. 2160-YEM)
Covenant Compliance

Agreement	Section	Covenant Type	Status	Original Fulfill Date	Revised Fulfill Date	Description of Covenant	Comments
DCA	Art.4 sec.4.01	01	C			Provide IDA with audited accounts, i.e., project accounts, special accounts, SOEs, by 9/30 of each year.	Complied with.
DCA	Sched.4, para 5	07	C	12/31/1990		Acquire land I drainage channel right-of-way and relocate and compensate affected households.	Complied with.
DCA	sched.4 para 2(a)	04	C	10/30		Submit proposed annual work program and budget due by October 30 of each year.	Complied with.
DCA	Sched.4, para 4	09	C	Quarterly		Submit quarterly progress reports	Complied with.
DCA	Sched.4 para 3	05	C	12/31/1990		Established a project management team	Complied with.
DCA	Sched.4 para 9	05	C	12/31/1991		Hire advisor to establish a section on public works design and material testing and research	Complied with
DCA	Sched.4 para 6	05	CN	06/30/1992		Hire municipal engineer to stregthen MCHUP's branch offices in Sana'a, Hodeidah and Taiz	Complied with.
DCA	Sched.4 para 10	12		12/31/1991		Hire advisor on mitigation of natural disasters and early warning sytems.	Not complied with.
DCA	Sched.4 para 7	05	C	09/30/1991		Hire advisors for the Housing Directorate.	Complied with
DCA	Sched.4 para 8	12		05/31/1991		Provide IDA with a draft national policy for municipal resource mobilization including billing and collection mechanism.	Deleted through ammendment letter June 13, 1997.
DCA	Sched.4 para 8	12		01/31/1992		Approve a national policy for municipal resource mobilization.	- do-
DCA		12		09/30/1992		Submit a national policy on municipal resource mobilization to the Legislature.	- do-
DCA	Sched. 4 para 11	02		01/01/1996		Implement a system of differential cost recovery in Taiz	- do-

Covenant Types:

1. Accounts/audit
2. Financial performance/generate revenue from beneficiaries
3. Flow and utilization of project funds
4. Counterpart funding
5. Management aspects of the project or executing agency
6. Environmental covenants
7. Involuntary resettlement
8. Indigenous People
9. Monitoring, review, and reporting
10. Project implementation not covered by categories 1-9
11. Sectoral or cross-sectoral budgetary or other resource allocation
12. Sectoral or cross-sectoral policy/regulatory/institutional action
13. Other

Status:

C = covenant complied with
CD = complied with after delay
NC = not complied with
CP = complied with partially

ANNEX 5

Performance Indicators

	Indicator	Target Date	Responsible Authority	Comments
1.	Provide IDA with a copy of Annual work program and budgetary allocation for the Project.	10/30/90	MMH	Done
2.	Provide IDA with a copy of approved budgetary allocations for the project.	12/31/90	MMH	Done
3.	Appoint an advisor to the Urban Development Depart.	12/31/90	MMH	Not needed
4.	Appoint municipal eng. to assist MMH in strengthening its branch offices.	12/31/90	MMH	Not needed
5.	Acquire land and relocate families.	12/31/90	MMH	Done
6.	Submit to IDA the first quarterly progres report.	12/31/90	MMH	Done
7.	Appoint construction engineer advisor and Yemeni Counterpart	12/31/90	MMH	Done
8.	Open a Special Account	02/14/91	MMH	Done
9.	Submit to IDA a draft national policy for municipal resource mobilization.	05/31/91	MMH	Under way
10.	Appoint a consultant to prepare a future urban development Project.	06/30/91	MMH	Done by PIU

Taiz Flood Disaster Prevention and Municipal Development Project (Cr. 2160-YEM)
Operational Plan

Operational Issues	Strategy	Performance Indicators	Timing
Maintenance of project works unstatisfactory	MCHUP to prepare detailed action plan, to carry out adequate continuous maintenance at the lowest cost. Action plan to specify for each wadi No. and qualification of staff, equipment, investment and running costs, as well as source of funds. For wadis 2 and 3, MOCHUP to carry out maintenance of wadis 2 and 3 through contractor until mid-1999, by using 5% retention money as leverage.	Availability of action plan	February 28, 1999
Budget adequate funds for operation and maintenance of project works	Identify appropriate funding source and budget required amount to cover investment and running costs	Fund availability	January 31, 1999
Municipality does not collect and dispose garbage adequately	Municipality under the Governor's authority to adequately organize collection and disposal of garbage along the four wadis	All project works cleaned	Start: February 1, 1999
Carrying out adequate continuous maintenance	MCHUP to implement action plan	All project works (Channels, culverts, sand traps, boulder traps, stilling basin, etc.) are clean	Starting from July 1, 1999
Follow-up project (final design and bidding documents already prepared (1998) by the PIU of the MCHUP) is needed to secure the sustainability of the current project work)	MOPD to contact appropriate funding institution, to fund the follow-up project. This request to be submitted upon achievement of adequate maintenance of current project works	All project works cleaned	Date depending on actual cleaning of project works
Maintenance of project works unsatisfactory (same as 1st issue)	An alternative strategy could be entrusting the maintenance of project works to a private contractor. The payment to be done through the "cleaning fund" established in accordance with the "cleaning law" approved in September 1990	Availability of funds	June 1, 1999

ANNEX 7

ANNEX B

IMPLEMENTATION COMPLETION REPORT

REPUBLIC OF YEMEN

TAIZ FLOOD DISASTER PREVENTION AND MUNICIPAL DEVELOPMENT PROJECT

(Credit 2160-YEM)

PROJECT REVIEW FROM BORROWER'S PERSPECTIVE

PROJECT REVIEW FROM BORROWER'S PERSPECTIVE

1. COUNTRY

1.1 Yemen is located in the Arabian Peninsula between latitudes 12 - 20 N of the equator and longitudes 41 - 54 E of Greenwich. It is bordered by Saudi Arabia in the North, the Arabian Sea and Gulf of Aden in the south, Oman on the East and the Red Sea in the West. In the South West of Yemen, the strait of Bab-al-Mandab, in the middle of which the Island of Mayun is located, which forms the point separating the continent of Asia from Africa Socotra, the largest Yemeni Island, is 510 Kilometers from the Coast of the Yemeni Arabian Sea and has an area of 3650 sq. km.

1.2 The area of Yemen is 555,000 sq.km. (excluding the Empty Quarter). Its population density is 28 persons/sq. km. Physically, Yemen is divided in 5 distinct features, that is the mountainous, the plateau, the coastal, the plan and the desert region. The climate varies from region to region i.e. hot, wet and moderate.

1.3 Yemen is one of the developing countries that started its economical development during the 60's and had achieved significant progress during the 70's and 80's especially in the sector of Agriculture, Industry and Services such as education, health and transport etc.

1.4 During the past 30 years, in the process of urbanization and natural development, the rural population started moving towards the urban areas in pursuit of the higher wages, job opportunities and modern life-style in addition to the natural growth of 3.7% annually in the urban areas. The situation became worse with the return of about 700,000 migrants from abroad due to gulf crisis.

1.5 For example, the population of capital city of Sana'a has doubled since 1989 and has reached a figure of more than 1.2 million out of country's total population of 16 million. The situation is not different in other urban areas. The growth has surpassed all predictions made in the Master Plan.

2. IDA INVOLVEMENT IN THE URBAN SECTOR:

2.1 IDA lending for urban infrastructure started in 1974 with a credit to help the Government finance the first public water supply system in Sana'a and to strengthen NWASA which was established in 1973, then Yemen Arab Republic (YAR). IDA involvement in the sector broadened in 1979 when the Government requested assistance for an urban sector review. This review (Urban Sector Report No. 2699-YAR) identified the major urban development issues and its findings formed the

basis of the Sana'a Urban Development Project (Credit No.1202-YAR) which was approved in January 1982. This first demonstration project was aimed at assisting the Government to address the issues identified by the sector review, tackling specific shelter problems, introducing the concept of mortgage financing to low-income groups for self- h e l p construction, as well as to strengthen the Housing Credit Bank (HCB).

2.2 On the basis of the principles established under the Sana'a Urban Development Project, IDA approved the Second Urban Development Project (CR.1441-YAR) in February 1984. The second project continued along the principles established under the first one by applying the same standards in Hodeidah (Yemen's third largest city) while expanding the activities of Ministry of Municipalities & Housing (MMH), which was later expanded as Ministry of Construction, Housing & Urban Planning (MCHUP).

2.3 Overall implementation progress of the first two urban projects was satisfactory, however, the institutional component implementation was found to be slower than what was originally envisaged. The main lessons learnt from the above projects were (a) considerable time should be allowed for project implementation (b) adequate compensation should be provided to attract and retain qualified local professionals for key positions.

3. <u>DEVELOPMENT OF TAIZ FLOOD DISASTER PREVENTION & MUNICIPAL DEVELOPMENT PROJECT (CR.2160-YEM).</u>

3.1 After the reintegration of both parts of Yemen in 1990, as Republic of Yemen (ROY), the third Urban Development Project was developed in agreement with Ministry of Planning & Development (MOPD), the MMH (now MCHUP) and other departments.

3.2 The project was included in the Third Five Year Development Plan (1988-1992). Messrs Halcrow Fox and Associates of England were appointed as Consulting Engineers to prepare a feasibility study. During the planning and conceptual design stage, it was revealed that the flood control measures should take priority over all other works because the funds spend on upgrading would be wasted if the flooding of the area was not effectively prevented. The scope of the project was therefore MODIFIED TO ACCORD PRIORITY TO FLOOD CONTROL.

3.3 The appraisal of the project was carried out during January 24 to February 13, 1990 and major issues pertaining to the project scope, cost estimates, procurement and cost recovery were resolved.

3.4 The Credit was negotiated at Washington from April 23 and 25, 1990, approved by the Board of IDA on June 14, 1990 for SDR

11.7 Million (MM) or about US$ 15 MM and was ratified by Yemeni Parliament in January 1991, and became effective on May 14, 1991.

4. PROJECT OBJECTIVES:

4.1 The main objectives of the project are:

a. To provide most needed flood control structure to protect private and public buildings and infrastructure, and to minimize disruptions to the local economy and reduce the risks to human life;
b. To implement a project cost recovery mechanism at a municipal level, and to promote implementation of a national municipal resource mobilization policy;
c. To strengthen the urban management capabilities to the main branch offices; and
d. To strengthen MMH's (now MCHUP) institutional capacity to address urban problems more effectively.

4.2 Project Design:

4.2.1 During the course of project preparation, several alternative design standards and primary drainage routes were considered. All of them followed a basic design concept incorporating drainage channels and box culverts through the built-up sections of the city, and sediment and boulder traps upstream. These also included the channelization of secondary wadis originating from Al Qahira Hill (Cairo Hill) to the south of the project area, and soil conservation measures.

4.2.2 Two alternative flow parameters were considered for the design of hydraulic structures, namely, a 1:5 year frequency flood as the minimum acceptable protection, and a 1:20 year frequency flood as an economically acceptable maximum protection. The impact of floods with return periods of 1:50 and 1:100 years was also considered to develop a loss-probability analysis and identify the cost effectiveness and risk protection of the proposed investment. Space constraints, due to the narrowness of the streets, limited the design capacity that could be economically provided. It was concluded that a hydraulic design capacity to carry 100 percent of the 1:20 year frequency flood and about 90 percent of the flood flows with a return period of 1:50 years, would yield, within the space constraints, the least-cost alternative and the maximum possible protection against any reasonable risk to human life. Thus, flood waters caused by

events exceeding the design capacity (such as events occurring with a frequency of 1:50 or 1:100 years) would be of minor or moderate impact and would pose no threat to people or property.

4.2.3 Several drainage routing alternatives were also studied to determine the least-cost solution. Diverting Wadi Seena by tunneling under a high ridge separating two adjacent watersheds was ruled out on economic grounds. Diverting Wadi Al Nasser into Wadi Seena was considered the only viable option as the streets along its natural drainage course are too narrow to enable construction of even the minimum hydraulic capacity option (1:5 years frequency flood) without the major demolition of historical buildings in the "Old Town". The only feasible option for controlling Wadi Madam flood waters was to provide a box culvert along the streets following the natural drainage course of the Wadi.

4.2.4 PHASING OF THE PROJECT:
Finally, taking into consideration the financial constraints, THE PROJECT WAS CONCEIVED TO BE IMPLEMENTED IN PHASES; from essential flood control works providing the most needed protection to the maximum investment including urban upgrading which would enhance land development in the area bordering some of these wadis. Therefore, the project was designed to provide the essential flood control works which has yielded the maximum economic benefit.

5. PROJECT COMPONENTS: The project comprised of the following main elements:

5.1 The essential flood control structures consisting of open channels,box culverts, sediment and boulder traps at various places in wadi Seena, Wadi Nasser, Wadi Madam and Wadi Al Kamet:

5.2 The restoration of street pavement; the conservation of soil through the terracing of unstable slopes; surface drainage footpaths in narrow and steep streets to control erosion; and land acquisition;

5.3 The procurement of equipment for the maintenance of flood control structures;

5.4 The institutional strengthening of MMH (Now MCHUP) and its main offices through technical assistance; and technical assistance for project construction management;

5.5 To implement a project cost recovery mechanism at a municipal level, and to promote implementation of a national municipal resource mobilization policy; This component was deleted. However, it was agreed between IDA and the Government that Cost Recovery mechanism at various governorates would be undertaken as part of the macro economic reforms currently being undertaken by the Government of ROY.

5.6 The training of MMH (Now MCHUP) and its main branch offices staff; and

5.7 Consultant services will be provided to prepare a feasibility study for a future urban development project, and on the basis of such a study, to prepare a preliminary and final design as well as tender documents and technical specifications.

6. MODIFICATIONS IN THE PROJECT DURING IMPLEMENTATION:

6.1 As a result of physical changing circumstances at site and to overcome implementation problems the design of civil works was modified in different places along the wadis while the basic objectives of the project remained unchanged. Given below are the modifications made in the project activities:

Contract 1 (Wadi 1)

a. Open channel stn 1200-1349, alignment was shifted one meter to the right side for getting to construct stone wall on left side.

b. Box Culvert SB/9

Length changed from 20 to 25 meters and stn 1020-1040 shifted to stn 1008-1033.

c. Open channel stn 1008 948.5 was changed from stone masonry to RCC U-Channel due to restricted space of excavation.

d. Box Culvert No. SB/8

Size of Box culvert was changed from 6.0x3.0 to 5x2.8 due to shifting of W-2 diversion to Wadi-3 and the 500 mm water pipe crossing the box-culvert. The length of this Box Culvert was extended from 100 M to 496 M through Awadhy Street as additional work.

e. Additional asphalt pavement was provided. (400 meters in length on each side of Open Channel).

f. Box Culvert SB/7

The size of Box Culvert was changed from 6.0x6.0x2M due to shifting of W-2 diversion to Wadi 3 and plinth levels of adjoining building being lower than road level.

Contract No. 2 (Wadi 2)

a. Wadi 2 diversion shifted to its natural course to join with Wadi 3 instead of Wadi 1 previously planned, due to problems to acquire houses in its route.

b. Stn 442-378 foundations for stone wall changed to combine footing due to restricted space of excavations.

c. Sedimentation, Traps and Ramp walls in Wadi 2 and 2A reduced in length to make room for machinery movements.

d. Foundation and drop walls reduced due to rock foundations and restricted space on sides.

Contract 3A (Wadi 3)

a. Size of Box Culverts from stn 104.5-650 was changed from 2.5x2.5 to 3.0x2.8 between stn 104.5-314.5; and 2.8x3.0 between stn 314.5-650. The size was changed to take the additional flow of wadi 2 and excavation limitations in narrow streets.

b. Slopes and invert levels between stn 104.5-374.5 were also changed to save the adjoining building from flooding.

7. PROJECT COST AND FINANCING

7.1 The project estimated to cost US$ 22.25 million excluding taxes and duties, of which US$ 15.0 million represented the foreign cost component. The detailed cost estimate at appraisal is given in Annex 1. The actual costs as incurred are given in Annex-2.

7.2 The construction of the main works was programmed to be completed by December 1996.

7.3 The entire foreign exchange component of the project i.e. US$ 15.0 million equivalent was proposed to be financed by IDA. The local cost of US$ 7.25 million equivalent was proposed to be financed by Yemen Government.

8. PROCUREMENT:

8.1 The procurement arrangements for the project as agreed during appraisal are shown in Annex 3.

8.2 The project was divided into nine civil works contract packages, five of which (representing about 86% of the total civil works) were proposed to be tendered following International Competitive Bidding (ICB) procedures in accordance with IDA procurement guidelines. Remaining four civil work contract packages were to be tendered under Local Competitive Bidding (LCB) procedure acceptable to IDA, consists of small works scattered all over the project area.

9. PROJECT IMPLEMENTATION:

9.1 Civil Works:

The Civil Works component of the project were separated into five International Competitive Bidding Contracts (ICB) and four Local Competitive Bidding Contracts (LCB).

9.1.1 ICB Contracts:

Contracts 1, 2, 3A, 3B and 4 were finalized under the procedures of International Competitive Bidding and these Contracts were awarded to the Public Corporation for Construction & Industrial Installation on September 12, 1991. The original contracts implementation period was 19.5 months including 6 weeks of mobilization. The contracts period had extended six times in order to complete the project.

The Contract implementation was delayed by 66 months for the reasons given at 9.4 in this report.

9.1.2. LCB Contracts:

All LCB contracts were completed as of October 31, 1998.

- Contract No. 2 & 3 were signed on November 6, 1996. The duration of these contracts was 12 months. The delayed time was approximately 12 months.

- Contract No. 1 & 4 were signed on March 6, 1997. The duration of these contracts was 6 months. The delayed time was approximately 12 months.

- The reasons for delay are given at 9.4 in this report.

9.2 Maintenance equipment:

9.2.1 The maintenance equipment were procured from Marubeni Corporation according to the World Bank procurement guidelines. The contract was signed on November 2, 1992. The details are given in Annex-4.

The contract for supply of maintenance equipment amounted to Japanese Yen (JY) 146,645,500 equivalent to US$ 1,383,448. The equipment arrived at the site in October 1993.

9.3 Institutional Strengthening of the Ministry

Through the life-cycle of the project, the objectives of this component are far exceeded compared to those at the time of appraisal, such as:

Consultancy services for municipal environment component:

- Employment of consultancy firm (Associated Consulting Engineers) to study and recommend improvement of solid waste collection and disposal including landfill sites; and to propose institutional strengthening of MCHUP's environmental department to address the issues nationwide. The study is received and is being used for development of future projects within the mandates of the Ministry.

  Staff Training:
  Training of 20 engineers and staff within the country and abroad. The training included different fields such as project management, Community Development, Urban Planning & Development Management, Development of Low cost Housing, Feasibility study & project evaluation, Material Testing & Quality Control, and training in Laboratory equipment, and others.

  Impact: 11 of the 20 trained, are currently holding responsible positions in the Ministry as Director of the departments, three are managing other IDA Credits (Public Works Project, Social Fund & Taiz Flood Prevention Project). Remaining are now working with other IDA projects or holding responsible positions in the Ministry.

- English course for Ministry's staff - 32 staff members of the Ministry had undergone 100 hour english course. This has improved the efficiency of the staff significantly.

- Strengthening Municipal Branch Offices: This component was identified during appraisal. In order to strengthen these and in agreement with IDA, necessary equipments needed for the ministry and its offices i.e. blue printing machine, survey equipments, computers and field vehicles were procured. This arrangement was found more appropriate instead of hiring a consultant and was agreed with IDA. This has strengthened the capacity of the Ministry, Taiz Branch Office and Survey department and enhanced their efficiency significantly. This component was modified to replace the provision of Advisor for Public Works Engineering identified at appraisal.

- Appointment of Technical Advisor to the ministry to assist with preparation of new projects and to assist the Ministry in developing policies in order to achieve the mandates of the Ministry. The advisor has played a positive role in identifying and implementing staff training programmes.

- Employment of Legal Advisor to the ministry to assist with preparation of new laws and legislation required for effective management of the policies within the mandates of the Ministry.

- Employment of Construction Advisor to the project unit to assist project staff in supervision and project management was undertaken. The need was identified during appraisal. The construction Advisor continued till January 1996 and trained the local staff in project supervision independently.

- Advisor to Urban Development & Housing Policies: The need for this position was identified during appraisal. However, there is an existing cooperation between MCHUP, United Nations Center for Human Development (UNCHS Habitat) and Institute of Housing & Urban Planning Rotterdam. Within this cooperation, a draft housing policy was drafted and sent to IDA for their review. It was agreed that there is no need for providing such advisor through the Credit.

- Employment of consultancy firm (Consulting Engineering Services) to study and design major road crossings in the city of Sana'a to improve Traffic movement. The study is expected to complete by the end of December 1998 and would be used for obtaining IDA credit within the concept of Urban Development projects.

9.4 Problems encountered during the Project Implementation:

The major problems encountered and factors contributing towards delay in implementation are as follows:

1. Utilities Problems

   a. A major problem is non-availability of adequate documents related to Plans for existing services within the project area. There were no records available for sewerage and water supply network. Most of the sewerage pipe locations were identified from enquiries made from the local residents during implementation. There were very few access points that were visible and many houses did not appear to have inspection chambers. It was common for direct connections to be made to the main sewer. Many of manholes were either buried or had been capped with concrete and covered by soil. No satisfactory records or knowledge of other facilities were available such as electricity and telephone cables which were spread every where underground.

   b. For dwelling within the project area which were not connected to the wadis, new lines of sewerage were executed by the contractor to solve this problem.

   c. Lack of coordination between the contractor and services authorities to divert the services which were encountered and affected the project execution.

2. Land acquisition problems in contract no. 2 had forced the client to change planned rout of wadi 3.

3. Inadequate arrangement for the provision of construction materials, equipments and man power as per the programme.

4. Insufficient cash flow for execution of work according to the programme.

5. Extra ordinary floods in the wadis.

6. Contractor's lack of experience with this type of work and their engineers not familiar with dealing with international contracts conditions (FIDIC).

7. The work was delayed for about 7 months due to the political crisis and the war that followed in the country. The contractor withdrew all his equipments from the site, shortly prior to the war. After the war was ended, the contractor started the work but was lacking capabilities due the post result of war.

   The contractor's materials and equipments were looted from his stores forcing him to hire from the market, and due to his short of cash flow, it was not possible in many cases.

8. Weakness of the contractor's administration in managing the work activities according to programme issued.

9. As the contractor is a government organization, its financial processes were hampered by the complex government regulations and the routine.

10. The government regulations does not allow for any incentives more than a certain percentage of the staff salary thus resulting in the general feeling amongst the contractor's staff of having a job to go to work daily instead of a commitment to complete a job within the agreed time frame.

11. Contractor ignoring the penalties laid in the contract condition, because the principle of achieving profit in the contract does not exist being a government body.

9.5 Measures taken to expedite the completion:

1. Arrangements were made to transfer all interim certificates to the account of the Contractor at Taiz instead of its headquarter at Aden which had ensured the availability of sufficient funds. With the intervention of World Bank representative, a loan of 15 million Riyals was provided to the contractor through MCHUP.

2. Strengthened the contractor's management unit by providing experts with extensive and similar work experience. They were delegated all authorities to take decision away from the routine government procedures.

3. Coordination was done with higher level governorate management and other relevant authorities to resolve the problems related to the utility services.

4. Close monitoring was done by PIU on the actual implementation of activities by the contractor, deviations

were referred to the higher management of the ministry to take appropriate action immediately.

5. It was ensured that the works are continued round t h e clock and on holidays without interruption. The contractor formed the working teams. Close monitoring was done by PIU to ensure that working teams are operational round the clock.

6. His Excellency the Governor of Taiz was approached, who took personal interest to ensure completion of the project within the credit period. Necessary cooperation was assured from various other departments such as Traffic Police, Municipality, Sewerage, Water,electricity and other departments.

10. ACHIEVEMENT OF PROJECT OBJECTIVES:

At the closing date, the project objectives are far exceeded compared to those at the time of appraisal, such as;

10.1 Storm water control measures:

For the storm water control measures, a suitable channelized network was constructed through the existing wadis i.e. Wadi-1 (Seena), Wadi-2 (Al Nasser), Wadi-3 (Madam), and Wadi-4 extension (Taiz).

The hydraulic structure constructed for the storm water control and flood mitigation measures include:

3.20 kms masonry open channels (3-12 m wide).

3.01 km reinforced concrete single and twin box culverts (2-10 m wide).

Construction of 5 sedimentation traps. The traps are constructed primarily for effecting clean water out-falls by initial segregation of the larger boulders and then the retention of sediments with trap, as the water flows pass over check weirs of the appropriate structures.

Construction of 3 drop structures. The drop structures had been constructed in order to enhance upstream retention capacities of the traps.

10.2 Road Access:
Traffic flow system had been improved by the construction of 5.4 km asphalt roads and 2.3 km stone pavement roads.
New major road was constructed beside Wadi Seena channel currently serves the purpose of:

- providing a continuous north-south route through the city of Taiz;

- enabling more effective use of southern ring road which in the past, used to carry very little traffic movement in relation to its standard and design new connections access and links between existing road along the eastern margin of the project were established.

10.3 Sewerage system:

The project was successful in enhancing the sewerage system network by providing 5932 meter sewer pipes and 183 manholes with different sizes (150mm-400mm) within the project area and for purpose of:

- Replacement main sewer affected by project implementation;

- Establishing of new sewer to connect dwellings not connected to the sewerage system along wadis.

10.4 Other services:

By the substantial completion of civil work components all services (telephone, electricity, water supply network) fully protected from damage during flood events. Most of these services re-arranged and recorded with refer and easy to be known underground.

10.5 Project Maintenance Equipments:

All the equipments purchased are being utilized effectively at Taiz city by the local office of the Ministry of Construction, Housing & Urban Planning who is responsible for operations and maintenance at Taiz city under the superviso of Taiz Governor in line with decentralization policy of the Government.

10.6 Institutional strengthening of the ministry:
By the closing date of the project the institutional strengthening of the ministry satisfactorily achieved.

Project Management - The Ministry was dependent on expatriate staff for project management at appraisal. Now the project is being implemented independently by the national staff.

Project design & Tender documents: International consultancy services were required for project design and preparation of tender documents at appraisal. Now, the national staff has independently prepared the drawings and tender documents for Phase-II activities of the project.

Staff training: During the time frame of the credit, a number of engineers and other staff members had undergone training in various fields such as Project Management, Quality control, Community Development, Low cost housing, financial management, Material testing, Project evaluation and others. Now three of them are managing IDA financed projects independently, others are either working with other IDA projects or holding senior positions in the Ministry. 32 staff members undergone training in English language which has enhanced their efficiency significantly.

Strengthening of Survey Department, Laboratory & Branch Offices: At appraisal the Ministry and its departments were dependent on external support. By provision of much needed survey equipments, Blue Printing machine, Asphalt testing machine and other equipments, the capacity of Ministry and its departments has enhanced significantly and minimized the dependency on external support.

11. IMPACT OF THE PROJECT:

1. Mitigation to Flood Damage - 100% of approximately 21,000 household (5000 at appraisal) and 900 shops (280 at appraisal) are now protected. The project mitigated flood damage to public infrastructure and private property. During the last two years, residents and business community inside the project area experiencing for the first time heavy rains without any emergency protective measures to be taken.

2. Protection of property worth US$ 3.0 Million annually: Negligible damage to public or private property including infrastructure (Road, Telephone, Water, Electricity) as compared to regular incidents of major losses amounting to US$ 3.0 million annually.

3. No loss to Human Life or cattle: No incident of loss to human life, cattle as compared 3 to 4 incidents each time during the floods.

4. Saving of US$ 1.6 Million annually on Maintenance cost - Enormous reduction in maintenance cost to public infrastructure and private property. Present expenditure is estimated at US$ 90,000 for 54,000 households as compared to US$ 150,000 for 5,134 households annually at appraisal, which makes a saving of US$ 1.6 million annually on maintenance cost.

5. Improved access - The project removed traffic disruption and improved road network and access to health centers, schools and mosques as compared to the situation during appraisal. New exit and entry points had been developed

for smooth vehicular and pedestrian traffic. This has relieved traffic at crowded Al-Gamal street and 26 September Street especially at the center of the city.

6. Development of Vehicle Parking - Vehicle parking has been developed at the center of the city using the space developed as a result of Box Culvert. No place was available for vehicle parking at appraisal. This will also develop green area in the city as compared to none at appraisal.

7. Uninterrupted and enhanced commercial activities - The project enhanced uninterrupted commercial activities throughout the year as compared 5 to 10 times annually for to 2 to 3 hours each time during floods.

8. Enhanced Land & Property Value - The project increased property value especially along wadis and within the old city.

9. Poverty Alleviation through Employment Generation - The utilization of local skills and material for the implementation of the civil works considered both technically and economically acceptable to the community and improved the employment opportunities. Uninterrupted economic and commercial activities has also played a vital role in employment generation.

10. 1100 street vendors & 900 shops as compared to 280 shops at appraisal - No disruption to economic and commercial activities within the city especially at the old city. The shops in the project area enhanced to 900 as compared to 280 at appraisal. This excludes about 1100 street vendors. At appraisal the commercial and economic activities were limited due to the danger of damage as a result of flood water

11. Direct benefit to 90,000 beneficiaries - (children 45,000, Women 25,000 and men 20,000).

12. Indirect benefit to entire population of Taiz (430,00) and others residing outside of project area which includes farmers, dwellers, visitors, businessmen, traders etc. whose economic benefits relate to the activities in Taiz city.

14. Development of Surface water drainage system - Surface water drainage system has been established as compared to none at appraisal. No stagnant water is seen as soon as the rains are over.

15. 100% protection against erosion - Erosion has stopped which ultimately damages the houses built along the wadis.

16. Effective use of Rain Water - Rain water is channeled in a designed manner through the wadis towards an earthen irrigation Al-Amra dam, which is connected to irrigation channels built under another IDA financed southern region Agriculture Development Project (CR.1772-YEM). With the control on the rain water, it recharges the existing wells.

17. Use of flood water for irrigation - The project contributed to the improvement of the quality of water for downstream flows so that the farmers benefitted from the proper use of floodwater for irrigation.

18. Improved sewerage and solid waste management - The implementation of new sewerage line along wadis and the improvement of road net work contributed to the improvement of environmental conditions. Because, before the project, the people along wadis connected their houses to wadis the collection of solid waste inside the project area become easier due to the availability of road access. A remarkable improvement was noticed in the solid waste management activities of the local office of MCHUP. This has also prevented the diseases to spread.

12. PROJECT SUSTAIBABILITY:

12.1 Maintenance of Infrastructure:

Within the decentralization policy of the Government of Yemen, each and every department of the Government falls under the administrative control of the Governor. In this case, the Governor of Taiz has the responsibility to ensure maintenance and sustainability of the project through the Municipal office of Taiz. The Governor is also responsible to recover a reasonable cost from the users according to the 'New Cleaning Law' which was approved by the Cabinet in September 1998.

Interim arrangements - A proposal for maintenance of the implemented infrastructure was submitted to His Excellency the Governor of Taiz. The proposal was acceptable, in principle, to the Governor of Taiz. Necessary budgetary provisions are being made for proper maintenance of the infrastructure to ensure sustainability of the project. The proposal included formation of a Maintenance Unit, as an interim measure, under the direct control of the Governor. The Maintenance Unit will have following functions:

- Cleaning the channels;
- To ensure that solid waste and other debris are not thrown into the channel;
- Preventive maintenance of the infrastructure;
- To develop and implement a Law which has a provision of punishment to ensure that solid waste is not disposed off into the channels;
- To ensure that all new houses are connected to Sewerage Line so that the excreta is not disposed off into the channels.

12.2 Long-term Plans: For sustainable maintenance of the Project, it is planned to utilize the services of Private Sector. The maintenance will be contracted. With the introduction of 'New Cleaning Law', the waste collection services will be on the basis of 'Fee for Service'.

12.3 Cost Recovery: The Governor of Taiz has taken the initiative towards cost recovery measures by imposing a surcharge to all households on their electricity bills. However, the institutional and legal arrangements for the cost recovery in the governorate are awaiting financial directions of the government under the macro economic reform. Efforts are also being undertaken to rationalize cost recovery mechanism as well as to introduce other taxes e.g. Toll tax and other taxes. A Socio-economic study was conducted recently which is under review. The final recommendations will be forwarded to the Governor of Taiz for implementation.

12.4 Phase-II of the Project: The existing project was appraised in 1990 and was phased out to match the financial resources which were available during 1990. The project aimed to complete flood control structure. A proposal is under discussions between MCHUP and MOPD for including Phase-II of the Project under IDA assistance. The Tender Documents and drawings are already completed. It is likely that delay in the implementation of Phase-II activities will damage the already implemented infrastructure during the Phase-I.

13. BANK PERFORMANCE:

13.1 The Bank officials had been monitoring and supervising the project regularly. However, special attention to the project was accorded after July 1995. Under the guidance and practical advise from World Bank experts, the project could be completed within the time frame. The efforts made in terms of institutional strengthening of the Ministry, expediting the completion of works and utilization of funds are worth mentioning.

13.2 The overall performance of the Bank can be rated as Highly Satisfactory(+).

14. BORROWER PERFORMANCE:

14.1 The project was implemented by a Project Implementation Unit (PIU) established by the line ministry i.e. Ministry of Municipalities and Housing (now Ministry of Construction, Housing & Urban Planning). Initially the PIU was headed by an expatriate Project Manager but later on taken over by a national. The PIU under the guidance of the Ministry assisted by the IDA supervision missions fulfilled all its obligations.

a. The project is completed as per schedule.
b. All procurement were done as per IDA guidelines.
c. The allocated budget (IDA+Government) was utilized efficiently and for the legitimate purposes.
d. Uptodate financial records are maintained which were audited by independent auditors.
e. Quarterly and Audit reports were submitted to IDA on time.
f. All covenants of the Development Credit Agreement were successfully achieved.
g. Local staff is now fully trained in the areas of project management, quality control, design and financial management.

14.2 The overall performance of the Borrower can be rated at Highly Satisfactory (+).

15. ASSESSMENT OF OUTCOME:

15.1 In view of the positive achievements of all covenants by the local staff, this can be rated as Highly Satisfactory. The existing staff, with on the job training, was able to develop design of the Phase-II independently.

16. FUTURE OPERATIONS:

As an interim measure, MCHUP is in the process of establishing a separate unit for maintenance of the existing infrastructure through its local office in Taiz. Under the decentralization policy of the Government, the Governor of Taiz is responsible for maintenance and sustainability of the project. This unit, under the direct supervision of the Governor, will focus on operations and maintenance, preparation of plans and would encourage the community participation. Special emphasis will be given to the training of beneficiaries and the staff. A plan of action has already been agreed in principle by the Governor of Taiz.

As a long term sustainable effort, it is planned to utilize the services of Private Sector on a contractual basis for maintenance of the project including cleaning of the channels.

The new 'Cleaning Law' which was approved by the Cabinet in September 1998 has the provision for recovering 'fee for service'. The amount collected from more than 21,000 households benefitted from the project will be sufficient for maintaining the project.

MCHUP and MOPD has already in principle that immediate implementation of Phase-II of the project will sustain already implemented infrastructure during Phase-I of the project.

MCHUP is in the process of developing new Urban Development Projects for the cities of Sana'a and Taiz. Proposals for consultancy services are invited from international companies for preparing a city development strategy for the cities of Sana'a and Taiz. A study to solve the traffic problem in the capital city of Sana'a (funded out of this credit) is expected to be completed by the end of December 1998.

17. KEY LESSONS LEARNED:

- The Project Implementation Unit should be more autonomous and be responsible only to the Minister or Vice Minister.
- Sufficient time should be allowed for any civil work components when they are implemented within the cities, and due consideration should be given to the inconvenience of the local population.
- The responsibility of the designated engineer should not be undermined by decisions taken outside of the framework of the contract.
- The project preparation should have the participation from all actors who are to play role in the implementation of the project to ensure inter-departmental support.

ANNEX C

IMPLEMENTATION COMPLETION REPORT

REPUBLIC OF YEMEN

TAIZ FLOOD DISASTER PREVENTION AND MUNICIPAL DEVELOPMENT PROJECT

(Credit 2160-YEM)

COMMENTS FROM THE GOVERNMENT

بسم الله الرحمن الرحيم

REPUBLIC OF YEMEN
Ministry of Construction
Housing & Urban Planning

الجمهورية اليمنية
وزارة الانشاءات والاسكان والتخطيط الحضري

JUN 15 1999 Received

Date:

No:

التاريخ: ١٥/٦/١٩٩٩م

الرقم: ز ا ن/١٢٤

June 14, 1999

Mr. U. Kirmani
Senior Implementation Specialist
Infrastructure Development Group
Middle East and North Africa Region
The World Bank
Washington DC

Sub: Draft Implementation Completion Report (ICR) for Taiz Flood Disaster Prevention and Municipal Development Project (CR.2160-YEM).

Dear Mr. Kirmani,

We thankfully acknowledge the receipt of Draft Implementation Completion Report (ICR) for Taiz Flood Disaster Prevention and Municipal Development Project (CR.2160-YEM) forwarded to us vide your letter dated June 7, 1999.

We have gone through the subject report and would like to congratulate you for a very well prepared document. The report highlights the benefits achieved by implementation of the project and the urgency to undertake Phase-II of the project.

We are conveying our acceptance of the report to the Ministry of Planning and Development, Government of the Republic of Yemen.

Sincerely yours,

Ahmad H. Udayni
Vice Minister
Ministry of Construction
Housing & Urban Planning

Copy to: Mr. Anwar Harazi, Deputy Minister Projects, Ministry of Planning and Development.

: Mr. Jean-Claude Villard, Director Infrastructure Group, The World Bank, Washington DC

بسم الله الرحمن الرحيم

NATIONAL WATER & SANITATION AUTHORITY
Head Office - Sana'a
Republic of Yemen

المؤسسة العامة للمياه والصرف الصحي
الإدارة العامة - صنعاء
الجمهورية اليمنية

Ref : 1781

Date : 24-6-99

إشارة :

التاريخ :

Mr. Uruji Kirmani
Senior Implementation Specialist
Infrastructure Development Group
Middle East and North Africa
The World Bank
1818 H Street N.W.
Washington, D.C. 20433
U.S.A.

Fax. No. 00 1 202 477 6391

Subject: Yemen Al-Mukalla Water Supply Project and
Taiz Flood Disaster Prevention and Municipal Development Project
– Draft Implementation Completion Reports

Dear Mr. Kirmani

Reference to your letter dated June 7th, 1999 concerning the above-mentioned subject, we would like to express our sincere thanks and gratitude to the World Bank in general and to your goodself in particular. Your outstanding performance and devotion made all the difference in projects areas and objectives were fulfilled. As for ICP we would like to inform you that NWSA has no comments on the subject reports.

Sincerely yours

Dr. Mohamed Al-Saidi
The Director General

Tel : 231254 - 231255 250169 - 250171
Cable . NWSA Telex : 2346 Ye - Fax : 251536
P. O. Box : 104 - Sana'a - Republic Of Yemen

تلفون : ٢٣١٢٥٤ - ٢٣١٢٥٥ - ٢٥٠١٦٩ - ٢٥٠١٧١
تلغراف : نوسا - تلكس : ٢٣٤٦ - فاكس : ٢٥١٥٣٦
ص.ب : ١٠٤ - صنعاء - الجمهورية اليمنية

ANNEX D

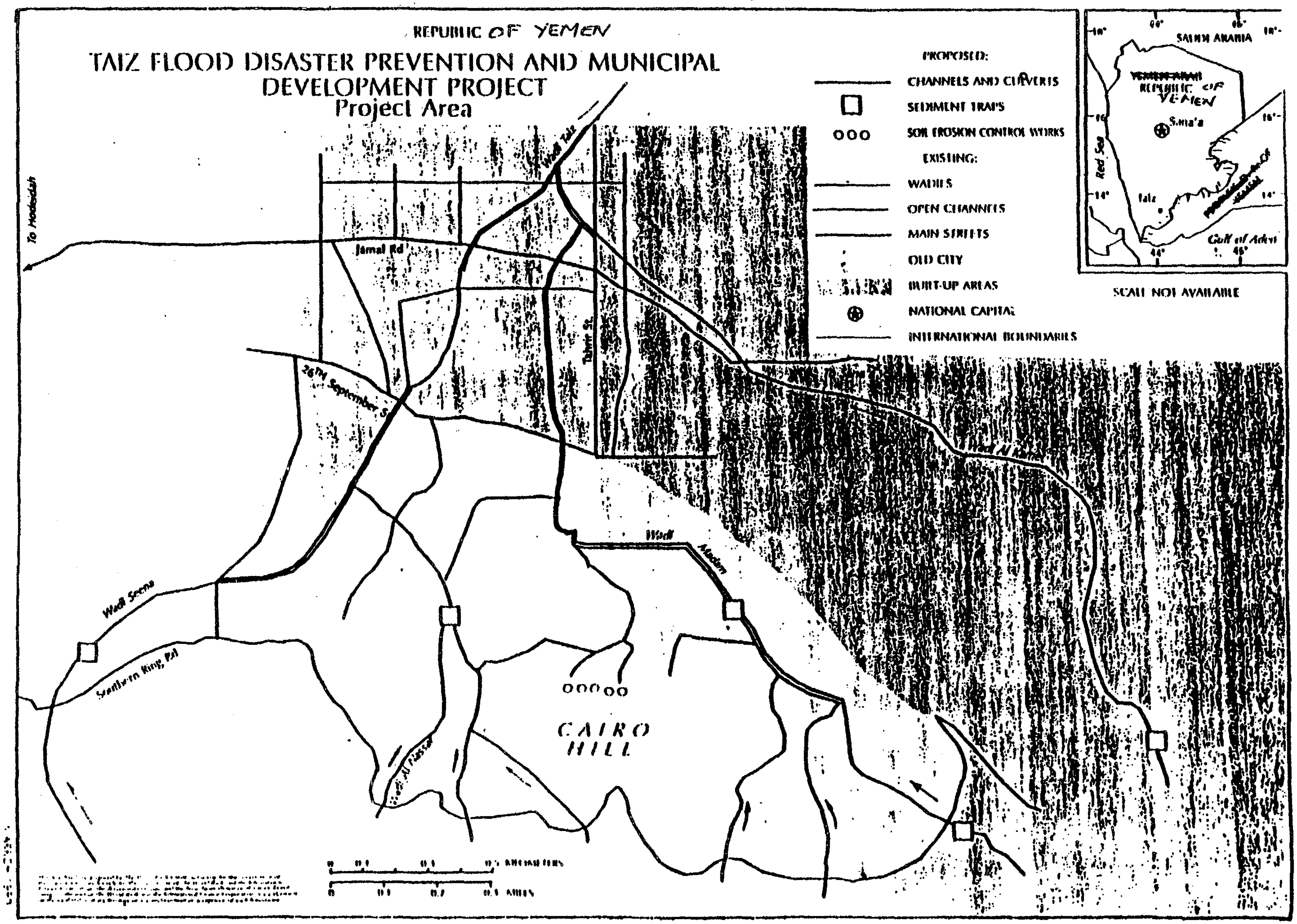
IMPLEMENTATION COMPLETION REPORT

REPUBLIC OF YEMEN

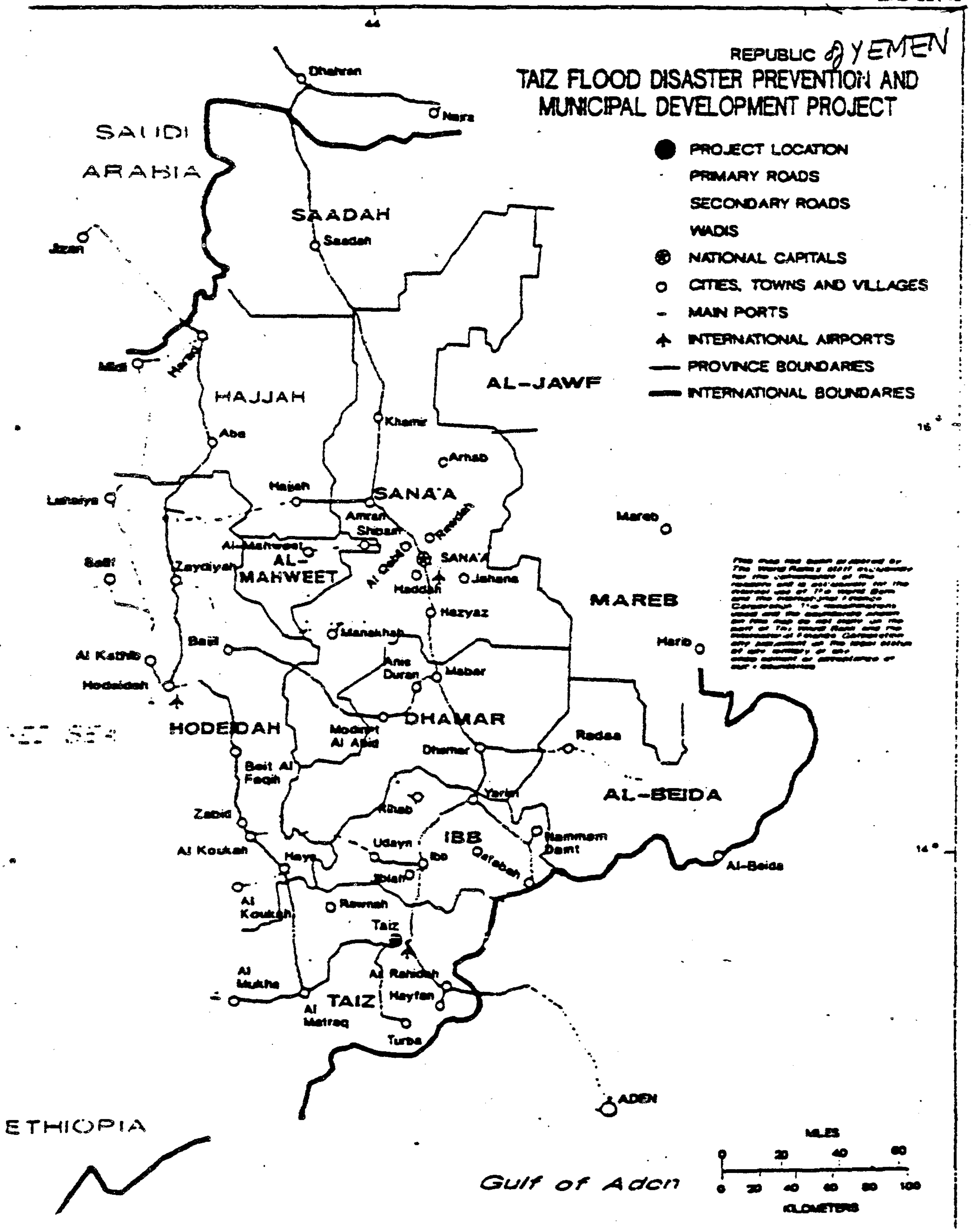
TAIZ FLOOD DISASTER PREVENTION AND MUNICIPAL DEVELOPMENT PROJECT

(Credit 2160-YEM)

MAP SECTION


REPUBLIC OF YEMEN
TAIZ FLOOD DISASTER PREVENTION AND MUNICIPAL
DEVELOPMENT PROJECT
Project Area
PROPOSED:
CHANNELS AND CULVERTS
SEDIMENT TRAPS
SOIL EROSION CONTROL WORKS
EXISTING:
WADIES
OPEN CHANNELS
MAIN STREETS
OLD CITY
BUILT-UP AREAS
NATIONAL CAPITAL
INTERNATIONAL BOUNDARIES
SCALE NOT AVAILABLE
SAUDI ARABIA
REPUBLIC OF YEMEN
Sana'a
Red Sea
Taiz
Gulf of Aden
To Hodeidah
Jamal Rd
26TH September St
Wadi Seena
Southern Ring Rd
CAIRO HILL

IBRD 22142



REPUBLIC of YEMEN
TAIZ FLOOD DISASTER PREVENTION AND MUNICIPAL DEVELOPMENT PROJECT
PROJECT LOCATION
PRIMARY ROADS
SECONDARY ROADS
WADIS
NATIONAL CAPITALS
CITIES, TOWNS AND VILLAGES
MAIN PORTS
INTERNATIONAL AIRPORTS
PROVINCE BOUNDARIES
INTERNATIONAL BOUNDARIES
44
16°
14°
SAUDI ARABIA
ETHIOPIA
Gulf of Aden
SAADAH
HAJJAH
AL-JAWF
SANA'A
AL-MAHWEET
MAREB
HODEIDAH
DHAMAR
AL-BEIDA
IBB
TAIZ
Dhahran
Najra
Saadah
Jizan
Midi
Haradh
Abs
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Arhab
Hajjah
Amran
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Al Gabil
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Hezyaz
Lahaiya
Salif
Zaydiyah
Mareb
Harib
Bajil
Manakhah
Al Kathib
Hodeidah
Anis
Duran
Mabar
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Zabid
Al Koukah
Rihab
Yarim
Udayn
Ibb
Qatabah
Hammam Damt
Al-Beida
Hays
Ibb
Rawnah
Taiz
Al Rahidah
Hayfan
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Al Matraq
Turba
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KILOMETERS

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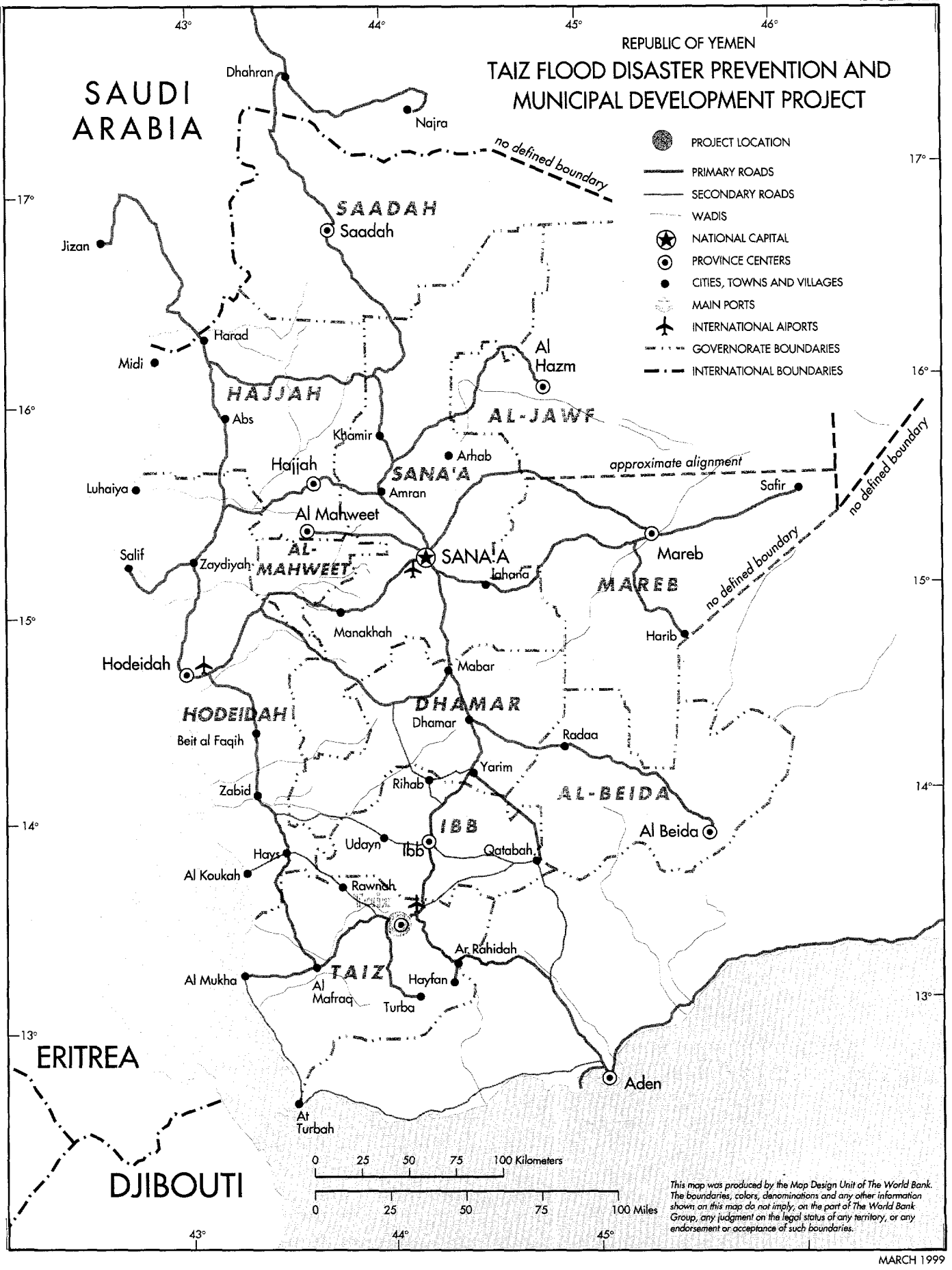
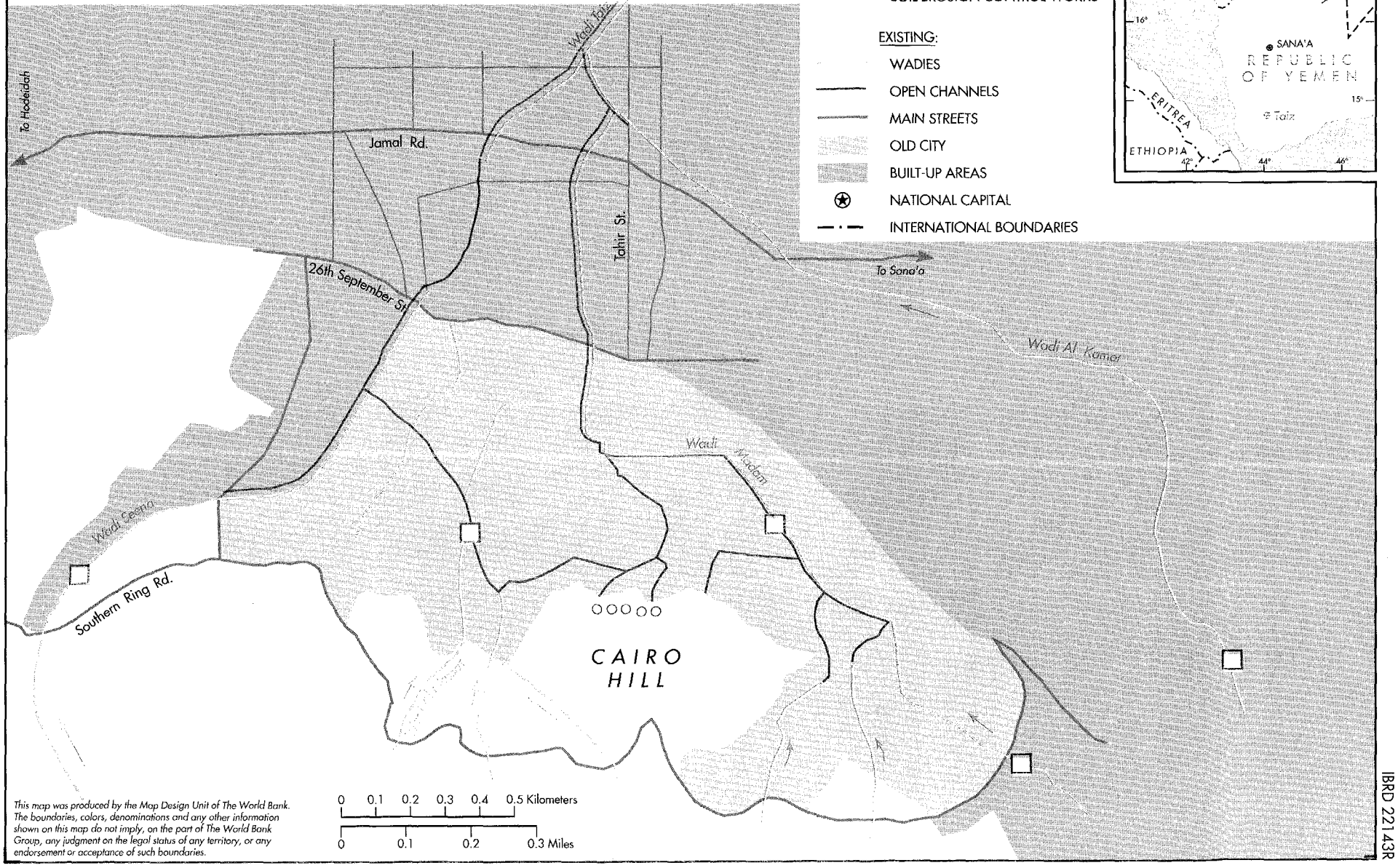


MARCH 1999

REPUBLIC OF YEMEN

TAIZ FLOOD DISASTER PREVENTION AND MUNICIPAL DEVELOPMENT PROJECT

PROJECT AREA



MARCH 1999

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