

**Transport and Education Infrastructure
in the North-West Dhawran District
YEM/90/C01**

Yemen

**PROJECT EVALUATION
FINAL REPORT**

July 2002

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LIST OF ABBREVIATIONS

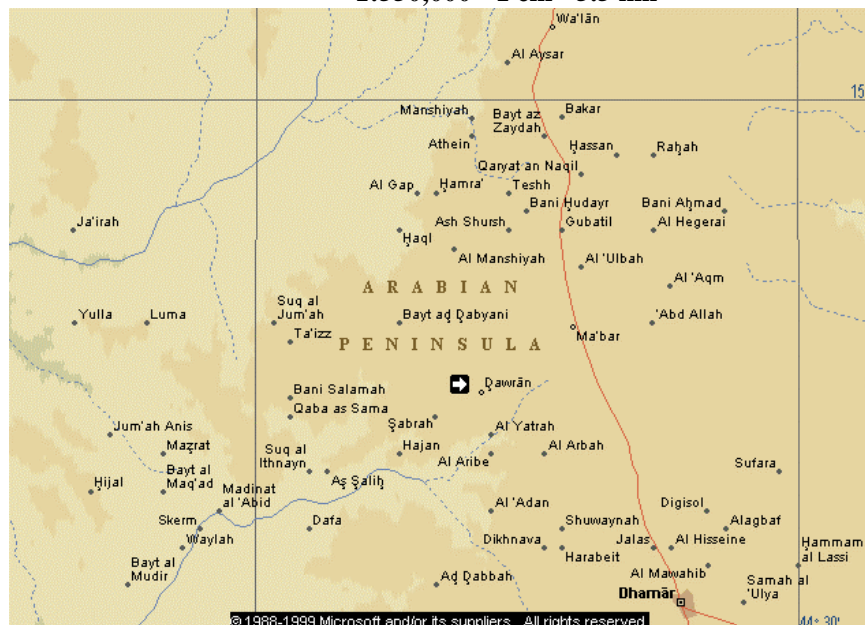
CTA	Chief technical Advisor
EOR	Executive Office for Reconstruction
GCRB	General Corporation for Roads and Bridges
GDP	Gross Domestic Product
GNP	Gross National Product
HDI	Human Development Index
LCCD	Local Council for Co-operation and Development
LDC	Least Developed Countries
NPD	National Project Director
PMU	Project Management Unit
PPP	Purchasing Power Parity
UNCDF	United Nations Capital Development Fund
UNDP	United Nations Development Programme
USD	United States Dollars

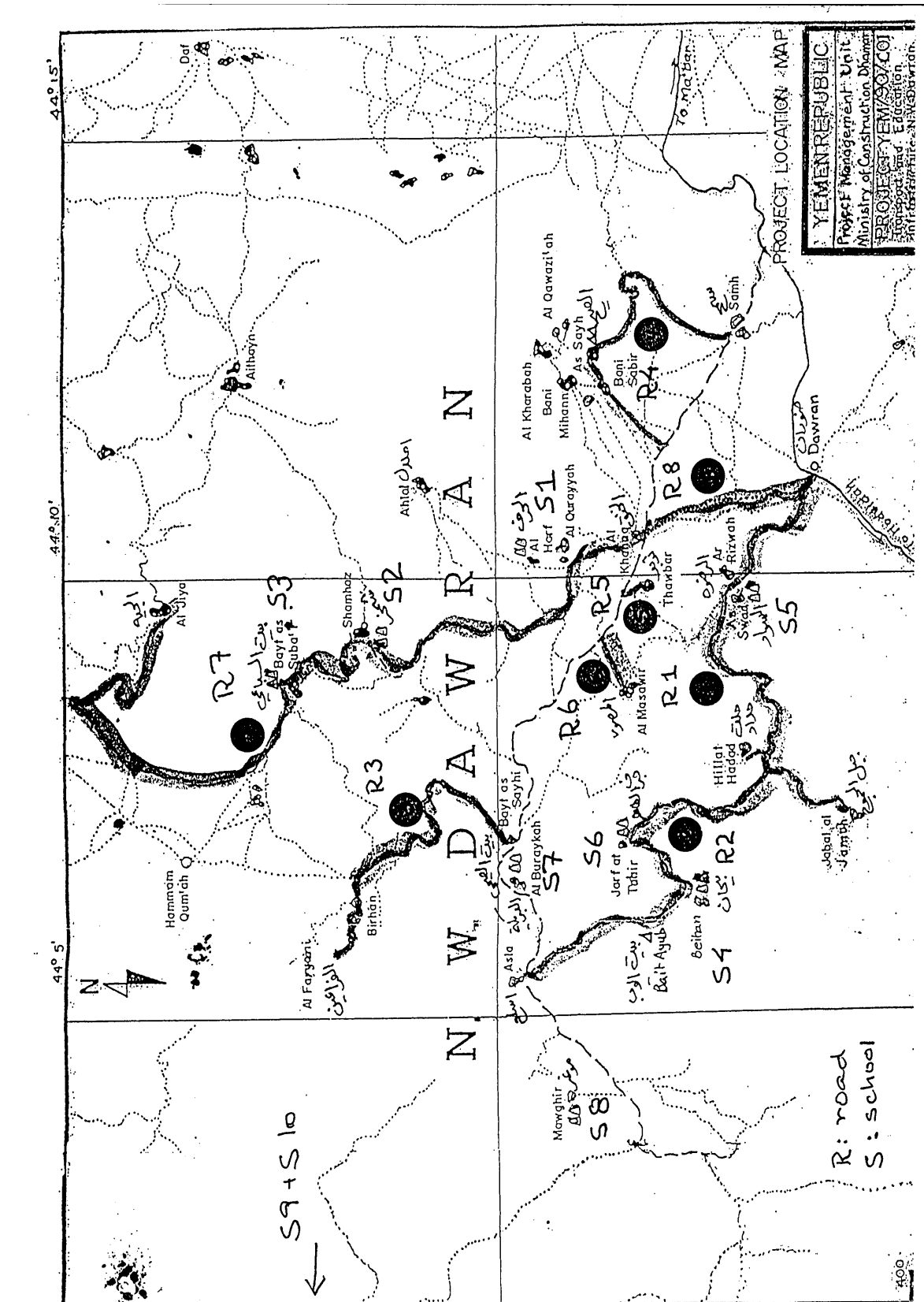
MAP OF PROJECT AREA

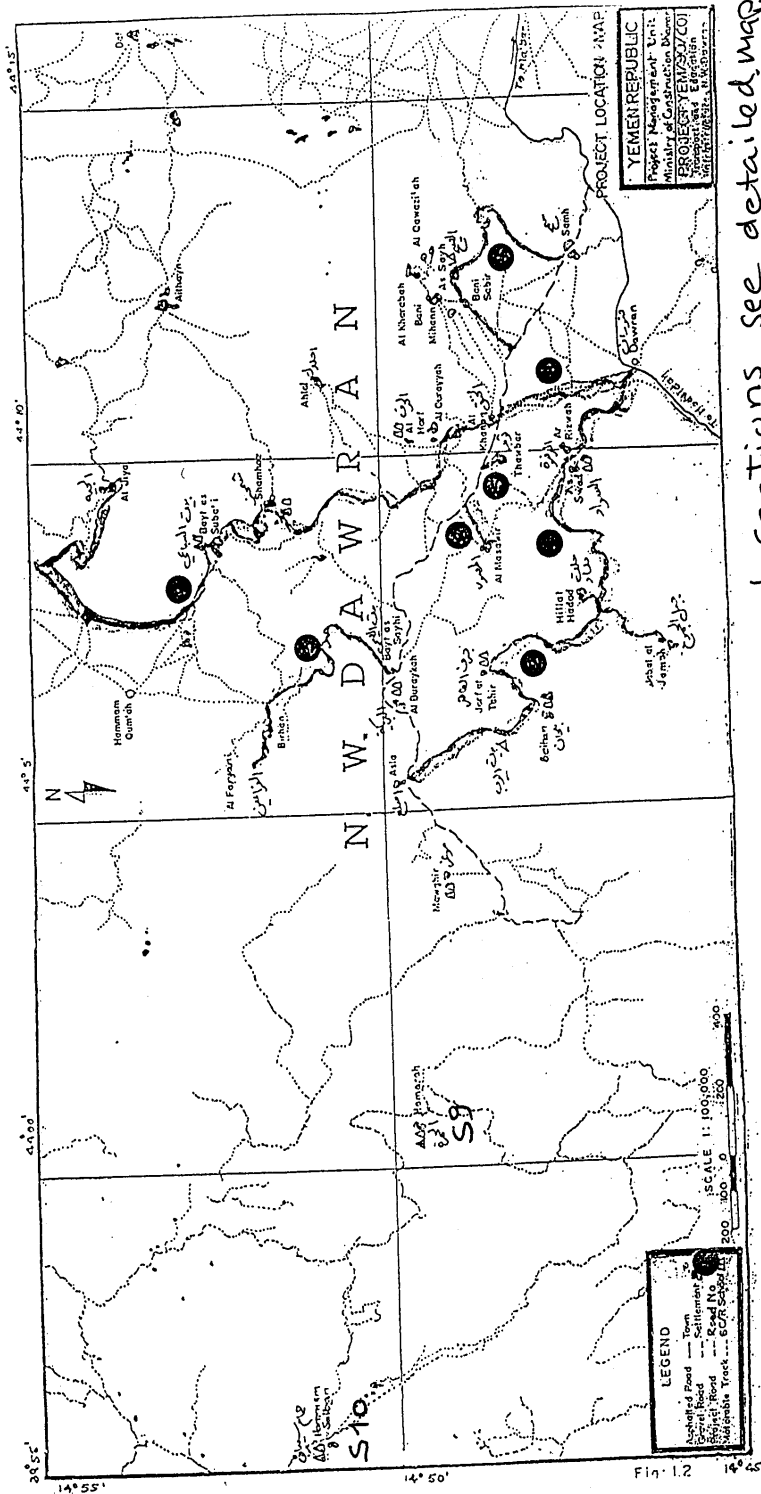
North-West Dhawran District located in Dhamar Governorate



Project Area located North-west of Dhawran
1:550,000 - 1 cm= 5.5 km







S: school For other schools and road sections, see detailed map.

EXECUTIVE SUMMARY

1. Development Context

Following a severe earthquake in December 1982, which hit the Dhamar Governorate in the central mountain plains, an estimated 25,000 houses were destroyed.

Upon the Government's request in 1984, UNCDF assistance was provided under project YEM/84/CO1, entitled "Post-Earthquake Housing Reconstruction in the North-West Dhawran Region", for the construction, on a self-help basis of 280 earthquake-resistant houses in very remote and difficult to reach villages. Prior to the completion of that project, the need for an adequate transport and education infrastructure for the region became apparent; the present project identified in 1986, is, therefore, a follow-up of the housing project. The project is located in the same geographical region as the previous one. However, it extends into longer-term objectives through improving the social conditions in the area, and by providing access to the nearby road network.

2. Project Description

The project was intended to rehabilitate 77 kms of feeder roads and construct 10 primary schools including 20 three-teacher hostels to accommodate a total of 60 teachers.

The development objective was to improve the basic social and economic infrastructure in the region and to create conditions that are conducive to future economic development, mainly in the agricultural sector and related economic activities. The project was to contribute to this development objective through:

1. Ending the relative physical isolation of the region, due to the lack of a feeder-road system to villages. This has proven to be a major obstacle to the marketing of agricultural produce outside the region;
2. Raising the educational level of the local population by providing adequate schooling facilities, which is expected to induce parents to increase enrolment of girls in elementary schools; additionally, adult evening classes can also be facilitated in the new school buildings.
3. Promoting the social development of the region through easier contacts with the more urban centres in the vicinity.

The immediate objectives of the Feeder Road component were to:

1. Improve the agricultural production and marketing potential of the region, in liaison with the Central Highlands Agricultural Development Project, through better access to the rural consumption areas;
2. Support the deployment of adequate social services, and facilitate reintegration of returnees from the Gulf States to the rural areas;
3. Improve the road-maintenance capabilities of the Local Council for Cooperation and Development (LCCD), in the project areas.

The immediate objectives of the schools component were to:

1. Rebuild the infrastructure destroyed by the earthquake;
2. Create and / or improve basic social services in education to serve as an incentive for the population to remain in the area and to develop its potential;
3. Assist the Government in the completion of the elementary school programme carried out under the Second Five-year Development Plan (1987-1991)
4. Provide adequate accommodation for teachers, that will induce them to move to the isolated areas.

3. Project Evaluation

The present project evaluation is conducted and the report prepared by Consulting Engineer Steen Frederiksen, M.Sc. Civil and Structural Engineering during a 10 days mission to Yemen.

The budgeted input according to the ToR was 47 mandays excluding travel time and "Sundays". This budget was reduced to 10 days and because of this substantial reduction the activities had to be carefully prioritised. General data collection concerning the present national situation as regards roads and schools development in a broader context has been omitted. Furthermore, an analysis of the socio-economic situation in the project area has been left out, partly for time constraints and partly because the road programme, which were meant to be the main stimulus for the economic development, is not yet completed.

The focus of the evaluation has been the present situation of the project, analyses of the project development and the reasons for the substantial delays. Finally the report focuses on actions to mitigate the effects of the delays and to complete the project.

Relevant files in the UNDP office were collected, meetings held with the Ministry of Public Works and Urban Development, Dhamar Governorate, Local Council of Dhamar, the contractor General Corporation of Roads and Bridges, FutureTech Consulting Engineer and local beneficiaries.

Two days field trip was made inspecting some 80 % of the roads and 6 out of 10 schools.

Debriefing has been made in the Ministry and the UNDP, Sana'a.

4. Project Achievements

The project succeeded in achieving more than the stipulated output as regards schools. The originally planned facilities for ten schools totalling 51 classrooms were expanded to 60 classrooms and corresponding teachers' hostels.

The quality of design and construction is satisfactory.

The registered attendance compared with the project background data shows an increase in number of pupils attending school in the villages concerned of 50 %. The increase in number of girls attending school is more than 100 %. Nevertheless, girls still only

constitute 22 % of pupils in primary school and 8 % in secondary school. There is still a long way to go.

In all schools there is a satisfactory number of teachers, which largely can be subscribed to the improved hostel facilities and the feeder road programme making access to the villages a lot easier than it used to be.

The feeder road programme has been very much delayed and is not yet completed. Originally scheduled for completion in 1995, the first construction contract was terminated in 1996 because of non-performance, and a new contract entered into in 1999. By the end of 2000 all available funds have been spend without works being completed.

The original project consisted of 8 sections totalling 77 km (later adjusted to 74 km). Five of these sections, totalling 22.5 km were completed in 1995 but not taken over by the Ministry with the consequence that maintenance was not initiated.

The remaining three sections, totalling 50,8 km was to be completed under the contract signed in 1999. In this contract was also included a new road section of 8.7 km. Later it was agreed between the Ministry and UNCDF further to include another road section of 9.6 km, so that the project was expanded by 18 km of additional road. It was argued that a saving could be obtained within the original three sections to be completed, which could finance the cost of the last addition of 9.6 km. This never was a realistic assumption and the inevitable result is now that the contract has come to a standstill as the funds have been exhausted.

This further entails that the work made is not being maintained, as this is the responsibility of the contractor until handing over, and the contractor has stopped working because he is not being paid anymore.

5. Critical Issues

The main shortcoming of the school programme is that the planned establishment of power supply and water mains has not been made. The main problem in this connection is that the toilet facilities cannot be used, as they are based on running water being installed. The Local Council is promising to manage this problem, but it may take some time.

School furniture is only provided in some 50 % of the classes. Furniture supply and repair is being initiated by the Local Council Authorities.

The road project is not completed and it is estimated to cost USD 500,000 to finalize the work according to the contract.

Furthermore, neither the already completed sections nor the parts not completed are being maintained at present. A gravel road in an area exposed to heavy rains, which is not being maintained - in some parts for the last 6 years - will quickly suffer. Critical parts have deteriorated to a degree that the road is no longer passable in heavy rains, and within short parts of the road may become completely impassable, and an important part of the investment and benefits will be lost.

The lack of maintenance has resulted in severe erosion in the mountainous areas, culverts being undercut, retaining walls breaking down etc. Substantial repairs and reconstruction will thus be needed before normal maintenance can be programmed. The carriageway has

in some parts of the mountainous sections being completely washed away and the driving is on the bare rock base.

6. Recommendations

The overall most important recommendation is quickly to take action as regards road maintenance to prevent further deterioration of the investment.

Furthermore:

- The Government should put pressure on Local Council Authorities to establish as soon as possible water and electricity supply, as well as the required furniture for the schools. Especially water supply is critical to get the sanitary installations working. Alternatively latrine-type of toilet facilities should be established.
- The UNCDF should as soon as the options for further assistance on the roads programme have been clarified convene a meeting with all stakeholders to get a commitment on completing the roads, repairing and reconstructing stretches as may be needed and maintaining the whole project.
- When dealing with the project problems, the original sections 1 to 8 should be treated as one package and given first priority, as this is where the past investment is particularly at risk. Second priority should be given to Al Jiya - Aithin - Daaf sections.
- The UNCDF and the Government should investigate the possibilities for additional financing for completion of the sections 1 to 8, either UNCDF financing or other donors. The estimated cost is USD 400,000.
- The UNCDF should request the Ministry to present a maintenance programme incl. budget for the original roads section 1 to 8.
- Ministry of Public Works and Urban Development or Local Council Authorities should undertake as soon as possible to repair and reconstruct as may be needed the feeder roads in order that they can be taken over by the maintenance authorities. If this is not done very soon a substantial part of the investment and the benefits may be lost.

1. INTRODUCTION AND BACKGROUND

1.1 Introduction

The present project evaluation was conducted 10th to 19th March 2002. The objective of the evaluation is to:

- Assess overall progress and identify shortcomings
- Assess project relevance
- Assess sustainability of the project and identify exit strategies
- Draw critical lessons learned in relation to project design, implementation and management

Specifically the evaluation will look into the results attained in relation to the goals set by the Government in the 2nd Five Year Plan:

- To bring remote areas out of isolation
- To extend basic education to all population centres, and to offer equal education to citizens of urban and rural areas

The evaluation mission is undertaken by Consulting Engineer Steen Frederiksen. Terms of Reference for the mission are presented as Annex 1. Mission programme and list of persons met are presented as Annex 2.

It should be noted, that the mission budget has been reduced from a two person mission and 47 mandays input to a one person mission and 11 mandays input. Because of this substantial reduction the activities had to be carefully prioritised. General data collection concerning the present national situation as regards roads and schools development in a broader context has been omitted. Furthermore, an analysis of the present socio-economic situation in the project area has been left out, partly for time constraints and partly because the road programme, which were meant to be the main stimulus for the economic development, is not yet completed.

The focus of the evaluation has been the present situation of the project, analyses of the project development and the reason for the substantial delays. Finally the report focuses on actions to mitigate the effects of the delays and to complete the project.

Selected project files from the 10 years implementation period have been examined, and critical issues identified for later discussions with stakeholders. Meetings have been held with UNDP-UNCDF staff, Ministry of Public Works and Urban Development, the General Corporation for Roads and Bridges, Futuretech Consultants, the Governor of Dhamar, representatives of the Local Council of Dhamar, and local Sheiks.

The Consultant wishes to thank all parties having contributed to the present evaluation mission. Opinions expressed and conclusions are the sole responsibility of the Consultant and not necessarily shared by the UNDP/UNCDF and the Government of Yemen.

1.2 Project Background

1.2.1 Country Background

The Republic of Yemen has a total land area of approximately 528,000 km² and a population of 18.7 million (2001). The Republic of Yemen was declared in May 1990 merging the Yemen Arab republic and the People's Democratic Republic of Yemen. The economic situation in the new country deteriorated during the Gulf War 1990-91, among others because of the return of some 800,000 Yemenis working in the Gulf countries, mainly Saudi Arabia. Their remittance of earnings had been an important contribution to the national economy. At the same time most international aid programmes were suspended.

A devastating civil war followed in 1994, resulting in a budget deficit of some 16 % of GDP in 1994 and foreign reserves of less than one month imports.

In the project period 1990 to today the key economic development has been:

- population growth from 12.2 to 18.7 mio
- life expectancy increased from 43 to 60 years
- infant mortality and under five mortality rates declined by 15 % and 31 % respectively
- the fertility rate declined from 7.8 to 6.5
- agriculture fell from 28% to 17 % of GDP
- oil grew from 14 % to 30 % of GDP
- manufacturing remained unchanged around 8-9 % of GDP
- service sector fell from 45 % to 39 % of GDP

Nevertheless, Yemen is still today designated as a LDC (Least Developed Country) and is currently ranked 148 in the UNDP Human Development Index (HDI), which places it in the Low Human Development category.

The HDI value in 1998 is 0.448, with a GDP per capita PPP of US\$719 (GNP per capita of US\$280), and a 44.1% adult literacy rate. In literacy and GDP indicators, women score significantly lower. Female adult literacy is 22.7% compared to male adult literacy of 65.7%, and the female GDP per capita (PPP) is US\$331 compared to the male GDP per capita (PPP) of US\$1,122. The UNDP Gender-related Development Index (GDI) ranking in 1998 was 133.

The school enrolment rate is still among the lowest in the Arab world. Economic factors and the poor state of classrooms and school facilities account for the low access to education. Furthermore, the quality of education is low, schoolbooks inadequate if at all existing, and the system is thoroughly gender biased. The enrolment of girls, especially in the rural areas is hampered by the lack of female teachers as well as lack of appropriate sanitary facilities in the schools.

1.2.2 Origin of Project

Following a severe earthquake in December 1982, which hit the Dhamar Governorate in the central mountain plains, an estimated 25,000 houses were destroyed. After the earthquake, to facilitate the work of the various international donors of relief assistance, the affected area was divided into 14 'tender' construction areas and six 'self-help' construction areas, the latter comprising North-West Dhawran.

Upon the Government's request in 1984, UNCDF assistance was provided under project YEM/84/CO1, entitled "Post-Earthquake Housing Reconstruction in the North-West Dhawran Region", for the construction, on a self-help basis of 280 earthquake-resistant houses in very remote and difficult to reach villages. Prior to the completion of that project (a total of 279 houses were completed by July 1989), the need for an adequate transport and education infrastructure for the region became apparent; the present project identified in 1986, is, therefore, a follow-up of the housing project. The project is located in the same geographical region as the previous one. However, it extends beyond the construction of housing as an immediate relief measure, into longer-term objectives through improving the social conditions in the area, and by providing access to the nearby road network.

1.3 **The Project**

The project is intended to rehabilitate 77 kms of feeder roads and construct 10 primary schools (7 of 6 classrooms each, and 3 of 3 classrooms each) including 17 three-teacher hostels to accommodate a total of 51 teachers.

The development objective was to improve the basic social and economic infrastructure in the region and to create conditions that are conducive to future economic development, mainly in the agricultural sector and related economic activities. The project was to contribute to this development objective through:

1. Ending the relative physical isolation of the region, due to the lack of a feeder-road system to villages. This has proven to be a major obstacle to the marketing of agricultural produce outside the region;
2. Raising the educational level of the local population by providing adequate schooling facilities, which is expected to induce parents to increase enrolment of girls in elementary schools; additionally, adult evening classes can also be facilitated in the new school buildings.
3. Promoting the social development of the region through easier contacts with the more urban centres in the vicinity.

The immediate objectives of the Feeder Road component were to:

4. Improve the agricultural production and marketing potential of the region, in liaison with the Central Highlands Agricultural Development Project, through better access to the rural consumption areas;
5. Support the deployment of adequate social services, and facilitate reintegration of returnees from the Gulf States to the rural areas;
6. Improve the road-maintenance capabilities of the Local Council for Cooperation and Development (LCCD), in the project areas.

The immediate objectives of the School Programme component were to:

7. Rebuild the infrastructure destroyed by the earthquake;
8. Create and / or improve basic social services in education to serve as an incentive for the population to remain in the area and to develop its potential;
9. Assist the Government in the completion of the elementary school programme carried out under the Second Five-year Development Plan (1987-1991)
10. Provide adequate accommodation for teachers that will induce them to move to the isolated areas.

The Executive Office for Reconstruction (EOR) was designated the Government Implementing entity, and an autonomous Project Management Unit (PMU) was to be established by the EOR in Ma'abar. The PMU was headed by the National Project Director (NPD) who is appointed by the EOR. He was assisted by an UNOPS recruited (UNCDF-financed) expatriate Project Manager / Construction Engineer.

The designs for the schools were to be submitted by the Ministry of Education. The survey and design of the feeder roads were to be carried out by an engineering firm pre-qualified and selected by UNOPS through international competitive bidding. The construction of the schools and roads were to be executed by private contractors pre-qualified and selected by the PMU with approval from UNDP and UNCDF.

2. PROJECT PREPARATION AND DESIGN

2.1 Project Preparation

The Project Agreement was signed in July 1991.

As background information the document focuses on the agricultural production in North-west Dhawran. The potential for cutting transportation costs and increasing the production due to easier market access is used as the main economic justification for the road component. Further benefits would be access to schools, health services and other community and government organisations.

As regards schools the existing facilities are few, some damaged and some non-existent. New and well functioning classrooms and living facilities for teachers are thus found to be an important element in improving the teaching of children and adults.

The beneficiaries of the road component are identified as the population of the region at large, as the roads will ease access to social services and other community centres, and it will stimulate economic activity by making the present agricultural production more profitable and pave the way for an increase in production. The population involved is 40,000 people.

The schools will provide education for some 2000 primary school-age children from 53 villages. They are also intended for cultural activities, adult education and special activities for women. The provision of hostel facilities for teachers should make it easier to attract teachers to these somewhat isolated rural areas.

In total the project comprise 77 km of feeder roads, 10 primary schools of 3 or 6 classrooms and 17 three teachers hostels.

The total budget was USD 6.410.880 financed with 5.6 mio by UNCDF and 0.8 mio by the Government.

The project was estimated to take 3 years to implement.

2.2 Project Design

2.2.1 School Programme

The schools and hostels were planned as simple standard designs suitable for the area and easy to build. They were based on experience from a previous Saudi Arabian project. The design meets all relevant requirements; it is very well suited to the purpose and could have been termed excellent if water and power supply had been in place.

The Project Document thus covers the needs of the project satisfactorily as basis for the implementation. The difficulties in allocating land for the schools, and the uncertainty related to the input from Ministry of Education might have been anticipated and some contingency plan built into the programme. However, the planned organisation and distribution of responsibilities seem reasonable.

2.2.2 Road Programme

The feeder roads were planned to be very low cost and a draft design was provided in the project document. The design and specifications are fully adequate for the needs of the project.

The road budget was based on gravel roads of a minimum standard with "minimum use of gabions for stabilizing slopes and control and prevention of erosion".

The shortcoming in the construction cost estimate for the roads is most probably due to very much reduced field survey during project preparation. During implementation a proper detailed design was carried out, and the correct quantities of work calculated resulting in a cost overrun of 40 % in spite of the very low design standard.

3. INPUTS AND OUTPUTS

The project budget as of end 2001 was as follows: (in USD)

1.	Personnel	748,000
2.	Contracts, schools	1,620,000
	roads	2,727,000
	others	236,000
3.	Equipment	83,000
4.	Miscellaneous	169,000
Total		5,582,000

3.1 The School Programme

The school programme has been executed according to schedule in the period 1991 to 1995. The land allocation presented initially some problems, but agreements with villages were reached, and all schools built without undue delays.

The design is based on a recognized standard and appears suitable to the conditions. The construction follows local traditions and uses local materials. The local authorities have taken over the responsibility for maintenance and because of the completely standardized design this has been a fairly simple and straightforward task.

The construction work was executed with few delays and within an overall acceptable timeframe. A saving of USD 400,000 on the overall construction budget of USD 2,020,000 has been reported.

The school project was planned to comprise:

- 7 standard six-classrooms schools
- 3 standard three-classrooms schools
- 17 standard teacher hostels (each for 3 teachers)

The locations are as follows (refer map page 4/5 above):

1. Al-Harf
2. Shamhaz
3. Bayt As-Subai
4. Beiha
5. As Sawad
6. Jarf at-Tahir
7. Al-Buraikah
8. Mowghir
9. Al- Homarah
10. Hammam Saiban

The actual output has been:

- 10 standard six-classrooms schools
- 20 standard teacher hostels (each for 3 teachers)

The actual construction work was carried out by local contractors experienced in this type of buildings, and as the construction standard is local and well known, the maintenance is not giving any problems for the local authorities.

The "local" input in the form of power and water supply had not been established in any location in spite of the school programme having been completed otherwise since 1995.

3.2 The Feeder Road Programme

3.2.1 Project Input

The implementation of the feeder road programme started by the signing of a contract for construction in October 1993 with Abd Rabbo Murai Contracting Company. The General Corporation for Roads and Bridges (GCRB), a division under the Ministry of Construction, Housing and Urban Planning, was appointed Supervising Engineer.

This represents approx. one year's delay compared with the initial time schedule in the Project Agreement. The contract was for 18 months and the work should thus have been completed in August 1995. It is, however, in March 2002 not yet completed.

The Project Agreement defines 7 sections (refer map page4/ 5 above):

1. Rizwa-Jabal Jamouh (12.2 km)
2. Hillat Hidad-Asla'a (12.3 km)
3. Beit As Seihi-Al Farhayn (10.6 km)
4. Samh-Bani Sabir (5.9 km)
5. Access to Thawbar (0.6 km)
6. Access to Al Masawir (1.3 km)
7. Al Khanak-Al Jiya (28.0 km)

This was originally estimated to be 77 km with a construction cost of USD 2,032,000.

To this was later added a section 8, Al Khanaq Junction (3 km).

According to the report from the UNCDF Chief Technical Advisor of February 1996, the total of the contract signed in October 1993 was estimated at 74 km at a cost of USD 2,800,000 (revision June 1995).

In June 1996 the supervision by the General Corporation for Roads and Bridges (GCRB) ceased and the contractor was asked to stop his work due to non-compliance with the contract. The contractor never the less continued to work until some time in 1997. In late 1997 a settlement of claims and compensations was made, which according to the report from UNCDF Consultant of November 1997 meant that the contractor had received a total of USD 1,500,000 as payment for works and compensation. At the time it was assessed by the GCRB that sections no 1, 4, 5, 6 and 8 were satisfactorily completed.

The above report from the UNCDF Consultant (November 1997) recommends that GCBRD be removed from the project because of the organisation's inability to prevent disputes between tribes and the contractor and because they are in disagreement with some of the tribes. The UNCDF Consultant warns that this might result in the tribes confiscating the construction equipment, which is actually the case at present.

In spite of this - and probably for some other good reasons - a contract was signed in February 1999 between the Ministry of Construction, Housing and Urban Planning and

the GCRB for completing the works. In this contract was in addition to sections 2, 3 and 7 included one more road section, Al Jiya-Aithin, 8.7 km, at a cost of USD 423,000, bringing the total of the contract to USD 1.2 mio. Furthermore the section Aithin - Daaf should be constructed, but paid separately by the Ministry. By letter of 26th November 1999 the GCRB is instructed by the Ministry to include the section Aithin - Daaf in the contract budget and obtain corresponding savings on the sections 2, 3 and 7.

This contract was for 8 months, and should thus have been completed around February 2000 at the latest. In June 2000 an agreement was made between the UNCDF and the Ministry, that works should be completed by 31st October 2000 and that the obligations of UNCDF would cease by 31st December 2000. This agreement does not recognize that the Aithin - Daaf section has been included in the contract. However, it spells out that the intention is "to complete, construct and maintain" the roads. This agreement must be read as an acceptance by the Government that the Ministry/GCRB will be responsible for maintenance of the roads after that date and prior to handing the completed roads over to the local authorities.

The work stopped in December 2000 as the budget amounts were spent, but the contracted work is not completed. In spite of the cost overrun on section 3 - because of a huge retaining wall structure required - the section is not yet completed. Nevertheless, GCRB estimates that all roadworks can be completed within a budget of USD 500,000. This would, however, not include rehabilitation and repair to work already done.

Amounts in USD	Contracted amount *) February 1999	Work executed by December 2001	Works needed for completion
Engineer's facilities	28,000	15,000	15,000
Section 2, 12.3 km	234,000	56,000	178,000
Section 3, 10.6 km	222,000	269,000	?
Section 7, 28.0 km	271,000	114,000	157,000
Al Jiya-Aithin, 8.7 km	444,000	399,000	45,000
Aithin-Daaf, 9.6 km		346,000	100,000
TOTAL	1,199,000	1,199,00 **)	495,000 + ?

*) incl. contingencies, 5 % **) The contractor has received 80 % of this amount.

3.2.2 Project Output

The output from the above has been some 95 km of not yet completed roads, and nevertheless very much improved access to a large number of hitherto isolated villages. This is important for the agricultural production and the marketing of produce, it is important for contact to social institutions such as hospitals, schools and community centres.

The feeder road project was up to 1997 executed by a contractor that never before had built any roads, so a certain capacity development has taken place in this connection. However, the company does not exist any more as the owner died in a tribal fight (not related to the road project). The construction work was later taken over by the GRCB, the government organisation that made the initial design work.

The completion of the project and the future maintenance activities will be an important element in developing maintenance standards and capacity for this type of work with the local authorities. The responsibility for maintenance is at present being transferred to the Local Council Authorities, and they are very keen to undertake the maintenance of the roads in question. The Governorate is assuring that the corresponding budgets are available. However, they require that the roads must be completed and in an acceptable

standard before the maintenance organisation can take them over (from Government). (Refer below chapter 4.)

A programme for maintenance of the roads has not yet been made. The maintenance responsibility will rest with the Local Council. It is, however - according to the Ministry - not the Council staff, but local contractors that will do the maintenance work. The Chairman of the Local Council, the Governor of Dhawran, seems not be of quite the same opinion. However, the law has just been introduced by 1st of January 2002, so some uncertainty concerning the interpretation is understandable.

3.3 Capacity Building

The schools have been constructed by local contractors following a design that has been used previously. The standard is above "normal" village standard and the work has thus assisted in developing skills and capabilities with the local contractors and is setting a good example for high quality building standards. Because of the quality of the construction works very little maintenance has been needed. Typical maintenance works have been broken windows, cracking walls due to differential settlements, and paved areas.

In many schools the sparsely existing furniture badly needs repair. The capacity for doing this exists in the villages, but the funds are lacking.

As regards the road programme, the GCRB responsible for design and later for construction is a very experienced organisation, and for this simple type of road works they have no need for further capacity building. However, this experience is not necessarily reflected on local village level.

The maintenance work will be undertaken locally. However, as described later, the roads have not yet been handed over and the maintenance has not yet started. The maintenance work is planned to be tendered among local contractors. Some of these will already be experienced in road construction and maintenance others will probably not. The element of capacity building will thus depend on the extent inexperienced contractors will win the tenders for maintenance. Alternatively, the maintenance will be undertaken by local council staff with very little experience in this type of work. That would entail a substantial capacity development within the public sector.

As discussed later in Chapter 5, the expectations to the beneficiaries direct involvement in maintenance have not been fulfilled. Public organisations, Ministry of Public Works and Urban Development and the Local Councils under the Governorate of Dhamar have been taking care of all works.

4. IMPLEMENTATION AND RESULTS

4.1 The School Programme

The below table shows the number pupils and teachers in the different schools, as well as levels of teaching.

The number of classrooms actually built is 60 against the planned 51, and the number of teachers' hostels is 20 against the planned 17. All schools have thus 6 classrooms. In one school two extra classrooms have been added, in another school the two staircases provided room for four extra classes.

	Total pupils	Girls	Boys	Teachers	Comments
1. Al Harf	590	162	428	19	Primary and secondary school
2. Shamhaz	111	11	100	8	Primary school
3. Bayt As-Subai	148	18	130	3	Primary school
4. Beihan	150	25	130	7	Primary school
5. As Sawad	231	27	204	7	Primary school
6. Jarf at Tahir	351	30	321	13	Primary and secondary school
7. Al Buraikah	135	20	115	4	Primary school
8. Mowghir	414	131	283	18	Primary and secondary school
9. Al Homarah	97	29	68	?	Primary school
10. Hamam Saiban	50	10	40	2	Primary school

The pupils are distributed as follows:

	Total	Boys		Girls	
	No	No	%	No	%
Primary school	2012	1570	78	442	22
Secondary school	265	244	92	21	8

The attendance in primary school is larger than the capacity in most places, and the programme is thus satisfying an important need for school facilities.

The implementation must be said to be highly efficient, and the quality of construction is high, except for one location, Mowghir, where the foundation of the buildings were not properly made with resulting cracks in walls and ceiling. The cracks have been repaired by the contractor and improvement of the foundation has been attempted, however, without success as the differential settlement continues. The problem does not appear to be critical for the structural safety of the building. The cracks in the ceiling are of course being repaired to avoid rain in the classrooms, otherwise the cracking walls are more an esthetical than a structural problem.

The building standard corresponds to a previous Saudi aid programme. It is quite suitable to the environment and with a high quality of finish that clearly inspires to proper maintenance. However, it was observed that when extensions were made, these would be of an entirely different and much lower standard (no plaster on walls, no windows, corrugated iron roof etc) , and it must be concluded that the population experiences the present school standard as quite luxurious and above the standard they would choose when they have to pay the cost themselves.

This most probably also reflects on the lack of water and electricity supply. In none of the inspected schools were connections to water mains or power lines provided. The teaching take place by daylight, and the teachers staying there use gaslight and car batteries for television and radio. Water for drinking is brought by car or donkey.

In all villages are wells with pumps from which the people collect water in plastic cans and connect pipes used for irrigation and some decentralised water supply. Only few houses have installed water mains.

The schools are mostly located in some distance from the villages as they were serving several communities and therefore should not be seen as belonging to the one or the other. In one case the neighbouring village has felt offended to the degree that they have destroyed the access road to the school. This situation makes establishment of water and electricity connections expensive and perhaps in some cases impossible.

The problems related to water supply and thereby establishing flush toilets in the schools should have been foreseen so that alternative facilities could have been included in the project. The present complete lack of toilet facilities in the schools is embarrassing in view of the standards for development the schools should be signalling.

Furniture has only been provided for approximately half the pupils. The rest are sitting on the floor or on the staircases. In the places where furniture exists the utilization is high, a standard two pupil desk would accommodate up to four in a primary school.

The Governorate assures that furniture will be provided in the coming years. It should be noted that the present classes of up to 50 pupils sitting on the floor in one room would not be possible had the classroom been furnished.

The schools are a proven success measured from the large number of pupils attending. They are to a lesser extent being used for social activities and adult studies. This is said to take place, but it has not been possible to get specific information of the volume of activities.

All schools were built by a local contractor involving a substantial local workforce.

4.2 The Feeder Road Programme

It must unfortunately be clearly stated that the original feeder road project, section 1 to 8 and the added two sections Al Jia to Daaf have not been completed.

However, all roads are in use and serve their purpose of providing access to the isolated communities. The villages are thus benefiting from the project. Transportation into and out of the areas is facilitated and the service level considerably increased.

The key problems are:

- The original design and cost calculation appear not to have taken the drainage and storm water problems sufficiently into account
- The first contractor had never made a road project before and the workmanship was consequently in some places not of a sufficient quality, side drains and retaining walls were not made where they were needed etc.
- The wearing course is said not have been compacted properly
- The supervision was sparse and inexperienced
- As the road project in its entirety has not been completed the sections were not taken over by the maintenance authorities, and the roads have thus not been maintained since construction - in some sections more than 6 years ago.
- Important drainage structures, box culverts and retaining walls are still not completed

It must be noted, that at present it is somewhat difficult to determine whether the reason for the damage to the road is poor quality of work or 6 years' lack of maintenance. The area has in recent years been exposed to severe rainfalls.

Other problems identified are:

- The farmers used to have rainwater drains crossing the roads leading from higher elevations to lower fields. These were not included in the project with the result that farmers today are cutting ditches in the wearing course with a bump like guide for the water.
- Some villages have an irrigation system leading water in pipes from wells to the fields. There is no provision for these crossing the roads with the result that the steel pipes are laying on and across the roads.
- In some places the villagers use the side-cuts in the rock as quarry for further sandstone production. Such private quarry activities are sometimes almost blocking the road.

4.2.1 Summary of the Situation

Section 1:

The road is in general in an acceptable condition, primary need is maintenance.

Section 2:

Foothill sections only need maintenance, rocky sections need improved retaining walls in some places, wearing course has been completely washed away in some of the mountainous areas and severe erosion has taken place in sections with steep gradients.

Section 3:

Some culverts still missing, severe erosion in steep hairpin turnings, some parts need complete reconstruction and could become impassable within one or two rainy seasons.

Section 4:

The road needs maintenance and in some places retaining walls (they might have been there originally), otherwise ok.

Section 5:

No specific comments.

Section 6:

No specific comments.

Section 7:

The road is still passable, however some sections need reconstruction because of severe erosion, some box culverts seem to be in the wrong places, some hairpin turns in the mountains are very narrow and additional rock blasting would be required to make these places safe, especially in rainy weather, in many places all wearing course has been washed away (if it ever existed).

Section 8:

No specific comments.

Al Jia- Aithin:

The road is essentially completed and in reasonable shape.

Aithin-Daaf:

The road is not completed and lacks numerous drainage structures. The villagers have confiscated some road construction equipment as security for the completion of the works.

4.2.2 Conclusion

The original concept was probably reasonable as a low cost road, had it been properly executed with due consideration to side drains, culverts and retaining walls.

The first contractor was inexperienced and his bid was very low. According to a previous UNCDF report the bid was 35 % lower than the design consultant's estimate. (This has not been verified.) If local capacity development should have any meaning in this context, the contractor should have been assisted in correcting the mistakes in his bid, and provided that his bid was still the lowest, been allowed to execute the job at the corrected price.

Instead the works were executed at a too low price with a resulting low quality, with delays and a weak supervision delaying payments for no obvious reason and thereby adding to the difficulties of the contractor, and all of it ending in a - for all parties - costly cancellation of the contract.

The individual road sections were not taken over by the Ministry as and when completed, and the completed sections have thus not been maintained since the contractor left the works. Not maintaining a gravel road in mountainous areas exposed to heavy rains for 6 years or more is disastrous. The situation is now that some parts of the roads may be completely gone in a rainy season or two. Newly constructed box culverts are being undermined and falling down. The investment is gradually being lost because of lack of maintenance.

The decision in February 1999 to extend the activities first to the section Al Jiya - Aithin, and later to include Aithin - Daaf, instead of concentrating efforts and money on completing the original sections 1 to 8 - as recommended by the UNCDF CTA in his handing over report in 1996 - was a serious mistake by the Ministry. Unfortunately this decision was approved by the UNCDF office. If this decision had not been taken by the Ministry and approved by UNCDF, the original road project would have been completed by the end of 2000, and there might even have been funds available for making up for the lack of maintenance on the sections completed by the first contractor.

The result is now that the budget has been spent and the roads are not completed. Completing the roads as designed will require additional funds of some 500,000 USD. Furthermore, some 200,000 USD may be required to bring the poorly maintained roads up to a standard where the Local Council's maintenance organisation can take over.

5. PROJECT IMPACT

5.1 The School Programme

The impact on the enrolment in the schools is presented in the below table.

	Total pupils			No of girls		
	1989	2002	Increase %	1989	2002	Increase %
1. Al Harf *	181	590	225	9	162	1700
2. Shamhaz	59	111	88	9	11	22
3. Bayt As-Subai	206	148	-28	53	18	-66
4. Beihan	189	150	-20	36	25	-30
5. As Sawad	135	231	71	5	27	440
6. Jarf at Tahir *	141	351	149	19	30	58
7. Al-Buraikah	167	135	-19	38	20	-47
8. Mowghir *	162	414	156	9	131	1300
9. Al-Homarah	140	97	-30	16	29	80
10. Hammam Saiban	152	50	-67	29	10	-65
TOTAL	1532	2277	50	223	463	108

*) Now primary and secondary schools

It was confirmed that the schools are also used for adult courses, but no statistics in this respect were available.

The availability of facilities for the teachers as well as the road connections have eased the problem of getting teachers to work in these isolated villages.

The number of teachers exceeds in many schools the available hostel rooms, and the remaining teachers are living in the nearby villages (refer table page 18).

The objectives for the schools have been fulfilled as regards attracting pupils. If the parents are considered the direct beneficiaries, they do not appear to be involved in the maintenance of the schools. This is taken care of by the Local Council Authorities. All schools were in a reasonable shape and well maintained.

5.2 The Feeder Road Programme

The feeder roads have improved communication and transportation considerably. This especially applies to the transportation of agricultural products for which transportation costs have become substantially lower, and thereby is giving the farmers in question an increased profit. Local authorities maintain that agricultural production has increased, but relevant data were not readily available. The improved access has enabled villagers and farmers to hire well drilling equipment and thus improve drinking water supplies and irrigation possibilities. There seems to be ample groundwater resources.

One large potential agricultural development area (between section 7 and section 3) has not yet been exploited due to disagreement between two villages over the rights to cultivate the land. All farmers seen working in this area were armed. Some 50 villagers have been killed in the conflict.

The village population also emphasizes the importance of the roads in relation to easy and quick transportation to the hospital.

In relation to the school programme the existence of proper roads facilitates very much the employment of teachers.

The original objective that the maintenance should be undertaken by the beneficiaries and local authorities has not been met. By law of 01.01.2002 the maintenance responsibility and related budget have been transferred to the Local Council. They will formulate the requirements and tender the services among local contractors. The village population seems not at all engaged or interested in the maintenance as such. On the contrary, many of the cross-road irrigation ditches made by the farmers are increasing the erosion and damage to the carriageway, laying of irrigation pipes and rocks to protect these from cars and keeping them in place is also adding to the damage.

6. PROJECT RELEVANCE, EFFECTIVENESS AND CRITICAL ISSUES

6.1 The School Programme

The immediate objective of the school programme was:

- Rebuild infrastructure destroyed by the earthquake
- Create and/or improve basic social services in education to serve as an incentive for the population to remain in the area and to develop its potential
- Assist the Government in the completion of the 2nd Five Year Development Plan
- Provide adequate accommodation for teachers, that will induce them to move to these isolated areas

The output was planned to be seven 6-rooms and three 3-rooms schools with a total of 17 teachers' accommodation (three teachers sharing each room).

The actual output was 10 schools of 6 classrooms and 20 teachers' accommodations because substantial savings were possible. A total of USD 400,000 was saved on the winning tender compared with the original estimate, and part of this was used to expand the three 3-rooms schools to 6-rooms.

The objectives have thus more than been fulfilled and the above described attendance in the schools demonstrates the very high project relevance and effectiveness.

The key problems not identified during project preparation were land allocation and water and power supply difficulties. The land allocation issue was related to lack of suitable flat areas, which were not used for agriculture, as well as the fight between villages for the prestige related to having the school within its boundaries. All of this was solved very well by the Project Management and local authorities in co-operation.

The solution to the missing water and power supply is not in sight, and particularly the complete lack of suitable toilet facilities is unacceptable. This problem should have been foreseen in the project preparation.

The schools are highly appreciated by the local authorities, and compared with other existing school facilities they represent a very much improved standard. As a good example the project is certainly supporting the Government's development objectives.

The Local Council is taking responsibility for establishing water and power supply to the schools and has an extensive programme for supplying and repairing school furniture. This will undoubtedly take some time.

6.2 The Road Programme

The objectives of the road programme are:

- Improve the agricultural production and marketing potential of the region.
- Support deployment of adequate social services and facilitate reintegration of returnees from the Gulf States to the agricultural areas
- Improve the road maintenance capabilities of the Local Council for Co-operation and Development in the project areas

The outputs were planned to be 77 km of low cost, all-weather roads and training of engineers and technicians, that later could take over maintenance responsibilities and supervision of new works in the local council.

The basic design is sound and appropriate, however, the drainage problems were greatly underestimated.

The roads have been built although not yet completed. They are not - any longer - all-weather roads. The mountainous parts of sections 3 and 7 may be passable in rainy weather, but it must be considered very risky and is not recommended by the local people.

6.2.1 Road Construction Problems

An inexperienced contractor was chosen in the first instance. His bid was the lowest, in spite of being some 35 % above the original estimate. Secondly the GCRB was chosen as supervising organisation, but according to UNCDF reports it was a weak and inefficient supervision and according to other sources the works on site were not inspected properly.

The project management has been chaotic and inefficient with disputes over authority between the parties involved and with considerable delays in processing approvals and making decisions. It is not at this stage possible to put the blame for this on one or the other of the participating parties.

The original time schedule was probably from the start completely unrealistic. In addition, the general situation in Yemen in the early 90's, disagreements and lack of efficiency has further delayed the project. The dispute with the first contractor may have cost additional two years delay, and the project has now been standing still since December 2000.

Below is presented key cost figures.

	Project Agreement	1. Contractor	2. Contractor*)
Total cost (USD/km)	26,400	36,500	47,000
Earthworks (USD/km)	23,600	11,000	29,500
Drainage/ Protection (USD/km)	2,800	26,500	17,500 **)
Common excavation (USD/m3)	2.20	0.40	1.38
Rock excavation (USD/m3)	7.50	6.00	4.30
Embankment (USD/m3)	3.50	1.50	4.30

*) Based on the GCRB Contract for Al Jia - Athin, 9 km only. **) No really rocky areas in this section.

It should be noted that in the period from the cost figures for the Project Agreement was estimated, say 1989, to the date of the GCRB Contract in 1999, considerable changes have taken place in costs and exchange rates in Yemen. Even in USD considerable price increases must be allowed, for instance as regards equipment and fuel.

It appears quite clearly that the assumptions in the Project Agreement regarding drainage and protection structures required, were completely wrong, and constitute together with the delay the main reason for the cost overrun.

It also appears clearly that the first Contractor had unrealistic low unit prices for common excavation and embankment, both of which involve large quantities.

6.2.2 Saving the Road Project

The termination of the first contract could not have been avoided, but the UNCDF should have insisted that the Ministry took over the responsibility for maintaining the sections of road that were completed at that time. Now these sections need not only maintenance but also some serious repairs and in some places even reconstruction.

When engaging a new contractor, GCRB, in 1999, the project management should have decided that the funds available first and foremost should be spend on completing the original project. If that had been done, the sections 2, 3 and 7 would have been maintained and completed by the end of 2000. It has to be noted, that by taking over the unfinished road sections for completion, the contractor is in accordance with normal contractual practice also taking over the responsibility for maintaining these sections until final handing over is made. The responsibility for this maintenance thus in principle still rest with GCRB, as the work has not been completed and handed over.

The final straw was the decision in November 1999 to include the Aithin - Daaf section in the contract budget. The cost estimate for this section is 450-500.000 USD, which is roughly the amount estimated today to be missing for completion of all works. The assumption that this amount could be saved on the completion of sections 2, 3 and 7, having a total budget of USD 725.000 is difficult to understand, and should have caused severe worries in the UNCDF.

It is now essential that an effort be made to complete sections 2, 3 and 7 and that the Ministry takes the responsibility for reconstruction and repairs of all road sections. This will save the original project, and bring the roads to a standard where they can be taken over by the local authorities for ordinary and regular maintenance.

It has been proposed by the Ministry as well as by the local authorities that all the roads should be asphalted. This would clearly not be feasible and cannot be recommended. Sections with heavy traffic should perhaps in the future receive a Double Surface Treatment, which is much less costly.

The Ministry will try to get part of the road rehabilitation included in a World Bank project for access to rural villages. Whether this is a realistic possibility has not been checked.

7. FINDINGS, RECOMMENDATIONS AND POLICY LESSONS LEARNED

The main findings are:

- The school project exceeds the expectations and may serve as example for further development of schools in remote village areas in Yemen. The number of children going to school in the villages concerned has increased by 50 %, and the number of girls attending school has gone up by more than 100 %. This is a clear success, in spite of the fact that girls still only account for 22 % of the pupils in primary and 8 % in secondary school.
- The feeder road project is in its inception excellent and very much needed, but the investment and the benefits to the villages are threatened because the project is not completed and not maintained.
- The project preparation for schools and roads should have been more elaborate and detailed. Thereby some of the problems would have been identified at an early stage and the failure of the road project might have been avoided. This especially applies to the cost estimates.
- The project management for the feeder road project as well as the monitoring from UNDP/UNCDF has been weak.
- Expectations of beneficiaries participation and local capacity building in relation to maintenance have been unrealistic.

The main recommendations are:

- The Government should put pressure on Local Council Authorities to establish as soon as possible water and electricity supply, as well as the required furniture for the schools. Especially water supply is critical to get the sanitary installations working. Alternatively latrine-type of toilet facilities should be established.
- The UNCDF should as soon as the options for further assistance on the roads programme have been clarified convene a meeting with all stakeholders to get a commitment on completing the roads, repairing and reconstructing stretches as may be needed and maintaining the whole project.
- When dealing with the project problems, the original sections 1 to 8 should be treated as one package and given first priority, as this is where the past investment is particularly at risk. Second priority should be given to Al Jiya - Aithin - Daaf sections.
- The UNCDF and the Government should investigate the possibilities for additional financing for completion of the sections 1 to 8, either UNCDF financing or other donors. The estimated cost is USD 400,000 including project preparation.
- The UNCDF should request the Ministry to present a maintenance programme incl. budget for the original roads section 1 to 8.

- Ministry of Public Works and Urban Development or Local Council Authorities should undertake as soon as possible to repair and reconstruct as may be needed the feeder roads in order that they can be taken over by the maintenance authorities. If this is not done very soon a substantial part of the investment and the benefits may be lost.

Further recommendations are:

- The UNCDF and the Government should use the school programme as an example for initiating similar programmes elsewhere in Yemen, or induce other donor organisations to do so.
- The UNCDF should consider to provide support to the Ministry and to the Local Council Administration for repair to maintenance equipment and road repair and reconstruction. Alternatively other donor assistance could be sought.

The lessons to be learned from the present project are:

- A low cost road does not necessarily imply that a low cost design effort will suffice (design fee was budgeted at 4 % of budgeted construction cost for roads and schools together).
- Even the most appropriate management structure will fail if staff changes/reductions take place without considering the requirements of the project.
- A comprehensive project with many components should have a clear strategy for partial handing over and follow-up.
- Interim project reviews/evaluations should be considered when important parts of a given project is completed, for instance when the ten schools, and the five road sections were completed in 1996. This might have caused remedying actions to be taken at a much earlier stage.

ANNEX 1 – TERMS OF REFERENCE

UNITED NATIONS CAPITAL DEVELOPMENT FUND

TERMS OF REFERENCE

FOR

FINAL EVALUATION OF YEM/90/CO1

Transport and Education Infrastructure in the North-West Dhawran District

		<u>Total Project Cost:</u>
		9th July 1991: US\$ 6,410,880
		At completion : XXXXXX
Final Evaluation		
<u>Country:</u>	Yemen	<u>Financing:</u>
		UNCDF
		9th July 1991: US\$ 5,582,360
		At completion: XXXXXX
Full Project Number: YEM/90/CO1		
Project Title: Transport and Education Infrastructure in the North-West Dhawran District		Government:
		9th July 1991: US\$ 828,520
		At completion: XXXXXX
<u>Sector:</u> (0600) Transport and Communications (1100) Education		
<u>Subsector:</u> (0630) Land Transport (1121) Design and Construction of Educational Facilities		
<u>Government</u>	<u>Executing</u>	
<u>Agency:</u> The Executive Office for Reconstruction		
<u>United Nations Cooperating Agency:</u> UNOPS		<u>Approval Date:</u> 9th July 1991
		<u>Starting</u> <u>Date:</u> XXXXX
		<u>Completion</u> <u>Date:</u> XXXXX
		<u>Evaluation Date:</u> June 2001

PART ONE: General Evaluation Framework

I. Project Background

A. Country Background

The Republic of Yemen has a total land area of approximately 528,000 square kilometres and a population of 16.9 million (1998). It is designated as a LDC (Least Developed Country) and is currently ranked 148 in the UNDP Human Development Index (HDI), which places it in the Low Human Development category. The HDI value in 1998 is 0.448, with a GDP per capita PPP of US\$719 (GNP per capita of US\$280), a life expectancy at birth of 58.5 years, and a 44.1% adult literacy rate. In literacy and GDP indicators, women score significantly lower. Female adult literacy is 22.7% compared to male adult literacy of 65.7%, and the female GDP per capita (PPP) is US\$331 compared to the male GDP per capita (PPP) of US\$1,122. The UNDP Gender-related Development Index (GDI) ranking in 1998 was 133.

B. Origin of Project

Following a severe earthquake in December 1982, which hit the Dhamar Governorate in the central mountain plains, an estimated 25,000 houses were destroyed. After the earthquake, to facilitate the work of the various international donors of relief assistance, the affected area was divided into 14 'tender' construction areas and six 'self-help' construction areas, the latter comprising North-West Dhawran. Upon the Government's request in 1984, UNCDF assistance was provided under project YEM/84/CO1, entitled "Post-Earthquake Housing Reconstruction in the North-West Dhawran Region", for the construction, on a self-help basis of 280 earthquake-resistant houses in very remote and difficult to reach villages. Prior to the completion of that project (a total of 279 houses were completed by July 1989), the need for an adequate transport and education infrastructure for the region became apparent; the present project identified in 1986, is, therefore, a follow-up of the housing project. The project is located in the same geographical region as the previous one. However, it extends beyond the construction of housing as an immediate relief measure, into longer-term objectives through improving the social conditions in the area, and by providing access to the nearby road network.

II. The Project

The project was to rehabilitate 77 kms of feeder roads and construct 10 primary schools (7 of 6 classrooms each, and 3 of 3 classrooms each) including 17 three-teacher hostels to accommodate a total of 51 teachers.

The development objective was to improve the basic social and economic infrastructure in the region and to create conditions that are conducive to future economic development, mainly in the agricultural sector and related economic activities. The project was to contribute to this development objective through -

7. Ending the relative physical isolation of the region, due to the lack of a feeder-road system to villages. This has proven to be a major obstacle to the marketing of agricultural produce outside the region;
8. Raising the educational level of the local population by providing adequate schooling facilities, which is expected to induce parents to increase enrolment of girls in elementary schools; additionally, adult evening classes can also be facilitated in the new school buildings.
9. Promoting the social development of the region through easier contacts with the more urban centres in the vicinity.

The immediate objectives of the Feeder Road component were to -

11. Improve the agricultural production and marketing potential of the region, in liaison with the Central Highlands Agricultural Development Project, through better access to the rural consumption areas;
12. Support the deployment of adequate social services, and facilitate reintegration of returnees from the Gulf States to the rural areas;
13. Improve the road-maintenance capabilities of the Local Council for Cooperation and Development (LCCD), in the project areas.

The immediate objectives of the Schools component were to -

14. Rebuild the infrastructure destroyed by the earthquake;
15. Create and / or improve basic social services in education to serve as an incentive for the population to remain in the area and to develop its potential;
16. Assist the Government in the completion of the elementary school programme carried out under the third Five-year Development Plan (1987-1991)
17. Provide adequate accommodation for teachers that will induce them to move to the isolated areas.

The Executive Office for Reconstruction (EOR) was designated the Government Implementing entity, and an autonomous Project Management Unit (PMU) was to be established by the EOR in Ma'abar. The PMU is headed by the National Project Director (NPD) who is appointed by the EOR. He is assisted by an UNOPS recruited (UNCDF-financed) expatriate Project Manager / Construction Engineer. The designs for the schools were to be submitted by the Ministry of Education. The survey and design of the feeder roads were to be carried out by an engineering firm pre-qualified and selected by UNOPS through international competitive bidding. The construction of the schools and roads were to be executed by private contractors pre-qualified and selected by the PMU with approval from UNDP/UNOPS and UNCDF.

III. Project Status

TO BE PROVIDED BY UNCDF PROGRAMME OFFICER IN YEMEN

IV. Purpose of the evaluation

The Final Evaluation is conducted to provide a review of project performance, in order to:

1. Assess overall progress (or lack of thereof) in attaining Immediate Objectives and likelihood of attaining the Development Objective,
2. Assess project relevance;
3. Assess sustainability of implemented activities and/or identify exit strategies;
4. Assess the monitoring and evaluation system (including review and comparison of project performance indicators with corporate performance indicators; i.e the SRF;
5. Set the course for the formulation of the next expanded phase.
6. Draw critical lessons learned about project design, implementation and management; and
7. Comply with the requirement of the Project Document/Financing Agreement as well as per the rules and regulations of the UN Capital Development Fund.

Specifically, the evaluation is to look into the results attained by the project in the roads and education sectors, and its contribution to the GRoY effort to reach their goals set in the Third Five Year Plan -

- i. to "bring remote areas out of isolation" and
- ii. to "extend basic education to all population centres, and to offer equal education to citizens of urban and rural areas."

The evaluation is expected to also investigate the new institutional arrangements that support the GRoY's decentralization reform in progress.

The evaluation should assess the efficiency and the effectiveness of the implementation arrangements of the project as well as the relevance and impact the project is having in the project area. Particular attention should be given to improving the efficiency and effectiveness of the implementation of infrastructure projects, as well as provide feedback to the GRoY, UNOPS, UNDP and UNCDF on how to improve the policy, planning, project formulation, appraisal and implementation phases and the results achieved.

V. Evaluation methodology

The evaluation methodology should be as follows:

- Briefing by UNCDF Programme Manager, Technical Advisor and EU;
- A desk review at UNCDF/UNDP Yemen Country Office of the project files, the project formulation report and any progress reports, in order to familiarize the mission with the latest project activities and results;
- Field trips - Site visits and consultations with stakeholder representatives
- Interviews with both the concerned project-related authorities and the beneficiaries/users
- The data gathered should be analysed to support the evaluation report; at times, consultation with UNCDF may be necessary before finalization of the report.
- As much as possible, evaluation data should be disaggregated by gender
- On the basis of their findings, the mission should draft an Aide Memoire, which will be shared with key stakeholders (Government, UNDP/UNCDF in Yemen, and other relevant partners) prior to the mission "wrap-up" meeting, where stakeholders can comment on the missions' findings.
- Mission Wrap-Up meeting is held and comments from participants are noted for incorporation into the final report
- Debriefing session with the UNDP Resident Representative and government focal point.
- Debriefing of UNCDF HQ in New York by the team leader.

In the process of data collection, the Project Director as well as the Project Manager are key persons to be consulted. Quantitative and qualitative data should be gathered by visiting the sites to assess the relationship between the planned activities and the result. In the absence of baseline data, it may be necessary to rely on retrospective assessment of before and after situations by project beneficiaries and other relevant informants; i.e. through interviews, focus group discussions and other participatory appraisal methods.

VI. Organization, composition and duration of the Mission

The evaluation will be carried out jointly by the GRoY, UNCDF and UNDP. The GRoY will make the Programme Director and the Programme Manager available for the evaluation mission. The UNDP field office will facilitate the evaluation; focus person will be the UNCDF PO. The evaluation team will consist of an Infrastructure Expert (team-

leader), and an architect (national). The team-leader will be responsible for leading and coordinating the work of the team to ensure a quality report. The tentative work-plan for the mission is as follows:

- July/August XXX - 2 days briefing and orientation at UNCDF/UNDP Country Office
XXX - 15 days field visits and consultation
- 2 days Aide Memoire drafting and wrap-up meeting preparation
- 1 day Wrap-up meeting and debriefing of ResRep & GRoY focal point
- 6 days Final Evaluation report compilation and drafting (Team Leader only)

Final Report submitted by August/Sept, 2001

Date to be arranged - 1 day debriefing at UNCDF headquarters (Team Leader only)

Total - 20 work-days in country (not counting Sundays)
(27 days for Team leader not including travelling time)

The Team-leader will be recruited by UNCDF Headquarters. The architect will be recruited by UNCDF/UNDP, Yemen, in consultation with GRoY.

VII. Reporting

The Consultants shall work as a team and report to UNCDF Evaluation Unit. In the field, the mission should report to the UNCDF representative (i.e. the Resident Representative UNDP or his appointee).

Near the end of the mission (upon completion of information gathering and assessment), the mission should draft an **Aide Memoire** briefly stating their key findings. Ideally, time should have been allowed for discussion of findings in the field with the project beneficiaries during the in-field consultations.

The Aide Memoire becomes the basis of discussions at the Evaluation Wrap-Up meeting, to which representatives of key stakeholders are invited. UNCDF HQ should receive a copy of the Aide Memoire as well prior to the meeting. At the Wrap Up meeting, the mission should discuss its main findings and recommendations with the UNDP Resident Representative, government authorities, and other project partners concerned. While the consultants are free to raise any subject relevant to the evaluation of the project, the mission is not empowered to make any commitments on behalf of UNCDF.

The comments of the Government, the UNDP Resident Representative, and other relevant stakeholders on the Aide Memoir and at the Wrap Up meeting should be incorporated or addressed appropriately in the **Draft Evaluation Report**.

The mission should submit the Draft Evaluation Report 4-5 days after completion of the Evaluation Wrap-up meeting. An electronic version of the Evaluation report, including the "summary of project evaluation", (in Microsoft Word 6 format) should be submitted to UNCDF headquarters for review and comments, ideally at least 5 days prior to the Evaluation Debriefing of UNCDF HQ by the team leader. After the Evaluation Debriefing, the team leader should then finalise the **Final Evaluation Report and Summary** and submit 10 bound copies and an electronic version of the report to UNCDF. UNCDF will distribute the report to all parties concerned.

VIII. Mission costs and financing

UNCDF will cover the evaluation costs from the project budget. Payment agreements will be specified in the contract.

IX. Format for the Evaluation Report

The evaluation report should follow the outline provided in Part II: Detailed Terms of Reference

PART TWO:

Detailed Terms of Reference

The Evaluation report should include the items listed below. The Evaluation team should feel free to elaborate and add additional relevant information:

1. Contents of the Evaluation Report

The evaluation report should include the following items:

- i.** Table of contents
- ii.** Executive Summary, 2-3 pages providing an overview of the report, and a summary of the main findings and recommendations.
- iii.** List of abbreviations
- iv.** Project data sheet, providing key facts and figures on a single page
- v.** Introduction to the Evaluation, briefly stating the purpose of the mission, composition of the evaluation team, a schedule of activities carried out, the methodology used, and the structure of the report.
- vi.** Chapters as per sections 2 outlined below
- vii.** List of persons interviewed
- viii.** List of documents and references used in the evaluation
- ix.** **An Evaluation Summary**; a 4-5 page annex to the main report. This is distinct from the Executive Summary, and should serve as a self-contained summary that may be read without reference to the main report. The evaluation summary should follow the this outline:
 - a.** Basic project data
 - b.** Background of the project
 - c.** Description of the project
 - d.** Purpose of the evaluation
 - e.** Findings of the evaluation mission
 - f.** Assessment of the project design
 - g.** Policy implications and lessons learned
 - h.** Recommendations of the mission
 - i.** Members of the evaluation team

UNCDF will provide examples of Evaluation Reports and Summaries to the team leader. However, please note that the formats/outlines may be different from that stipulated in this ToR.

2. Evaluation Report Chapters

I. Introduction and background

- Include a brief description of Yemen, with a special focus on the project area, including physical characteristics and the socio-economic situation at the project start and now.
- Describe the Roads and Education sector together with a summary of the pre-project situation in the project area, i.e. school enrolment (boys and girls), literacy rate, road use, economic indicators, etc.
- Describe the rationale behind the project and the substantive approach, including how the project got designed and how the objectives were developed. What inputs have been provided to the project and what were the expected outputs?

- Implementation and operations arrangements for use of constructed facilities should be looked into. This will include a thorough examination of the developed designs of Schools; whether the design is appropriate and whether risks during formulation were identified.
- Cost and financing, including the GROY's funding commitments and actual expenditure should be incorporated.

II. Project preparation and design

- Analyze the appropriateness of the project preparation, and assess the design and the quality of the formulation of the project, based on the Project Agreement. To what extent were all the necessary components/elements taken into account?

III. Inputs and outputs

- The mission should focus on how the support to reconstruction, rehabilitation, relocation and new construction of schools and feeder roads assist in reaching the development and immediate objectives of the project.
 - Investigate the delivery of inputs, such as capital and technical assistance, the timing of the inputs should be assessed,
 - The timeframe for the project should be compared with the actual time spent.
- The mission should look into how suitable the developed design is for the selected sites, and whether the project has succeeded in development of a standard design and reduced the maintenance costs.
- The outputs and the cost of the project should be in focus together with the capacity that has been build including the maintenance arrangements at local levels.
- Further should it be included to what extent the project has build institutional capacity at of the XXXX department at local level to deal with construction programmes of this kind in a cost effective manner.

IV. Implementation and results

The mission should look into the various aspects of the project, factors that have contributed or limited the efficiency and the impact of the project:

- The implementation of the project, from the time the 1990 to the implementation started in XXXX and further to its completion in XXXX should be assessed.
- The actual implementation should be compared with the planned implementation. In this aspect the management of the project should be in focus, especially the financial management.
- The suitability of design and material should be analyzed.
- Assess whether the project has succeeded in building capacity among contractors servicing the project area (i.e. whether the competence of engineers, inspectors and surveyors in roads construction and maintenance has been upgraded)

V. Project impact

- Assess the immediate impact the project has had on the beneficiaries in the project area. The mission should look into the development in school enrolment and compare with the pre-project situation.
- It should be estimated to what extent the beneficiaries have been reached and whether they have been/will be included in the maintenance process.

VI. Project relevance and effectiveness

- Compare the achievements of the project to what was expected at the time of its formulation, and determine whether the project has been effective.
- Assess whether the objectives set for the project were realistic and still valid and whether the outputs were designed to achieve the project's immediate objectives.

- Assess whether the project was designed in the best possible way to achieve the objectives set forth.
- Analyze the project's cost-effectiveness, with special attention to the significant cost-escalation by the project.
- Identify possible alternatives/improvements that could have been or could be applied.
- Are the results obtained in line with the national development objectives?

VII. Critical issues

- Analyze the replicability of the designs developed as standard models to be built in remote areas and whether the design facilitates a simple and effective site supervision and construction, reduces initial capital investment, enables low recurrent costs for local preventive and corrective maintenance, uses a minimum of imported materials and is adjusted to the local labour skills and remoteness of the project sites.
- Assess the Maintenance Agreements that should be developed and implemented.
- Assess the financial management arrangement, including the role of the communities if any. Are the communities involved in maintenance of the roads and schools?
- Monitoring and Evaluation: Assess the monitoring and evaluation system in place, focussing on design, relevance and implementation (for project management as well as policy development use), as well as review and compare project performance indicators with corporate performance indicators; i.e the SRF and KPIs);

VIII. Findings, recommendations and policy lessons learned

The mission is requested to state their findings of the evaluation, both the successes and the failures of the project. Special issues that need to be addressed as a result of project activities, or which will improve the project's effectiveness, should be substantiated here.

Identify possible means to improve the utilization of the roads and schools and of the established systems and procedures, especially related to maintenance. Assess efficiency, effectiveness and impact, compared to similar projects, making concrete recommendation(s) on the course of actions to be followed. The action partner(s) should be clearly specified.

Extract policy lessons learned that would help the GRoY and UNCDF to improve the design of other projects in the same sector/thematic area.

ANNEX 2 – MISSION PROGRAMME AND PERSONS MET

09.03.2002	Arrival in Sana'a at 20.00 hours
10.03	Introduction by UNDP and presentation of project files
11.03.	Meetings in Ministry of Public Works and Urban Development, and meeting with General Corporation for Roads and Bridges
12.03	Field trip
13.03	Field trip
14.03	Preparation of report
15.03	Preparation of report
16.03	Preparation of report
17.03	Debriefing in Ministry of Public Works and Urban Development
18.03	Debriefing in UNDP
19.03	Finalisation and submitting report
20.03	Departure from Sana'a at 08.00 hours

List of Persons Met:

UNDP

Mr. James W. Rawley, Resident Representative
Mr. Bob Adolph, Security Officer
Ms. Jeehan N. A-Malik, Programme Associate

Ministry of Public Works and Urban Development

H.E.Mr. Ahmed Al Udiani, Vice Minister
Mr. Abdul Wahab Al-Hhakam, General Manager for Construction
Mr. Basheer Al Basseri, General Director of International Relations

General Corporation for Roads and Bridges

Mr. Thabet Shiban, General Manager of Planning and Statistics
Mr. Mohamed Abdul Wahed, General Manager for Flood Damages
Mr. Hussein Rashad, Dep. General Manager for Projects
Mr. Fadl Abbas, Project Manager
Mr. Ameen Al Agmay, Engineer
Mr. Abdul Rahman Harmul, Head of Dhamar Branch

FutureTech

Mr. Ahmed Mutahar, Director

Governorate of Dhamar

Mr. Abdul wahab Y-Al-Durhh, Governor of Dhamar
Mr. Abdul wahab Salah, General Manager of Local Council
Mr. Abdul Ellah Al Gharseen, Local Council District Head

ANNEX 3 – DOCUMENTS RECEIVED

1. Project Agreement, July 1991
2. Tender Documents, December 1992
3. Quarterly Progress Report, October 1992
4. Progress Report, December 1992
5. Six-monthly Progress report, August 1994
6. Quarterly Follow-up, January 1996
7. Handing over Report, February 1996
8. Minutes and letters related to conflict with contractor, November 1995 to July 1996
9. Settlement of Dispute, November 1997
10. 2nd Construction Contract, February 1999
11. Supervision Contract with FutureTech, February 1999
12. Progress Reports from FutureTech, June 1999 to April 2000
13. Letter instructing inclusion of Aithin - Daaf in Contract, November 1999
14. Agreement with UNDP on extension of project, June 2000
15. Revised budget, June 2001.
16. Yemen Common Country Assessment, January 2001