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Rural Water Supply Department

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SUPPORT RURAL WATER SUPPLY DEPARTMENT

REPUBLIC OF YEMEN

REPORT OF THE 1990 YEMENI-DUTCH EVALUATION MISSION



Dhamar/Delft, May/June 1990

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PREFACE

This report presents the findings of the evaluation mission for the Support Rural Water Supply Department Project in what is now the Republic of Yemen. The historic event of the unification of the Yemen Arab Republic and the Peoples Democratic Republic into the Republic of Yemen that took place on 22 May 1990, was witnessed by and made a profound impression on the mission. The mission uses this opportunity to wish all those involved a prosperous and happy future in the newly born state.

The mission was carried out from 12 to 23 May 1990, on request of the Netherlands Ministry of Foreign Affairs. The mission hereby expresses its gratitude to all those who contributed their valuable time and energy to enhance the quality of the its work. A special word of thanks is directed at mr. Aart van der Horst and colleagues who conducted a very exhaustive and extremely useful inventory of the project's water supply and sanitation scheme, and to messrs. Abdul Wali Alshamy and Abdul Salaam Zubairy who assisted the mission in the field visits and in preparing the Arabic translation of the conclusions and recommendations.

On 21 and 22 May 1990, the conclusions and recommendations of this report were discussed with and agreed by the project staff, the Rural Water Supply Department and the Royal Netherlands Embassy.

Delft, 20 June 1990

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ABBREVIATIONS

DGIS	Netherlands Government, Directorate General for International Cooperation
DRHP	Dhamar Rural Health Project
GOY	Government of the Yemen Arab Republic
GON	Government of the Netherlands
HOD	Health Office Dhamar
IWP	Integrated Water Project
LCCD	Local Council for Cooperative Development
RNE	Royal Netherlands Embassy
RWP	Rural Water Project
RWSD	Rural Water Supply Department
SNV	Netherlands Development Organization
SRWSD	Support Rural Water Supply Department Project

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Conclusions and recommendations (in English)

1. General

Objectives

The prime objectives of the present, third phase of the project (1988-1990) are:

- i) the development of the RWSU unit Dhamar to one capable of project preparation and implementation;
- ii) the development of an integrated approach to water supply and sanitation, including also community involvement and health and hygiene education;
- iii) the implementation of water supply and sanitation projects to a value of about Dfl. 10 mln, of which half on integrated projects in the catchment areas of the Primary Health Centres/Units of the Dhamar Health Office.

Achievements

The project has performed well. The RWSU Dhamar has developed into a suitably staffed and equipped unit that maintains effective relationships with the beneficiary villages, the RWSU Head Quarters and with the involved LCCD's. The cooperation in the field of health education with the Health Office Dhamar is promising but as yet sub-optimal. An integrated approach for water supply has been developed and is being successfully implemented in all projects; procedures can now be formalized. A health education programme has been developed and implemented. The integrated approach to sanitation is being developed and appears promising. The investments realized by the project are approaching the available budget. The Yemeni-Dutch cooperation in the project is good and should be continued into a next project phase.

2. Expenditure, physical progress, functioning and use of systems

Expenditure

The Dutch contribution for phase III totalled Dfl. 11.3 mln, of which Dfl. 1.3 mln concerned a carry over from phase II. By 31 March 1990 (75% of time spent) the expenditure totalled Dfl. 8.3 mln (73% of budget).

Physical progress

By the above date 34 village water supply schemes had been started, of which 26 were completed (31,550 population), six were under construction (9,360 population), and two had been abandoned (4,325 population). These numbers include thirteen projects carried over from phase II, of which twelve were completed and one abandoned.

Of the twenty-one village water projects started in phase III, ten are integrated projects in villages with primary health care centres/units. In addition to the village water supply schemes the project also completed nine minor projects, seven of which are connections of health centres/units to existing water supply systems.

In sanitation, the project completed 25 projects in 15 villages. These included public toilets at mosques, health centres/units and schools, and private toilets (one village only).

Functioning and use of systems

The functioning and use of 42 water systems completed by the project in phases I, II and III were investigated during April 1990. Thirty-two systems (75%) were found functioning, whilst 10 (from phases I and II) were not operating (mainly for organizational reasons). In schemes that are functioning almost all people have access to the water.

3. Implementation approach:

Water supply

The newly developed approach to project implementation is characterized by increased community involvement in project preparation and implementation, integrated health education, increased use of readily available materials and equipment, and decreased dependency on contractors.

The selection criteria with respect to project feasibility and priority as developed by the SRWSD are instrumental to the new approach. The experience with this approach is now such that it deserves to be recorded and formalized, for increased clarity in decision making to all parties, and for the promotion of the approach with other water projects.

The new approach to project implementation has met with highly satisfactory results as construction is quicker, possibly cheaper, and with better prospects for adequate functioning, use and maintenance of the completed systems. This positive experience was reason for the Project to also apply this new approach to the RWPs.

Sanitation

Good initiatives and experiments have been undertaken to promote sanitation improvements related to water use, waste water disposal, human waste disposal and solid waste disposal. Emphasis is on education, but technical and financial support for public and private latrines have also been provided in villages with good rapport.

The next step must be to develop a policy and an approach for this project component that continues to emphasize education and demonstration, and aims to support the implementation of sanitation measures taking into account village priorities and implications on the project in terms of manpower, funds and other resources.

Women involvement

The project has succeeded to involve women in project implementation, mainly through health education but also through exchange of information on the design, construction and operation of the water supply schemes. In a new project phase this emphasis should be continued and where possible extended and intensified.

Monitoring

The project did not yet develop a system for the monitoring of water supply and sanitation interventions. It is recommended to do so, as the present informal feed-back and also the recent investigation on the functioning and use of the completed schemes show that much can be learned from experience to be used for system operators, primary health care workers, and those responsible for project design.

4. Institutional development and external relations

RWSD-unit Dhamar

During 1988 the project established itself at the RWSD compound at Dhamar, where it now avails of adequate offices, equipment, a workshop and stores. Full-time personnel numbers twenty-two, of which eight are Ministerial staff, four are expatriates (DGIS,SNV) and ten are contract staff. The staff is well trained, competent and able, with nominal Ministerial support only, to execute all tasks related to project preparation and implementation in the Dhamar area. The capacity of the office is limited to its present workload (Dfl. 2 mln investments per annum).

Provided that Yemeni replacements are made available, the expatriate staff for the next project phase can be reduced, probably to a minimum of two persons. To assist further Yemenisation, the expatriate staff should be provided with a full-time, qualified counterpart staff.

Village capability

The project aims at development of capability for operation and maintenance at the village level. To achieve this the project implements the integrated approach, provides training of operators and health care workers, and maintains intensive contacts with the village during project preparation and implementation. In future, project assistance to capacity building could be expanded by offering advise on bookkeeping, cost recovery and related matters.

Relation with RWSD-Sana'a

The RWSD-Sana'a has enabled the implementation of the Phase III of the project: All proposed water supply schemes were formally approved; some equipment and an important number of part-time and full-time Yemeni staff has been provided; the development of the new approach to implementation has been supported.

The good relationship with the RWSD-Sana'a could be further strengthened by appointing one of the HQ staff to act as a liaison officer for the project.

Relation with LCCDs

The LCCDs are involved in the preparation, operation and maintenance of the water supply schemes in the appropriate way. Official documents are always signed by the LCCD and their assistance is called in, in case of any problems.

Relation with HOD and DRHP

The relationships of the SRWSD with the Health Office Dhamar (HOD) and the Dhamar Rural Health Project have been hampered by unclarity about their respective tasks and responsibilities and by subsequent unrealistic expectations about cooperation. Nonetheless the three parties succeeded in establishing working relations at implementation level and to jointly develop and carry out a health education programme. The HOD also appointed one of their staff members as a liaison officer for the SRWSD project.

It is the opinion of the Mission that cooperation with the HOD, and through this Office with the DRHP, should be developed further and worked out in an agreement that is to be supported by the Ministries concerned. This document should specify the objectives, activities, inputs and outputs, organizational framework and conditions of co-operation, and should become part of the project document of a new phase.

5. Health education

Considerable progress has been achieved in the development and implementation of a health education programme related to water and sanitation. It is an asset that this programme was developed in communication with the men and especially the women in the project villages, and as far as possible in cooperation with staff of the HOD, DRHP and SNV.

The experience gained by health education resulted in a practical set of messages, carefully built up over a number of sessions and using methods and materials adapted to the situation and suitable of being used by primary health care workers. For the ongoing development of the programme it is suggested to further test the need and suitability to discuss microbes as one of the basic concepts of the health education, to develop more audio-visual tools and to adapt the messages and methods for men and for children at school.

Appropriate training in health education was provided for technical project staff, primary health care workers and training/supervisors.

The mission strongly supports the continuation of the integrated health education. It is acknowledged that an important constraint is the availability of field level staff, as future project villages will be further away from Dhamar and most likely lack a fully developed health infrastructure. Therefore the personnel inputs for a next phase need to be carefully quantified.

6. Yemeni-Dutch Cooperation

Need for Phase IV

A continuation of Yemeni-Dutch cooperation in the SRWSD project is recommended on the basis of the positive evaluation of the present phase, the concurrence of the project objectives with the policies of both Governments, the need for increased coverage in certain pockets of the Dhamar area, and the demonstration value of the project for water supply and sanitation development in Yemen. It is proposed that the size of a phase IV is equivalent to phase III.

Continuation in Dhamar

The Mission is the opinion that the project should continue to operate in Dhamar. In this way the recently acquired manpower, facilities, experience and relationships can be utilized for maximum productivity in all areas of project activity.

Type of Dutch executing agency

The present form of Dutch assistance to the project should, in view of the successes achieved in Phase III, be continued. It is proposed that DGIS provides the project manager whilst SNV supplies any additional staff. Backstopping may in this context be best arranged through a reputable institute.

Expatriate staff requirement

The input of expatriate staff can be limited to one project manager holding overall responsibility for project implementation, and the necessary staff for the implementation of the health education component. The latter requirement must be detailed in the project document.

Phase IV preparation

The experience, capacity and motivation of project personnel should be mobilized to draft the project document for a next project phase. It is advised that for the chapters on the development and utilization of links with the health sector assistance is provided by an independent expert with relevant sector and country experience.

(1) مقدمة عامة

الإسهادات : يمكن تلخيص الإسهادات الأساسية للمرحلة الثالثة (1988-1990) فيما يلي :

- (أ) تطوير مكتب إدارة مياة الريف بدمار بحيث يكون قادرا على اعداد وتنفيذ المشاريع.
- (ب) تطوير خطة متكاملة تشمل مشاريع المياة والمرافق الصحية بمشاركة الاهالي وكذا ادراج التنفيذ الصحي .
- (ج) الميزانية المخصصة لتنفيذ مشاريع المياة والمشاريع الصحية هي مبلغ 10 مليون جيلدر هولندي منها 50% مخصصة للمشاريع الصحية (IWP) في المناطق التي توجد فيها خدمات المراكز والوحدات الصحية التابعة للرعاية الصحية الاولى بمكتب الشؤون الصحية بدمار.

المنجزات :

- المشروع يعمل بطريقة جيدة ، واصبح يرتبط بعلاقات جيدة مع :
 - القرى المستفيدة من المشاريع .
 - الإدارة العامة لمشاريع مياة الريف بصناعاً .
 - المجالس المحلية .
- اما بالنسبة للتعاون في مجال التنفيذ الصحي مع مكتب الشؤون الصحية فانه يبشر بالنجاح ولكنه الان ليس في الصورة المطلوبة .
- وبالنسبة لخطة تنفيذ المشاريع فقد تطورت ونفذت بنجاح واصبح الان من الممكن كتابة طريقة العمل بشكل رسمي . كذلك تم تطوير برنامج التنفيذ الصحي وتم تنفيذه .
- وبالنسبة لمشاريع صحة البيئة فقد تم تطويرها واصبحت واعدة بالنجاح .
- وبالنسبة للميزانية المنصرفة فقد اوشكت على الانتهاء .
- وبالنسبة للتعاون اليمني الهولندي في المشروع فهو جيد وتوصي على ضرورة استمراره في المرحلة القادمة .

(2) المصروفات ، الإنجازات ، وكيفية تشغيل المشاريع :

- الدعم الهولندي المالي للمرحلة الثالثة يقدر ب 11 و 3 مليون جيلدر هولندي . منها 1 و 2 مليون جيلدر تم ترحيلها من المرحلة الثانية الى الثالثة .
- وحتى تاريخ 1990/3/31 م (75% من فترة المرحلة) تم صرف 8 و 2 مليون جيلدر هولندي (72% من ميزانية المرحلة)

الإنجازات :

- حتى التاريخ المذكور اعلاه تم البدء في تنفيذ 34 مشروع كالآتي :
 - 26 مشروع تم تنفيذها بالكامل (وتخدم 21550 نسمة)
 - 6 مشاريع تحت التنفيذ (وتخدم 9260 نسمة)
 - 2 مشاريع تم استبعادها بعد بدء العمل فيها (وتخدم 4225 نسمة)
- ومن هذه ال 24 مشروع السابق ذكرها يوجد 12 مشروع من مشاريع المرحلة الثانية تم تنفيذها او استكمالها في المرحلة الثالثة ، بينما تم استبعاد مشروع واحد من هذه ال 12 مشروع .
- ونجد مما ذكر اعلاه ان عدد مشاريع المرحلة الثالثة هي 21 مشروع (مشاريع جديدة) منها 10 مشاريع متكاملة (IWP) في القرى التي توجد فيها مراكز او وحدات صحية .
- بالإضافة الي ذلك قام المشروع بتنفيذ 9 مشاريع صغيرة منها 4 مشاريع عبارة عن توصيل المياه الي المراكز أو الوحدات الصحية .

اما في مجال الصرف الصحي فقد تم تنفيذ ٢٥ مشروعا في ١٥ قرية ، وتحتوي هذه المشاريع على حمامات عامة في المساجد والمراكز والوحدات الصحية ، وكذلك المدارس. كما تم تنفيذ حمامات خاصة في قرية واحدة.

التشغيل والاستخدام للمشاريع :

تم تنفيذ ٤٢ مشروع مياه في المرحلة الاولى والثانية والثالثة ، ومن خلال البحث والتقييم الذي تم في شهر ابريل ١٩٩٠م اتضح ان ٢٢ مشروع (٧٥%) تعمل بصورة جيدة بينما ١٠ مشاريع (من مشاريع المرحلتين الاولى والثانية) لاتعمل (لأسباب ادارية لتنظيم المشاريع).

ويلاحظ استخدام مياه الشرب من قبل جميع الاهالي في المشاريع التي تعمل .

(٢) طريقة التنفيذ

* مشاريع المياه : الطريقة الجديدة لتنفيذ المشاريع تتميز بمشاركة الاهالي في الإعداد

والتنفيذ والإرشاد الصحي واستخدام المواد والمعدات المتوفرة وتقليل الاعتماد على المقاولين.

عملية الاختيار وعلاقتها بإمكانية تنفيذ المشروع ذات الاولوية كما طورها مشروع الدعم الهولندي، فهي اداة وسيلة عملية للطريقة الجديدة للتنفيذ ، وتستحق ان يتم تشكيلها بطريقة رسمية لتوضيح عملية اتخاذ القرار من اطراف ذات العلاقة، وتعميم عملية الاختيار في جميع المشاريع.

نتائج الطريقة الجديدة لتنفيذ المشاريع جيدة ، حيث ادت الى سرعة التنفيذ وتكلفة اقل . والاهتمام بتشغيل وصيانة المشروع ، ونتيجة لهذه الايجابيات جعلت المشروع ان يطبق نفس الطريقة في تنفيذ المشاريع والتي كانت تتم عن طريق المقاول.

* حماية البيئة : بداية وتجربة جيدة تم تطويرها لتأمين صحة البيئة والمتعلقة باستخدام المياه والتخلص من المياه العادمة والنظف الادمية والتمامة .
الإرشاد الصحي كان مكثفا ولكن الدعم الفني والمالي ببناء حمامات عامة وخاصة تم توفيره في القرى التي ساهمت في تنفيذ مشروع المياه بطريقة جيدة .
والخطوة القادمة يجب تطوير طريقة خاصة بهذا الجزء من المشروع والتي تهتم بالإرشاد وتهدف بدعم الخطوات اللزم اتخاذها في صحة البيئة .

* دور المرأة : المشروع نجح في ادراج المرأة في تنفيذ المشروع وخاصة من خلال الارشاد الصحي ، وكذلك من خلال تبادل الآراء حول التصميم وتنفيذ وتشغيل مشاريع المياه.
وفي المرحلة القادمة للمشروع يجب استمرارية التركيز على هذا الموضوع، واذا امكن العمل على تمديده وتحسينه .

* المراقبة : المشروع لم يطور نظام مراقبة سير استخدام وتشغيل مشاريع المياه وصحة البيئة ، ونرى انه من الضروري عمل ذلك ، لان المعلومات التي يحصل عليها من يقوم بتشغيل المشروع وكذلك المرشدين الصحيين من الزيارات الغير منتظمة سوف تكون مفيدة.

(٣) التطوير المهني والعلاقات الخارجية :

- ١- تم تدريب ١٥٠ من الكوادر الصحية في ١٩٨٥م تم نقل مشروع الدعم الهولندي الى ارضية مكتب الصحة في القرية التي تم تنفيذ المشروع فيها ، وذلك لتدريب الكوادر الصحية في القرية.
- ٢- تم تدريب ١٠٠ من الكوادر الصحية في ١٩٨٥م في القرية التي تم تنفيذ المشروع فيها ، وذلك لتدريب الكوادر الصحية في القرية.
- ٣- تم تدريب ١٠٠ من الكوادر الصحية في ١٩٨٥م في القرية التي تم تنفيذ المشروع فيها ، وذلك لتدريب الكوادر الصحية في القرية.
- ٤- تم تدريب ١٠٠ من الكوادر الصحية في ١٩٨٥م في القرية التي تم تنفيذ المشروع فيها ، وذلك لتدريب الكوادر الصحية في القرية.
- ٥- تم تدريب ١٠٠ من الكوادر الصحية في ١٩٨٥م في القرية التي تم تنفيذ المشروع فيها ، وذلك لتدريب الكوادر الصحية في القرية.
- ٦- تم تدريب ١٠٠ من الكوادر الصحية في ١٩٨٥م في القرية التي تم تنفيذ المشروع فيها ، وذلك لتدريب الكوادر الصحية في القرية.
- ٧- تم تدريب ١٠٠ من الكوادر الصحية في ١٩٨٥م في القرية التي تم تنفيذ المشروع فيها ، وذلك لتدريب الكوادر الصحية في القرية.
- ٨- تم تدريب ١٠٠ من الكوادر الصحية في ١٩٨٥م في القرية التي تم تنفيذ المشروع فيها ، وذلك لتدريب الكوادر الصحية في القرية.
- ٩- تم تدريب ١٠٠ من الكوادر الصحية في ١٩٨٥م في القرية التي تم تنفيذ المشروع فيها ، وذلك لتدريب الكوادر الصحية في القرية.
- ١٠- تم تدريب ١٠٠ من الكوادر الصحية في ١٩٨٥م في القرية التي تم تنفيذ المشروع فيها ، وذلك لتدريب الكوادر الصحية في القرية.

وهذه المجموعة مؤهلة وقادرة على القيام باعداد وتنفيذ اعمالها في منطقة ذمار بدعم من الإدارة العامة لمشاريع مياة الريذ .
وسبعة المكتب التنفيذية محدودة في الوقت الحاضر (٢ مليون جيلدر سنويا).
وفي الإمكان العمل على التوسع في يميننة المشروع وبالتالي يمكن تقليل تواجد الخبراء الهولنديين الى خيارين في المرحلة القادمة، بحيث يتم تعيين نظراء يمينيين مؤهلين لكي يتحملوا مسؤولية المشروع مستقبلا.

* امكانيات الاهالي في القرى : من اهداف المشروع هو تطوير مستوى التشغيل والصيانة لاهالي . لذلك يقوم المشروع بالعمل على من سيتم بتشغيل وصيانة المشروع خلال عمليات الإعداد والتنفيذ للمشروع. وبالمثل يتم تدريب المرشدين الصحيين .
وفي المستقبل نرى العمل على مساعدة من يقوم بادارة المشروع بعمل السجلات اللازمة لتنظيم المشروع.

* علاقة المشروع مع الإدارة العامة لمشاريع مياة الريذ: الإدارة ساعدت على تنفيذ مشاريع المرحلة الثالثة وذلك باعتماد قائمة المشاريع المقترحة ، وكذلك بارسال بعض المعدات اللازمة ، وكذلك وجود المسؤولين ذوي الاهمية ممن يعملون للمشروع بسنة جزئية او كاملة . كما دعمت الإدارة الطريقة المتبعة في تنفيذ المشاريع .
ويمكن تقوية هذه العلاقة بتعيين منسق للمشروع في الإدارة العامة لمشاريع مياة الريذ.

* علاقة المشروع بالمجالس المحلية : المجالس المحلية هي في الصورة منذ اعداد وحتى التشغيل والصيانة للمشروع ، وجميع الوثائق المتعلقة بالمشروع يتم اعتمادها من قبل المجالس المحلية . كما تتم الاستعانة بالمجالس المحلية عند حدوث اية مشكـلة.

* علاقة المشروع مع مكتب الشؤون الصحية والمشروع الصحي الهولندي بدمار : العلاقة بين المشروع ومكتب الصحة والمشروع الصحي الهولندي متعثرة بسبب عدم ونوع ماهي التزامات ومسئوليات كل جانب ، مما اثرت عليه توقعات غير ممكنة من كل من الجانبين . ولكن الاطراف المشتركة استطاعت وبنجاح تاسيس علاقة عمل على المستوى التنفيذي ، وتم الإشتراك في تطوير وتنفيذ برنامج للإرشاد الصحي . كما قام مكتب الصحة بدمار بتعيين احد موظفيه كمنسق مع مشروع الدعم الهولندي لصياح الريذ.

وترى لجنة التنسيق بان التعاون بين مشروع الدعم الهولندي لمياة الريذ ومكتب الصحة بدمار والمشروع الصحي الهولندي يجب تطويره وعمل اتشاقية معده من الوزارات المعنية توضح اهداف التعاون ونشاطات والتزامات كل جانب ، وتنبسج هذه الاتشاقية جزء من الاتشاقية الخاصة بالمرحلة القادمة.

(٥) الإرشاد الصحي

نجاح كبير تم اعجازه في تطوير وتنفيذ برنامج الإرشاد الصحي المتعلق بالمياه وصحة البيئة ، حيث يتم تطويره بواسطة التحدث الى الرجال والنساء في القرى ، ويتم ذلك بالتعاون مع مكتب الصحة والمشروع الصحي الهولندي بدمار .
ومن التجربة التي اكتسبت من الإرشاد الصحي تم عمل مجموعة من الرسائل الصحية والتي اختلفت بعناية خلال عدة جلسات، وكذلك استخدام طرق ومواد مناسبة للوضع وسهولة الاستخدام بواسطة المرشدين الصحيين . ونفترض لتطوير البرنامج الحالي مناقشة الميكروبات كواحد من المفاهيم الاساسية للإرشاد الصحي ، وتوفير الوسائل والمعدات النظرية والسمعية وتعديل الرسائل الصحية وطريقة ايصالها الى الرجال والاطفال في المدارس.

التدريب المناسب في مجال الإرشاد الصحي تم تويره للكوادر الفنية في المشروع وكذلك للمرشدين والمرشدين الصحيين .
فكرة التنسيق تدعم بقوة الاستمرارية في مجال الإرشاد الصحي وتعلم بان هناك صعوبات في توير الكوادر على مستوى القرية .
ربما ان القرى في المرحلة القادمة ستكون بعيدة عن مدينة ذمار ، وامكانية عدم توفير الخدمات الصحية هناك ، لذا يجب تحديد الكوادر بعناية في المرحلة القادمة.

(٦) :التعاون اليميني الهولندي :

الاحتياج للمرحلة الرابعة : نوصي باستمرار التعاون الهولندي اليميني في مجال دعم مشاريع مياة الريذ ، على اساس التقييم الايجابي للمرحلة الحالية وتطبيق اهداف المشروع مع سياسات او نظم الدولتين بغرض تطوير مشاريع مياة الريذ وصحة البيئة في اليمن ، ولتقترح ان يكون حجم المرحلة الرابعة مساويا للمرحلة الثالثة .

الاستمرارية في ذمار : ترى فرقة التقييم ان المشروع يجب ان يستمر في العمل بدمار ، وبهذا الشكل يستطيع المشروع بالكوادر والوسائل والخبرة والعلاقات الموجودة ان يزيد من انتاجه في جميع مناطق التنفيذ .

نوع الجهة الهولندية المنفذة : الشكل الحالي للمساعدة الهولندية يجب ان تستمر في المرحلة القادمة على اساس التجاهاات التي انجزت في المرحلة الثالثة . ونقترح ان يكون مدير المشروع من الحكومة الهولندية ، بينما يكون الخبراء الاخرون من منظمة المتطوعين الهولنديين . ويمكن ترتيب هذا مع المختصين في هذا المجال .

الخبراء المطلوبين : يمكن تحديد عدد الخبراء بواحد كمدير للمشروع يكون مسؤولا بكامل من المشروع وآخرين لتنفيذ الارشاد الصحي الضروري ، ويتم الطلب للخبراء من خلال وشيئة المشروع .

التجهيز للمرحلة الرابعة : خبرة وقدرة وحماس كوادر المشروع يجب ان تعمل على اعداد نسخة اولية لوشيئة المشروع للمرحلة القادمة . اما بالنسبة تيمما يخص نطاق النسخة فتعطى لخبير مستقل في هذا المجال ، ولديه الخبرة عن اليمن .

1. INTRODUCTION

1.1 Background

The project was agreed in 1982 as a merger of two separate projects; a technical assistance project to strengthen the RWSD at the national level, and a financial project to complete a number of water supply construction projects in the Dhamar area. Upon completion of the first two phases (1983-1985 and 1985-1987) Dutch support to the project had totalled Dfl 10.92 mln.

A project evaluation mission that was carried out in August/September 1987 concluded that support at the national level had been minimal and that water supply construction would benefit from increased user-involvement. The mission recommended continuation of the project in a third phase with emphasis on the development of Yemeni capability for project implementation and of an integrated approach to water supply and sanitation including also community involvement and health and hygiene education, and the implementation of integrated water supply and sanitation projects.

A phase III for the 3-year period 1988 to 1990 was agreed between the cooperating Governments. Apart from carry-over funds to a value of Dfl. 1.35 mln, the Dutch Government made available Dfl 10 mln for this phase. By the end of March 1990 expenditure from this budget totalled Dfl 8.3 mln.

1.2 Project phase III

Name:	Support Rural Water Supply Department, Phase III
Activity:	Implementation of integrated rural water supply and sanitation projects
Location:	Dhamar area
Executing authority:	Ministry of Electricity and Water, Rural Water Supply Department
Sector:	Water supply and sanitation
GOY contribution:	in kind
GON contribution:	Dfl. 10,000,000

The project is being implemented on the basis of a project document prepared by a support mission in January 1988. A monitoring mission was carried out in March 1989. The Project staff produces quarterly progress reports.

1.3 Evaluation Mission

From 12 to 23 May 1990 a joint Yemeni-Dutch mission was fielded to the SRWSD. In view of the termination of the Phase III of the Project an evaluation was required to assess the progress and achievements to date and to advise on a possible Phase IV.

The Mission members were:

Maarten W. Blokland engineer, member

Marieke T. Boot sociologist, member

Abdul Hamid al Radi engineer, member

Nagwa Yahia Zabarah health educationist, part-time observer

The terms of reference, the itinerary of the Mission, and a list of organisations visited and persons met have been included as Annexes. The Mission had discussions with the Yemeni authorities, Netherlands Embassy staff, Project staff and Project beneficiaries. Several field visits were included as shown in the itinerary.

2. EXPENDITURE AND PHYSICAL PROGRESS

2.1 Expenditure

Funds made available by the GON for Phase III amount to Dfl 11.35 mln, including Dfl 10.0 mln for Phase III and some Dfl 1.35 mln carried over from phase II. By 31 March 1990 an amount of Dfl 8.3 mln had been spent, leaving the Phase II carry-over virtually depleted and a remaining balance of Dfl 3.0 mln in the Phase III budget. The balance of Dfl 3.05 mln will suffice to the end of Phase III.

Expenditure by 31 March 1990 may be broken down in following major categories (expenditures in Dfl):

Technical Assistance, incl. SSTRUW	
Personnel costs	863,000
Equipment and transport	281,000
Running costs	455,000
Training	113,000
SSTRUW (hydrogeological consultancy)	593,000
Evaluation and support missions	74,000
	----- +
	2,379,000
Financial Assistance	
Water Supply:	
- village schemes - Phase II schemes	1,797,000
- Phase III RWPs	1,208,000
- Phase III IWPs	1,029,000
- connections to existing schemes, etc.	73,000
- stocks, preparatory costs	1,018,000
	----- +
	5,125,000
Sanitation	750,000
Other	49,000
	----- +
	5,924,000
	----- +
Total project expenditure by 31 March 1990:	8,303,000

Actual investments, i.e. the total of items under village schemes, connections to existing schemes and sanitation total Dfl 4.9 mln or 59% of project expenditure.

2.2 Physical progress

In Phase III three approaches to village water supply implementation can be distinguished. The first type (phase II) concerns the continuation of practices of previous project phases, i.e. implementation with minimum user involvement, where the work is executed by contractors. This approach is used in the completion of 12 projects started up during phase II. The second type (phase III-RWP) concerns new initiatives in 11 villages where no primary health care infrastructure exists. In the project document implementation of water supply projects in these villages was foreseen by the contractor. In actual fact these schemes

are being implemented with village participation, minimum involvement of contractors and with health education. The third type (phase III-IWP) concerns activities in 10 villages with primary health care infrastructure, i.e. a Health Centre or Health Unit operated by the Health Office Dhamar. The schemes are being implemented with village participation and minimum involvement of contractors, whilst also a health education programme is being implemented.

The progress achieved in village water supply construction as per 31 March 1990 is as follows:

approach	no.of water supply systems(beneficiaries)			
	started	completed	U/C	abandoned
Phase II	13(21,980)	12(20,655)	0(0)	1(1,325)
Phase III-RWP	11(12,315)	7(6,055)	4(6,260)	0(0)
Phase III-IWP	10(10,940)	7(4,840)	2(3,100)	1(3,000)
Total	34(45,235)	25(31,550)	6(9,360)	2(4,325)

note: U/C = under construction

Considering that all new projects (IWP and RWP) are implemented using an integrated approach it may be concluded that the aim to construct at least 50% of the projects using this approach has been achieved, both in terms of investment and beneficiary population.

The quality of work in the schemes following the integrated approach (i.e. Phase III-RWP and IWP) is not less, maybe even better than that in the older type projects (Phase II). The increased use of local materials in reservoir construction appeals to the villagers, one of whom remarked that a concrete reservoir may stand for 100 years, but a cut stone one will stand for one thousand years.

2.3 Inventory of completed schemes

Between February and April 1990 a systematic investigation has been carried out of 42 schemes constructed by the SRWSD Project. Aim of the investigation was to learn more about the functioning and use of the completed schemes. The investigation resulted in a report: 'An inventory of water supply and sanitation schemes constructed by the Support Rural Water Supply Department Project', by Aart van der Horst, Dhamar, April 1990. The outcomes of the investigation, which are generally supported by the evaluation mission, are shortly reviewed below whereas the conclusions and recommendations are attached as annex D.

The investigation has been carried out in close collaboration with staff of the RWSD Sana'a, project staff and staff from a neighbouring water supply and sanitation project, thus increasing its value in terms of shared learning from experience. However, it is a lost opportunity that no full-time female social investigator was involved, not only to learn more about the use of the completed schemes, but also to increase the reservoir of female experts. The involvement of female project and SNV staff only partly made up for this shortcoming. In the future it should

be taken into account that recruitment of female professionals requires more and more timely actions by responsible agencies.

Of the 42 schemes included in the investigation, 21 were working without problems, 11 were working with problems and 8 were not working at all because of problems with village organization, water source or pump, whereas 2 schemes were never completed. Careful selection of villages turns out to be a key factor for the future success of the schemes. Therefore, the selection criteria for new water supplies as developed by the project (and as summarized in the report of the monitoring mission, March 1989) should be strictly applied under all circumstances to prevent a waste of money and effort on schemes that are not or not fully used upon completion.

Over the years a change-over was made from water supply schemes with a low location of the reservoir and public taps only, to water supply schemes with a more extensive distribution system that allows for private connections. People are much more satisfied with these new systems whereas the total costs are not affected, as construction is done by village participation.

The average water consumption in schemes with public taps is 20 litres per person per day (l/c/d). For schemes with private connections and a flat rate average consumption is 27 l/c/d, whereas for schemes with water meters this is 22 l/c/d. The range of water consumption between the individual households is not known, neither is the influence of reuse of water. It seems that nobody is excluded from access to the water supply scheme as people who cannot afford to pay are excused.

In all but two schemes where the water quality is poor, the water is used for drinking and personal hygiene. In only half of the schemes the water is also used for washing clothes. The reasons for using alternative sources for washing clothes are: not enough water from the scheme, water too expensive or waste water problems near the houses. It seems that the amount of water used for various purposes and the water used from alternative sources requires more attention in terms of prevention of health risks.

In phase II of the project a start was made with the construction of sanitary facilities, but the design and quality of construction was not optimal, whereas community participation was minimal. Most of these facilities are presently non-used. At one place a washing slab was made near the pumphouse to enable women to use the cooling water for cloth washing. It seems that this successful experiment was not repeated. Since the start of phase III more attention is given to sanitation improvements. The public toilets now include a metal water tank on the roof and a tap inside each unit. Recently a start has been made with assistance to the construction of private latrines. The first experiences are very promising. As further discussed in paragraph 3.2, the future development of the sanitation activities will require careful consideration.

3. IMPLEMENTATION APPROACH

3.1 Water supply

One of the objectives of phase III of the SRWSD project is the development of an integrated approach to water supply, sanitation and health, including active community involvement in project preparation, implementation and operation. This approach should be applied for all Integrated Water Projects (IWPs), covering at least half of the project activities.

The development of a more integrated approach has been made quickly and in a successful way. The switch over to this new approach was facilitated by introducing the working procedure as developed by the New TransCentury Foundation. This procedure has been further adapted and extended by SRWSD staff, with more attention for project preparation, community participation, health education, sanitation and (on the job) training for water supply system operation and maintenance.

The implementation procedure as developed presently runs through the following steps:

- listing of potential villages for water supply systems by RWSD and HOD;
- feasibility study, village selection and priority setting through a participatory technical and socio-economic survey;
- detailed design and signing of contract by village representatives, LCCD, RWSD, SRWSD, the Governor and HOD;
- construction of the water supply scheme, implementation of the hygiene education programme and training of the scheme operator;
- handing over of the scheme after completion and phasing out of technical support and hygiene education activities.

According to this procedure, the women involvement and hygiene education staff should take part in the feasibility study, but in practice this is not always done, mainly due to time constraints and this requires more attention in the future. Criteria for village selection are used, but tend to be applied in a rather implicit way, sometimes creating misunderstandings for parties involved in the request for a water supply. A strict adherence to the selection criteria with proper notification of RWSD and HOD of the outcomes are expected to solve the problem.

Community participation is well developed, not only in terms of providing money, materials and labour, but also in decision making with respect to the technical design and implementation of the water supply scheme. Examples are joint decision making on the distribution network and the size and the location of the reservoir. Hygiene education is generally well received both by community groups and by technical staff who find community involvement easier when accompanied by hygiene education.

Other characteristics of the new implementation approach are that materials and equipment are increasingly purchased at the local market in order not to frustrate community motivation by long waiting times and that the dependency on contractors greatly decreased as schemes are

largely constructed by the community itself with project guidance and supervision only. Recently the project also started to promote the use of water meters, to facilitate a proper functioning and use of the completed systems and to avoid disputes on water availability.

The new approach to project implementation has met with highly satisfactory results as construction is quicker and possibly cheaper, with better prospects for adequate functioning, use and maintenance of the completed schemes. This positive experience was reason for the project to also apply this new approach to the RWPs. The experience with this approach is now such that it deserves to be recorded and formalized and be used for promotion in other water supply projects.

3.2 Sanitation

Good initiative and experiments have been undertaken to develop a suitable approach to the promotion of sanitation improvements in relation to water use and the disposal of waste water, human waste and solid waste. Emphasis is on education through the hygiene education programme, as is further discussed in chapter 5. In addition, technical and financial support has been provided, mainly for public latrines but also for washing facilities, cattle troughs and recently for private latrines.

A nice example provides Bani Muwallad, as recorded in the 'Inventory of water supply and sanitation schemes constructed by the SRWSD Project', April 1989. This village with 600 inhabitants was visited 8 times for hygiene education with women. During the group meetings the use and reuse of water was discussed as was the danger of human waste. This resulted in a request for toilets. At first, public toilets were constructed for the school and the mosques, and a unit with two public toilets for women. When the number of requests for toilets for women increased, it was decided to embark upon a private latrine construction programme, in which the household would be responsible for excavation of the pit and construction of the superstructure, while the project would provide material and technical support. This programme met with much success and nearly all households have completed their toilet either inside or outside the house.

In eight of the water supply scheme areas of Phase III public toilets were constructed for men and/or schools; in three project areas also for women. Only in a few cases the community contributed in terms of money, labour or materials. It is suggested, that future sanitation improvements are only implemented with village contribution.

The experience with the use and maintenance of the public latrines seems to be mixed. Some are not used or not used by the intended groups, or not properly cleaned (mainly at health centres and schools), others are very nicely cleaned (for example when there is an active school teacher, and in the case of public latrines for women). Active involvement of the community in the planning and implementation of the facilities, including hygiene education on proper use is considered to make a difference and should be further explored. Another point for consideration is the priority to be given to public latrines. Other options for sanitation improvements may be equally or more important.

Whereas promotion of sanitation improvements is very positive, it may create problems when they start to consume a too high percentage of project manpower and funds for technical and material support. For example, the promotion of private latrines in Bani Salama met with a much higher response than counted for.

The experience gained so far should be used to further develop a suitable approach to sanitation promotion and to establish a clear policy with respect to what sanitation measures can be supported by the project, in what way and to what extent, while taking into account village priorities and project limitations in terms of manpower and funds.

4. INSTITUTIONAL DEVELOPMENT

4.1 RWSD-unit Dhamar

During 1988 the project established itself at the RWSD compound at Dhamar, where it now avails of adequate offices, equipment, a workshop and stores. Full-time personnel numbers twenty-two, of which eight are Ministerial staff, four are expatriates (1 DGIS, 3 SNV) and ten are Yemeni contract staff. The staff is well trained, competent and able, with nominal Ministerial support only, to execute all tasks related to project preparation and implementation in the Dhamar area.

The volume of work handled by the office now leads to an investment of about Dfl 2.5 mln per year, for which amount about 10 project locations with a beneficiary population of 1000 each can be provided with piped water supply and some sanitation facilities. The workload of project staff is such that this capacity should be taken as a guideline for future planning.

The project document (January 1988) foresaw an expatriate input of 5 professionals plus 2 engineering trainees throughout phase III of the project. After one year the monitoring mission (March 1989) concluded that the availability and quality of Yemeni staff was such that the expatriate professional staff could be reduced to three and that the trainees should be discontinued. By 31 March 1990 the expatriates numbered four, and by May 1990 the number was brought down to three, i.e. one Sana'a project manager (DGIS), one Dhamar team leader (SNV) and one women, health and research coordinator (SNV). The mission feels that the remaining period in phase III should be utilized to prepare for the combination of the presently separate positions of project manager and Dhamar team leader into one.

The mission is the opinion that with a comparable workload, the expatriate staff for project phase IV can from the start be limited to two persons, i.e. one project manager/team leader and one health educator. To assist further Yemenisation in phase IV, suitably qualified Yemeni staff should be provided on a full-time basis as counterparts to the remaining two expatriates. In phase IV therefore one engineer/-manager and one health educator should be added to the present Yemeni staff complement. Only if it proves to be impossible to comply with requirements for female Yemeni staff it should be considered to recruit a person from the Arab speaking region.

4.2 Village capability

The project aims at development of capability for operation and maintenance at the village level. To achieve this the project implements the integrated approach, provides training of operators and health care workers, and maintains intensive contacts with the village during project preparation and implementation.

The mission visited 3 project areas with a beneficiary population of about 2600 persons and had discussions with village representatives and others about the project. From these discussions it appeared that the

relations between project and community are good. The communities appear to have sufficient experience to deal with government agencies and also have their own system of internal communication and decision making. In all cases the principle of village contribution to the project is well understood and accepted, and often elaborate records are maintained to show contributions made in cash and kind during system construction by each family in the community. Also, procedures for system operation are devised, a cost recovery system is designed, and rules and regulations are set for system users.

As each community devises its own procedures there is a large variation of procedures, rules and regulations, etc.. This in itself is acceptable as each community has its own situation and characteristics. However, it seems both a waste of time and an unnecessary risk for each community to think up ways of organizing the system when an increasing amount of experience is being built up in the other systems in the area. The mission therefore advises that the project provides some assistance to village capacity building by offering advise on bookkeeping, cost recovery and related matters, on the basis of their knowledge of successful projects elsewhere in the Dhamar area.

4.3 Relation with RWSD-Sana'a

The RWSD-Sana'a has been supportive to the successful implementation of phase III of the project. Most importantly, the positive attitude to an integrated approach to water supply, sanitation and health greatly facilitated the change-over. Also, the establishment of the Dhamar unit was greatly facilitated by the provision of an important number of part-time and full-time Yemeni staff (see also para 4.1) and the transfer of well testing equipment.

It is felt that communication between RWSD-Sana'a and the SRWSD Project could be improved by appointing a liaison officer for the project within the Sana'a office to ensure a regular exchange of information.

4.4 Relation with LCCDs

The Local Councils for Cooperative Development are important elements in the development process. They control relatively small administrative areas, and are in a position to have a good insight in the status of the different villages in their area.

Despite their small professional staff and comparatively minimal budgets, (the LCCD-Ans with 130,000 inhabitants that was visited by the mission has 17 paid staff, a minimum of facilities and a budget of YR 1.6 mln/yr) they maintain intensive relations with their client communities and assist these with small projects and subsidies, and with advise on relevant authorities and/or project offices to be contacted.

Both the project staff and the beneficiary villages have established good and realistic working relations with the LCCD's. Official documents are always co-signed by the LCCDs and their assistance is called in case of problems.

4.5 Cooperation with HOD and DRHP

The project document emphasises cooperation between the SRWSD on the one hand and the Health Office Dhamar and the Dhamar Rural Health Project on the other hand with respect to health and hygiene education related to water supply and sanitation. Cooperation is considered to be beneficial for all parties. For HOD and DRHP water supply and sanitation improvements are supportive to their primary health care work. For SRWSD the health centres and health units with their training/supervisors, Primary Health Care Workers and Traditional Birth Attendants provide the necessary infrastructure to carry out regular hygiene education.

Up till now, cooperation between the three parties has not been developed according to expectation and presently has to be characterized as a discordant relationship hampered by disagreement and misunderstandings about each others tasks, responsibilities, possibilities and limitations. There is a tendency to make high demands upon each other while emphasizing each others shortcomings, what may be understandable, but clearly is counterproductive and gives too little credit to what has been accomplished notwithstanding the many problems.

Starting up cooperation is never easy, especially not when it concerns a new activity without previous experience and examples that may be used as starting point. Therefore, the mission is of the opinion that there is no reason to be too pessimistic about what has been achieved so far. Working relations at implementation level have been established and are growing; a health education programme has been jointly developed and is carried out partly in cooperation; HOD has appointed one of its staff members as liaison officer for the SRWSD Project.

Another positive result is that the experience gained so far allows for a better assessment of the organizational framework, manpower and finance required for building and expanding future cooperation. Whereas in the past it was a question whether cooperation with HOD would better be channelled through DRHP, time provided the answer in favour of a direct line of cooperation with HOD, and through this office with DRHP. This also seems to be most logical for reasons of manpower development, institution building and sustainability of efforts.

Time is ripe to come up with a clear definition of future cooperation, laid down in an agreement supported by the ministries concerned. Based on this agreement the scope, content and conditions of the cooperation should be further elaborated and set out in a document, covering manpower, time and financial aspects, a division of tasks and responsibilities and the organizational set-up. This document should become part of the project document for phase IV.

5. HEALTH AND HYGIENE EDUCATION

The objectives of the health and hygiene education programme are that:

- water from the new schemes will be used in a health promoting way;
- domestic waste water will not cause any health or environmental problems;
- water from the new schemes does not get contaminated before its consumption.

Although not specifically stated, the health and hygiene education activities also cover the promotion of the safe disposal of human waste.

The hygiene education programme is part of the implementation approach to water supply and sanitation as above in chapter 3. The programme is integrated with community participation, especially women involvement, and to a lesser extent with small scale research, mainly for the purpose of developing community based hygiene education messages and activities.

The hygiene education programme covered 16 schemes, both IWPs and RWPs. A total number of 124 hygiene education sessions were held in 36 groups with an average number of 6 to 15 participants per group. Sessions were held mostly with women, sometimes with men, in case a male primary health care worker was available. In addition, hygiene education was given at five schools in the project area. Apart from school children, a total of 195 women and men have been touched by the programme during one to twelve visits.

The experience gained with hygiene education resulted in a practical set of messages, carefully built up over a series of sessions and using methods and materials adapted to the situation and suitable of being used by primary health care workers. For the future it is suggested to further test the desirability of using microbes as a basic concept in the hygiene education and to pay more attention to an adequate use of water from the new water supply scheme and alternative sources by discussing advantages, needs, constraints, and possible solutions and actions. It is understood that the latter is already done in practice to some extent, but it should come out more clearly, also in the hygiene education guide for primary health care workers.

At present hygiene education with women is more developed than with men and children. Some ten visits per group of women seem to be needed to cover the full hygiene education programme. Ideally, eight visits take place before the completion of the water supply scheme. These visits mainly aim to prepare the women for the change-over to the new water supply scheme and how to make best use of it. Two visits follow after the handing over of the scheme to the community to discuss the functioning and use of the water supply scheme and if necessary any problems, and to reinforce health behaviour in relation to water and sanitation. Health education with men and with children at school still needs to take shape. With a growing involvement of male primary health care workers, trainer/supervisors and HOD staff, it is expected that hygiene education messages and methods can be adapted and made specifically suitable for men and for children at school within the foreseeable future.

For women groups it seems that the group size should not exceed 15 participants, especially not as they usually bring their children along.

This puts limitations to the number of women that can be reached by the hygiene education programme. At present it is tried to have a condensed hygiene education programme of four sessions with additional women groups in the same water supply scheme area. Also an attempt is being made to involve more hygiene educators as to be able to multiply activities. It seems that more experimentation is needed as to decide on the most feasible options, and a budget should be available for this.

An experiment in joint action by SRWSD, HOD and DRHP was carried out as part of the development of the hygiene education programme. The experiment included training of trainer/supervisors and primary health care workers, and the subsequent implementation of the programme by the trained staff in selected villages under the close guidance of a so-called implementation group consisting of representatives of the three parties concerned. Important outcomes of this experiment were that new villages should be selected in close cooperation with the implementation group, that the trainer/supervisors should be more involved in the planning of the hygiene education programme at village level, and that the primary health care workers felt greatly supported in carrying out their tasks.

Training of various staff was part of the ongoing activities. In January 1989 a one week course was organized for the technical project staff including two trainer/supervisors of the HOD with the aim to familiarize them with health education subjects and methods. In September 1989 a two weeks training course for trainer/supervisors and primary health care workers (see above) was organized to provide them with practical training on how to carry out hygiene education at village level. In addition contributions were given to the regular training courses of primary health care workers in Hamam Ali, Dowran and Rada and the training sessions for trainer/supervisors.

Monitoring of hygiene education activities have been done thoroughly during the building up phase by preparing short reports of all visits. A more systematic monitoring system on hygiene education inputs, activities and results still needs to be developed.

For a next project phase the plan is to cover more remote areas. For the implementation of hygiene education this will imply a serious manpower constraint as mobility of female Yemeni staff is restricted and the health infrastructure in these areas is not yet fully developed. This problem requires due attention during the preparation of the project document for phase IV.

6. WOMEN INVOLVEMENT

The project document of phase III does not mention women involvement as a specific objective or point of emphasis and women involvement only figures in the job description of the female social researcher, a position that rightly has been changed in Health, Women and Small Scale Research Coordinator. As indicated by designation in this title women involvement has become an integrated aspect of the project activities.

In the previous chapters women involvement was already touched upon. At the request of the Netherlands Government this chapter will cover a number of specific women involvement issues based on a checklist provided by the RNE.

The approach to women involvement is mainly through hygiene education during construction and after completion of the water supply scheme. In the group sessions the women are informed about any important aspect related to the water supply. The provision of accurate information is seen as an important precondition for women to influence the decision making process. The following examples may serve as illustration. In one village it was discussed with the women that the non-functioning of the recently completed water supply scheme was not due to delayed project actions but rather to internal village problems. With this information the women managed to get the problems settled and the system functioning. In another village the discussions on water use and hygiene made women active to get the opening hours of the distribution system better adapted to their needs.

Also through hygiene education women are involved in sanitation improvements. The private latrine programme which was especially developed to meet the needs of the female population has already been mentioned. Another example is the promotion of the use of grey waste water for home-gardening. During one of our field visits a woman proudly offered the educational staff a beautiful bunch of green herbs and vegetables (courgettes and tomatoes) grown with waste water.

An improved water supply clearly responds to the needs of women. The women explained that with the reduced burden of water collection they feel less tired, and have less headaches and pain in the shoulders. Many women indicated that now they have more time for feeding the cow, looking after the children, food preparation, cleaning the house, weaving of baskets. To a certain extent the new water supply also implies an increase of their tasks as now they claim to spend more time and water on the washing of children's hands and faces, on bathing of children and on washing of clothes. To what extent these answers reflect real changes is difficult to estimate, but the fact that these issues are mentioned at least indicate a certain awareness. More systematic attention to these issues may reveal important information.

Operation and maintenance of the water supply scheme is a responsibility of the men, but may be influenced by the women as the above example showed. Only the cleaning of the household water tanks is a woman's task.

The income situation of the women does not seem to be affected substantially by a new water supply scheme, but the household expenditure

pattern may change. In some cases there may be a decrease in household expenditure, for example when water was previously obtained through trucks or when women started to grow vegetables or to weave baskets for home use. In other cases there may be an increase in household expenditure, for example when water that was freely collected before now has to be paid for.

The project has tried to link the hygiene education and sanitation activities with other development activities. In one village contacts were established with ARA for promoting forestry nurseries and with Risabah for the development of a home garden programme. The latter failed due to problems within Risabah.

Whereas at the start of phase III women involvement was met with some reservations both by a part of the project staff and the project population, it now seems to be generally accepted and appreciated as may be derived from their requests for hygiene education activities. The hygiene education and women involvement activities also contributed to job opportunities for women. Presently the project employs one female Yemeni hygiene educator, but in the near future two more part-time staff will be recruited. In addition, some women in the project villages who actively participated in the hygiene education activities have been selected for training as female primary health care worker.

Experience with women involvement is encouraging. In a new project phase this emphasis on women involvement should be continued and where possible extended and intensified. It is acknowledged that women involvement in the planning phase is difficult as the responsibility for a new water supply scheme is the responsibility of men, but therefore should not be neglected and every effort should be made to always have a female staff member participating in the feasibility study to pay attention to the needs and wishes of women also at that stage. It is suggested that women involvement is taken up as a specific issue in the phase IV project document.

7. YEMENI-DUTCH COOPERATION

7.1 Need for Phase IV

A continuation of Yemeni-Dutch cooperation in the SRWSD project is recommended for the following reasons:

- the positive evaluation of the present phase. The approaches that have been developed have proved successful and should be further refined and consolidated;
- the project objectives concur with the policies of both Governments: whilst meeting the prime policy objective of the Yemeni Government in extending water supply coverage in rural areas, it also meets Dutch Government objectives of sustainability and effectiveness through user participation, cost recovery and capability development at the village level.
- whereas the project has achieved important progress in water supply and sanitation coverage in Northern, Central and Eastern parts of the project area, the South-Western corner of the Dhamar area has hardly benefitted from this or any other development projects;
- the success of the new approach by the project has met with favourable consideration by the relevant authorities. The continuation of the project will enable the demonstration value of the project for water supply and sanitation development in Yemen.

As stated elsewhere, the lay-out of the facilities and the workload of project staff is such that the present work volume, equivalent to an investment of Dfl. 2.5 mln, should be taken as a guideline for future planning. It is proposed therefore that the size of a phase IV would be approximately equivalent to phase III.

7.2 Continuation in Dhamar

The Mission is the opinion that the project should continue to operate in Dhamar. In this way the recently acquired manpower, facilities, experience and relationships can be utilized towards consolidation of project procedures and increased effectiveness in all project activities.

Also, as stated above, some pockets in the Dhamar area have not been served by the project. It is recommended that in the formulation of a phase IV specific areas of project intervention will be detailed.

7.3 Type of Dutch executing agency

The present form of Dutch assistance to the project should, in view of the successes achieved in Phase III, be continued. It is considered that both DGIS and SNV have, each from their inherent areas of expertise, contributed to the project's achievements. It is proposed that DGIS continues to provide the project manager whilst SNV supplies the staff required for health education activities. The limited opportunities for both DGIS and SNV to provide professional backstopping from their own organisations should be compensated by an early identification of the need for such inputs and the entering of backstopping contracts with reputable institutes.

7.4 Expatriate staff requirement

The input of expatriate staff can be limited to one project manager holding overall responsibility for project implementation, and the necessary staff for the implementation of the health education component. The latter requirement depends on the location of the project activities in Phase IV and must be specified in the project document.

7.5 Phase IV preparation

The experience, capacity and motivation of project personnel should be mobilized to draft the project document for a next project phase. This draft should preferably be prepared in the months of July and August 1990. It is advised that for the chapters on the development and utilization of links with the health sector assistance is provided by an independent expert with relevant sector and country experience.

The draft should be submitted to the cooperating Governments for their appraisal. If the document would prove to be unsatisfactory, an external mission could be sent to Yemen by the Netherlands Government to finalize the draft with project personnel and Yemeni authorities.

REFERENCES

Support Rural Water Supply Department, Report of the Yemeni-Dutch Evaluation Mission, August/September 1987 (Volume 3), December 1987.

Support Rural Water Supply Department, Project Document (First Draft); January 1988.

Support Rural Water Supply Department Project, Report of Monitoring Mission, March 1-10, 1989; March 1989.

An Inventory of Water Supply and Sanitation Schemes constructed by the Support Rural Water Supply Department Project; Aart M. van der Horst, April 1990.

SRWSD-Project Phase III, (Quarterly) Progress report; 1988-I to IV, 1989-I to IV, 1990-I.

ANNEXES

- A. Terms of reference evaluation mission SRWSD
- B. Itinerary of the mission
- C. Organizations visited and persons met
- D. Conclusions and recommendations from the inventory of SRWSD water supply and sanitation schemes conducted by A.M. van der Horst

Terms of Reference Evaluation Mission SRWSD

Introduction

The present Yemeni/Dutch "Support Rural Water Supply Department-Project" covers a period of three years (1988-1990). The project started in 1983, was extended in 1985 and is now completing its third phase.

Whereas previous phases of the project emphasized the technical preparation and implementation of water supply projects, the present phase focuses more on increasing involvement of beneficiary villages in project preparation and implementation, and on the development of Yemeni capacity in integrated water supply development in the Dhamar unit of the Rural Water Supply Department of the Ministry of Water and Electricity.

It has been suggested to shift the focus of the project's attention (gradually) from the Dhamar province to a different area. In preparation of the decisions on the possible future Yemeni-Dutch development cooperation in this project, an evaluation of the present state of affairs is required.

Objectives of the Evaluation

1. To record progress achieved in the light of the Project Document, the Report of the Monitoring Mission of March 1989, the findings of the present investigations into the functioning and use of water supply schemes, and other relevant project documents.
2. To assess the significance, effectiveness and efficiency of the project activities.
3. To assess whether there is a need for further Yemeni-Dutch cooperation in the field of rural water supply and sanitation, and if so to advise if activities in Dhamar should be continued.
4. To review the working relations between this project and the Dhamar Rural Health Project, specifically DRHP's input in the field of hygiene education vis-à-vis the present project, and working relations with RWSD-Sana'a, as well as the Health Office Dhamar.

Specific topics

1. To assess the participation of the users, men and women, in the planning, implementation and the use of the project's facilities as well as the operation and maintenance by village care takers/operators.
2. To advise on the type of Dutch executing agency and backstopping (DGIS, and/or SNV or a Consultant).
3. To identify and assess those constraints, which may have hampered the smooth progress of further phases to be identified.
4. To assess the cooperation between the project, LCCD's and other agencies involved in water supply and sanitation.
5. To identify possible economic, social and environmental effects of the project.
6. To assess the training activities of the project and its effect on the management and on the expatriate staff requirement for the project.

The evaluation will be carried out in the period 12-23 May 1990 by:
Maarten W. Blokland engineer, member
Marieke T. Boot sociologist, member
Abdul Hamid Al Radi engineer, member
Nagwa Yahia Zabarah health educationist, part-time observer

Before leaving the Yemen Arab Republic the mission will present a summary of conclusions and recommendations to be discussed with the Yemeni-Dutch project team, the Embassy, the Ministry of Water and Electricity at Sana'a and the CPO.

Itinerary

- SAT 12.05 - Travel to Yemen
- SUN 13.05 - Meeting at the Royal Netherlands Embassy with: Mr. Alex Bartelink, RNE sector specialist rural development, Mrs. Sonja Zimmermann, RNE sector specialist women and development, Mr. Theo Haagsma, Project Manager SRWSD, Mr. Aart van der Horst, Civil Engineer.
- Meeting at the RWSD with Mr. Ibrahim Al Shami, Deputy Director General, Mr. Fawzy A. Al-Khribash, Director Bilateral Projects, Mr. Yahya Sannabanni, Director RWSD unit Dhamar, Mr. Haagsma, Mr. Bartelink.
- Meeting with Mr. Henri Soeteric, Director SNV-Sana'a and Mrs. Heleen Nijland, Deputy Director SNV-Sana'a, Mr. Haagsma, Mr. Bartelink.
- MON 14.05 - Travel to Dhamar
- Meeting at the Dhamar RWSD Office with Mr. Abdul Salaam Zubairy, civil engineer, Mr. Abdul Wali Alshamy, civil engineer, Mr. Abdul Karim Omar, administrator, Mr. Haagsma, Mr. Twan Vriens, civil engineer, Mrs. Erica Zwart, Women Health and Small-scale Research Coordinator.
- Meeting at the Health Office Dhamar with Mr. Ronald van Dijk, departing Project Manager DRHP, Mr. Charles Swagman, arriving Project Manager DRHP, Mrs. Ann Hoskins, Public Health Doctor DRHP, Mrs. Zimmermann.
- Discussion with Mr. van der Horst.
- Discussion with Mrs. Zwart.
- TUE 15.05 - Field trip to Bani Salamah (IWP-18) and Bayt Al Nahmi (IWP-13).
- Discussion with Mrs. Hoskins
- WED 16.05 - Field trip to Al Mashaa'hida (IWP-3)
- THU 17.05 - Meeting with mr. Sannabanni.
- Meeting at the LCCD office of Ans with Mr. Mohamed Algarbi, Head LCCD, Mr. Ali Al Magdashi, General Secretary LCCD, Mr. Sannabanni.

- SAT 19.05 - Meeting Mr. Naji Al Ansi, Deputy Director Primary Health Care Section, and liaison officer HOD for SRWSD.
- Meeting with Mr. Haagsma, Mrs. Zwart, Mr. Vriens, Mr. Abdul Salaam, Mr. Abdul Wali.
 - Meeting at the HOD with Mr. Mohamed Taha, Director Finance and Administration Section and Mr. Abdul Hakim, Director Education Section.
 - Discussion with Mrs. Zwart.
- SUN 20 - Informal discussions with various project staff.
- Preparation of draft conclusions and recommendations.
- MON 21.05 - Meeting with Mr. Abdul Wali, Mr. Abdul Salaam, Mr. Haagsma, Mr. Vriens, Mrs. Zwart, Mr. Bartelink.
- Meeting with Mr. Mohamed Taha, Mr. Swagman and the above participants.
 - Travel to Sana'a.
- TUE 22.05 - Meeting at the RWSD Office with Mr. Ibrahim Al Shami, Mr. Abdulla A. Malik, Director of Drilling and Hydrogeology, Mr. Fawzy, Mr. Mohamed Magdi, Director Technical Department, Mr. Bartelink, Mr. Haagsma, Mr. Abdul Wali.
- Meeting at the Royal Netherlands Embassy with Mr. Jan Wijenberg, Ambassador, Mr. Bartelink, Mr. Haagsma.
- WED 23.05 - Travel to the Netherlands.

Organizations visited and persons met

Ministry of Electricity and Water, Rural Water Supply Department:

- Mr. Ibrahim Al Shami, Deputy Director General
- Mr. Abdulla A. Malik, Director of Drilling and Hydrogeology
- Mr. Mohamed Magdi, Director Technical Department
- Mr. Fawzy A. Al-Khribash, Director Bilateral Projects
- Mr. Yahya Sannabanni, Director RWSD unit Dhamar

Support Rural Water Supply Department Project (SRWSD):

- Mr. Theo Haagsma, Project Manager
- Mr. Twan Vriens, civil engineer
- Mr. Abdul Salaam Zubairy, civil engineer
- Mr. Abdul Wali Alshamy, civil engineer
- Mrs. Erica Zwart, Women, Health and Small-scale Research Coordinator
- Mr. Abdul Karim Omar, administrator

Health Office Dhamar:

- Mr. Mohamed Taha, Director Finance and Administration Section
- Mr. Abdul Hakim, Director Education Section
- Mr. Najj Al Ansi, Deputy Director Primary Health Care Section, and liaison officer HOD for SRWSD

Dhamar Rural Health Project:

- Mr. Ronald van Dijk, departing Project Manager DRHP
- Mr. Charles Swagman, arriving Project Manager DRHP
- Mrs. Ann Hoskins, Public Health Doctor DRHP

LCCD Office Ans:

- Mr. Mohamed Algarbi, Head LCCD
- Mr. Ali Al Magdashi, General Secretary LCCD

Rada Integrated Rural Development Programme:

- Mr. Aart van der Horst, Civil Engineer

SNV, Organisation for Development:

- Mr. Henri Soeteric, Director SNV-Sana'a
- Mrs. Heleen Nijland, Deputy Director SNV-Sana'a

Royal Netherlands Embassy:

- Mr. J. Wijenberg, Ambassador
- Mr. Alex Bartelink, RNE sector specialist rural development,
- Mrs. Sonja Zimmermann, RNE sector specialist women and development

An Inventory of Water Supply and Sanitation Schemes constructed by the Support Rural Water Supply Department Project; Aart M. van der Horst, April 1990.

CONCLUSIONS AND RECOMMENDATIONS

1. Of the 42 visited schemes 21 are working without problems, 11 have some problems while 10 are not operational at all. The schemes which are not functioning are all constructed in phase I and II.
2. Reasons that schemes are not operational are the pump (2 schemes), the water source (2 villages) and the organisation (6 villages).
3. Almost all organizational problems in the schemes are caused by the fact that the people did not participate or contribute. The SRWSD should not implement any water supply or sanitation scheme without contribution. For certain activities the contribution can be low.
4. The civil works of the schemes are in good condition. Only three schemes have problems with reservoirs and pumping mains and the SRWSD should try to solve these problems.
5. The pumps are in general good, except some pumpheads which should be replaced. The problems around the size of the pump and engines in three schemes should be studied and final decisions should be taken.
6. The 24 days training course for pump-operators in Sana'a is a must. Additional training focused on a specific type of engine should be given by the mechanical engineer of the SRWSD.
7. The construction of water schemes with village participation is cheaper and gives schemes which are better maintained.
8. The success of sanitary facilities at public places is variable, but will increase when the SRWSD asks for a small contribution.
9. The programme for construction of private latrines is very successful and should be stimulated as much as possible.
10. Health education is a very labour-intensive job but has good effect on the way the scheme is used and maintained. SRWSD should develop a structure in order to cover more villages.
11. In the schemes that are functioning, almost all people have access to the water and poor people are often not paying.
12. Water meters and bills are major instruments in the organisation of the schemes and the SRWSD should use all means to push the villages to install water meters and to introduce a good paying system.
13. The SRWSD should give more information and training about financial aspects of a water supply scheme like the price of water, the salary of the operator and a good system of bookkeeping.
14. The SRWSD should visit all schemes at least once a year in order to renew the training of the operator and to stimulate the people to maintain the scheme.