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THE RADA INTEGRATED RURAL DEVELOPMENT PROJECT

REPORT BY A JOINT YEMEN - NETHERLANDS EVALUATION MISSION
TO THE PROJECT IN THE PERIOD FROM
2 - 17 JUNE 1989

Sana'a 15 June 1989
Wageningen 1 August 1989

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ABBREVIATIONS

ARA	Agricultural Research Authority
CHDP	Central Highland Development Project
DGIS	Directorate General of International Cooperation of The Netherlands
FAO	Food and Agriculture Organisation
FMO	Netherlands Development Finance Company
GTZ	German Development Aid Programme
IRPD	Integrated Rural Project Department (MoA)
LCCD	Local Councils for Cooperative Development
LWC	Land and Water Conservation
MCH	Mother and Child Health
MoA	Ministry of Agriculture
ONV	Organisation of Netherlands Volunteers
PME	Planning, Monitoring and Evaluation
RDP	Rural Development Project
RIRDP	Rada Integrated Rural Development Project
RLIP	Range and Livestock Improvement Project
RWES	Rural Women Extension Section (RIRDP)
SPPC	Seed Potato Production Centre
TAU	Technical Assistance Unit of RIRDP
T&V	Training and Visit (system)
WB	World Bank
WHO	World Health Organisation
WTC	Women Training Centre
YAR	Yemen Arab Republic

INTRODUCTION

In 1987 a joint mission of the Yemeni Arab Republic and the Kingdom of the Netherlands evaluated the Rada Integrated Rural Development Project. In its general conclusions the mission stated that some of the activities progressed well, but that due to a variety of constraints in several other fields progress did not meet expectations. The mission recommended that the project should be evaluated again after two years.

Thus another evaluation took place in June 1989. In order to ensure a good comparison between the situation in 1989 and that in 1987 it was decided that the same members of the mission in 1987 should take part in the 1989 evaluation. However, on the Dutch side the livestock specialist and the economist did not join the 1989 evaluation.

The mission consisted of:

- | | |
|---------------------------|------------------------------------|
| - Mr L. Razoux Schultz, | mission leader for the Dutch side |
| - Mr Ali Al-Khawlani, | mission leader for the Yemeni side |
| - Mr M.W. Blokland, | civil engineer |
| - Mrs M.T. Boot, | sociologist |
| - Mr Abdulwahab Al-Hamzi, | economist |
| - Mr Mohammed Al-Helali, | animal husbandry expert |
| - Mr H.A.I. Stoetzer, | agronomist |

The Dutch members of the mission arrived in Sana'a on 3rd June and met the Yemeni members on 5th June. On that date a briefing session was held with the Assistant Deputy Minister of Agriculture. The mission visited the project from 6th to 13th June and had meetings with the project management and staff and with the team leader of the Technical Advisory Unit and the team members. Several field visits were made and the mission was received by the Deputy Governor for Al-Bayda district. Three members of the mission visited the Regional Director of ARA and some of his staff at Dhamar. Mr A. Bartelink, sector specialist at the Netherlands Embassy took part in some of the discussions in Rada. The mission leader had a debriefing meeting with the Netherlands Ambassador and the whole mission was received by the Minister of Agriculture and his deputy for debriefing.

The mission is very grateful for all the cooperation and hospitality extended to her by all the project staff, both Yemeni and Dutch and by the Netherlands Embassy, especially mr Bartelink.

Prior to the departure from Sana'a of the Dutch mission members a document 'Summary of major conclusions and recommendations' was prepared and signed by the joint mission leaders. This document is included in the yellow pages of this report.

The Terms of Reference of the mission is presented in Annex I, the Itinerary in Annex II. In Annex III the list of RIRD staff and Advisors is shown. The report is concluded with a list of References in Annex IV.

SUMMARY OF MAJOR CONCLUSIONS AND
RECOMMENDATIONS OF THE YEMENI-NETHERLANDS EVALUATION MISSION
OF THE RADA INTEGRATED RURAL DEVELOPMENT PROJECT

Note: for some detailed recommendations not included in this summary, reference is made to the paragraphs 'Recommendations' in the various chapters of the report.

1. GENERAL STATEMENT

The manager and staff of the RIRD and the teamleader and members of the Technical Advisory Unit have made considerable efforts to redress the shortcomings which were identified by the evaluation mission in 1987.

Most of the recommendations by that mission have been implemented. The present mission is impressed by the achievements and improvements during the past two years and recommends that the Yemeni-Netherlands cooperation will be continued in a next project phase of three years. However, there are still many constraints and weaknesses, particularly shortages in professional and technical staff. Yet, it is of the utmost importance that the standards attained so far are being maintained and further improved and during the next project phase efforts should be directed to that effect.

2. AGRICULTURAL SECTION

2.1. Present situation and achievements

The facilities at the Al Khabar Farm are in general in a good shape, they have been improved considerably since the previous evaluation in 1987 and crops are well cultivated.

The farm is executing the following activities:

- trials, mainly in cooperation with ARA;
- fruit tree nursery;
- fruit tree collection;
- vegetable nursery;
- forestry nursery;
- production of vegetables.

Considering the continuing constraint in manpower, the above duties are carried out rather well.

The coordination of research with ARA improved considerably during the last two years. The trial programme does show more consistency than in the past.

The multiplication of rootstocks and fruit trees is still giving some problems.

The cooperation between the Agricultural Section, the Agricultural Extension Section and the Rural Women Extension Section has been improved through regular meetings of the Coordinating Committee and TAU extension meetings.

2.2. Recommendations

1. The personnel situation of the section has to be further improved. Two technical assistants have to be appointed at Al Khabar Farm soonest, while a horticultural engineer is needed to take the responsibility of the programme on fruits and fruit tree multiplications.
2. The proposed fruit tree and vegetable nurseries in Al Bayda and Juban will need each one Yemeni technician. It is the opinion of the mission that these technicians will not be appointed at the expense of the technicians at the Al Khabar Farm, as this will result in a set back in the efficiency of the operations at that farm.
3. The assignment of the horticulturist in the TAU team is proposed by RIRDP to terminate end of 1989 (see "RIRDP - Eleven years of experience in rural development"). The mission recommends an extension of the contract for the present TAU horticulturist for another year (till the end of 1990). When the present TAU horticulturist does not extend his contract he should be replaced preferably by an expert or by an associate expert with two years experience, specialised in fruit trees and their multiplication.
In the latter case the associate expert can be appointed under the guidance of the TAU irrigation engineer and the assignment should then be for another two years (till the end of 1991). An overlap of at least six weeks with the present TAU horticulturist is recommended.
4. The contacts with ARA have to be further intensified. It is recommended that the ARA trials at the Al Khabar Farm are analysed by the Agricultural Section of RIRDP and that the results are submitted to ARA for endorsement. This makes the Agriculture Section much more involved in the trial work, while more experience is obtained in the statistical analysis of trials. An exception should be made for the national trials of ARA.
5. The technical note on the review of agricultural experiments in the period 1977 - 1988 has to be followed up by a proposal on further research on the priority crops in concert with the Agricultural Extension Section and RWES. This proposal has to be discussed with ARA, in order to reach agreement on the trials needed to be carried out in the Al Khabar Farm and/or farmer's fields. It has to be ensured that the trials are reflecting farmer's oriented problems, and therefore may contribute to solving problems which the farmers face. It is left at the discretion of the project to set the priorities in the trial programme.

6. With respect to the last recommendation it is important to give insight in the traditional farming systems and the reasons why they are applied since immemorial times. This comprises observations on intercropping and crop sequences and could be a basis for farm oriented research. The mission recommends that the section, in concert with the Extension Section and ARA should indicate what information is required. The observations are to be considered when the next priority programme for the Extension Section is to be established.
7. The mission is concerned about the tendency to solve pest and disease problems solely by the application of pesticides, and recommends that agricultural and extension staff should be made familiar with the philosophy and principles of integrated pest management.

3. LIVESTOCK

3.1. Present situation and achievements

A better balance has been achieved between production oriented and veterinary activities. At the same time research has been reduced to the minimum as recommended by the previous evaluation mission. The cooperation with other sections particularly the RWES is reported to have been intensified since 1987.

3.2. Recommendations

The mission recommends that:

1. The programme on distribution of fodder and feed mixtures including bonemeal will be further expanded in close cooperation with the RWES;
2. Monitoring of all activities should be intensified and should include the effect of interventions. This should be part of a monitoring programme in consultation with the PME and other sections involved;
3. A more cost conscious policy be adopted in the sense that farmers should not be charged for drugs only but also for deworming and for servicing by the RIRD bull. Prices should be adapted to the farmers' capabilities to bear the costs and could be kept low for very expensive treatments (for example in case of deworming a charge of 10% could be considered);
4. A list of extension messages be prepared based on research and observation trials in consultation with ARA and the RLIP and the RIRD sections concerned. This should serve the production of extension materials by the Information Unit and should be kept up to date.

4. RURAL WOMEN EXTENSION SECTION (RWES)

4.1. Present situation and achievements

During the past two years the RWES has made much progress in the implementation and development of the five extension programmes covered by the section. Women extension agents have been trained and are fully active in the implementation of the RWES programmes. The general manpower situation is however a point of continuous concern. Cooperation between the RWES and the other sections of the RIRDP requires continuous attention.

4.2. Recommendations

1. To safeguard and improve the quality of its programme the RWES intends to carry out a review on the position of rural women to examine women's current interest in rural development. The mission recommends that this study will be carried out in consultation with the PME Section within a year (before June 1990) to allow for timely adaptations and changes in the programme, if required.
2. Based on experience with women activities in concentration villages, the RWES has changed its strategy and is presently working in four concentration areas. The mission is of the opinion that this new strategy deserves support, but should be evaluated after one or two years to learn whether it is successful and should be continued or whether again a change is needed.
3. The agricultural extension programme still did not succeed in setting up a programme for labour-saving activities in agricultural production. It is appreciated that the required knowledge and expertise for such a programme is not available within the RWES. Moreover, the opinions of the RWES and the Extension Section about the programme seem to be at variance. Therefore, the mission recommends that the management takes appropriate steps for the immediate development and implementation of this programme.
4. The agricultural extension programme aims at gradually shifting its emphasis from home gardening towards small-scale commercial farming.

The mission endorses this change of emphasis provided that:

- women who are interested in assistance from the project for home gardening are not excluded;
- for women who do not have land and/or water other types of activities are being considered.

5. The future livestock extension programme will put more emphasis on animal husbandry practices of local dairy cows, sheep and local goats. For the development of this programme a female animal husbandry extensionist is necessary. The mission strongly recommends that this person is appointed without any further delay.
6. For the further development of the crafts programme it is recommended that:
 - The post of a crafts extensionist will be continued and should the post become vacant it will be filled as soon as possible for a flexible period of time;
 - The report on marketing of products produced by rural women (May, 1989) is submitted to an independent expert organization (FMO in The Netherlands) to get their opinion about the proposal and to investigate their interest for support;
 - Awaiting this external advice the present situation with regard to carpet production and sale is continued;
 - In case the external advice does not produce new insights, the recommendations of the marketing report are followed.
7. The mission endorses the new set-up of the health education programme which supports the other RWES activities and the water supply and sanitation activities of the Engineering Section. It is the opinion of the mission that this change towards supportive health education also provides a sound basis for a clear cooperation with the primary health care programme of the MCH-clinic, Rada. The regular exchange of information and experience between health related projects, as is presently the case, is an important tool for programme development and should be continued.
8. The literacy cum home-economics programme is an important activity for rural women development and should be continued by the project as long as necessary until it can be transferred to an appropriate educational organization which is entitled and capable to continue and extend this programme.
9. The desirability of a functional literacy specialist in the RWES did not become evident during the past project period. It is therefore advised not to appoint such a specialist, at least not in the foreseeable future.
10. At present the General Manager acts as head of section of the RWES. It is understood that the appointment of a female head of section is expected within a short period of time. The new head of section will need the active support of project management and RWES staff to develop her skills to guide and manage the RWES.
11. None of the four expatriate extensionists of the RWES have a Yemeni counterpart. This is a matter of serious concern. As the lack of educated Yemeni women is not easy to resolve it is recommended that the project management, the rural women de-

partment of the Ministry of Agriculture and the adviser on women and development at the Netherlands Embassy sit together to identify ways and means to improve the counterpart situation.

12. The training and supervision system of the first group of extension agents has been very successful. Whereas they originally functioned as general extension agents they now receive in-service training to become a specialized extension agent on a specific subject. Whereas this is a positive development, a part of their tasks should continue to focus on general extension in order to increase the impact of extension activities and to safeguard integration and follow-up activities.
13. The introductory course for new extension agents should start as intended in September/October this year to safeguard the staffing requirements for extension agents. It is recommended to try to interest some older women to participate in the course in order to become extension agents. As the recruitment of interested women and the invitation of outside trainers to the course will be time consuming this should start as soon as possible with the active inputs and support from the project management.
14. The present status of the RWES still requires a flexible budget for training and backstopping to support the development of the various programmes of the section and of the section as a whole.
15. The mission recommends that the project submits a detailed proposal for the construction and management of a guesthouse for trainees, trainers and short-term visitors of the RIRDP, MCH and WTC. The guesthouse may include a training facility provided the total costs of the guesthouse cum training facility do not exceed the allocated budget. The detailed proposal should be prepared in close cooperation with the RWES. After approval of the proposal construction should be undertaken as soon as possible.

5. AGRICULTURAL EXTENSION SECTION

5.1. Present situation and achievements

Ten extension centres are operational with 15 extension agents from the area, who have been regularly trained by the section and other institutions. The three visited extension centres have been improved considerably since the previous evaluation of 1987. In most centres data are kept on the number of contact farmers, farmers in contact with the contact farmers, farmers who were visited by the extension agent and farmers who visited the extension centre. Extension leaflets are available for the farmers on various subjects.

Demonstration plots on fruit trees, vegetables and cereals are laid out in the farmer's fields of the different districts. The T&V system of extension has been adopted by the project. It became effective (again) only with the arrival of the new batch of extension agents in 1987.

The section is in a situation to become an effective tool in transmitting extension messages to farmers. The overall impression of the section by the mission is much more favourable than during the 1987 evaluation.

The cooperation between the Agricultural Extension Section, the Rural Women Extension Section and the Agricultural Section has been improved considerably through regular meetings of the CIE and TAU extension meetings.

5.2. Recommendations

1. It is strongly recommended to appoint and train a second batch of extension agents for consolidation purposes.
2. Consideration should be given to a system of incentives for extension agents in order to prevent them from leaving the section and endangering the achievements so far.
3. The appointment of a technician on forestry in the section is recommended. The technician may need a long term training abroad on the subject.
4. The proposal to provide the extension agents with motorbikes is endorsed by the mission.
5. The relations with ARA have been improved considerably. It is recommended that the number of verification trials in farmer's fields will be increased over the next three years. This needs to be done in concert with ARA. The number of verification trials have to cover three crops in 1990, with at least three trials per crop. An increase to five crops with at least three trials per crop in 1992 is considered to be a realistic aim.
6. In addition to the monitoring of the survival rates of the fruit trees sold to farmers by the project, it is recommended to start monitoring the yields of these fruit trees as soon as they come into bearing. The monitoring should be done in collaboration with the PME Section.
7. The number of broken down hand operated knapsack sprayers, motorized knapsack sprayers and high pressure motor sprayers is alarmingly high (ranging from 50% and 75%). As the spareparts are not locally available, it is advised that the mechanic prepares a list of all the spareparts needed for repairs, and that these parts are ordered from abroad.

8. An appropriate replacement is recommended for equipment that cannot be repaired or that is not suitable for the section, this at the discretion of the project. Equipment that is beyond repair should be disposed of, this after consultation with the MoA.
9. The mission is concerned about the tendency to solve pest and disease problems solely by the application of pesticides, and recommends that agricultural and extension staff should be made familiar with the philosophy and principles of integrated pest management.
10. The mission recommends a follow up of the evaluation mission by an expert on agricultural extension, who will evaluate in detail the Agricultural Extension Section for a period of 10 days to two weeks by field visits and present additional recommendations.

6. ENGINEERING

6.1. Present situation and achievements

6.1.1. Water supply

The implementation of water supply schemes is progressing well, although the mission notices that difficulties are experienced in completion of the schemes. The coverage of rural population by the end of 1989 through RIRD assistance may be estimated at 45% in Rada Districts and 4% in Al Bayda District.

The per capita cost of complete schemes is around YR 700, and the required 40% village contribution is not considered a problem for the majority of villages. In spite of this, the collection of the village contribution appears problematic.

The newly employed maintenance adviser provides valuable assistance to the villages in operation and maintenance of water supply schemes, and in the training of operators.

6.1.2. Sanitation

The recommended consolidation of the mosque sanitation programme will presumably be achieved only in 1989, while the village contribution has not been raised to the recommended 40%.

An environmental sanitation and health education programme was designed, including targets for sanitary blocks, village garbage disposal schemes and shallow well improvements. These targets were not achieved. The mission considers this a matter of over-ambitious planning rather than a failure. In fact, the mission is very impressed with achievements so far, and noticed that public attention has been drawn and that requests for similar projects elsewhere are coming up.

6.1.3. *Geohydrology*

The geohydrological sub-section continued its work in the collection and analysis of geohydrological data, the preparation of steady and non-steady state models for water management, and the provision of services of water supply development and land and water conservation activities. The unit has not been working up to capacity, however significant improvement is showing in the current year.

6.1.4. *Monitoring and evaluation*

Regular monitoring of all project activities in water supply and sanitation has not yet materialized.

In accordance with the recommendations of the 1987 mission, a socio-economic survey of water supply schemes was carried out. The survey yielded important recommendations with respect to future selection procedures and criteria for new water supply schemes and for the functioning of completed schemes.

6.1.5. *Withdrawal of advisory staff*

After 12 years of activities in water supply, and 4 years in sanitation the poor availability of suitably qualified Yemeni staff still inhibits the transfer of knowledge and with that the intended gradual withdrawal of advisory staff from the engineering section.

6.1.6. *Organization of the section*

The mission observes that in the course of time various sub-sections have been formed within the engineering section. The mission is not convinced that the present set-up is efficient, and proposes the management to analyse the organization of the section, and consider a reorganization.

6.2. *Recommendation*

The mission recommends the following:

1. To study the organization of tasks and the responsibilities of the section, and consider its reorganization;
2. To determine long-term manpower requirements, to adjust staff requirements accordingly, and to draft and implement a training programme at shortest possible notice;
3. Related to the above recommendation, to draft a plan for the phased withdrawal of TAU-staff;
4. To define the delimitations of responsibilities of the project with regard to water supply and sanitation schemes;

5. To implement the recommendations of the socio-economic study of water supplies on the selection procedures and criteria for new water supply;
6. To promote an integrated approach to water supply, sanitation and health education at the village level;
7. To continue the provision of piped water supply at present levels, with emphasis on extension of coverage in the Al Bayda District;
8. To implement the proposed sanitation programme, with major emphasis on health education, school sanitation, garbage disposal, low-cost waste water removal and shallow well improvement. The implementation of this programme should be initially confined to Rada District;
9. To design procedures for and implement the systematic and regular monitoring activities for all activities of the section;
10. To limit the programme for mosque facilities to the level recommended earlier (8 per year), striving to increase village contribution to 100% aiming at this activity to be reduced to technical assistance only;
11. To strictly implement the established village contribution policy for the various activities.

7. ROADS/LAND AND WATER CONSERVATION

7.1. Present situation and achievements

7.1.1. Roads

The sub-section has started a road construction programme involving 83 km of feeder roads, 53 km of which is in Al Bayda District. Available funds do not allow the completion of these roads before the end of 1989, in fact, at the present investment rate of Yr 3 mln per annum, the completion of these roads will require an additional 2 years. Requests for village roads have been few, and it is foreseen that only 15 out of the targeted 55 km will be constructed.

Regular maintenance and reconstruction of 155 km of existing roads appears to be carried out satisfactorily although regular maintenance is below the requirement.

The experiment to transfer regular maintenance to a LCCD did not materialize. The mission understands that this matter is under consideration at the highest level.

With its present resources the workload of the subsection is slightly above capacity. This problem may be addressed by reducing down-time of equipment, (partial) disposal of maintenance tasks, or increased contractor involvement in the construction of new roads.

7.1.2. Land and water conservation

More than 100 requests for schemes were received through LCCD's. The procedure for project preparation is well conceived, however for various reasons was not strictly implemented. Now that nearly all constraints have been removed, it may be expected that the project management will be provided with draft project proposals including the results of technical, agricultural and socio-economic studies.

So far, the activities of the sub-section have resulted in 3 minor and 3 major schemes that have been well designed and constructed. Cost of schemes above original estimates were caused by a lack of information on unit prices, and by variation of quantities. Beneficiary contributions were not received to the required level. Due to the high workload of the sub-section in design and construction, only about 50% of all requests were investigated, and presently only a small number of feasible projects have been identified for implementation. This situation is due mainly to the absence of a counterpart to the TAU adviser.

7.1.3. Selection of land and water conservation projects

Earlier studies by the project have indicated that major works should preferably be land conservation dams with an average cost of YR 750.000. It appears that this type of dams provides the best opportunities for realizing high social and economic benefit/cost ratio's.

The target of the project is to realize 1 major project in every LCCD, requiring an estimated additional investment of Yr 10.5 mln. With the available funds of Yr 3.5 mln per annum, this target can be achieved in the period 1990 - 1992.

Concerning the matter of projects with much higher investment cost, these should be considered only where projected social- and economic benefit-cost ratio's compare very favourable with less costly alternatives. It should be also taken into consideration that the implementation of large projects will inhibit the target to realize one scheme in each LCCD.

7.2. Recommendations

The mission recommends the following:

On roads:

1. To utilize the 1990 - 1992 budget for road construction first for the completion of 83 km of feeder roads (of which two-third is in the Al Bayda district) carried over from the 1988/89 period;
2. To study the maintenance requirement of feeder roads, and identify resource requirements in terms of manpower, equipment and budget;
3. To find final solutions for the issue of road maintenance. In the meantime the project should fulfil all road maintenance requirements;
4. To formulate proposals for the construction of additional feeder roads, taking into consideration the capacity and responsibilities of the section, and the overall availability of funds for the sub-section;
5. Where savings are available in other sections, and there is proof of capacity in the roads section to undertake the construction of additional new roads, to forward an application through the proper channels to utilize these savings for road construction. The roads are to be constructed in Al Bayda district.

On land and water conservation:

1. To continue the land and water conservation activities at the proposed rate of investments of Yr 3.5 mln per annum with due consideration for both minor and major schemes;
2. To give first priority to the preparation of draft project documents to such an extent that a choice of feasible projects is available for final selection by the management;
3. To select for implementation in 1990 and beyond those projects that best fulfil the selection criteria. Preferably, major projects should have an estimated cost not exceeding Yr 1.000.000,- in order to facilitate the target to implement one major scheme in each of 14 remaining LCCD's;
4. To submit to the Ministry of Agriculture those proposals for major schemes that have been rejected by the project for reasons of high cost and relatively low benefit/cost ratio's;

5. To provide forthwith at least one counterpart engineer to the TAU adviser. If such is done, it may be possible to both, prepare the required draft project documents and to expend the remaining funds in the present budget;
6. To strictly apply the policy for contributions by beneficiaries.

8. MAINTENANCE

8.1. Present situation and achievements

The workshop maintains a fleet of approx. 70 vehicles, and more than 20 pieces of heavy equipment, the latter used mainly in road maintenance and construction. The workshop has excellent facilities and maintains a good stock of spares. If the efficiency of the workshop is low, this is due mainly to the shortage of qualified staff, and the difficulties in procuring less current spares.

8.2. Recommendations

The mission recommends:

1. To set up a system that allows the management to review the efficiency of maintenance of vehicles and heavy equipment.
2. To propose ways and means to improve the efficiency of the workshop, with special consideration for the filling up of the vacancies for heavy equipment mechanics, and the procurement of spares now causing long delays.

9. PLANNING, MONITORING AND EVALUATION

9.1. Present situation and achievements

It is the mission's impression that the re-organization of the former socio-economic section into a PME section will serve a clearer definition of the section's mandate. Although the new section comprises a small staff and more experience has to be gained, several activities are going on or are under preparation within the framework of the Plan of Operations. Yet a careful analysis of priorities is required in view of the available manpower and the requests for support by the various other sections.

9.2. Recommendations

1. The following surveys have been or will be carried out as part of a short term priority programme:
 - village water scheme surveys (completed)
 - road impact study (in preparation)
 - commodity oriented marketing study (planned for harvest time 1989)

The mission endorses this programme.

2. Manpower planning should be a task of the PME section in consultation with the various sections.

10. FINANCE AND ADMINISTRATION

10.1. Present situation

Several measures were taken or are in the making to improve the organization and facilities of the section, including computerization.

The mission is of the opinion that these measures are sound and has no reasons for formulating specific recommendations, except some concerning training.

10.2. Recommendations

The mission recommends that:

1. The Management in consultation with the Technical Advisory Unit will prepare a longterm training programme fitting in the Plan of Operations 1990 - 1992 and beyond;
2. A member of the TAU team will be made responsible for the training as intended by the Management;
3. The training programme will be based on the assessment of the training requirements of the existing and future manpower, carried out by the Planning, Monitoring and Evaluation Section in concert with the various sections;
4. This programme should comprise proposals for scholarships for training abroad, for training within the country and in-service training in the project;
5. After selection of staff members who are in need of and competent for training, those who are not yet registered with the Ministry of Agriculture will be proposed for registration;
6. Efforts should be renewed to arrange for English language training, if need be abroad, and incentives will be considered to encourage the staff in participating in such training;
7. The mission hopes that the Ministry of Agriculture will investigate whether procedures for obtaining permission to travel abroad for training could be accelerated and, if need be, could be revised to the effect.

Although there are still many constraints hampering progress, the achievements, as compared with the situation in 1987 have been satisfactory. Integration of activities between sections and within sections is more extensive than in the past.

11. INFORMATION UNIT

This unit was recently established. The mission had a favourable impression of the presentation of the section on its intended programme and would refrain from making recommendations in this early stage. But if the unit is to serve all the sections, its present staffing and facilities require strengthening.

12. GENERAL MANAGEMENT

The recommendation of the evaluation mission 1987 that a deputy general manager should be appointed, was not yet implemented. It is strongly recommended that a suitable candidate is identified and appointed.

13. OVERALL REVIEW OF THE PROJECT

13.1. Analysis and evaluation

An overall analysis of the project as a whole leads to the conclusion that continuation of the project in a next phase is fully justified.

13.2. Institutional aspects

The mission is of the opinion that no further consideration should be given by the Netherlands side to the question whether or not a Central Highlands Development Authority should be created for Dhamar-Al Bayda as long as no decision has been taken on the subject. The mission recommends continuation of the Netherlands assistance to the RIRDP for the next phase, in such way that the project could cover the whole of Al Bayda Province. In case the Yemeni government decides the creation of a Central Development Authority, the Netherlands Government will respond positively in principle to cooperate and contribute (irrespective of the donor organization involved), so as to ensure efficient implementation of the Yemeni-Netherlands project provided that the Yemeni side should inform the Netherlands side accordingly in order to discuss this subject and coordination.

13.3. Institutional aspects

13.3.1. The mission recommends that extension to Al Bayda district should be one of the main aims of the project, to be reflected in the Plan of Operations for the years 1990 - 1992. A start will be made with priority activities, i.e. agriculture and extension; building of a sub-station; establishment of a nursery; land and water conservation schemes, and roads. Funds for building this sub-station will be provided by both sides on a 50/50 basis.

The evaluation mission is of the opinion that if expansion of activities on a large scale in the Al Bayda district should be carried out, the funds for the project should be increased on both sides. The Yemeni members strongly insist on such increase. However the Dutch members had to inform them that according to their information no such increase is to be expected from the Netherlands Government. The Dutch members of the mission are concerned that the expansion to Al Bayda district could be at the expense of the activities in Rada. In view of the above situation the Dutch members of the evaluation mission request the Netherlands Ambassador to take up the matter with the Ministry of Agriculture.

13.3.2. As the facilities of the sub-station at Al Bayda will be funded from RIRDP funds and the professional guidance of the sub-station will be provided by the RIRDP the evaluation mission is of the opinion that the general manager should be the responsible authority for the management of this sub-station.

In its meeting with the Deputy Governor of Al Bayda the mission has stressed that it is a prerequisite for such an expanded programme that shortages in staff should be eliminated.

13.4. The future of the project:

The mission recommends that:

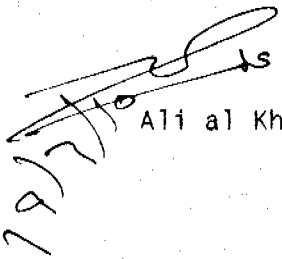
1. The management of the RIRDP in consultation with the Technical Advisory Unit prepares a draft Plan of Operations covering the period 1990 through 1992. In addition a tentative proposal should be prepared for follow-up activities beyond 1992 so as to allow the Netherlands Government to consider further technical assistance, if need be;
2. In the Plan of Operations 1990 - 1992 all the recommendations of the evaluation mission will be reflected;
3. In the tentative proposal for activities beyond 1992 the emphasis should be on short term consultancies and only a bare minimum of resident experts, if still required, should be included;
4. The next evaluation should take place early in 1992. The outcome of that evaluation will determine whether or not the tentative proposal in its original or adapted form should be translated into a Plan of Operations for a follow-up project phase.

Final remark

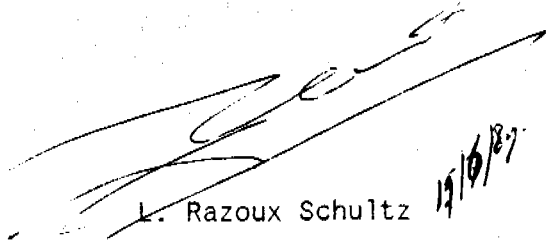
The time available for this joint evaluation mission was two weeks. In view of the size and complexity of the project, and the related requirement for frequent joint discussions through translators, it is recommended that the proposed 1992 evaluation mission will be given three weeks for an optimal discharge of its task.

Sana'a, June 1989

On behalf of the mission:

19/6/89


Ali al Khawlani


19/6/89

L. Razoux Schultz

Joint Mission Leaders

1. GENERAL

In response to the recommendations of the evaluation mission 1987 the RIRD P produced two important documents:

- 'RIRD P - Eleven years of experience in rural development' (December 1988).
- 'Review of the agricultural experiments (1977-1988) at the Rada Integrated Rural Development Project. Past and future strategy' (March 1989).

Moreover a third paper was presented to the mission:

- 'Position paper. Monitoring report 1989' (June 1989).

These documents were of great value and have very much facilitated the work of the mission. Most of the recommendations of the evaluation 1987 were implemented, as is shown in the above 'Position paper' .

After careful analysis of the documents, discussions with the project management and staff and field visits, the mission concluded that it is fully justified to continue the project in a next phase of three years. The mission's overall impression is summarised in the following 'general statement':

The manager and staff of the RIRD P and the team leader and members of the Technical Advisory Unit have made considerable efforts to reduce the shortcomings which were identified by the evaluation mission in 1987. Most of the recommendations by that mission have been implemented. The present mission is impressed by the achievements and improvements during the past two years and recommends that the Yemeni-Netherlands cooperation will be continued in a next project phase of three years. However, there are still many constraints and weaknesses, particularly shortages in professional and technical staff. Yet, it is of the utmost importance that the standards attained so far are being maintained and further improved and during the next project phase efforts should be directed to that effect.

2. AGRICULTURAL SECTION

2.1. Recommendations of 1987

Most of the 1987 mission's recommendations have been implemented. The following comments are confined to some recommendations which were not yet, or were only partly implemented.

- All the past experiments were reviewed as recommended and a final report was submitted in March 1989 ('Review of Agricultural Experiments 1977 - 1988 at the RIRD. Past and Future Strategy'). However, conclusions and recommendations presented are not always based on the results of the trials in Rada. The same applies for the extension messages to the farmers; many of the recommendations to farmers are premature. The future action to be taken is indicated in the above report. As the report was completed only rather recently, it is too early for implementation of the recommended trials at this stage.
- The recommended programme on watersaving techniques was not yet implemented. However with the arrival of the TAU irrigation specialist (in the Agricultural Extension Section) a working programme has been designed, but awaits implementation due to delays in the delivery of equipment. The delays are caused by delay in ordering of the equipment by the contractor and lengthy customs clearing for the importation of the items.
- The recommended fruit tree experiments on priority fruits were not executed as the available material is not yet sufficient. An exception are the trellising trials on grapes.
- The general manager and, in the hierarchical line, the farm manager have the mandate to decide on the magnitude of the farm activities without interference from outside. However, the MoA fixes for the Al Khabar Farm high targets for fruit tree production and distribution. Mostly the targets are not met due to technical problems in the multiplication of the material.
- The recommended improvement of the personnel situation in the section was not fully achieved. The Head of Section left for the Sudan to get a M.Sc. in forestry (on a FAO fellowship). It is not very likely that he will return to the section, so the position of horticultural engineer is vacant. Two vacancies exist for technical assistants. Some old labourers were replaced by young ones, while the total number increased. Temporary labourers are hired whenever required.

2.2. Present situation & achievements

According to the Plan of Operations for 1988 - 1989 the section has to execute the following activities:

- crop trials, mainly in cooperation with ARA;
- irrigation trials;
- fruit tree nursery;
- fruit tree collection;
- vegetable nursery;
- forestry nursery.

The production of vegetables and rainfed sorghum, maize, alfalfa and barley at the Al Khabar Farm is not indicated in the Plan of Operations. The products are sold to the employees at a competitive price.

Considering the continuing constraint in manpower, the above duties are carried out rather well. The facilities at the Al Khabar Farm are in general in a good shape, they have been improved considerably since the previous evaluation in 1987.

The above activities are shortly described below.

2.2.1. Trials

The project has decided on a number of priority crops for the trial programme. The vegetable priority crops are onions, tomatoes, potatoes, sweet melons and water melons. Further priority is given to cereals (wheat, sorghum and maize) and pulses (broad beans, common beans and lentils). The trials on the vegetables are irrigated. The trials on the cereals and pulses are not purely rainfed, but with additional irrigation in different ways. Trials on fruit tree crops are not (yet) executed. In grapes a trellising trial is carried out.

The coordination on research with ARA improved considerably during the last two years. The trial programme does show more consistency than in the past.

The 'Review of the Agricultural Experiments (1977 - 1988) at the RIRD, Past and Future Strategy' (Technical Note 27), as recommended by the 1987 evaluation mission, was published in March 1989. The review is a valuable contribution for future action of the Agriculture Section and the Agricultural Extension Section. It is a commendable piece of work.

The above review gives a trial overview per crop, discussion and recommendations, including proposed future action, and finally extension message to farmers.

In general, this review can be considered as very useful for designing future applied research. This research has to be designed on the established priority crops of the project, in collaboration with ARA, the Agricultural Extension Section and the RWES. The resulting programme has to be farmer-oriented.

A matter of concern is the high failure rate of the trials. Only 60 % (= 12) of the trials succeeded. During all the phases of the trials, from sowing/planting to harvest, the utmost care has to be taken.

A programme for irrigation and watersaving techniques has been proposed. It includes a number of trials on the Al Khabar Farm and in farmers' fields. The programme will be executed by the irrigation engineer and the TAU irrigation specialist. The trials have been discussed with ARA and received their approval. The TAU specialist will take the lead in this respect as ARA does not have the appropriate equipment.

Unfortunately the programme for irrigation and watersaving techniques has been delayed as troublesome clearing procedures at customs delayed the arrival of the equipment at the project site.

2.2.2. Fruit tree nursery

The propagation of rootstocks and fruit trees is still giving some problems. High failure rates with the various techniques (by seeds, cuttings and grafting) are observed. Mortality rates over 90 % are no exception. After occurrence of the mortality, the causes of the failures can often be indicated by the TAU advisor. Special attention should be given to the propagation media and the soil disinfection. Reference is made to the technical recommendations of the Senior Horticulturist in his mission report 'Review of the horticultural subsection programme', March 1988.

Due to these high failure rates the mostly unrealistic targets set by the MoA for various fruit trees are hardly met by the nursery of the Al Khabar Farm. The target of the MoA for pomegranates was also too high (6000), but in this case due to lack of interest from the farmers. Too many trees (5100) remained unsold (per April 1989). Details on the targets of the MoA and the distribution of the fruit trees during spring 1989 are given respectively in table 1. and 2. of the Annex to this chapter. Table 3. of the same Annex indicates the number of apple and peach trees which were purchased by RIRD from the MoA for distribution to farmers.

The priority fruit trees are apricot, peach, nectarine, plum. Apple is popular with farmers, but has the disadvantage of requiring much water.

The distribution per species over Rada and Al Bayda district is given in table 4. of the Annex to this chapter. This table indicates as well the number of farmers involved in the distribution of fruit trees. It is obvious that the farmers in the nearby subdistrict ('Al Arsh) received most of the fruit trees.

2.2.3. Fruit tree collection

The fruit tree collection has been reduced since 1987 to realistic proportions, concentrating on temperate fruits with low chilling requirements, grapes, pomegranates and figs. The appearance of the collection is rather good.

2.2.4. Vegetable nursery

The vegetable nursery provides seedling of various vegetables for the Agricultural Extension Service and the RWES. No major problems have been observed or reported.

2.2.5. Forestry nursery

The forestry nursery produces some 20,000 seedlings of various tree species per year. Some 13 species are under production. Most of the trees were provided free of charge in connection with the National Tree Planting Campaign, while the remaining is either sold or provided free of charge through the RWES and the Agricultural extension section. *Cupressus sempervirens*, *Parkinsonia* and *Casaurina equisetifolia* are the most popular trees (compare table 5 and 6 of the Annex to this chapter. Note that *Atriplex* has mostly been planted on the Al Khabar Farm).

The distribution of the forest tree species over the two districts Rada and Al Bayda is given in table 6 of the Annex to this chapter. The Agricultural Extension Section does not have an extension agent or subject matter specialist for forestry.

An earlier proposal by the mission on 'Environmental Aspects of YAR - Netherlands Development Cooperation' (by Pelinck & Verfaillie, November 1987) for strengthening the forestry component by the appointment of an associate expert, has not been approved. It would mean an extra TAU member, while no national plan on forestry or agro-forestry does exist.

2.2.6. Personnel

The section has presently three vacancies for the Al Khabar Farm:

- one horticultural engineer;
- two technicians (=technical assistants).

The permanent supporting staff did undergo some rejuvenation, being presently at a total number of 22, with an average age of approximately 54.

Each of the proposed nurseries in Al Bayda and Juban needs one technician and supervision from Rada.

The cooperation between the Agricultural Section, the Agricultural Extension Section and the Rural Women Extension Section has been improved considerably through regular meetings of the CIE and TAU extension meetings. Further improvement in the cooperation should be aimed at.

2.3. Specific considerations

2.3.1. ARA collaboration

The handing-over by ARA to RIRDP of the full results of the Rada-located trials is still a matter of concern, as it is not (yet) done by ARA. The communication by ARA to RIRDP of recommendations on trial results from the past takes too long, approximately two years. Further the validity of the ARA recommendation messages for the farmers in the RIRDP area can be questioned, as hardly any on farmers' field trial is executed.

As the trials to be executed in Rada' can be divided in two groups, the trials of national importance and the ones of a regional importance, the collaboration with ARA should be worked out at these two levels.

The National Trials will have a common lay-out for all trial locations in YAR. In this case ARA should do all the statistical analysis and finally the formulation of recommendations. The desirable procedure should be that ARA communicates, at least after each season, the results of the trials in the Al Khabar Farm to the Agricultural Section of RIRDP. ARA should draw its final conclusions on trial results relevant for the Rada' area in concert with RIRDP. A follow-up in the form of an on-farm verification trial programme has to be designed by the concerned parties.

The Regional Trials for Rada should be designed in collaboration with ARA, and preferably approved by them, the results should be statistically analysed by the Agricultural Section of RIRDP, while these results are handed over to ARA for verification. A proper follow-up as described for the National Trials is required.

2.3.2. Review of Agricultural Experiments

In the 'Review of the Agricultural Experiments (1977-1988) at the RIRDP, Past and Future Strategy' the chapter 'Extension message to farmers' per crop has to be dealt with the utmost care. Sometimes

these recommendations are based on the results of one trial, using recommendations from other ecological zones in the country, in order to arrive at a recommendation. Again, it has to be commented that the recommendations are not based on final testing in on-farm trials. In a number of instances however, there is sufficient information available for rather complete extension messages to farmers, although the most crucial trials, the on-farm trials, have (mostly) not been carried out. In such cases the recommendations could be used for the planning and execution of such on-farm trials.

2.3.3. Water techniques

The question whether the use of water efficient techniques in agriculture will have a positive or negative effect on the mining of groundwater cannot be answered straight away. The following points should be known to clarify the above question:

- Do the farmers have more land available for irrigation and do they want to irrigate a bigger area ?
- Do the farmers want to sell a surplus of water to their neighbours, and are the neighbours willing to buy the water ?

These questions should also be answered in the planned survey on borehole use.

2.3.4. Pest control

The trial programme shows a strong tendency towards the chemical control of pests and diseases. Other methods of pest control do exist, although under Yemeni conditions they are not yet applicable to farmers. However, as a first step, it is important that the agricultural and extension staff become acquainted with the aspects of integrated pest control.

2.3.5. Personnel

The contract of the present TAU horticulturist will be terminated at the end of 1989. The activities in the Al Khabar Farm, especially the fruit tree programme, need further technical support in order not to endanger the present achievements. An Yemeni horticultural engineer is not yet available, therefore the contract of the TAU horticulturist needs an extension.

2.4. Recommendations

1. *The personnel situation of the section has to be further improved. Two technical assistants have to be appointed at Al Khabar Farm soonest, while a horticultural engineer is needed to take the responsibility of the programme on fruits and fruit tree multiplications.*

2. The proposed fruit tree and vegetable nurseries in Al Bayda and Juban will need each one Yemeni technician. It is the opinion of the mission that these technicians will not be appointed at the expense of the technicians at the Al Khabar Farm, as this will result in a set back in the efficiency of the operations at that farm.
3. The assignment of the horticulturist in the TAU team is proposed by RIRDP to terminate end of 1989 (see 'RIRDP - Eleven years of experience in rural development'). The mission recommends an extension of the contract for the present TAU horticulturist for another year (till the end of 1990). When the present TAU horticulturist does not extend his contract he should be replaced preferably by an expert or by an associate expert with two years experience, specialised in fruit trees and their multiplication.
In the latter case the associate expert can be appointed under the guidance of the TAU irrigation engineer and the assignment should then be for another two years (till the end of 1991). An overlap of at least six weeks with the present TAU horticulturist is recommended.
4. The contacts with ARA have to be further intensified. It is recommended that the ARA trials at the Al Khabar Farm are analysed by the Agricultural Section of RIRDP and that the results are submitted to ARA for endorsement. This makes the Agriculture Section much more involved in the trial work, while more experience is obtained in the statistical analysis of trials. An exception should be made for the national trials of ARA.
5. The technical note on the review of agricultural experiments in the period 1977 - 1988 has to be followed up by a proposal on further research on the priority crops in concert with the Agricultural Extension Section and RWES. This proposal has to be discussed with ARA, in order to reach agreement on the trials needed to be carried out in the Al Khabar Farm and/or farmer's fields. It has to be ensured that the trials are reflecting farmer's oriented problems, and therefore may contribute to solving problems which the farmers face. It is left at the discretion of the project to set the priorities in the trial programme.
6. With respect to the last recommendation it is important to give insight in the traditional farming systems and the reasons why they are applied since immemorial times. This comprises observations on intercropping and crop sequences and could be a basis for farm oriented research. The mission recommends that the section, in concert with the Extension Section and ARA should indicate what information is required. The observations are to be considered when the next priority programme for the Extension Section is to be established.

7. *The mission is concerned about the tendency to solve pest and disease problems solely by the application of pesticides, and recommends that agricultural and extension staff should be made familiar with the philosophy and principles of integrated pest management.*
- *8. The project, in consultation with the Senior Horticulturist Advisor and the proposed Training Specialist of the project, has to design a training programme for the period 1990 - 1992. The proposal of the internal memorandum dated 16.04.89 can be considered as a good starting point.
9. The anticipated results of the increase of TAU tasks in training as reflected in table 1. of the report 'Training and institutional development', April 1988, is considered unrealistic (the production/training target goes from 90%/10% in 1988 to 10%/90% in 1991).
10. The earlier mentioned training programme has to be designed after an analysis has been made of the quantitative and qualitative staff problems, as suggested in the above report.
11. The collaboration with ARA should arrive at a trial division at two levels: (1) the National Trials, and (2) the Regional Trials for Rada. Details are given under 2.2.1..
12. Trials on which no agreement with ARA can be achieved should be avoided as much as possible but if they are considered important for the region, these trials should be executed by the project with the full support of the project management.
13. Efforts have to be made to improve the success rate of the trials in Al Khabar Farm from approximately 60% to 90%.
14. The trial proposal on irrigation and watersaving techniques is fully endorsed by the mission. However, the consequences of watersaving techniques for the water use by the farmers has to be investigated.
15. The percentage of failures in the multiplications of fruit trees in the nursery of the Al Khabar Farm is still too high. Soil disinfection has to be applied, as recommended by the Senior Horticulturist Advisor (May 1988).
16. Nursery plants of each production cycle should be sold completely. The unsold plants have to be discarded, otherwise there will be lack of space next season.

*The recommendations 8-16 concern details and are not included in the Summary.

ANNEX

DATA ON FRUIT AND FORESTRY TREES AVAILABLE FOR DISTRIBUTION IN SPRING 1989*

Table 1. Available trees for distribution in spring 1989 estimated in June 1988 from the Al Khabar farm

Kind of trees	MoA target	Nr planted	Mode of propagation	Mortality (%)	Remaining Sept. '88
Apples	10,000	5,000	grafting	85	740
Peaches	10,000	25,000	seeds	99	210
Plums	6,000	-	-	-	-
Almonds	-	5,000	seeds	97	135
Apricots	-	5,000	seeds	95	250
Pomegranates	6,000	500	cuttings	90	50
Figs	5,000	-	-	-	-
Quinces	2,000	1,000	cuttings	99	10
Pears	5,000	-	-	-	-
Grapes	-	6,000	cuttings	80	600
Total	44,000	47,500			1,995

*Source: 'RIRD 1989. Distribution of fruit and forestry trees in Al Bayda Province in 1989'. Technical Note 34, June 1989

Table 2. Distributed trees during spring 1989 (Al Khabar farm)

Kind of trees	Remained prod. '88	Remained Prod. '87	Free distr.	Sold	Price (YR)	Farm use	Remaining April '89	Remarks
Apples	740	-	157	515	60	29	39	(1)
Peaches	210	-	10	-	-	200	-	
Plums	-	-	-	-	-	-	-	
Almonds	135	-	25	-	-	10	100	(2)
Apricots	250	-	25	-	-	-	225	(2)
Pomegranates	50	6,000	350	600	10	-	5,100	
Figs	-	295	120	175	10	-	-	
Quinces	10	-	-	-	-	-	10	
Pears	-	-	-	-	-	-	-	
Grapes	600	-	50	481	10	-	69	
Total	1,995	6,295	737	1,771	-	239	5,543	

(1) - Some apple trees were too dwarfy for selling.

(2) - Almonds and apricots were kept for rootstock use on farm or seedling planting in micro catchment areas. No intention existed for selling to farmers.

Table 3. Trees purchased from the MoA for distribution to farmers (spring 1989)

Kind of trees		Nr purchased	Farm use	Nr sold	Price/tree (YR)
Apples	'Anna'	400	-	400	65/-
	'Golden Dorsett'	100	-	100	65/-
Total		500	-	500	
Peaches	'Flordagold'	80	30	50	65/-
	'Flordaprince'	180	20	160	65/-
	'Flordaking'	210	10	200	65/-
Total		470	60	410	

Table 4. Fruit tree distribution over sub-districts in Al Bayda and Rada district (1989)

District	Sub-district	Nr of farmers	Grapes	Figs	Pomegranates	Apples Al Khabar	Apples Sana'a	Peaches Sana'a	Total nr of trees
Al Bayda	Al Bayda	5(29)	26(53)	25(69)	52(50)	7(78)	-	-	110(48)
	Dhi Naim	5(29)	-	5(14)	20(19)	2(22)	30(91)	-	57(25)
	As Sawadiya	6(35)	13(27)	6(17)	21(20)	-	3(9)	-	43(19)
	Nate	1(6)	10(20)	-	10(10)	-	-	-	20(9)
	Total	17(100)	49(100)	36(100)	103(100)	9(100)	33(100)	-	230(100)
Rada	Al Arsh	183(51)	103(25)	48(41)	153(44)	207(49)	256(61)	200(56)	967(46)
	Ar Riashivah	2(1)	-	6(5)	6(2)	-	-	-	12(1)
	Juban	6(2)	-	5(4)	15(4)	9(2)	80(19)	49(14)	158(8)
	Qaifah	80(22)	205(50)	30(26)	117(34)	139(33)	31(7)	73(21)	595(29)
	Rada	76(21)	91(22)	21(18)	49(14)	58(14)	42(10)	33(9)	294(14)
	Sabah	13(4)	11(3)	7(6)	9(3)	13(3)	14(3)	-	54(3)
	Total	360(100)	410(100)	117(100)	349(100)	426(100)	423(100)	355(100)	2,080(100)

The figures between brackets indicate the percentage of the total for the district

Table 5. Review of forestry trees available for distribution during spring 1989

Kind of tree	MoA target	Available Sept. '89	Distributed from Sept. '89 to March '89	Remaining May '89
<i>Parkinsonia</i>		2,650	2,127	523
<i>Lugustrum</i> (farm and office use)		120	120	-
<i>Eucalyptus</i> sp.		590	580	10
<i>Cupressus sempervirens</i>		5,083	3,819	1,264
<i>Casuarina equisetefolia</i>		2,378	2,178	200
<i>Acacia cyanophylla</i>		958	958	-
<i>Acacia melanoxylon</i>		190	190	-
<i>Cassia siamea</i>		190	190	-
<i>Robenia pseudocacia</i>		477	430	47
<i>Ziziphus spina-cristi</i>		46	6	40
<i>Schinus molle</i>		1,200	1,190	10
<i>Atriplex</i>		5,000*	4,087	913
<i>Medicago arborea</i>		500	-	500
Total	43,000	19,382**	15,875	3,507

* - 2000 resulted from autumn sowing (Sept. '88) and 3000 others were obtained from RLIP (Range and Livestock Improvement Project) free of charge

** - Maximum capacity of forestry nursery is 21,600 annually.

Table 6. Review of the distributed forestry trees (1989)

Kind of tree	Al Bayda district	Rada distr.	WS	Comp. + Office	Farm	Distributed from Sept. '88 to March '89
Parkinsonia	1,225	712	-	40	150	2,127
Lugustrum	-	-	-	120	-	120
Eucalyptus sp.	244	307	-	-	29	589
Cupressus arizonica	1,598	2,221	-	-	-	3,819
Casuarina equisetefolia	1,205	783	-	40	150	2,178
Acacia cynaphylla	142	476	150	40	150	958
Acacia melanoxylon	-	-	-	40	150	190
Cassia siamea	-	-	-	40	150	190
Robenia pseudocacia	80	350	-	-	-	430
Schinus molle	207	693	-	40	250	1,190
Atriplex	496	789	150	-	2,652	4,087
Ziziphus spina-cristi	-	-	-	-	6	6
Medicago arborea	-	-	-	-	-	-
Total	5,197	6,331	300	360	3,687	15,884

WS = Women Section

Comp. = Compound Al Khabar

3. LIVESTOCK

3.1. Recommendations of the evaluation mission 1987

Two major observations of the evaluation mission 1987 were that the section's programme should become more production oriented and that cooperation with other sections, particularly the Rural Women Extension Section should be improved. These recommendations have been implemented.

3.2. Present situation and achievements

The programme as presented by the section reflects more concentration on production aspects and a better balance between these and veterinary activities.

The production activities comprise:

- Meat and bone meal promotion and distribution in cooperation with the Rural Women Extension Section.
- Preparation of ensilaged feed in cooperation with the Extension Section.
- Demonstration of treatment of dry fodder with urea in cooperation with the Extension Section.
- Planting of green fodder and Atriplex in cooperation with the Agricultural Section and the RLIP.
- Preparation of high protein - low energy and low protein - high energy fodder mixtures.
- Other production oriented activities comprise continuation of services by making available the station's bull and Saanen bucks to farmers and the distribution of layers and chicken feed.

On the veterinary side vaccination and control measures against internal and external parasites continue.

The section's staff consists of one animal production specialist (head of section), one veterinary surgeon and one assistant veterinary surgeon, three veterinary technicians and 6 supporting staff members (labourers). There are no expatriates involved anymore.

3.3. Specific considerations

- The mission gave consideration to a request for an expatriate senior animal production specialist who should assist and advise the head of section.

However, no recommendation to that effect is being made. The present programme does not offer sufficient scope for a second senior animal husbandry specialist to fill his time, research activities being reduced to a minimum. Moreover, much of the production orientated work is done by the Rural Women Extension Section. In case production and distribution of all kinds of animal feed are increasing in response to an increased demand in the future the section should rather be strengthened with Yemeni technicians.

- It is desirable to monitor production figures from cattle, goats and sheep fed with various types and quantities of feed and fodder from the section and the results of servicing cows and goats by the station's bull and bucks. These results could support extension messages through the Agricultural Extension Section.
- There is some discrepancy in charging farmers for veterinary treatments on the one hand and providing other services free of charge. In the opinion of the mission all services should be paid for in principle, although the percentage of contribution could vary depending on the treatment or service and the farmers' capacity to pay for it.
- The section faces difficulties in securing sufficient quantities of phosphorus blocks and powder for distribution and requested whether these products could be ordered from the Netherlands, paid from Dutch funds with subsequent repayment. However, meat and bone meal is rich in phosphorus and distribution of this feed should be promoted in the mission's opinion rather than the use of more expensive blocks and phosphorus powder for which foreign currency is required.

3.4. Recommendations

The mission recommends that:

1. *The programme on distribution of fodder and feed mixtures including bone meal will be further expanded in close cooperation with the RWES.*
2. *Monitoring of all activities should be intensified and should include the effect of interventions. This should be part of a monitoring programme in consultation with the PME and other sections involved.*
3. *A more cost conscious policy be adopted in the sense that farmers should not be charged for drugs only but also for deworming and servicing by the RIRDP bull. Prices should be adapted to the farmers' capabilities to bear the costs and could be kept low for very expensive treatments (for example in case of deworming a charge of 10% could be considered).*
4. *A list of extension messages be prepared based on research and observation trials in consultation with ARA and the RLIP and the RIRDP sections concerned. This should serve the production of extension materials by the information unit and should be kept up to date.*
5. *Phosphorus blocks and powder should be replaced by meat and bone meal.*

4. RURAL WOMEN EXTENSION SECTION (RWES)

4.1. Recommendations of the evaluation mission 1987

Generally the recommendations of the 1987 evaluation mission have been incorporated in the implementation of the programme of the RWES. A few issues require renewed attention such as a guesthouse for women and cooperation between the various sections. This will be done under the headings 4.2. and 4.4.

4.2. Present situation and achievements

4.2.1. General

To a large extent the RWES has been successful in the implementation of its Plan of Operations. It is an achievement that due attention has been given both to the development of an overall programme and to the development and implementation of the five main programme activities. In addition, flexible adaptations have been made based on experience. An overview of quantitative results is attached in the annex to this chapter.

4.2.2. Extension activities

Concentration villages/areas

The RWES originally intended to focus its activities on a limited number of so-called concentration villages. Main reasons were amongst others to prevent scattering of the various programmes and programme activities of the section and to facilitate training and supervision of extension agents.

This strategy to work in concentration villages now has been adapted to work in concentration areas comprising a number of concentration villages. The section expects that in this way programme activities will better respond to the specific interests of women in the concentration villages and also satisfy the demands of women in neighbouring villages.

For villages where group extension is a major activity, the policy has been adopted to rent a room where women can gather easily, in case there is no suitable RIRDP extension centre nearby. This seems to be a simple and suitable solution.

Agriculture

Agricultural activities have grown in number and variety. Apart from homegardens a start has been made with wadi gardens for female headed households owning wadi land. Experience learns that it takes more than two agricultural seasons before women can grow vegetables without further support and supervision by the section. This influences the rate of expansion of the programme to new villages.

The selection of target groups for home gardening deserves more attention. Priority should be given to low income households where vegetable growing can have an impact on the diet and nutritional status of the family.

The distribution of fruit trees has been continued as a regular activity. An interesting attempt has been made to promote the planting of forestry trees on household waste water, with the aim to help solve both the stagnant waste water problem and meet the need for fire wood.

No progress has been made as yet with the introduction of labour saving devices for women active in agricultural production. The reasons are difficult to understand and the issue requires much more attention.

Livestock

Livestock activities have been limited as both the livestock extensionist of RWES and the female veterinarian of the Livestock section left RIRD in the first part of 1988.

The goats programme involved general advice to women possessing Saanen goats and redistribution of off-spring. The layer distribution programme has been implemented in response to requests from women in villages where the RWES is active. Both activities need further consideration whether or not to continue and if so, in what way and for what reasons.

The promotion of meat and bone meal has been taken up as a new activity and because of a positive response of the women so far this activity will be further developed.

In view of women's role in livestock production, this programme deserves much more attention for which an animal husbandry extensionist will be required.

Crafts

The main crafts activities include the introduction and use of spinning wheels and the training for the production of tatted carpets. The use of spinning wheels reduces the time involved in spinning of wool with an estimated 80%. The carpet production aims at providing women with a cash income. Although demand for carpets still exceeds production, marketing of the produce is a matter of concern because the market is distant (Sana'a) and limited to foreigners (residents and tourists).

A new activity is the production of wool filled duvets (bed covers). Although there is a high potential local market, this activity has been stopped for the time being, due to lack of suitable cotton ticking and the need for an industrial sewing machine for final stitching. The future of the crafts programme needs further consideration with respect to manpower requirements and marketing of products.

Health education

A detailed plan of action for health education was developed in early 1988, including a clear time schedule. The approach was selected to have the educational activities based on the interests and felt needs of the women and their active participation in problem solving. This approach has been very important to learn more about suitable health education messages and activities. With the experience gained a new approach has been developed. In the future the health activities will be built upon and integrated with other RIRDP activities. This new approach seems to be realistic and to have a good potential for being successfully used by the extension agents.

Literacy/home economics

The literacy/home economics programme in cooperation with the Ministry of Education has been restarted according to plan. The emphasis on attracting women to participate in the lessons and on stimulating girls to attend regular primary schooling in villages where enough teachers are available is to be appreciated. Up till now this activity was organised and supervised by the general adviser of the section. As she left the project and will not be replaced a suitable follow-up should be arranged for.

Cooperation between the sections

Cooperation between the sections has been functioning especially at the informal level and with respect to advising on day to day activities. More substantial cooperation as for example with the Agricultural Extension section on agricultural water use and labour saving devices still have to materialise. Cooperation with the Engineering section is expected to become much more intensive with respect to health education related to water supply and sanitation. Cooperation with the Livestock section will need reconsideration with the appointment of a animal husbandry extensionist.

4.2.3. Manpower and training

Head of section

Since the end of 1988 the general manager acts as head of section. Whereas this may be the best alternative for a bridging period it is not a long term solution. However, it is understood that the appointment of a new female head of section can be expected within a short period of time as a candidate already has been identified. Because she will not have professional experience in rural development she will need much guidance and support from project management and RWES staff.

Extensionists

The situation with respect to Yemeni extensionists leaves much to desire. At the time of the evaluation all extensionists were expatriates without Yemeni counterparts. The vacancy for a Yemeni livestock extensionist already exists from early 1988 onwards. The contract with the crafts extensionist will expire in September 1989 and it is still not clear how this post will be continued and by whom. The risk exists that there will be a serious gap between two assignments hampering both programme implementation and development.

Extension agents

Presently five extension agents are working in the RWES. Four have been trained during the first training course in 1987. The fifth extension agent recently joined the team and she will participate in the second training course planned for September/October 1989.

On the whole, the posting of extension agents in the section has been successful, probably also because of the elaborate system of in-service training and supervision. Whereas the extension agents originally functioned as general extension agents their position has now been changed towards specialisation in one specific subject for which they received additional training. Although this change towards specialisation is considered to be a positive development it is the opinion of the mission that the extension agents also should keep a general extension task to maximise the impact of the extension activities.

The functioning of the extension agents is constrained by their low educational background and socio-economic position in the area. Therefore, their scope for working independently is rather limited. This problem may be solved partly by also interesting older women extension agents in participating in the new training course.

Women leaders

At village level the RWES aimed at working through the active involvement of women leaders who would receive short term training courses. However, this idea has not yet been worked out nor have training courses been organised. It is felt that more thought is needed about the possible tasks and responsibilities of these women leaders and more experience should be gained.

4.2.4. Monitoring and evaluation

The RWES has made a serious effort at more systematic monitoring and evaluation of its activities. As a result programme adaptations and improvements have been integrated in a flexible way and programme planning for the new project phase is facilitated. It is expected that monitoring and evaluation will further improve in the near future.

4.3. Specific considerations

Crafts

The mission agrees with the project management that marketing of produce such as carpets and duvets should not be an RIRDPA activity. The question is how to hand over the marketing of these products to the private sector with the best possible chance of success. For this reason the mission feels that a second opinion about the marketing proposal as formulated in the marketing mission report of May 1989 is desirable. As this will take only a few weeks this will not cause delays in implementation.

Cooperation between RIRDPA and MCH

Presently discussions are going on between RIRDPA and MCH Rada about possible forms and levels of cooperation. It is the opinion of the mission that cooperation should be built up from the practical field level where interests meet in the day to day work.

Expansion to Al Bayda District

The mission agrees with the project that if in the future RIRDPA wishes to intensify activities for the whole of the Al Bayda Province, a separate rural women extension section would have to be established in Al Bayda. As manpower development and programme development are first priorities for the time being it is not to be expected that this expansion to the Al Bayda District can be taken up in the near future.

4.4. Recommendations

1. *To safeguard and improve the quality of its programme the RWES intends to carry out a review on the position of rural women to examine women's current interest in rural development. The mission recommends that this study will be carried out in consultation with the PME Section within a year (before June 1990) to allow for timely adaptations and changes in the programme, if required.*
2. *Based on experience with women activities in concentration villages, the RWES has changed its strategy and is presently working in four concentration areas. The mission is of the opinion that this new strategy deserves support, but should be evaluated after one or two years to learn whether it is successful and should be continued or whether again a change is needed.*
3. *The agricultural extension programme still did not succeed in setting up a programme for labour-saving activities in agricultural production. It is appreciated that the required knowledge and expertise for such a programme is not available within the RWES. Moreover, the opinions of the RWES and the*

Extension Section about the programme seem to be at variance. Therefore, the mission recommends that the management takes appropriate steps for the immediate development and implementation of this programme.

4. The agricultural extension programme aims at gradually shifting its emphasis from home gardening towards small-scale commercial farming.

The mission endorses this change of emphasis provided that:

- women who are interested in assistance from the project for home gardening are not excluded;
- for women who do not have land and/or water other types of activities are being considered.

5. The future livestock extension programme will put more emphasis on animal husbandry practices of local dairy cows, sheep and local goats. For the development of this programme a female animal husbandry extensionist is necessary. The mission strongly recommends that this person is appointed without any further delay.

6. For the further development of the crafts programme it is recommended that:

- The post of a crafts extensionist will be continued and should the post become vacant it will be filled as soon as possible for a flexible period of time;
- The report on marketing of products produced by rural women (May, 1989) is submitted to an independent expert organization (FMO in The Netherlands) to get their opinion about the proposal and to investigate their interest for support;
- Awaiting this external advice the present situation with regard to carpet production and sale is continued;
- In case the external advice does not produce new insights, the recommendations of the marketing report are followed.

7. The mission endorses the new set-up of the health education programme which supports the other RWES activities and the water supply and sanitation activities of the Engineering Section. It is the opinion of the mission that this change towards supportive health education also provides a sound basis for a clear cooperation with the primary health care programme of the MCH-clinic, Rada. The regular exchange of information and experience between health related projects, as is presently the case, is an important tool for programme development and should be continued.

8. The literacy cum home-economics programme is an important activity for rural women development and should be continued by the project as long as necessary until it can be transferred to an appropriate educational organization which is entitled and capable to continue and extend this programme.

9. The desirability of a functional literacy specialist in the RWES did not become evident during the past project period. It is therefore advised not to appoint such a specialist, at least not in the foreseeable future.
10. At present the General Manager acts as head of section of the RWES. It is understood that the appointment of a female head of section is expected within a short period of time. The new head of section will need the active support of project management and RWES staff to develop her skills to guide and manage the RWES.
11. None of the four expatriate extensionists of the RWES have a Yemeni counterpart. This is a matter of serious concern. As the lack of educated Yemeni women is not easy to resolve it is recommended that the project management, the rural women department of the Ministry of Agriculture and the adviser on women and development at the Netherlands Embassy sit together to identify ways and means to improve the counterpart situation.
12. The training and supervision system of the first group of extension agents has been very successful. Whereas they originally functioned as general extension agents they now receive in-service training to become a specialized extension agent on a specific subject. Whereas this is a positive development, a part of their tasks should continue to focus on general extension in order to increase the impact of extension activities and to safeguard integration and follow-up activities.
13. The introductory course for new extension agents should start as intended in September/October this year to safeguard the staffing requirements for extension agents. It is recommended to try to interest some older women to participate in the course in order to become extension agents. As the recruitment of interested women and the invitation of outside trainers to the course will be time consuming this should start as soon as possible with the active inputs and support from the project management.
14. The present status of the RWES still requires a flexible budget for training and backstopping to support the development of the various programmes of the section and of the section as a whole.
15. The mission recommends that the project submits a detailed proposal for the construction and management of a guesthouse for trainees, trainers and short-term visitors of the RIRD, MCH and WTC. The guesthouse may include a training facility provided the total costs of the guesthouse cum training facility do not exceed the allocated budget. The detailed proposal should be prepared in close cooperation with the RWES. After approval of the proposal construction should be undertaken as soon as possible.

ANNEX

Summary quantitative results RWES, January 1988 - May 1989

I	Agricultural Extension		
	- Home gardens	:	71 in 11 villages
	- Wadi gardens	:	5 in 3 villages
	- Nurseries	:	4 in 3 villages
	- Compost preparation	:	1
	- Fruit trees	:	371 in >9 villages
	- Women leaders	:	>16
	- Forestry trees	:	1161 in >11 villages
II	Livestock Extension		
	- Goats : distribution	:	9
	servicing	:	24
	improved stables	:	2
	- Chicken: distribution layers	:	500 in 130 families in 13 villages
	distribution shell food	:	479 kg
	distribution concentrated food	:	1000 kg
	- Cows : distribution bone meal against cash payment:		
	a. for demonstration purpose	:	247 kg in 10 villages
	b. for commercial purpose	:	1192 kg in 20 villages.
	- Number of women leaders	:	10
III	Literacy/home economics:		
	- Number of classes	:	16
	- Number of participants	:	322
	- Average/class	:	20
IV	Health education:		
	- Number of villages	:	8
	- Number of field visits	:	87
	- Average number of participants per group extension session	:	4
	- Total number of health subjects covered	:	20
	- Number of women leaders	:	9
V	Crafts		
	- Spinning and carpet making	:	98 carpets sold
	- Bed covers (duvets)	:	18 sold
	- Distribution of:		
	. spinning wheel	:	20
	. sewing machine	:	15 (?)
	. weaving machine	:	16 (?)
	- Number of villages	:	11
	- Number of women trained	:	289
	- Number of women leaders	:	59

VI Training

- Extension agents:
 - . in-service training : 2 days per week
 - . on-the-job training : 4 days per week
 - . specialised training course : 3 months
- Head of section (1988):
 - . on-the-job training
- Women leaders:
 - . on-the-job training

NB. These figures are derived from the position paper and monitoring report 1988, progress reports and information displayed on the wall at the RIRD office during the mission's stay in Rada. The figures from these sources were sometimes at variance and therefore the above overview may be inaccurate to some extent.

5. AGRICULTURAL EXTENSION SECTION

5.1. Recommendations of 1987

The 1987 recommendations have partly been implemented. The following comments are confined to some recommendations which were not yet, or were only partly implemented.

- The intensive training programme for extension agents included special training courses on horticulture and plant protection. Further, during 1988 about twice a month, a special one day training was given, which was less frequent than the project's own aim of weekly training days. It is not clear how intensive the in-service training in the field with farmers has been. The over-all effect of these continuous training activities for the extension agents could not be assessed.
- The vehicle situation is not yet optimal for the extension agents. The state of repair of the eleven available vehicles is poor. The section proposes the purchase of motorbikes.
- The priority crops have been selected, while in collaboration with the Agricultural Section and the RWES the research programme has been designed and discussed with ARA.
- The 1987 recommendation to provide farmers only with officially approved or released varieties of fruit trees has not fully been followed.
- The number of demonstration plots has been limited to about 124 for 1989. Since 1987 the appearance of the demonstration plots has been considerably improved. However, it is difficult to judge during a short visit the relevance of the demonstration to the farmers.
- The inclusion of rainfed demonstrations materialised by the establishment of two micro-catchment apricot orchards in 1988 and three in 1989.
- The recommended inclusion of verification trials in the programme remained limited to just one, which was written on the credit (or debit) of ARA.
- The strengthening of the information provision has to be materialised by the recently established Information Unit.
- Local authorities (LCCD, Agricultural Credit Bank) were not involved in the provision of agricultural inputs. Inputs were provided via revolving funds, but sales are low as the local market receives some inputs via other donors.
- No assistance to a farm mechanization programme through a bona-fide farm contractor was given.

- The number of extension centres is consolidated to ten. The replacement of four rented premisses did not yet materialise as tendering procedures are lengthy within the MoA.

5.2. Present situation & achievements

5.2.1. Extension centres

Ten extension centres are operational with 15 extension agents from the area, who have been regularly trained by the section and other institutions. The three visited extension centres have been improved considerably since the previous evaluation of 1987. In most centres data are kept on the number of contact farmers, farmers in contact with the contact farmers (see table 1. of the Annex to this chapter), farmers who were visited by the extension agent and farmers who visited the extension centre. The latter figure amounts to 3,835 for 1988 and 542 for the first three months of 1989. The number of visits made by extension agents to farmers was 4,730 for 1988 and 761 for the first three months of 1989.

Although eleven cars are allocated to the section, the transport situation is not optimal due to the bad state of repairs of these vehicles. The proposal made by the project to provide the extension agents with motorbikes should be pursued.

The equipment available to the section and the extension centres is for quite an important part in a bad shape. The section should first aim seriously at repair of the broken-down equipment rather than at replacement.

5.2.2. Services

The section through the extension centres provides services to the farmers. These services include mainly the provision of inputs and documentation (pamphlets or extension leaflets) in conjunction with extension activities.

Extension leaflets are available for the farmers on various subjects. During 1988 in total 21 pamphlets were prepared for farmers. No judgement can be made about the contents. The appearance of the pamphlets can be improved. In due time the new Information Unit may play its role in the improvement of the layout and appearance.

Fruit and forestry trees are an important input provided to farmers. Details are given in the tables of the Annex to this chapter. Table 2. and 3. of this Annex shows that apples, peaches and grapes are the most popular fruit trees.

5.2.3. Verification trials

During the previous evaluation mission it was stated that 'On-farm verification trials are a very important link with experiments carried out at the Al-Khabar Farm and the farmers' field reality'. So far only one verification trial was carried out in collaboration with ARA. The proposed one or two verification trials each year cannot be considered to be sufficient. The engagement of ARA and the relation to the National Programme are no excuses for the omission of such trials. In this context reference is made to the chapter on the Agricultural Section, para. 2.2.1. and the recommendations nr. 4., 5., 6., 11. and 12.

5.2.4. Demonstration plots

Fifteen demonstration orchards and 145 demonstration plots on vegetables and cereals were laid out in the farmers' fields of the different districts during 1988. A number of demonstration plots were visited, mainly orchards (pomegranates, grapes, apricots and apples) of various ages. Most of these demonstration plots were in a rather good shape, although the real purpose remains vague in a number of cases. Some of the demonstration orchards were presented as a viable alternative for qat growing, but no economical background was available.

5.2.5. Agricultural extension

The T&V system of extension has been adopted by the project. It became effective (again) only with the arrival of the new batch of extension agents in 1987. The project does not follow this system fully, as the extension agents are having duties which are not allowed under the original T&V doctrine (e.g.: participation in economic crop production study, and sampling of demonstration plots for yield estimates).

The section is in a situation to become an effective tool in transmitting extension messages to farmers. The overall impression of the section by the mission is much more favourable than during the 1987 evaluation. However, after a couple of discussions with the staff members, visits to four extension centres and approximately eight demonstration plots, it is very difficult to judge the real impact of the extension programme for the farmers. (See for some considerations 5.3.).

5.2.6. Infrastructure

The cooperation between the Agricultural Extension Section, the Rural Women Extension Section and the Agricultural Section has been improved considerably through regular meetings of the sections concerned.

The collaboration with ARA is improving as well. See for more details 5.2.3. and related paragraphs of the Agricultural Section.

5.2.7. Personnel

The personnel is not at the required number. Presently the following vacancies do exist:

- 2 area supervisors;
- 2 subject matter specialists (Ibb Agricultural School graduates);
- 1 farm mechanisation engineer.

Planting of forestry trees is promoted by the Government on various occasions, while the project encourages the planting of these trees in demonstration plots and farmers' fields. For this purpose a technician on forestry should be appointed in the section.

5.3. Specific considerations

For the functioning of the Agricultural Extension Section the extension agents are of crucial importance. Most of the agents were recruited in 1987 and are locals from the region. The latter fact is of the utmost importance as this is a requirement for obtaining confidence of the farmers. These extension agents are continuously trained by the project. It is important for the section that the extension agents remain in the project for a longer period. A system of incentives preventing the extension agents from leaving has to be developed.

It can be questioned whether the T&V system is the most appropriate system of extension under the prevailing sociological and cultural conditions. In this context one could wonder whether the system of contact farmers is the most appropriate: are the visits of the farmers to the extension centres effective, are the visits of the extension agents to the farmers effective, do the extension agents have enough farmers' oriented extension messages, do other farmers visit the contact farmers regularly and how effective is this line of communication? Other questions which could be raised are e.g. regarding the relevance of the various subjects of the continuous training programme for the extension agents.

The above questions do not imply a judgement in positive or negative sense on the quality of the extension service. It does not mean that the system has to be abandoned and replaced by another extension system, but it may mean that the system used presently may need some minor or major adaptations.

5.4. Recommendations

Special attention is drawn to recommendation nr 10.

The mission recommends that:

1. *It is strongly recommended to appoint and train a second batch of extension agents for consolidation purposes.*
2. *Consideration should be given to a system of incentives for extension agents in order to prevent them from leaving the section and endangering the achievements sofar.*
3. *The appointment of a technician on forestry in the section is recommended. The technician may need a long term training abroad on the subject.*
4. *The proposal to provide the extension agents with motorbikes is endorsed by the mission.*
5. *The relations with ARA have been improved considerably. It is recommended that the number of verification trials in farmer's fields will be increased over the next three years. This needs to be done in concert with ARA. The number of verification trials have to cover three crops in 1990, with at least three trials per crop. An increase to five crops with at least three trials per crop in 1992 is considered to be a realistic aim.*
6. *In addition to the monitoring of the survival rates of the fruit trees sold to farmers by the project, it is recommended to start monitoring the yields of these fruit trees as soon as they come into bearing. The monitoring should be done in collaboration with the PME Section.*
7. *The number of broken down hand operated knapsack sprayers, motorised knapsack sprayers and high pressure motor sprayers is alarmingly high (ranging from 50% to 75%). As the spare parts are not locally available, it is advised that the mechanic prepares a list of all the spareparts needed for repairs, and that these parts are ordered from abroad.*
8. *An appropriate replacement is recommended for equipment that cannot be repaired or that is not suitable for the section, this at the discretion of the project. Equipment that is beyond repair should be disposed of, this after consultation with the MoA.*
9. *The mission is concerned about the tendency to solve pest and disease problems solely by the application of pesticides, and recommends that agricultural and extension staff should be made familiar with the philosophy and principles of integrated pest management.*

10. *The mission recommends a follow up of the evaluation mission by an expert on agricultural extension, who will evaluate in detail the Agricultural Extension Section for a period of 10 days to two weeks by field visits and present additional recommendations.*
- *11. Referring to the recommendation to the Agricultural Section regarding the follow up of the review of agricultural experiments in the period 1977 - 1988 by a proposal on further research, it is important to give insight in the traditional farming systems and the reasons why they are applied since immemorial times. This comprises observations on intercropping and crop sequences and could be a basis for farm oriented research. The mission recommends that the section, in concert with the Agricultural Section and ARA should indicate what information is required. The observations are to be considered when the next priority programme for the Extension Section is to be established.

Further recommendations in relation to ARA are presented under recommendation nr. 4., 5., 6., 11. and 12. of the Agricultural Section, para 2.4.

* This recommendation is not included in the Summary.

ANNEX

DATA ON AGRICULTURAL EXTENSION SERVICES

Table 1. Data on extension centres and farm families

Extension Centre	Nr Extension agents	Nr villages	Nr farm families	Nr contract farmers	Nr farmers involved
Rada	1	33	520	30	54
Tha	1	25	2,000	45	400
Dureiba	1	16	1,460	25	326
Sabah	3	35	2,375	8	500
Reyashia	1	34	1,385	11	400
Juban	1	50	2,000	14	400
Matar	1	32	430	25	44
Mansour	1	33	600	8	40
Dhi Naem	2	19	1,425	16	300
Sawma	1	30	incomplete data		
Sawadia	2		Centre not yet operational		

6. ENGINEERING SECTION

6.1. Recommendations 1987

The recommendations of the 1987 evaluation mission have been largely followed up, be it with a varying degree of success. The items concerned will be discussed under 6.2 Present situation and achievements and under 6.3 Considerations.

6.2. Present situation and achievements

6.2.1. Water Supply

The implementation of water supply schemes is progressing well, although the mission notices that difficulties are experienced in completion of the schemes. Main problems appear to be timely collection of 40% village contribution and cumbersome tender procedures, especially for pumps and engines. In 1988 construction of new schemes was delayed because pump testing equipment was out of order for quite some time.

Provided completion is achieved of the 13 schemes presently under construction, nearly 20,000 inhabitants in 20 villages will have been served with a new or improved piped water supply in 1988/1989, as compared to nearly 40,000 inhabitants in 65 villages over the period 1978-1986. The coverage of rural population by the end of 1989 through RIRDPA assistance may be estimated at 45% in Rada' District and 4% in Al Bayda District.

Following the recommendation of the 1987 evaluation mission an investigation was carried out whether or not certain villages and or categories of villagers were in one way or another excluded from benefiting from improved water supply facilities. However, this investigation was only completed one month before the present evaluation with the final report not yet available. The draft summary indicates that in villages with an RIRDPA water supply scheme none of the households are excluded from its use for social or economic reasons and only in an exceptional case a household is excluded for technical reasons (eg. house is situated too far away or too high up hill). The study further indicates that there are no villages that are not being provided with an improved water supply for financial reasons. Whether or not a village is selected for a new water supply scheme is 'only a matter of project priorities' (Summary socio-economic survey of water supply schemes, 1989: 6). In view of this finding the evaluation mission re-emphasises that for the selection of new schemes, villages with the greatest need for water should be given priority. The recommendations as stated in the draft summary report provide guidance for future selection procedures and criteria.

Unfortunately neither the above mentioned investigation, nor any other study sufficiently addresses the lack of information about water use patterns as indicated in the 1987 evaluation report. Systematic information about water use (how much, by whom, for what purposes) is required to learn more about: (1) possible adaptations in technical design; (2) the need and possibilities for women involvement in water supply development; and (3) priorities for health education related to water supply and sanitation. All these issues have not been taken up yet by the project. They will need to receive more attention in the immediate future.

The newly employed maintenance adviser provides valuable assistance to the villages in operation and maintenance of water supply schemes, and in the training of operators. The mission recommends that in addition to his present tasks, the advisor starts up a reporting system to record the findings from his regular visits to the schemes. A standard form may be designed to describe system performance, state of repair, reasons for failure, inputs by the advisor, etc. Upon analysis of returns it may become clear what system performance is like, and what external (ex-village) support may be required, on temporary or permanent basis, to improve the proper functioning of the systems. Except for these corrective measures, the analysis may also show the need for adapting present designs/choice of equipment to improve system performance. Failing results of such an analysis now, the mission finds it premature to consider the idea of setting up small workshops at LCCD level for the support of the water schemes.

Available information indicates that operation and maintenance costs for water supply schemes are usually covered by the benefiting population. However, no provisions are made as yet for long-term depreciation, which means that villages again will call on project assistance when a well runs dry or when pump and engine get beyond repair. The project should address this problem by making clear to the population and authorities concerned that after completion of a water supply scheme, the village is fully responsible for long term operation and maintenance including major replacements.

6.2.2. Sanitation

The 1987 evaluation mission recommended the development and implementation of a realistic sanitation programme with emphasis on education and small scale, affordable improvements. As a result a revised environmental sanitation and health education programme was designed, and targets set for sanitary blocks, village garbage disposal and shallow well improvements. That these targets could not be fully achieved is considered to be due to over-ambitious planning. In fact, the achievements so far are quite considerable. Sanitation improvements have been developed in communication with the population and a start has been made with the integration of health education. The new sanitation activities have generated public interest and more requests for village sanitation improvements are coming up.

Waste water removal

The mission was favourably impressed by the detailed case study on alternative solutions for village waste water disposal. The study includes a discussion on the social, technical and financial feasibility of various options and the outcomes provide a solid base for future waste water removal projects. A first example is a waste water scheme for Al Khalagah for which the tender procedure recently was started.

Mosque sanitary facilities

The 1987 evaluation mission recommended the consolidation of mosque facilities to eight per year with an increased village contribution of 40%. However, many more facilities were constructed with only 20% contribution. Also the recommended evaluation to determine whether or not continuation of this activity is justified (and if so, on what basis), was not carried out. The mission still questions the relevance of this activity from development cooperation point of view.

Sanitary facilities for schools and health centres

A start has been made with the construction of sanitary facilities at schools and health centres. Whereas technical design and construction is given due attention, the integration of health education and the set up of a monitoring system is lagging behind. Close monitoring should reveal amongst others, whether sanitary facilities for women and girls should meet special requirements. Where new facilities are constructed, old ones which cause smelling problems and/or health risks should be removed.

Solid waste disposal

In close cooperation with the local population the first solid waste disposal projects have been implemented. For these projects, the village provides the land and RIRDP takes care of excavation works and the provision of fencing material and waste bins. Health education is integrated and is continued during the follow up visits to the project villages. Although systematic monitoring still has to start, a number of valuable observations have been made already showing that more attention has to be paid to waste transportation, waste bin size, and safe disposal of organic waste. Also, the design criterium for sizing the waste disposal pit still needs confirmation in practice.

Shallow well improvement

The first shallow well improvement was completed in 1988 and a second one is presently under construction. A shallow well improvement is a water supply system consisting of a shallow well, a pump, a rising main, and an elevated water reservoir with an outlet to one water distribution facility with drinking water taps, a washing place and a cattle trough.

The shallow well improvement programme is an alternative for villages that cannot be provided with a full water supply scheme for one or more of the following reasons:

- water availability too limited;
- village too small (<200?) and thus construction costs and running costs too high;
- houses too scattered.

According to project staff there are hundreds of villages that could benefit from the shallow well improvement programme. As these villages are generally poor with a serious need for water supply improvements, this programme deserves much more attention. In view of the often complicated claims on the use of these wells, and of the lower level of service provided, communication and health education should play a more dominant role in this activity.

Water quality monitoring

Water quality monitoring started in 1988, but halted in the same year with the departure of the laboratory technician. The present situation must be considered highly undesirable, as it appears from available records that in several schemes fluoride levels and/or nitrate levels are in excess of or near permissible WHO levels. The mission's own observations of a stagnant pool of waste oil from the pumphouse right near the shallow well of Magdagwyn, where also the nitrate level is suspect, supports the view that water quality aspects are not receiving due attention. The mission recommends that water quality aspects both in system design and operation receive the immediate attention of the project. Also, standards should be set and used to decide the suitability of sources; this concerns especially the fluoride and nitrate levels.

Solar water heaters

Installation of solar water heaters should be continued only where it can be integrated in other ongoing activities of RIRDP, such as the integrated water supply, sanitation and health education activities.

Training primary health care workers

A positive development is RIRD's contribution to the training of primary health care workers on sanitation issues at the MCH clinic, Rada. This not only because it helps to focus attention on the importance of sanitation, but also because it prepares the ground for future cooperation at village level.

6.2.3. Geohydrology

Following the recommendations of the 1987 evaluation mission, the geohydrological sub-section was reinforced with one geophysicist (TAU) and 2 Yemeni counterparts. The professional strength now stands at 4. The quality of field work by the counterpart staff is reportedly good, allowing the TAU staff to concentrate more on office work, which may also be gradually transferred to the counterpart staff. The assignment of TAU staff (one geohydrologist and one geophysicist) should be continued for a minimum of two years, and the need for the replacement of the recently departed geohydrologist is urgent.

The performance of the sub-section is presently good. In the area of geohydrological studies performance is good: the collection of data now yields an annual report on rainfall and groundwater levels; the transfer of the steady-state groundwater model was completed in the spring 1989, and work carried out in the Netherlands on the non-steady state model is nearing completion; communication with the Department of Hydrology in Sana'a is reportedly good. The support of water development, through site selection, drilling supervision, well logging and test pumping is now becoming more effective. The expected performance this year will be more than double of that of last year.

6.2.4. Staff

With exception of the geohydrological sub-section, the engineering section is suffering from extreme staff shortage. The section has 23 posts of which six are advisory posts (TAU). Whereas all advisory posts are filled, six of the 17 Yemeni posts are open. In addition, up till now no Yemeni post has been created for a sanitation extensionist, leaving the expatriate expert without a counterpart.

6.3. Specific considerations

Village contribution

Whereas the RIRD study on the selection of villages for water supply improvements (May 1989) indicates that the required village contribution of 40% is not an obstacle (the investment cost of a complete scheme is YR 700 per capita), project management and

project staff expressed their concern that a number of villages, especially in the Al Bayda District, are unable to meet this requirement, at least in the short term. The mission is of the opinion, that the established village contribution should be implemented strictly so as not to abuse the system. Only in an extreme case an exception to the rule should be possible, this is when a village is in serious need of water without having the resources to meet the 40% contribution. If experience learns that the rule becomes unrealistic, negotiations should start to set a new rule, instead of applying the present rule in a flexible way.

Withdrawal advisory staff

After 12 years of activities in water supply and four years in sanitation, the poor availability of suitable trained and qualified Yemeni staff still inhibits the transfer of knowledge and with that the intended gradual withdrawal of advisory staff from the engineering section. The mission feels that immediate action should be taken to address this situation.

Organisation and tasks of the section

The mission observes that in the course of time various sub-sections have been formed within the engineering section. The mission is not convinced that the present set-up is efficient, and proposes the project management to analyse the present situation and to consider reorganisation.

Except for the organisation of tasks, the mission feels it is necessary to analyse the delimitation of responsibilities of the section, especially with regard to maintenance responsibilities. Such responsibilities need to be defined where it concerns technical support (monitoring, training, advise).

Expansion to Al Bayda District

Expansion of water supply activities to the Al Bayda district was recommended by the 1987 evaluation mission. Of the 20 schemes undertaken in 1988/89, 7 were in Al Bayda. Although there is some concern related to the delays in completion of the schemes presently under construction, this does not appear to relate to the fact that a large proportion of the schemes is now being constructed in Al Bayda district. The mission therefore recommends that also in future water supply schemes are constructed in Al Bayda district. Concerning sanitation, these activities are rather new, and it would seem unwise to expand to Al Bayda before technologies and approaches have been sufficiently developed. Presently these activities take place rather near Rada, allowing the project staff to make frequent site visits during preparation, implementation and operation of the systems.

Integration of water supply, sanitation and health education

A start has been made with the integration of health education in sanitation activities, both by the sanitation sub-section and in cooperation with the Rural Women Extension Section. It is intended to further expand and intensify these health education efforts. The mission strongly supports this development and recommends that also water supply will be included in the integrated approach.

6.4. Recommendations

The mission recommends the following:

1. *To study the organisation of tasks and the responsibilities of the section, and consider its reorganisation;*
2. *To determine long-term manpower requirements, to adjust staff requirements accordingly, and to draft and implement a training programme at shortest possible notice;*
3. *Related to the above recommendations, to draft a plan for the phased withdrawal of TAU-staff;*
4. *To define the delimitations of responsibilities of the project with regard to water supply and sanitation schemes;*
5. *To implement the recommendations of the socio-economic study of water supplies on the selection procedures and criteria for new water supply;*
6. *To promote an integrated approach to water supply, sanitation and health education at the village level;*
7. *To continue the provision of piped water supply at present levels, with emphasis on extension of coverage in the Al Bayda District;*
8. *To implement the proposed sanitation programme, with major emphasis on health education, school sanitation, garbage disposal, low-cost waste water removal and shallow well improvement. The implementation of this programme should be initially confined to Rada District;*
9. *To design procedures for and implement the systematic and regular monitoring activities for all activities of the section;*
10. *To limit the programme for mosque facilities to the level recommended earlier (8 per year), striving to increase village contribution to 100% aiming at this activity to be reduced to technical assistance only;*
11. *To strictly implement the established village contribution policy for the various activities.*
12. *To pay increased attention to water quality aspects of drinking water supply system design, construction and operation.**

* This recommendation is not included in the Summary.

ANNEX

Performance of the section

1. Water Supply

Table 1. Physical achievements by RIRD in water supply

Years	No. of villages	Approx. no. Inhabitants
1977-1987	65	39 600
1988-1989	20	19 600
Total	85	59 200

Note: target is 12 schemes per annum

Table 2. State of completion (as per 31.03.1989)

1988/89	No. of villages	Approx. no. Inhabitants
Completed	7	4 100
Under construction	13	15 500
Total	20	19 600

Table 3. Distribution of Beneficiary Population over Rada and Al Bayda Districts.

Years	Beneficiary Population		Relative Distribution of Effort (%)	
	Rada Distr.	Al Bayda Distr.	Rada Distr.	Al Bayda Distr.
1977-1987	36 500	3 050	92	8
1988-89	14 300	5 250	73	27
Total	50 800	8 300	86	14

2. Sanitation

Table 4. Physical achievements in Sanitation

Activities	Annual Target	Achievements	
		1988	1989
Sanitary facilities at			
- Mosques	8	13	3
- Schools/Clinics	4	-	2
Garbage Disposal Schemes	4	2	3
Village Sanitation Schemes	5	-	-
Shallow Well Improvements	8	1	1
Solar Water Heaters	8	4	3
Water Quality Monitoring	400	102	16

Note: 1989 figures include schemes presently being implemented

3. Geohydrology

Table 5. Achievements in Geohydrology.

Activities	Achievements	
	1988	1989
Site selection	12	26
Drilling supervision	5	9
Well logging	2	26
Pump tests	13	20

Note: 1989 figures are estimates, based on improved performance so far in 1989.

4. Staff

Table 6. Staff position of the Engineering Section.

Engineering Section	Staff on 31.03.1989		Vacant Posts
	no. of posts	no. of vacancies	
Yemeni staff:			
- counterparts	4	1	sanitary engineer
- other senior staff	3	2	civil eng., surveyor
- junior staff	<u>10</u> +	<u>3</u> +	draftsman, lab. techn. assistant supervisor
	17	6	
TAU staff	<u>6</u> +	- +	
Total	23	6	

Note: not all TAU staff have counterparts

7. ROAD/LAND AND WATER CONSERVATION

7.1. Recommendations 1987

The recommendations of the 1987 evaluation mission concerned the strengthening of the section in view of its intended programme expansion, and the setting of priorities to ensure that the increased scope of work would not be at the expense of existing road maintenance obligations. The recommendations have been generally followed up.

7.2. Present situation and achievements

7.2.1. Roads

The Plan of Operations 1988/89 calls for the construction of feeder roads, the removal of bottlenecks in village roads and the maintenance of the existing road system.

The section started a road construction programme comprising 3 feeder roads with a joint length of 53 km, whilst also taking up the construction of a 30 km road from Al Bayda to As Sawmah, for which some funds were carried over from the 1986-87 budget. The mission questions the correctness of taking up this programme as the YR 5.5 mln budget available for 1988/89 could only cover about 50% of the estimated cost involved. The situation being what it is, it is inevitable that in the period 1990-92 a considerable part of the available budget will need to be spent (with priority) on the completion of the present road programme. In fact, assuming the budget for feeder road construction in 1990-1992 to be of the same order as in 1988/89, i.e. about YR 3 mln per annum, only about 20 km of new roads can be taken up on top of the commitments carried over from 1988/89.

The approach followed by the project in feeder road construction is to construct a road in 3 steps: first earthworks are carried out (over the entire length), then the top layer is constructed and finally the drainage is constructed. With the available funds in 1988/89, nearly all earthworks and some length of the toplayer will be completed, whilst the remaining length of toplayer and drainage will be brought forward to 1990-1992. Although this approach allows early use of the roads, the mission finds that this approach is not without risk, as especially in this case where the completion of roads may take up to 4 years, roads are exposed to the danger of being washed away in the absence of drainage. The mission recommends that for any new road programme, the project reconsiders the approach followed with the view to minimise the identified risk.

The village road programme so far comprised only 15 km of roads. Requests for this programme, that requires a village contribution, are few. It appears that private contractors that work to a much lesser standard than the project would, offer to do such work on conditions that are more favourable to the villages.

The maintenance requirement of the existing network depends on the traffic load. Although figures for traffic loads on the various roads are not available, the section, on request of the mission, drew up a schedule of regular maintenance requirements from which it appears that the constructed length of 158 km would require to be graded from once to four times per annum, involving a total graded length of about 325 km. In 1988 the graded length was 180 km, which is below this self-formulated requirement.

Reconstruction of feeder roads is taking place to a length of about 20 km per year (10-15% of the total length per year). The 1987 mission was informed that reconstruction of roads should take place once every four years, implying a reconstruction programme involving 25% of the total length, i.e. approx. 40 km per annum. Thus, performance is also below target. Whereas the above figures would prove maintenance to be poor, field visits show the roads to be in fairly good condition. It is recommended therefore that the project assesses more precisely the maintenance requirement of the road system and develops a more systematic approach to maintenance.

The matter of responsibility for road maintenance is still under consideration by the Government. An experiment recommended by the 1987 mission to transfer this responsibility to a LCCD was not carried out. The mission feels disappointed that no progress was made, and maintains its earlier point of view that as long as no other authority is charged with road maintenance, the project should consider this responsibility to have first priority in the activities of the section.

7.2.2. Land and Water Conservation

The land and water conservation programme started in 1987, after earlier initiating studies. The objectives of the programme were communicated to all LCCD's in Al Bayda Province and subsequently nearly 120 requests for projects were received from 14 (out of 16 LCCD's).

The proposed projects must meet technical and socio-economic criteria set by the RIRDP, and a 3-step procedure was designed to screen the proposed projects. The procedure is implemented by the Land and Water Conservation sub-section, assisted by the Agricultural Section and the Project Monitoring Unit. In the first two steps, that require relatively small inputs, 75% of the 60 proposed projects thusfar investigated prove not to be feasible for technical or socio-economic reasons. The third step requires detailed studies, and results in a draft project proposal that is forwarded to the project management for its consideration. So far only the technical/structural analysis is worked out in sufficient detail. The socio-economic analysis proves to be difficult, both in view of collecting data on the existing situations and in assessing the benefits that may accrue from the project.

The necessity to improve on the quality of the socio-economic studies is well understood, as the financial and social cost-benefit ratios that should result from such studies are crucial in deciding the feasibility of the project.

So far 6 projects were implemented. Of these the three major ones, with a joint cost in excess of YR 3 mln were visited by the mission. In all three cases the original structures that were conceived and constructed by the local population were replaced with permanent structures in reinforced concrete that appear well designed and constructed (a design manual that was prepared for this purpose needs to be reviewed later on, in view of its intended use by Yemeni engineers). Effects of the completed projects in terms of increased agricultural production, or a change in cropping pattern, could not be observed, and the mission is of the opinion that in order to achieve the projected benefits, communication with the communities by the Agricultural Extension Section needs to be stepped up considerably. Also, additional engineering inputs are required to enable benefits of the new structures to the full extent.

The construction cost of the projects appeared well above estimates. This was partly due to the lack of reliable cost figures for this new activity, and also to an underestimation of quantities. Cost estimation is expected to improve with increasing experience and through more detailed technical surveys. Village contribution to the project is lagging behind the intended 20%. In the Mahajaba project, that consumed about 60% of the available budget, no contribution was received at all.

The sub-section is understaffed and as a result the workload is too high. The time required for the detailed design, preparations of tender documents and supervision of construction of schemes that have been selected for implementation, leaves too little opportunity for the identification of new projects. Of nearly 120 requests by LCCD's, only 60 have been screened, and there is an obvious shortage of feasible schemes for implementation in the coming years.

7.2.3. Staff

There is only one vacancy in the road section. This concerns the post of a counterpart engineer to the (TAU) advisor on land and water conservation. This post should be filled at shortest possible notice to allow for the preparation of new projects.

7.3. Specific considerations

7.3.1. Selection of land and water conservation projects

It has been indicated from the onset of this programme that for several reasons the average size of the intended projects should be limited. One reason is the limited financial scope of the programme (about YR 3.5 mln per annum), a second reason is the limited capacity and capability of the sub-section, a third reason

is that project feasibility is decreasing with increasing investment, and a final reason is that the programme aims at providing one major project in each of the 16 LCCD's of Al Bayda Governorate. It are these reasons that have led to the recommendation that the cost of the average major project should not exceed YR 750,000. In fact, with a budget as intended, YR 3.5 mln per annum, the programme could provide each LCCD with one major scheme of the recommended size by the end of the next project period 1990-1992.

With regard to the degree of flexibility that is to be applied to the recommended project size of YR 750,000, the mission is of the opinion that whilst this size is to be used as a principle guideline, it should not lead to the exclusion of notably more (or less) expensive projects that appear highly beneficial. The final selection of projects by the management should be based on a comparative evaluation of the merits of a large number of alternative projects. This evaluation should take into consideration project location, cost, technical feasibility, economic and social benefit/cost ratios and the effect of a particular project on the programme as a whole.

It is the task of the project staff to facilitate such evaluation by providing a sufficiently large number of well documented draft project documents to the management. The mission finds it imperative that the staff is brought to the required strength, and is given sufficient time to take care of this task.

7.4. Recommendations

The mission recommends the following:

On roads:

1. *To utilize the 1990-1992 budget for road construction first for the completion of a 83 km of feeder roads (of which two-third is in the Al Bayda district) carried over from the 1988/89 period;*
2. *To study the maintenance requirements of feeder roads, and identify resource requirements in terms of manpower, equipment and budget;*
3. *To find final solutions for the issue of road maintenance. In the meantime the project should fullfil all road maintenance requirements;*
4. *To formulate proposals for the construction of additional feeder roads, taking into consideration the capacity and responsibility of the section, and the overall availability of funds for the sub-section.*
5. *Where savings are available in other sections, and there is proof of capacity in the roads section to undertake the construction of additional new roads, to forward an application through the propor channels to utilize these savings for road construction. The roads are to be constructed in Al Bayda district.*

On land and water conservation:

1. *To continue the land and water conservation activities at the proposed rate of investment of YR 3.5 mln per annum with due consideration for both minor and major schemes;*
2. *To give first priority to the preparation of draft project documents to such an extent that a choice of feasible projects is available for final selection by the management;*
3. *To select for implementation in 1990 and beyond those projects that best fulfil the selection criteria. Preferably, major projects should have an estimated cost not exceeding YR 1.000.000,-, in order to facilitate the target to implement one major scheme in each of 14 remaining LCCD's;*
4. *To submit to the Ministry of Agriculture those proposals for major schemes that have been rejected by the project for reasons of high cost and relatively low benefit/cost ratio's;*
5. *To provide forthwith at least one counterpart engineer to the TAU advisor. If such is done, it may be possible to both, prepare the required draft project documents and to expend the remaining funds in the present budget;*
6. *To strictly apply the policy for contributions by beneficiaries.*

8. MAINTENANCE

8.1. Present Situation & Achievements

The task of the maintenance section is to repair and maintain approximately 70 vehicles and 20 pieces of heavy equipment and agricultural machinery in use by the project, and to operate and maintain the electricity supply to the project compound at Al Khabar. The maintenance section has a workshop facility in Al Khabar, and a potential staff strength of 24.

In the current project period several measures were executed to maintain and improve the section's performance. The mechanical workshop/stores were extended, an agricultural machinery store and a car washing station were built, tools and spares were purchased, the stores retrieval system improved, the diversity in vehicle makes and types reduced, an agreement entered into for spare parts supply and maintenance of Caterpillar heavy equipment, etc. As a result the section is now well equipped to perform its task. Still, the efficiency of the section is reported to be low, especially where it concerns the upkeep of the heavy equipment that is in use by the Roads Section. Breakdown times of 1 to 6 months per annum are not unusual. The poor performance is attributed to the shortage of suitably qualified and experienced staff, and to the difficulties in procuring less current spares.

The staff situation is poor indeed. Out of 21 posts only 15 are filled, and notably only 1 out of 4 posts for heavy equipment mechanics is filled. The performance of the section could not be judged by the mission. Although records are kept on daily activities by the section these are not processed to allow analysis of performance by head of section and project management. With the present system it cannot be established, for instance, how many times a particular vehicle was brought in for repairs, what faults were found, which repairs were done, and how long repairs took. This means that the present system does not allow effective control of the section.

8.2. Recommendations

This mission recommends:

1. *To set up a system that allows the management to review the efficiency of maintenance of vehicles and heavy equipment.*
2. *To propose ways and means to improve the efficiency of the workshop, with special consideration for the filling up of the vacancies for heavy equipment mechanics, and the procurement of spares now causing long delays.*

9. PLANNING, MONITORING AND EVALUATION (PME)

9.1. Recommendations of the evaluation mission 1987

Generally, the mission 1987 endorsed the majority of on-going activities rather than presenting new recommendations. On the whole the section complied with the mission's advice.

9.2. Present situation and achievements

It is the mission's impression that the re-organisation of the former Socio-Economic Section into a PME section will serve a clearer definition of the section's mandate. Although the new section comprises a small staff and more experience has to be gained, several activities are going on or are under preparation within the framework of the Plan of Operations. Yet a careful analysis of priorities is required in view of the available manpower and the requests for support by the various other sections.

9.3. Specific considerations

One of the recommendations of the evaluation mission 1987 was:

'... that there should be more relevant questions from the management to the section pertaining to more problem oriented surveys that deserve high priority and would provide information indispensable for decision making.'

However, in discussions between the present mission and the head and staff of the section it became apparent that the latter wished a clearer definition of the section's mandate. In this connection the mission makes the following observations:

- A first step should be a priority programme for the section, as should be prepared for all the sections of the RIRD. In view of the many requests from various quarters for assistance by the PME section and the limited manpower resources of that section it is imperative that for the new project phase 1990 - 1992 such a priority programme is prepared in concert with the management.

- *Monitoring of all activities.*

The monitoring of activities of all sections within the framework of the priority programmes concerned, should be an important task of the PME section.

On the basis of such monitoring the management could be advised on any constraints and requirements of the sections and on the adjustments either in the programmes or in the availability of resources.

- *Manpower planning and training.*

Closely related to the previous issue the PME section should play a leading role in manpower planning and therefore be consulted on the planning of training, (refresher courses and up-grading of existent staff and in-service and other types of training of new staff) in concert with the Administration and Finance Section.

- *Monitoring of results of specific activities.*

This kind of monitoring should be clearly distinguished from the above monitoring. This type of monitoring should primarily be the responsibility of the sections concerned (for example: results in terms of acceptance by the population, yields etc. of bone meal distribution) and this should be reflected in the priority programmes of these sections.

The role of PME should be restricted to advising the sections on the methodology and techniques of monitoring and the analysis of results. This should not preclude involvement of PME staff in the monitoring operations in those cases when this could contribute to gaining experience or when PME input is requested specifically by the sections.

- *Impact studies.*

Monitoring in the above sense could provide valuable information for impact studies of certain activities or could contribute to an overall impact study of the RIRD as a whole. This could assist the Extension Section and the RWES in formulating extension messages to the farmers and women respectively.

- *Surveys.*

The section has a number of surveys in preparation (road impact study, commodity oriented marketing study), but a medium term planning of priority surveys (1990 - 1992) is required.

Depending on the type of survey, the question should be answered whether the brunt of input should be with the section(s) concerned or with PME. Some surveys may require outside input, either by other Yemeni organisations or donor-assistance. But in any case the terms of reference of such surveys should be prepared in concert with the PME and like with monitoring the analysis of results would also require PME involvement.

- PME should not overstretch its resources. Therefore it is of such great importance that the above mentioned priority programme is to be defined.

In case in the course of time ad hoc requests for PME assistance may be submitted by other sections or by the MoA or organisations outside RIRD, on top of the activities described in the PME priority programme, the decision whether or not such requests can be met (at the expense of some other priorities) should not be the responsibility of the PME and the section or organisation concerned, but solely of the RIRD management in concert with the TAU team leader.

- The evaluation mission 1987 was not in favour of continuation of the daily price data collection, as conducted by the former Socio-Economic Section. As a compromise the PME is carrying out weekly price data collection and has convinced the present evaluation mission that this should remain part of its programme.

9.4. Recommendations

The recommendations, laid down in the Summary of major conclusions and recommendations are confined to:

1. *The statement under above paragraph 9.2. (especially the last sentence).*
2. *The following surveys have been or will be carried out as part of a short term priority programme:*
 - *Village water scheme survey (completed)*
 - *Road impact study (in preparation)*
 - *Commodity oriented marketing study (planned for harvest time 1989)**The mission endorses this programme.*
3. *Manpower planning should be a task of the PME Section in consultation with the various sections.*

Moreover the following recommendations is added, not included in the Summary:

4. *A definition in some detail of the PME mandate as described under paragraph 9.3.*

10. FINANCE AND ADMINISTRATION

10.1. Recommendation of the evaluation mission 1987

The recommendations of the evaluation mission 1987 were implemented for the greater part.

However, the recommendation that Dutch funds should be scrutinised by an external auditor, was not adopted, as it was felt that this was sufficiently covered by DGIS.

10.2. Present situation

The section was re-organised, bringing about a reduction of staff as compared with the situation in 1987. Computerisation is being introduced. The Yemen computer expert is reportedly doing well. Progress reports present data on expenditures as compared to budgets per section and for the project as a whole. The mission is of the opinion that improvements are on-going and there is a potential to create a well functioning Administration and Finance Section, although there are still vacancies for a Deputy General Manager and a Personnel Officer.

10.3. Special considerations

The mission had no reason for making specific recommendations, the section still being in the process of re-organising itself. But one point of attention is the training of staff. This should be viewed in a medium and long term perspective and should be closely related to a manpower plan.

To this end the Administration and Finance Section and the Planning, Monitoring and Evaluation Section should work together in consultation with the management and the TAU leadership (see also chapter 9). The manpower cum training programme should be part and parcel of the Plan of Operation 1990 - 1992 and the tentative follow-up proposals for the time beyond 1992 (see chapter 13, especially paragraph 13.4.).

All kinds of training for all levels of personnel should be catered for, with the main aim to up-grade the staff and to prepare for sustainable project operations and a gradual phasing out of the Technical Advisory Unit Staff.

Special attention should also be paid to courses in English language which so far have been less successful than was hoped for. This is not only to permit the staff to follow training in non-Arabic speaking countries, whenever the need arises, but is also a prerequisite for reading up-to-date literature in that language. In advocating incentives for the staff to participate in this training, the mission has not primarily in mind increases in pay (which is a matter of Government policy beyond the mission's competence). Training abroad could by itself be an incentive as well as permitting staff to devote a defined part of the official working time to study.

Staff not registered with the Ministry of Agriculture is not eligible for training abroad at Government's expense. In discussions with the management and within the evaluation mission it was felt that the right procedure would be to have those staff members, selected for training abroad, registered first. Thus competence and need for such training would become selection criteria for registration with the Ministry.

10.4. Recommendations

The mission recommends that:

1. *The management in consultation with the Technical Advisory Unit will prepare a long term training programme fitting in the Plan of Operations 1990 - 1992 and beyond.*
2. *A member of the TAU team will be made responsible for the training as intended by the management.*
3. *The training programme will be based on the assessment of the training requirements of the existing and future manpower, carried out by the Planning, Monitoring and Evaluation Section in concert with the various sections.*
4. *This programme should comprise proposals for scholarships for training abroad, for training within the country and in-service training in the project.*
5. *After selection of staff members who are in need of and competent for training, those who are not yet registered with the Ministry of Agriculture will be proposed for registration.*
6. *Efforts should be renewed to arrange for English language training, if need be abroad, and incentives will be considered to encourage the staff in participating in such training.*
7. *The mission hopes that the Ministry of Agriculture will investigate whether procedures for obtaining permission to travel abroad for training could be accelerated and, if need be, could be revised to that effect.*

11. INFORMATION UNIT

This unit was newly established and is functioning only since the last five months. Its tasks are a.o. training of extension and women extension agents, editing of extension leaflets, preparation of video films, posters and pamphlets. The unit will need time to prove itself. It is modestly staffed and it will depend on the expansion of its work and the priorities decided on whether strengthening of the staff will be necessary. The evaluation mission has no special recommendations at this stage.

12. MANAGEMENT

The evaluation mission 1987 recommended that a deputy general manager should be appointed. This did not materialise. In view of the increasing number of activities of the project, including the expansion of activities into Al Bayda district the present mission would emphasise again the urgency of such an appointment. The PME-section in concert with the management and other sections is advised to prepare a manpower cum training programme and the general manager will have to play an important role in preparing such a plan and in implementing and supervising its execution. Therefore it would be very desirable that some of his other tasks could be delegated to a competent deputy.

13. OVERALL REVIEW OF THE PROJECT

13.1. Analysis and evaluation

- As is pointed out in chapter 1 of this report there has been a general improvement of various project activities as compared with the situation in 1987. This is particularly obvious in cases where physical improvements and achievements are visible like the impressive improvements of the Al Khabar farm. The livestock section developed a well balance programme. Activities in watersupply and road building continued to be satisfactory. During a field visit with the Rural Women Extension Section a good impression was obtained of the work going on and the section's programme is generally endorsed by the mission. Somewhat more difficult is a fair judgement of the agricultural extension work; the centres which were visited are well kept and improved since 1987 but how the extension system works out in the field could not be ascertained within the available time, neither could the various aspects and modes of the T&V system be discussed in depth. This is why the mission proposes that a short term expert in this field should attend the day-to-day work of the section and present additional recommendations as a follow up of the evaluation.
- The main characteristics of the developments within the project since the previous evaluation in 1987 are:
 - . A serious attempt at redressing the identified shortcomings;
 - . A more coherent programming within the sections, for example the livestock section and the newly created Planning, Monitoring and Evaluation Section, as well as the implementation of the newly defined programme of the Rural Women Extension Section;
 - . A more intensive integration of the activities between sections although there is still scope for improvement, for example in integration of water supply, sanitation and health education at village level.
- Two remaining major constraints are:
 - . The manpower situation which hampers the effective implementation of objectives and the intended phasing out of expatriate inputs. This is valid for nearly all sections but is especially a matter of concern in the Engineering and Maintenance sections. These two together have 16 vacancies out of a total of 33;
 - . The problem of road maintenance which, as road construction progresses, in an increased degree will limit the section's capacity to build new roads. A solution is not simple: LCCD's which are the most logical candidates for taking over this task, have insufficient or no personnel experienced in this field and insufficient means in terms of equipment and funds.

- The present situation was arrived and with much effort and seems promising for turning the project into a truly integrated development activity. Still lacking are impact studies as to the effect of the interventions per sector and of the project as a whole on the development of the region. With the creation of a new Planning, Monitoring and Evaluation section a start could be made with such studies but the magnitude of the section's tasks in relation to its present staff position precludes a comprehensive impact study programme for the time being.
- The sustainability of the present, rather favourable situation remains questionable as long as the above constraints are not removed. Therefore the next project phase should be especially devoted to consolidation of the achievements so far. The implications of further expansion of the work, particularly into Al Bayda district, are being discussed in paragraph 13.3.
- The above observations could be briefly translated into terms of effectiveness and efficiency as follows:
In contrast to the situation in 1987 all sections made a good impression as to programme and achievements.
Generally, both Yemeni and expatriate staff seem well motivated and quantitative results of their work, as presented in the 'Position paper 1989' and the last progress reports are satisfactory.
A coherent development plan for the whole province is still nonexistent and opinions regarding the need for such a plan are seemingly not yet unanimous.
However, the documents produced by the project, as mentioned in chapter 1 present a clear overview of past experiences which may in due course serve the formulation of objectives and activities which well fit in such a plan. In the document 'RIRD, - Eleven Years of Experience in Rural Development' the project management formulated these objectives as follows (p. 41):
 - . Increase agricultural productivity and incomes of farmers through:
 - provision of agricultural services
 - better management of land and water resources
 - improved irrigation and agricultural practices
 - . Improve the health/nutrition standards of the rural families providing:
 - improved domestic water supply
 - better sanitation facilities
 - development opportunities for women
 - . Improve the mobility of services, goods and people through the construction and maintenance of rural roads.

Of course, most of these are not new and some of them are in implementation right from the onset of the project. Limitations in manpower and funds from both, the Yemeni and Dutch side do not permit these activities to cover more than a relatively modest section of the rural population for the

time being. However, if the present activities could be sustained and gradually impact studies could materialise it could be hoped that by the end of the next project phase more accurate answers could be given to the question on effectiveness.

The mission recommends that the next project phase covering the period 1990 - 1992 will be approved.

13.2. Institutional aspects

- In the Terms of Reference of the evaluation mission the following paragraph is devoted to this subject:

'Views of the authorities and project management on the future of the project, particularly pertaining to the functioning of the project within the provincial government organisation and the question whether or not a Development Authority for the area is being considered in due course. Implication of the appraisal of the National Agricultural Development Project for the RIRDP'.

- As developments regarding this subject have not yet crystallised, any statements or conclusions would be premature. At high level within the government discussions on the subject of a Central Highland Development Authority are going on. The mission was told that the Netherlands government would be informed on a decision, as soon as the Yemeni government has arrived at a definite conclusion. As to the National Agricultural Development Project the appraisal for the project is expected to take place by the last quarter of 1989 and conclusions regarding possible implications for the RIRDP can not be drawn until the Yemeni government has formulated its standpoint concerning this project.

- Thus the mission has made the following statement in the Summary:

'The mission is of the opinion that no further consideration should be given by the Netherlands side to the question whether or not a Central Highlands Authority should be created for Dhamar-Al Bayda as long as no decision has been taken on the subject. The mission recommends continuation of the Netherlands assistance to the RIRDP for the next phase, in such way that the project could cover the whole Al Bayda Province. In case the Yemeni government decides the creation of a Central Development Authority, the Netherlands government will respond positively in principle to cooperate and contribute (irrespective of the donor organisations involved) so as to ensure efficient implementation of the Yemeni-Netherlands project provided that the Yemeni side should inform the Netherlands side accordingly in order to discuss this subject and coordination.'

13.3. Expansion to Al Bayda district

- As the RIRDP started in Rada district, this district was much favoured as compared to Al Bayda district. Naturally pressure increased from Yemeni side to expand the activities into Al Bayda so as to bring about a more balanced contribution of the project to both areas. This was emphasised again in meetings of the evaluation mission with the Minister of Agriculture and the deputy governor of Al Bayda district. The expansion to Al Bayda is not an issue of discussion, rather its extent. In fact there has been a considerable shift of some of the activities from Rada to Al Bayda as can be seen from the following rough estimates in percentages of activities in Rada and Al Bayda districts.

ACTIVITIES	GEOGRAPHICAL DISTRIBUTION OF ACTIVITIES (%)			
	1977 - 1987		1988/89	
	DISTRICT		DISTRICT	
	RADA	AL BAYDA	RADA	AL BAYDA
1. Agriculture	100	0	100	0
2. Livestock	100	0	100	0
3. Rural Women Extension*	100	0	100	0
4. Agricultural Extension	100	0	90	10
5. Water Supply*	95	5	65	35
6. Sanitation	100	0	100	0
7. Roads	90	10	35	65
8. Land and Water Conservation	0	0	65	35

* These activities for reasons discussed in chapter 4 and 7 respectively are deliberately confined to Rada District for the time being.

Note: 0 does not necessarily mean zero, but negligible compared to Rada;
 100 does not mean: right from the beginning, or that activities are at large scale;

In the light of the above, the mission made the following recommendations:

'The mission recommends that extension to Al Bayda district should be one of the main aims of the project, to be reflected in the Plan of Operations for the years 1990 - 1992. A start will be made with priority activities, i.e. agriculture and extension;

building of a substation; establishment of a nursery; land and water conservation schemes, and roads. Funds for building this sub-station will be provided by both sides on a 50/50 basis'.

- However, regarding the speed and degree of expansion there was a discrepancy between the views of the Yemeni and Dutch mission members. The Yemeni members advocated an increase in the project allocation so as to allow for a larger scale expansion covering all the above priorities. The Dutch members expressed apprehension as to the danger of over-stretching the project's capacities and span of control.

In principle there are two options:

- a. Project allocation approximately the same as for the period 1987 - 1989. This would imply a further re-distribution of manpower and funds between Rada and Al-Bayda. In order not to jeopardise the achievements in Rada, such redistribution should be gradual and based on a careful analysis of resources and priorities.
- b. A substantial increase in project allocation. This would allow a considerably larger expansion into Al Bayda. However, in view of the manpower problems in Rada such expansion would compel the management to draw more personnel from Rada. There would be the danger that, as a result, the work in both Rada and Al Bayda districts would be seriously jeopardised and the standards attained in Rada falling back to the 1987 level. Even if the Yemeni Government would succeed in securing sufficient members of professional and technical staff to fill existent vacancies and for staffing Al Bayda in addition, which is very unlikely in the light of past experience, then the supervision and training of this new personnel could be an extra burden on the present RIRD staff.

Thus, the Dutch members of the mission are in favour of option a. The Yemeni members strongly insist on option b.

- Another point of discussion was the utilisation of 'rest funds' from the present project budget for activities in Al Bayda during the next project phase. The mission recommends that requests for spending rest funds for this purpose will be considered positively. But the Dutch members stipulated that funds for activities planned for 1987-1989 but not yet executed by 1 January, 1990, should not be regarded as rest funds. Rest funds should be savings, i.e. funds that were saved due to actual expenses having remained below cost estimates or not having been spent due to cancellation of activities for professional reasons.
- In view of the proposed creation of a sub-station in Al Bayda the issue was raised and discussed at some length whether or not the general manager of the RIRD should also be responsible for this sub-station. The mission is of the opinion that this question should be answered in the confirmative.

- Closely related to the increase of activities and responsibilities the mission recalled the recommendation of the 1987 evaluation mission that a deputy general manager should be appointed. This did not materialise so far.

- The mission formulated the following recommendations:

1. *The evaluation mission is of the opinion that if expansion of activities on a large scale in the Al Bayda district should be carried out, the funds for the project should be increased on both sides. The Yemeni members strongly insist on such increase. However the Dutch members had to inform them that according to their information no such increase is to be expected from the Netherlands government. The Dutch members of the mission are concerned that the expansion to Al Bayda district could be at the expense of the activities in Rada. In view of the above situation the Dutch members of the evaluation mission request the Netherlands Ambassador to take up the matter with Minister of Agriculture.*
2. *As the facilities of the sub-section at Al Bayda will be funded from RIRDP funds and the professional guidance of the sub-section will be provided by the RIRDP the evaluation mission is of the opinion that the general manager should be the responsible authority for the management of this sub-section.*
- * 3. *The mission recommends that requests for utilising rest funds from the present project phase for activities in Al Bayda during 1990 - 1992 will be considered favourably. Rest funds should be savings; funds for planned activities, not yet implemented by 1 January, 1990 should not be regarded as rest funds.*
4. *In its meeting with the Deputy Governor of Al Bayda the mission has stressed that it is a prerequisite for such an expanded programme that shortages in staff should be eliminated.*
- ** 5. *The recommendation of the evaluation mission 1987 that a deputy manager should be appointed, was not yet implemented. It is strongly recommended that a suitable candidate is identified and appointed.*

* Detail recommendation not included in the 'Summary'.
** See Summary, under paragraph 12 'General Management'.

13.4. The future of the project

- In chapter 6 of the document 'RIRD - Eleven years of experience in rural development' the project aims for the future have been spelled out. In the evaluation of the performance and targets of the various sections of the RIRD the mission has arrived at the conclusion that these plans for the future should be endorsed. The mission wishes to draw the attention of the management and the TAU leadership to the following observations.
- The above general framework of project activities was prepared, as stated on page 1 of the document, in a series of consultation sessions with the RIRD sections and with all the senior staff and consultations with the Minister and senior staff of MoA, the Governor of Al Bayda and the Netherlands Embassy. There is no mentioning of the target groups of the RIRD: the rural population of Rada and Al Bayda districts.
The mission is quite aware that under the prevailing circumstances such a 'top-down' approach is inevitable, but would like to see in the next project phase more information on the opinions, desires and needs as expressed by (the representatives of) the rural people in the province. Such information could be gathered as a more intensive monitoring is to be implemented and impact studies may be embarked on during the next project phase. For the Rural Women Section a specific recommendation is being included on a study of women's current interest in rural development (chapter 4, paragraph 4.2. recommendation 1).
- The matter of monitoring and impact studies is being discussed in chapter 9 on the Planning, Monitoring and Evaluation Section. This should be a major effort during the period 1990 - 1992.
- The tentative schedule for 1990 - 1992 and the phasing out of long term technical assistance during that phase, as shown in Annex A of the document 'RIRD - Eleven years of experience in rural development' deserves some comment. While endorsing the principle that the expatriate contribution should gradually be diminished after 12 years of involvement in the project, the mission expresses apprehension as to an abrupt termination of technical assistance by the end of 1992. It is very unlikely that by that time all vacancies for Yemeni personnel will have been filled and that all professional input can be provided from the Yemeni side. Therefore, the management and the TAU leader are advised to prepare a tentative planning schedule for a longer time, of which:
 - . The first three years (1990 - 1992) are submitted for approval of a new project allocation. For this period a Plan of Operations should be drafted.
 - . The post-1992 period is presented as a tentative follow up phase, during which the expatriate contribution is further tailing off and the emphasis of that contribution will be on short term consultancies rather than on long term assignments. Any commitment by both sides to continue technical cooperation in the above sense beyond 1992 would a.o. depend on the recommendations by an evaluation mission during the first half of 1992.

Thus, the following recommendations have been included in the summary.

The mission recommends that:

1. *The management of the RIRDP in consultation with the Technical Advisory Unit prepares a draft Plan of Operations covering the period 1990 through 1992. In addition a tentative proposal should be prepared for follow-up activities beyond 1992 so as to allow the Netherlands Government to consider further technical assistance, if need be;*
2. *In the Plan of Operations 1990 - 1992 all the recommendations of the evaluation mission will be reflected;*
3. *In the tentative proposal for activities beyond 1992 the emphasis should be on short term consultancies and only a bare minimum of resident experts, if still required, should be included;*
4. *The next evaluation should take place early in 1992. The outcome of that evaluation will determine whether or not the tentative proposal in its original or adapted form should be translated into a Plan of Operations for a follow-up project phase.*

ANNEX I

Terms of Reference for the evaluation of the Rada Integrated Rural Development Project, Yemen Arab Republic

1. Introduction

In 1987 a joint mission of the Governments of the Yemen Arab Republic and the Kingdom of The Netherlands evaluated the Rada Integrated Rural Development Project.

In a "General Statement" in its report the mission declared that some of the activities

"... have progressed well but that for a variety of constraints in several other fields progress did not meet the expectations".

The mission concluded that the project should be reviewed after two years and that as regards the less successful activities

"... then a decision should be made whether either expansion of work would be justified or donor assistance should be diverted to more successful sections or to activities elsewhere in the country"

2. Documents

- At the request of the evaluation mission the project prepared a document "RIRDPEleven years of experience in rural development" (December 1988)

This document will be an important source of reference.

- Progress Reports
- Any technical papers
- A report on results of 10 years agricultural experiments.
- A Position Paper, to be prepared by the project.

3. Objectives of the evaluation

The objectives of the evaluation are in principle identical to those for the evaluation mission 1987, i.e.

- To record the progress achieved in the light of the project documents.
- To assess the significance, the effectiveness and efficiency of the project activities.
- To assess whether and to what extent there is a need for further Yemeni-Dutch cooperation as regards the various aspects of the project.

Although the "specific topics" for the evaluation specified in the Terms of Reference of the evaluation mission 1987 are equally valid for the 1989 mission, the evaluation should focus especially on those aspects which have been discussed in the "Summary and Recommendations" of the evaluation mission 1987.

4. General, valid for all sections

- Short term objectives/targets
- activities, planned and effectuated (including how it was implemented)
- inputs in time, money and manpower: planned and effectuated
- concept and achievements (and constraints if any)
- integration of work with all sections
- papers and documents

These aspects are to be dealt with in the intended position papers.

5. Agricultural Section

- Improvements of the facilities, the programme and the personnel situation of the Al Khabar Farm as compared with the situation in 1987.
- Adaptation and quality of the programme for research and multiplication to the available resources.
- Relevance of the research programme to farmers' problems.
- Perspectives for the further development and improvement of both rainfed and irrigated crops, including fruit trees.
- Special attention to trials on modern application systems and water supply techniques
- Trials, if any, on farmers' fields.
- Implications of the above for the effective functioning of the Extension and Rural Women Extension sections.
- Cooperation in the design of the research programme with Extension Section and Rural Women Labour Section.

6. Livestock Section

- The extent to which the recommendations of the evaluation mission 1987 have been adopted.
 - if so with what effect?
 - if not, the reasons why
- Implications of the above for the effective functioning of the Extension and Rural Women Extension Sections.
- Furthermore the following points need attention:
 - to collect information on the services that have been offered by the livestock section during the period under evaluation.
 - To collect information on the availability of clearcut messages for livestock extension.
 - To advise on the role of the livestock section in the scope of the project.
 - To advise on the need for expatriate regional or Netherlands assistance to the livestock section.
 - To advise on the role of veterinary treatments cq. vaccination within the project or section.
 - To identify sources of information for livestock extension methods to be used in the rural women and extension section to the project (RLIP, ARA, etc.).

7. Extension Section

- Cooperation and integration of work with the Agricultural, Livestock and Rural Women Extension sections
- Assessment of the Training and Visit System approach.
- Number of farmers visited and of farmers visiting the extension centres (organised or at individual initiative) and frequency of the visits.
- Amounts of fertilizer and credit money supplied through or by the intermediary of the centres and the number of farmers involved.
- Any comparison, if available between farmers benefiting from the centres and those who did not.
- the in-service training programme for extension personnel (number of personnel involved, frequency and type of training).

8. Rural Women Extension Section

In the "Summary and Recommendations" of the evaluation report 1987 (p. 7-10) much attention has been paid to this section. The evaluation mission 1989 will investigate to what extent the expectations have been met and the recommendations by the previous evaluation mission have been adopted. Special attention will be paid to:

- the detailed programme for the future and the concentration of rural women extension activities in the so-called "concentration villages"
- the identification and training of village leaders
- the cooperation and integration of work with the Agricultural, Livestock and Extension Sections
- the present views on the provision of a guesthouse for farmers, trainers and visitors, as recommended by the evaluation mission 1987.

9. Water Supply and Sanitation

- View of the consultant on the longterm prospects of sanitation development.
- The integration of health education in the water supply project.
- The existence of a realistic sanitation programme, as recommended by the evaluation mission 1987 (p. 14, para 7.2.2)
- monitoring of the existent system
- selection of villages and beneficiaries within these villages
- relationships irrigation and drinking water.

10. Roads/Land and Water conservation

- The personnel situation.
- Operations and maintenance. Any progress in transferring responsibilities for maintenance to another government organization.
- Activities as regards water conservation dams.

11. Geohydrology and Drilling

Assessment of the situation since 1987

12. Mechanical Section

Situation regarding personnel and repair of heavy equipment

13. Socio-Economics Section

Priorities of problem-oriented surveys defined by the management

14. Management and Administration

Measures taken since 1987 for strengthening the section so as to render it self-sustaining in terms of personnel and facilities

15. Institutional

Views of the authorities and project management on the future of the project, particularly pertaining to the functioning of the project within the provincial government organization and the question whether or not a Development Authority for the area is being considered in due course.

Implications of the appraisal of the National Agricultural Development Project for the RIRD.

16. Future of the project

The mission is expected to discuss in its report views and recommendations on the future in terms of continuation or discontinuation of present activities but also consideration should be given to any new activities, if any, which are deemed necessary or recommendable.

17. Concluding remarks

The mission should formulate recommendations in the light of the above findings a.o. on:

the need of continuation of donor assistance for another period per section and for the project as a whole, taking into account the observations by the evaluation mission 1987, briefly quoted under para 1. of this Terms of Reference. The proposals, made in the document "RIRD-Eleven years of experience in rural development" have to be scrutinized in this connection and the longterm views of the Yemeni authorities and project management and Dutch project staff have to be taken into consideration as well as the proposal World Bank National Agricultural Development Plan. The Terms of Reference of the evaluation mission 1987 could serve as a checklist whenever appropriate.

ANNEX II

ITINERARY AND PERSONS MET

- June 02 - Departure mrs M.T. Boot from Bangladesh and arrival in Sana'a
- June 03 - Departure mr M.W. Blokland, mr L. Razoux Schultz and mr H.A.I. Stoetzer from Amsterdam and arrival in Sana'a by
- June 04 All Dutch members of the mission (Boot, Blokland, Razoux Schultz and Stoetzer):
- discussions at Netherlands Embassy with Mr A.A. Bartelink, Sector Specialist Rural Development Projects/First Secretary of the Netherlands Embassy;
 - informal discussion with Mr J. Guillot-Lageat and Mr Bachir Souhlal, members of the World Bank (WB) pre-appraisal mission for the Central Highland Rural Development Project (CHRDP);
 - discussions with Mr Th. Smits, team leader of the Technical Assistance Unit (TAU) of the Rada Integrated Rural Development Project (RIRDP).
- Boot and Blokland:
- discussions with mr H. Soeterik, Director ONV in YAR and mrs H. Nijland, ONV
- June 05 - Meeting Yemeni members of the evaluation mission (mr Ali Al-Khawlani, mr Abdulwahab Al-Hamzi and mr Mohammed Al Helali) with the Dutch members, in the presence of mr Friesenegger (GTZ), advisor to the Director of the Integrated Rural Project Department of MoA, mr A.A. Bartelink and mr Th. Smits.
- Meeting with mr Jagya Sabara, 2nd Assistant Deputy Minister, MoA and the whole evaluation mission, in the presence of mr A.A. Bartelink and mr Th. Smits.
- Boot and Stoetzer:
- discussions with mrs Hayat Al Karski, Director of Rural Women Department, Integrated Rural Project Department, MoA.
- June 06 - Departure by the Dutch members of the mission for Rada, accompanied by mr Bartelink and mr Smits.
- Introductory meeting of the Dutch members of the mission with the General Manager RIRDP and the Yemeni and Dutch project staff.

June 06

Razoux Schultz and Stoetzer:

- Discussions with the Deputy General Manager of Agriculture, heads of section, heads of sub-section and advisers of Agricultural Section, the Agricultural Extension Section and Information Section.

Blokland and Boot:

- Discussions with the head of Section Roads/LWC and the adviser of the sub-section LWC.
- Discussions with the head and the adviser of the Section Engineering/Waterschemes.
- Discussions with the head of the section, heads of the sub-section and the advisers of Sanitation and Geohydrology.

Arrival Yemeni members of the mission

June 07

- **Management Section:**

Khawlani, Razoux Schultz, General Manager, Bartelink and the Team leader.

- **RWES:**

Boot, Bartelink and Stoetzer

- **Roads:**

Blokland

- **Livestock:**

Hilali, Razoux Schultz and Khawlani.

- **LWC:**

Blokland, Al Hamzi and Stoetzer (partly)

- **RWES and Livestock:**

Razoux Schultz, Khawlani, Boot and Hilali

- **LWC and Irrigation:**

Blokland, Al Hamzi and Stoetzer

- **Workshop:**

Khawlani, Razoux Schultz and Blokland

- **Finance/Administration Section:**

Khawlani, Razoux Schultz and Blokland

- **PME:**

Khawlani, Razoux Schultz and Blokland

- **Visit to Al Khabar farm and nurseries:**

Stoetzer and Hilali

June 08

- **Field visit with the Water Supply and Sanitation**

Section: Blokland, Al Hamzi and Boot

- **Field visit with the Agricultural Extension Sec-**

tion: Khawlani, Stoetzer and Razoux Schultz

- **Discussion Hilali with head Livestock Section.**

June 09

- **Field visits with Roads/LWC and Agricultural**

Extension Section: Blokland, Stoetzer, Khawlani and Al Hamzi.

- **Visit to Al Khabar farm:** Razoux Schultz and

Hilali.

- June 10 - Visit to Al Bayda, whole mission:
Meeting with Deputy Governor and site visits
- June 11 - Field visit with RWES: Razoux Schultz, Boot,
Hilali and Al Hamiz accompanied by Mrs Hayat Al
Karski.
- June 12 - Feedback meeting with the sections and members of
the mission.
- Hilali, Razoux Schultz and Stoetzer, trip to
Dhamar:
. Visit (unofficial) to SPPC; discussion with
Sayed Taha, team leader and Mr Rahomi,
co-manager.
. Meeting at ARA with Mr. Fachl Abdu Chamid,
Regional Manager of ARA; Mr Amin Alkirshi, Mr
Monyeddin El Ghouri, Mr Mansour Alzageer and Mr
Mohammed Zaid.
- Boot and Blokland meeting with Mr Nasser El
Azzal, director MCH Clinic Rada and Mr J. Jangh
Bhadur Singh, ONV, MCH Clinic Rada.
- June 13 - Debriefing mission/management with all sections:
Mission/General Manager/Team Leader TAU/Heads of
Section/Advisers
- Al Hamzi, Boot, Khawlani and Razoux Schultz
departure for Sana'a.
- June 14 - Blokland departure for Sana'a
- Hilali and Stoetzer:
. field visits with Agricultural Extension
Section;
. departure for Sana'a.
- June 15 - Debriefing by all members of the mission, the
management of RIRD and Mr Bartelink at MoA with
Mr Nasser Abdulla Awlaqi, Minister of Agriculture
and Mr Mukbil Ahmed Mukbil, Deputy Minister of
Agriculture.
- Razoux Schultz: Netherlands Embassy, meeting with
Mr J.J. Wijenberg, ambassador.
- June 16 - All Dutch members of mission meeting with WB
mission (see also 4 June)
- June 17 - All Dutch members of mission departure from
Sana'a and arrival in Amsterdam.

ANNEX III

STAFF OF RIRDP (YAR-STAFF AND LONGTERM STAFF) Per June 15th, 1989

General Manager : Ahmed Abu Regal

1. Agriculture Section
Head of Section : Mohammed Mahjough
Technical Assistant Fruits : Ahmed Saleh
Technical Assistant Forestry : Khalid Attashi
TAU Horticulture : H.W.J. Overloop

2. Agricultural Extension Section
Head of Section : Ali Al Ayashi
Area Supervisor (5 x) : Abdaleh Al Fatish
Ala'a Ibrahim Badr
Al Sayed Attiya
Abdul Karim At Tamm
Abdallah Nagi
Subject Matter Specialist : Al Wahbi
Plant Protection : Ali Kuku (Sudanese)
: Yassin Al Absi
Soils and Irrigation : Adnan Abdul Al Fatah
TAU Agric. Extension Advisor : Humeida Khalil
TAU Irrigation Specialist : A. Noordhoek Hegt

3. Information Unit
Head of Unit : Ali Ahmed Al Asswad

4. Livestock Section
Head of Section : Yahyah Al Wasaby
Veterinary Doctor : Ibrahim Shafiq (Egyptian)
Assistant Vet. Doctor : Khalid Al Rassas
Technical Assistant : Hamied Adien Gelal
Abdul Rahman Al Mustaka

5. Engineering Section
Head of Section : Salah Al Gafni
Head of Subsection Sanitation : Saad Al Wahaibi
Construction Supervisor : Saif Ahmed
Laboratory Technician : Ali Sharif
Geohydrologist : Jamil Kaweh
Saleh Johaish
Installation Supervisor : Ali Guar
TAU Engineering : H. Gidey
TAU Sanitary Engineering : A. van der Horst
TAU Geophysicist : R. Teunissen
TAU Geohydrologist : vacant
TAU Sanitation Extensionist : Hassan Khalid
TAU O&M Technician : A. Cagar

6. **Road Section**
Head of Section : Abdulah Awiagi
Supervisor (4 x) : Mohamed Susuwa
Alawi Batooi
Ahmed Omari
Sinan Mawri
TAU Land and Water Conservation : G. Leereveld
7. **Rural Women Extension Section**
Head of Section : Vacant*
TAU Home-economist : A. Janssen
TAU Female Agric. Extensionist : M. Faiza
TAU Health Educationist : L. Zonneveld
TAU Livestock Extensionist : vacant
8. **PME Unit**
Head of Section : Ahmed Saleh Shamy
Agro Economist : Abdulatif Al Raboy
TAU Agro-economist : A. Bakheid
9. **Maintenance Section**
Head of Section : Heil Mohamed Abdu
Supervisor : Ali Al Hadda
Transportation officer : Salah Kuzam
Storekeeper : Ali Johaish
10. **Administration and Finance Section**
Head of Section : Hussein Idris
Accountant Yemeni Budget : Abdulah Oshaish
Accountant Dutch Budget : Ali Mogbil
Procurement Officer : Ali Kabili
Personnel Officer : Saad Bukari
Logistics Officer Sana'a : Abdel Karim Oshaish
Computer Specialist : Eissa
TAU Finance and Administration : H. Boerdam
11. **Management Section**
General Manager : Ahmed Abu Regal
Deputy GM for Agriculture : Mohamed Sharaf
Translator/secretary : Mohamed Shahary
TAU Team Leader : Th. Smits

* at the time of the mission

ANNEX IV

List of References

1. Report by a joint Yemen - Netherlands evaluation mission to the project in the period from 23 August to 19 September 1987 (Sept-Oct. 1987).
2. Plan of Operation, 1988 - 1989 (Nov. 1987).
3. Progress Reports numbers 39 - 45 (July 1987 - March 1989).
4. Eleven years of Experience in Rural Development (Dec. 1988).
5. Overloop, H.W.J.: Review of the Agricultural Experiments (1977 - 1988) at the Rada Integrated Rural Development Project. Past and Future Strategy (Technical note 27, March 1989).
6. Position Paper - Monitoring report 1989 (June 1989).
7. Marion Derckx: Elementary Hygiene and Sanitation. A manual on behalf of the course for female rural extension agents in Rada, YAR. Non-formal Education Centre for Women, Rada; Mother and Child Health Clinic, Rada; Rada Integrated Rural Devt. Project, June 1987.
8. Marion Derckx; Elementary human nutrition. A manual on behalf of the course for female rural extension agents in Rada, YAR. Non formal Education Centre for Women, Rada, MCH, Rada, RIRDP, September 1987.
9. Lies Holstein; Review and planning of the rural women extension programme, Mission report, May 1988.
10. Dia Timmermans; Review and planning of the health education programme. Mission report, May 1988.
11. Schoot, Chrisje and Derckx, Marion; Communication explained Communication training for extension workers. Range and Livestock Improvement Programme and RIRDP, November 1988.
12. Aart M. van der Horst; Alternative solutions for village waste eater disposal: Al Hajar village as case study, January 1989.
13. E.H. Hofkes; Sanitation programme review and planning, Mission Report, April 1989.
14. Marion Derckx; Review of the RWES Health Education Programme in 1988, April 1989.
15. Edwin Prowizur; Socio-economic survey of water supply schemes. Summary of mission report, May 1989. Draft.
16. Dia Timmermans; Draft summary of: Review and Planning of Health Education Activities. Mission Report, May 1989.
17. M.A. Tesselaar; Market size and market links for products produced by rural women, May 1989.

18. Lies Holsten; Review and planning of the rural women extension programme. Mission report, May 1989.
19. Wissink, A. 1988; Review of the Horticultural Subsection Programme. Mission Report (May 1988).
20. Recommendation for the RIRDP Extension Services. (Technical Note 25, February 1989).
21. Overloop, H.W.J., 1989; Distribution of fruit and forestry trees in Al Bayda Province in 1989. Production costs fruit and forestry trees at the Al Khabar form in 1989 (Technical Note 34, June 1989).