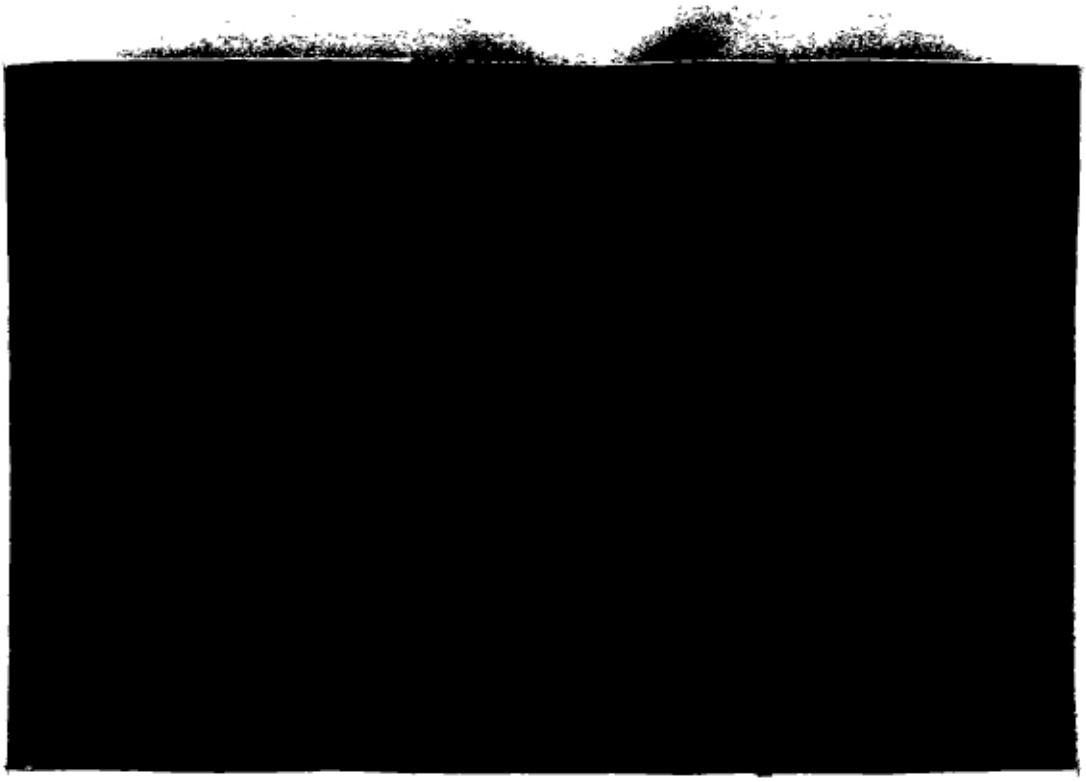
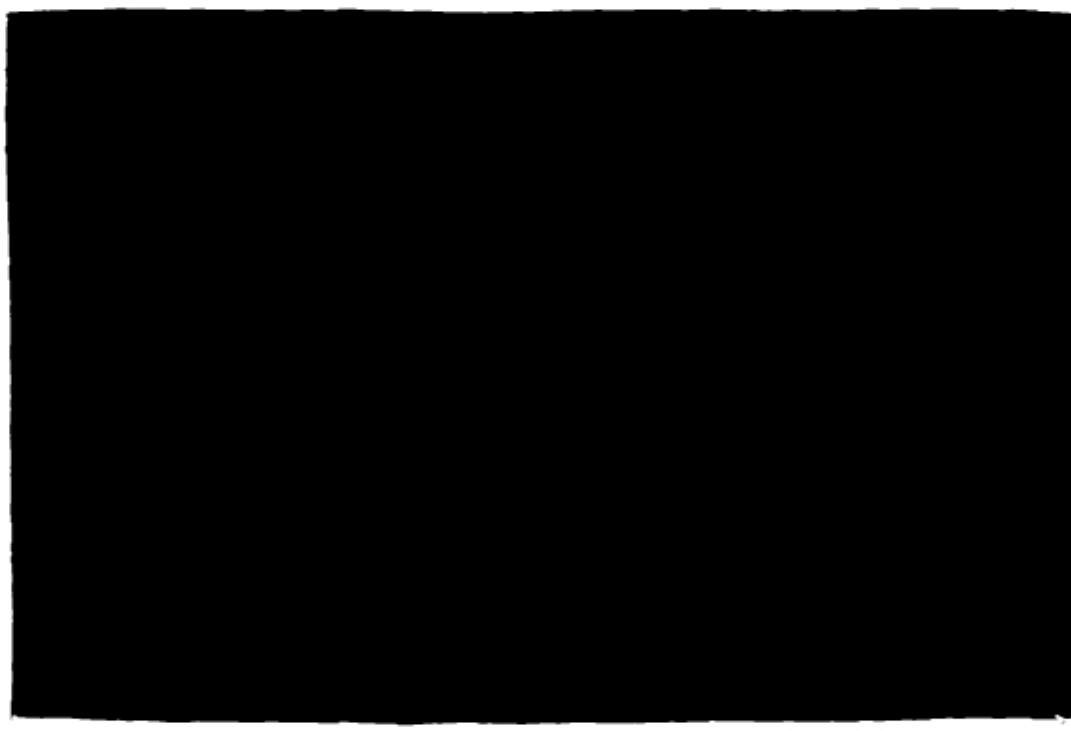
TEACHING WELL

TEACHING BETTER



A study on the education programme of the Rural Water for Health Project in Zambia



Water is the driving force of all nature

Leonardo da Vinci

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TEACHING BETTER

A study on the education programme of the

Rural Water for Health Project in

Zambia

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November 1992

RURAL WATER FOR HEALTH PROJECT
Solwezi, Zambia

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PREFACE

For a thesis on Extension Science within my study of Human Nutrition, I worked seven months for the Rural Water for Health Project in Solwezi, Zambia. I hope this paper and the new training programme will be of use for the project.

I am grateful to all the people of the project and all other friends, who made my stay so pleasant and instructive and such a precious memory. Some people I want to mention in particular. First of all Erick Baetings who assisted me in my study with useful comments, but more specially offered me so much hospitality and friendship. Secondly I want to thank all the PEP-staff; Mr Kalenga, Mrs Mephis Musonga, Mr Chiyengi, Mr Malambo, Ms Riet Lenting and Mr Kanyetta. I learned a lot from them and we spent pleasant times together in the field and in the office. Finally I thank Greatson Mulapwa and Oliver Chilekwa and their wives for their warm friendship.

Furthermore I thank my supervisor Jet Proost for her useful and pleasant assistance during the preparation and completion of this research and report. And last but not least I thank my housemates for their support and encouragements in the moments when I thought this paper would never get finished.

The title of this paper is analogous to the title of a base-line survey conducted by the RWHP in 1988: "Getting well, getting better".

SUMMARY

The study described here is carried out on the Participation and Education Programme (PEP) of the Rural Water for Health Project (RWHP) in Solwezi, Zambia. This project has been constructing hand-dug wells in two districts of the North Western Province since 1988. Construction is done on self-help basis; communities request for assistance, contribute labour and materials to the construction and are fully responsible for the maintenance after completion. To motivate and organize communities for these responsibilities and to augment a possible health effect, the PEP has been developed.

The analysis of the PEP is done on the basis of the factors of Royen's wheel: objectives, target group, content, organisation and methods/methodologies/materials. An investigation of these concepts was done on two levels; the overall education programme and a specific training. In the latest Project proposal a community based approach is strongly advocated, however in practice the participation of the target group is quite limited by strict project procedures.

The PEP broadly focuses on three aspects; motivation and organization of the community, proper use and maintenance of the facilities and health, hygiene and sanitation education. However it came out that no clear and precise objectives for the PEP are available.

All meetings, except some trainings, are conducted for all villagers, without differentiation in specific target groups. It is recommended to organize in any case special meetings for women. Though knowledge about the target population is available from different sources, more information should be collected in order to further improve on the programme.

As a consequence of the lack of clear objectives the content of the PEP is not well focused and quite superficial. Moreover, the health education is merely directed at increasing knowledge. A selection of clear-cut topics and actions has to be compiled on which the programme should concentrate.

Besides eight project staff, a number of community based extension workers of other ministries is involved in the PEP. Although the incorporation of these extension workers into the PEP has many benefits, it presently creates a lot of problems too. The main constraint is their lack of motivation and part of them also have insufficient knowledge on health and hygiene topics and are lacking adequate teaching skills.

Little variation is seen in the methodologies of the PEP. Mainly discussions are held which often result in question-answer sessions. Participation of the target group is therefore limited.

Most problems seen in the overall analysis are also found in the case-study on the Village Caretaker Training. For the new programme more elaborated objectives are formulated. The content is revised on the basis of these new objectives. Changes have been proposed to provide for more extensive, profound and structured discussions on the topics. A number of new methodologies are used in the new training to increase the participation in and variation and attractiveness of the course.

TABLE OF CONTENTS

1.INTRODUCTION

1.1 BACKGROUND AND FORMULATION OF THE PROBLEM

The Rural Water for Health Project (RWHP) operates since 1988 in the North Western Province (NWP) of Zambia. The RWHP is part of the Department of Water Affairs (DWA) and is in charge of the construction of water wells in rural areas of three districts of this province.

The attention being paid by the project to educational activities has been extended largely since 1989. From that time the educational component has been outlined in the Participation and Education Programme (PEP). The tasks of the PEP are to stimulate the involvement, participation and organisation of the target group and to encourage hygiene and sanitation education. These conditions have to be fulfilled in order to ensure the acceptance and sustainability of the new facilities and to increase the health impact of the new and safe water supply system.

I came in contact with this project because of my interest in the use of drama in extension programmes. The RWHP employs a professional drama group to give performances during some of the meetings of the education programme. In the scope of my Master's thesis for extension science I wanted to carry out a research into the use of drama within this project. The research question the project proposed to me was to find some possible alternatives for this methodology. The foremost motive for this request was the high dependency of the project on the drama group. Moreover it was thought necessary to improve and diversify the whole extension programme.

However, it is not possible to improve an extension programme by looking at the methodologies only. Firstly, it is necessary to know the entire programme to be able to propose appropriate alternative or additional methodologies. Secondly, frequently methodologies are not the fundamental constraints in a programme. Therefore it has been decided to analyze the complete programme first, before new methodologies would be proposed. As stressed by Wapenaar et al (1989) first the "six W's" have to be sorted out and known before the "H" can be filled in. This means that first the questions Why, What, Where, When, For Whom, By Whom have to be answered before any conscious choice can be made How to give the extension (which methodology will be most appropriate and effective). Consequently the problem formulation is quite broad and runs as follows:

Problem formulation:
Which improvements are possible in the extension programme of the RWHP?

1.2 RESEARCH OBJECTIVES, QUESTIONS AND METHODOLOGY

Research objectives:

* To investigate the problems with the currently given extension of the RWHP in the villages.
* To study how these problematic aspects can be improved.

Research questions:

a- How can the present extension programme of the RWHP be described?
b- What are the positive and negative sides of the present extension programme of the RWHP?
c- Which recommendations can be made to improve the extension programme of the RWHP?

The study of the extension programme (question a and b) is carried out by means of an investigation of the factors of Royen's wheel; objectives (why), target group (for whom), content (what), organisation (by whom, where, when) and method, methodologies and materials (how).

The study is mainly carried out by participant observation and by consultation of project personnel. Frequently I accompanied the PEP-staff into the field to attend trainings and meetings. Otherwise I stayed at the office to work out results and to participate in meetings. During all these activities there was ample time to observe and talk with many of the project staff, and moreover with extension workers and villagers.

The current organisation and implementation of the PEP is related to and compared with what was found in literature. Literature both on extension in general and more specific on extension in water supply projects is referred to. Furthermore literature on health, hygiene and sanitation education was used.

1.3 THE VILLAGE CARETAKER TRAINING AS A CASE-STUDY

The educational activities of the PEP can be divided in four sections, each on their turn consisting of several activities. An analyses of the PEP can be done on either three levels. The analysis of the overall education programme, as introduced in 1.2, is a study in the first level. Additionally a study on the third level is carried out as an case-study. This allows for a more detailed and profound study of the particular extension activity. Besides, more concrete and specific recommendations for improvements can be given in this way.

The research objectives and questions for this case-study are analogous to those of the overall analysis, and run as follow:

Research objectives:

* To investigate the problem of the current VCTT.
* To give recommendations for improvements of the VCTT with major attention to the objectives, content and methodologies.

Research questions:

a- What is a description of the current VCTT?
b- What are the problems of the current VCTT?
c- Which recommendations can be made to improve the VCTT?

Note: The research questions will be answered with major attention to objectives, content and methodologies.

The analysis of the VCTT is set up and carried out in the same way as the overall analysis of the PEP. Outcome of the case-study is an improved design for the programme of the VCTT. This design will be take shape in the form of a new hand-out for the facilitators of this training.

1.4 OBJECTIVES AND STRUCTURE OF THIS REPORT

This report is intended primarily for the RWHP to be of use for the further development and improvement of their educational programme. More precisely it is meant for the PEAs and management-staff, who should convert the recommendations in practical changes and activities for other concerned staff. Secondly other comparable water supply projects might possibly find their benefits from the analysis or the case-study in this report.

The set up of this report is as follows. After this introduction, the RWHP is sketched in chapter two. In chapter three the analysis of the PEP is described on the basis of the factors of Royen's wheel. The case-study of the VCTT is worked out in chapter four. Finally chapter five and six comprise of respectively the conclusion and discussion.

Annex I consists of a list of abbreviations that are used in the report. Concepts with a specific meaning in the scope of this report are explained in annex II. The new programme of the VCTT is added as an addendum.

2. RURAL WATER FOR HEALTH PROJECT

2.1 INTRODUCTION

This chapter describes the Rural Water for Health Project (RWHP) briefly. First a sketch of the project area is given in paragraph 2.2. After a short summary of the history of the project, paragraph 2.3 introduces the present situation and organisation of the RWHP. The project is currently found in an interim period between the first and second phase.

This chapter presents merely a description of the RWHP which is for the greater part adopted from the Project proposal for the second phase (Project proposal, 1991).

2.2 PROJECT SETTING

2.2.1 Project area and its population

The RWHP presently operates in two districts of the North Western Province (NWP) of Zambia; Kasempa and Solwezi district. In 1992 the project planned to phase out of Kasempa. As soon as the project proposal for the second phase is accepted, activities will start in the third district, Mwinilunga. The total area of these three districts is 72,000 sq.km.

The population in the total project area is, according to the 1990 census, 239,460. Approximately 86% of the population lives in rural areas, which makes the target population for the project about 206,000. As these figures show, the project area is very sparsely populated, with an average of 3 persons per sq.km. However most villages are found along the main roads of the districts and, to a lesser degree, along the rivers. Only in Mwinilunga the villages are more scattered among the fertile areas.

The economic situation in the NWP is very poor, most people are engaged in subsistence farming based on sorghum or cassava. The yields are low and seasonal hunger is common (Harnmeijer et al, 1990). Some few additional cash earning activities are undertaken, like cash crop farming, fishing, hunting, trading and beer brewing (Doedens et al, 1989). However the income from these activities remains low.

2.2.2 Existing water and sanitation facilities

In 1986 there was, according to data from DWA, a total number of about 600 protected wells in the NWP. If they all were fully functioning, some 25-30% of the total population would have been served with save water. However half of the wells were functioning poorly or were completely out of use.

The current situation is difficult to assess. Since 1986 quite a number of new wells have been constructed but on the other hand has the condition of the previous mentioned 600 wells probably deteriorated. Altogether the majority, assessed at some 60-70%, of the population of the NWP is still dependent on unsafe water supplies, like streams, dambos and unprotected shallow wells (Project proposal, 1991). Data from the Provincial Planning Unit from 1988 even give a much more pessimistic outcome of the percentage of the population served by a fully functioning well (Harnmeijer et al, 1990).

The baseline survey conducted in Kasempa and Solwezi (Doedens et al, 1989) indicates that about 90% of the villages had some kind of pit latrines. Although the majority is in use, half of the latrines were considered dirty and covering the squatting hole is not very common.

2.3 PROJECT DESCRIPTION

2.3.1 History

The RWHP is the successor of the Drought Contingency Project (DCP) which started in 1984 with the construction of new and rehabilitation of existing wells in two districts of the NWP; Kasempa and Solwezi. The DCP, which was set up after a period of extreme drought in 1982, was implemented by the DWA with support of money and manpower of the Netherlands Government and the Dutch Development Organisation (SNV). In 1988 the DCP was continued as the Rural Water for Health Project. This project operated until 1990, in that year a proposal for the next phase was made. This proposal was rejected by the donor and in 1991 a new proposal was written and submitted to the Zambian and Netherlands Government. This new proposal still waits for a final decision about its acceptance.

2.3.2 Objectives

The long term objective of the second phase of the project is (Project proposal, 1991, p16):

> "The principle social and economic objectives of the project are to provide safe and adequate drinking water facilities at affordable recurrent costs with the aim to improve the health and living conditions of the rural population in three districts of the North Western Province."

Besides this general objective, four operational objectives are formulated:

1- Assist communities in the establishment of their own improved water supply facilities;
2- Ensure that completed facilities have maximum potential of being sustainable in the long run;
3- Maximise potential health benefits and living standards from the improved facilities; and
4- Assist the DWA in strengthening its institutional capacities.

Some additional comments on these objectives are given in the project proposal, p17-19:

ad 1 In the three year period of the second phase of the project a total number of 150 new wells will be completed.

ad 2 This is one of the most fundamental operational objectives. The potential of sustainability can be maximised by:

a- maximising commitment of users by following consistent selection criteria stringently;
b- maximising capability of users to carry out operation and maintenance tasks;
c- minimising maintenance requirements, by improved designs, technology applied, material used and standards of construction; and
d- developing the capacity of responsible institutions for managing the back-up support activities.

ad 3 With regard to a reduction of water related diseases specific targets are not feasible. Public health levels will be increased by:

a- selecting villages on their potential for an improvement in water accessibility, and water quantity and quality;

b- ensuring acceptance, functioning and use of facilities by maximising the communities' involvement;

c- incorporating simple health and sanitation messages/sessions in all meetings and trainings;

d- maximising the chance of continued health and sanitation activities after project completion by involving, training and supporting existing extension services.

The improvement in living standards will be most obvious by a saving in time and energy when a more accessible water supply is available, thereby increasing the production potential. Especially woman and children are likely to benefit from this.

ad 4 The project is to assist the DWA to strengthen its capacity to plan, implement and support water supply and related health activities. The project also intends to serve as a catalyst in increasing coordination and liaison between various government institutions involved in community development, water supply and health and sanitation education.

2.3.3 Approach

The project approach has considerably changed since the start in 1984. In the beginning the first aim was to serve the poorest population groups (Project proposal, 1984). However at this moment the first aim is to assist in the construction of wells that have a good chance of being sustainable. This implies an important change in the criteria for the selection of potentially assisted villages. The first years the most important criteria was the need for an improved water supply. Besides this the emphasize in the second phase will be more on the ability and willingness of the community to properly use and maintain their well.

The project always had a community based approach. However the implementation and use of this approach have changed in the course of time. The participation and education component (PEP) of the project has been extended largely, both in personnel and in importance, to ensure the involvement of the communities from the earliest stages of project interventions.

The set up of the PEP has also become more community based. To lessen the gap between the project and the communities, part of the PEP is now delegated to community based extension workers.

2.3.4 Construction

The technology that is used by the project is a covered shallow hand-dug well with a bucket and windlass system. The project both constructs new and rehabilitates existing facilities (repair or redeepening). All wells are supplied with a soak-away and washbasin. Material that is not locally available is provided by the project.

In the second phase the RWHP intends to implement also hand-augured bucket pumps. This type of facility is more economical and is mainly suitable for smaller communities.

2.3.5 Selection, construction and follow-up

The project is introduced to communities during a ward[1] meeting. After this interested communities request assistance of the project by means of an application form. All the applications are scrutinized to select a number of communities where an assessment survey will be conducted. After this assessment the project staff decides which communities qualify for assistance.

The selected communities receive tools from the project, and have to dig until water level. Then a construction team from the project is send to assist the community with digging below water level, lining and constructing the surface part of the well, the soak-away and washbasin.

When the well is completed it is officially handed over to the community. Extension staff will further assist the community with regular follow-up visits.

2.3.6 Organisation

The RWHP falls under the responsibility of the Provincial Water Engineer, DWA. The project can be roughly divided in four sections.

* The management and administrative section is a.o. responsible for planning, reporting and financial control.
* The participation and education programme conducts meetings, trainings and assists the extension staff in carrying out community support visits (this section is in great detail described in chapter 3).
* The construction section makes the well liners and assists the communities in constructing the wells.
* The mechanical workshop is responsible for the maintenance of all project vehicles and equipment.

An organisation chart which shows the division of responsibilities and supervision is given in annex III.

The total number of project staff for the RWHP-II is 75. More than half of them are directly employed by the project, 23 are seconded by the DWA. The Ministry of Health (MOH) and Department of Social Development (DOSD) have both seconded four staff members.

2.3.7 Users Support Programme

To enable communities to maintain and repair their wells a programme is being set up to give them continued support in these tasks. The Users Support Programme (USP) is a joint programme of the DWA, MOH, DOSD and the District Council (DC), it has to be integrated in these existing government institutions. The project will assist in establishing the USP.

[1] Wards are political subdivisions of a district.

The objectives of the USP are (Project proposal, 1991 p34):

a to enable communities to take full responsibility for the operation and maintenance of water supply facilities; and

b to ensure properly coordinated and effective back-up support from the participating government institutions.

To reach these objectives the USP will carry out the following activities:

- organize and conduct trainings both for VWCs and village caretakers as well as for community based extension staff
- give continued support to the extension staff to assist them in their duties with regard to improving the hygiene and sanitation situation in the communities.
- give technical support and advise to communities on the operation, maintenance and repair of the wells. Supply of spare parts and actual repairs will be on cost recovery basis.

3. PARTICIPATION AND EDUCATION PROGRAMME

3.1 INTRODUCTION

This chapter describes the Participation and Education Programme (PEP) of the RWHP more in detail. This description will be done by analyzing the factors of Royen's wheel; objectives, target group, content, organisation, methods/methodologies/material. (Wapenaar et al, 1989).

First brief reflections are made on the concept of hygiene education and on the model of Royen. Then the present activities of the education programme are briefly described. Paragraph 3.2 gives some remarks concerning the project policy because this is the major basis for the PEP. In paragraph 3.3 till 3.7 the PEP is presented and analyzed, each paragraph deals with one of the five concepts of Royen's wheel.

3.1.1 Hygiene education

Boot (1991 p4) defines hygiene education as "all activities aimed at encouraging behaviour and conditions which help to prevent water and sanitation related diseases". Hygiene education is often part of water and sanitation programmes. In this setting it normally aims to "promote an optimum use of water supply and sanitation facilities and a care for their continuous functioning through proper operation and maintenance" (Boot, 1991 p.1). With this definition the tasks of the PEP can be summarized as hygiene education.

This definition makes hygiene education as a very broad concept, also including e.g. motivating and organizing the community to maintain new water facilities. Although hygiene education will normally refer to a more restricted concept and this definition may be a bit too broad, it makes reference to all PEP-activities easy. Therefore when hygiene education is mentioned in this report it refers to this wide definition. This explains why many references are made to what is written about hygiene education by Boot (1984 and 1991) and Burgers et al (1988).

It has been proved by many studies that hygiene education is an essential part of water supply and sanitation projects. The physical construction of facilities is not enough to reach the general objectives of these projects, namely: to help to prevent water and sanitation-related diseases and to help to improve living conditions.

To have any significant effect on the health and living condition of the beneficiaries these facilities have to be used continuously by everybody in a hygienic way (Boot, 1991). Furthermore it is normally necessary to change also other hygiene conditions and behaviour of the beneficiaries (Burgers et al, 1988). Hygiene education is necessary to achieve this. This need for hygiene education is realized by the RWHP, as it states that the PEP is the "backbone of the project" (Project proposal, 1991 p27).

3.1.2 Royen's wheel

The model of Royen can be used to plan and design an extension programme. An illustration of this model is presented in figure 1. This is only one of the possible representations of Royen's wheel. Which factor is placed central can vary according to a specific situation (Wapenaar et al, 1988).

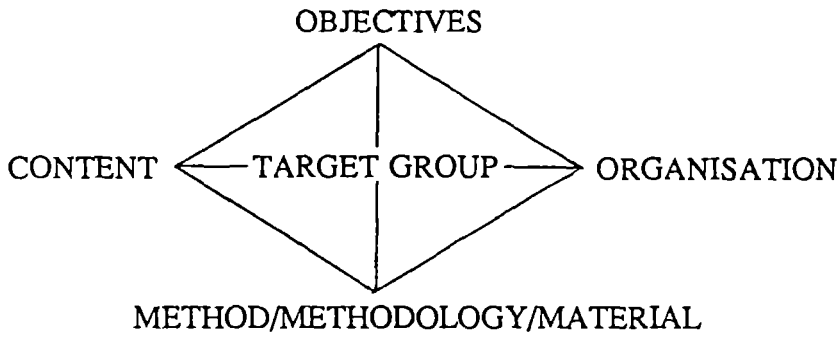

Figure 1. Royen's wheel (Wapenaar et al, 1988 p75)

Royen's wheel aims at two things. Firstly it indicates the five essential aspects which have to be considered during planning and setting up an extension programme. Secondly it stresses the interdependence between these factors. Changes in one of them have consequences for the others.

Although this model is originally a planning model it can also serve for a more evaluative study. Royen's wheel should not be seen as a static model but as an iterative process. The wheel should be passed through several times during the planning stage. Decisions become more and more precise and definitive in the course of this process. In this light the use of the model as evaluation instrument can easily be understood (see fig. 2).

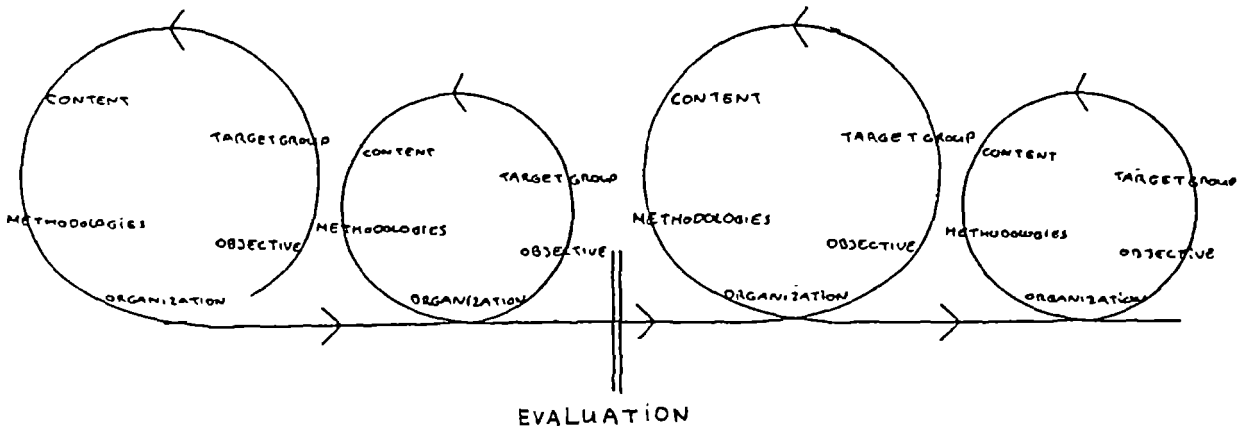

Figure 2. Royen's wheel as a dynamic process and the role of an evaluative study within this process (adapted from Wapenaar et al, 1988, p76)

3.1.3 Activities of the education programme

The educational activities carried out for the PEP can be broadly divided in four sections; 1) Programme for wells under construction, 2) Programme for completed wells, 3) Trainings for Village Water Committees (VWCs) and 4) Trainings for extension workers.

The meetings of the first two Programmes are normally referred to as Community Support Visits (CSVs). They are briefly enumerated in annex IV, this is a summary of the out-lines given in the so-called "Blue File". Both PEP-staff and extension workers use this file as a hand-out for the meetings.

Programme for wells under construction

This is the series of meetings that is held before and during construction activities. The Programme starts with some orientation meetings in a new ward, in these meetings the project introduces itself in this new area. Then appraisals are conducted in some selected communities, out of these are finally the communities selected that finally qualify for assistance.

In the selected communities a succession of five meetings is executed by the PEP-staff. Three meetings take place before the actual construction commences. They aim at motivating and organizing the communities, selecting the well site and training VWCs. Additionally health education is given. The last two meetings are respectively right before and after completion, to hand over the facilities officially to the communities. Additionally the PS and extension worker should pay several undefined visits during the period of construction.

Programme for completed wells

This is a cycle of six meetings which is repeated twice a year. The first three meetings concern the condition and maintenance of the facilities. When problems are encountered the facilitator should assist the villagers with drawing up an action plan to solve this problem. The last part of the programme consists of meeting concerning respectively sanitation and domestic & personal hygiene.

The extension workers are presently responsible for these meetings. They are assisted by the PEP-team through occasional visits. The cycle consists every term of the same meetings. Target group of each meeting is the entire community that is using a facility.

Trainings for Village Water Committees (VWCs)

Presently three trainings for VWC-members are conducted. The first one, the VWC-training, is included in the Programme for wells under construction. A VWC-refresher course has recently started. This is a training of one day, mainly focusing on communication within the VWC and between the VWC and the community (because this course has just started it is not in this report). Both VWC-trainings are conducted for every VWC separately.

A last training in this section is the village caretaker training (VCTT), this is analyzed in detail in the case-study presented in chapter four.

Trainings for extension workers

Twice a year[2] a "PEP-workshop" is organized in both districts. This is a two day training for all extension workers in one district. The workshop used to concentrate on looking back

[2] Until the half of 1992 this used to be four times a year.

on the programme of the extension workers (Programme for completed wells) of the previous quarter and planning a new programme for the next quarter. Currently more attention is paid to give the extension workers some basic training in educational concepts and techniques. The training is mainly planned by the PEAs and executed by both the PEAs and one PEP-team.

3.2 PROJECT POLICY

3.2.1 A community based approach

In the Project proposal for the second phase community based approach for rural water supply projects is strongly advocated; "the quality of construction is important but the involvement of the communities in all the activities from the early stages of project intervention at community level is even more important to guarantee sustainability" (Project proposal, 1991 p27, see also 2.3.3). On grounds of this the PEP section has such a significant role in the whole project cycle.

A community based approach is important because experiences have shown that communities will only put effort in new facilities which they see as an improvement on their former source. Only through this kind of approach the new facilities have a good change to be accepted and maintained properly by the beneficiaries (IRC, 1991).

In a truly community based approach the community has a voice in all important decisions. "Right from the start, it is argued, decisions about types of technology, levels of service, positioning and frequency of neighbourhood taps, organization of water committees, provision of local labour for construction, selection and training of community members for maintenance duties, and so on, need to be reached jointly through continuous dialogue between the prospective users of the new system and the implementing agency" (IRC, 1991 p6). Although this quotation is about piped water systems, the same applies for other water systems. This way of collaborating with the future users will make sure that the improved water facility and its maintenance system meets their needs, wishes and abilities.

The name that is used for this kind of approach in an IRC-publication: "partnership approach", gives a fair impression of what it involves: "The communities not only have to be informed on the project but the agency must in the first place work with them to identify their needs and capacities" (IRC, 1991 p9, underlining by author).

Despite the recognition in the Project proposal (1991) of the importance of the full involvement and participation of the beneficiaries in all stages, the every day practice of the RWHP does not prove this. Improvements towards a more community based approach have surely been made since the beginning of the project in 1984. But the involvement of the community still principally consists of the implementation of rules and procedures imposed by the project. They have nearly only a voice in minor aspects and decisions.

The community is not able to choose the most suitable type of water facility because the project only offers one type of technology[3]. Offering a wider range of water facilities is an unfeasible option for betterment in this respect. Additionally strict project procedures have

[3] In the near future another option will be available, namely a hand augured well. Whether this will make any improvement for the involvement of the communities will depend on who is going to make the choice between the two facilities, the community or the project.

to be followed. An example is the compulsory criterion of a minimum of 40 households per well. There are sound motives for this criterion; first to assure the future availability of sufficient funds for the upkeep of the facilities and secondly to reduce the "per capita cost". In spite of this it denies the possibility that communities are able and prefer to organize the necessary funds with less households. The organization of the maintenance might in these cases be more easy because less villages are involved.

To meet the requirements of the donor, to construct a determined minimum number of wells, a pressure of time is entailed on the project activities. It should be realised that a complete implementation of a community based approach will not be possible because of these constraints, implying that the current proceedings are not enabling the full and genuine involvement of the communities.

Although the introduction of an absolute community based approach is not possible for the RWHP, improvements towards a more genuine cooperation with the communities are still attainable. Some points that should be taken in account are for example the following.

Firstly the "Programme for wells under construction" should be less tight. Currently the number of visits per community is limited and fixed, also the space of time between visits is equal for each community. Certainly restrictions on the number and period of these visits are inevitable, but more flexibility is necessary to avoid too hasty decisions and to make sure that the community is sufficiently participating and prepared to organize itself.

Besides the construction work another aspect influences the rigidity of the programme. This is the fact that a drama group is involved during two meetings. This results in more inflexibility of the programme, as the meetings involving this drama group should for logistical reasons be conducted for all communities in the same period.

Secondly the meetings before construction should have less the character of strongly promoting the offered facilities. The protected wells will have many positive effects (e.g. a saving of time for water collecting and a decrease in the prevalence of water related diseases), but they also requires quite something from the communities. The maintenance will cost efforts, money and cooperation. These aspects are incorporated in the meetings, but to my impression they are not really discussed in an "open way". The meetings have too much the goal to convince the communities of the advantages of the facilities.

A point that should get more attention is the improvement of traditional water sources. Relatively small and simple improvements of these sources can often bring about remarkable betterment of the water quality. This aspect is discussed presently during assessment meetings (see annex IV), but does not receive the attention it deserves. (Communities that are not selected for the new facilities can also greatly benefit from this, an important improvement in the water condition of much larger group of people can be achieved in this way.)

Furthermore is the community not really involved in the organization of the VWC. The project outlines the organizational form and the tasks and responsibilities of its members. This organization is not discussed with the villagers but merely explained to them. The communities can only choose the persons who shall take up the prescribed posts.

Since the establishment of a strong community organization is influential for the sustainability of the facilities, it is very important that the type of organization is suitable for and accepted by the community. For this reason it might be necessary to have a closer look at the effectiveness of the current VWC, and to see whether another organisational form would be better.

It will again ask for a more flexible and probably prolonged programme to give the communities more exemption to choose their own way of managing the well. It is probably not possible for the project to let the community entirely free to choose a suitable organisational form by themselves. Many communities will need guidance and support to organize themselves adequately. Ensuring for example the participation of all community members and the consideration of all aspects involved in the management of the facility. However it will be feasible to introduce some alternatives and find out together which possibility the community prefers. Before outlining different alternatives investigation is needed on common types of organisation and cooperation in the region.

A good example where the procedures come closer towards a community based approach is the implementation of a fund-raising system. At present not one system to organize the necessary funds (monthly contributions) is advocated anymore, but different possibilities are given and discussed. The decision on the organisation of the funds is left to the communities. This approach should be applied to more aspects of the project activities and interventions.

3.2.2 Conclusion

The policy that is advocated by the project towards the implementation and construction of water facilities; a community based approach, is presently not fully adopted by the project. It should be looked at carefully how far this approach is wanted by and feasible for the project. Although a fully adopted community based approach will not be possible, some improvements can still be made. The new approach towards the fund-raising system proves this. This approach should be applied to more aspects of the project activities and interventions. Moreover the programme before construction should be more flexible and more truly based on a dialogue with the community.

3.3 OBJECTIVES

3.3.1 Objectives of the PEP

When the PEP started at the end of 1988, objectives for this programme were formulated. Although these objectives may still be more or less valid, the formulation was so poor that they are not applicable. Presently they are therefore not used anymore.

However real objectives for the PEP have not been formulated recently. In the Project proposal for the second phase (1991, p27) it is only mentioned that the role of the PEP, among others, is to:

a- select potential communities which have requested assistance;
b- ensure maximum community involvement;
c- prepare and strengthen communities to carry out their new tasks and responsibilities;
d- involve extension staff in all project activities;
e- organize and conduct workshops and training courses;
f- maximise potential health benefits; and
g- ensure that communities are capable of operating and maintaining their own facilities.

Furthermore it is stated that the PEP is essential in achieving the maximum potential of sustainability and maximising potential health benefits (operational objectives 2 and 3, see 2.3.2.). "Improved water supply facilities can have an impact on the health and well-being of the project beneficiaries but only if health education and sanitation promotion is made an integral part of the project" (Project proposal, 1991 p28).

3.3.2 Chain of objectives

To execute an effective extension programme it is necessary to make explicit what the goals of the programme are. To be able to formulate this goal, an analysis has to be made about the observed problem. On the basis of this analysis the ultimate objectives of the programme can be defined. Then the causes of the concerned problem should be investigated, so that the intervention goals can be set. These goals indicate which causes will be attacked by the programme. Two aspects have to be considered when selecting these causes. Namely the relative importance of each cause and how easy or difficult each cause can be dealt with (Wapenaar et al, 1989).

Only after defining the intervention goals it is known whether extension can contribute to the programme. This is mainly the case if one of the intervention goals can be reached with a voluntary behaviour change. If it turns out that extension can matter an analysis of the behaviour determinants should be made. It has to be investigated which aspects and opinions determine or influence the concerned behaviour. When this is known, extension aims can be formulated (Wapenaar et al, 1989).

3.3.3 Setting of sound and clear objectives

A common problem in relation to the objectives for hygiene education, is that they are poorly formulated. They are written in only vague qualitative terms, without giving clear direction to what has to be achieved in what time. In many cases the lack of good objectives leads to a situation where education staff just starts with activities without clearly realizing why, how and when they should be done (Boot, 1991).

For the PEP no objectives have been formulated explicitly, neither overall objectives nor intervention goals are set. This does not mean that it is completely indistinct what the PEP has to do, but what has to be achieved exactly is unknown. The formulation of explicit overall objectives and especially of intervention goals and extension aims, could provide a more focused and adapted education programme.

When overall objectives and intervention goals are formulated the following aspects should be taken account of (Boot, 1991 p72):

-they have to give clarity about what should be accomplished by the hygiene education programme in what period of time;
-they have to give guidance on the integration of technical and non-technical project components;
-it should be possible to use them as a basis for a workplan including time, money and manpower;
-they should include monitoring and evaluation criteria.

Extension aims have to be formulated very precisely, indicating "who is expected to achieve how much of what behaviour by when" (Boot, 1991 p23). This kind of exact goals makes monitoring and evaluation of the programme and its success possible. The purposes that have been formulated for most of the PEP-activities do not meet with these requirements (see annex IV).

The formulation of the overall objectives of a specific hygiene education programme should result from the general project objectives, the already on-going health/hygiene education in the area and the outcomes of a community level study (on a.o. health and hygiene believes, knowledge and practices, community organization and existing facilities) (Boot, 1991 p71).

In the project area there are no active community health programmes running (Project proposal, 1991). About the target population there is quite some information known within the project. But more specific information might still be necessary, especially for the setting of the specific extension goals (see also 3.4.6). Close cooperation with the communities is important to ensure that these goals will be realistic and adapted to the local circumstances, priorities and practices (Boot, 1991).

3.3.4 Knowledge, attitude and behaviour

As has been mentioned in 3.3.2 extension goals involve a change in people's behaviour. The mistake is frequently made to think that it is possible to change somebodies behaviour by just increasing his/her knowledge. But to make people behave in a new way, at least three conditions have to be fulfilled (Wapenaar et al, 1989):

-to know	(one has to know the new behaviour)
-to want	(one has to want to behave in the new way)
-to can	(one has to be able to behave in the new way, this involves both to have disposal of the necessary means as to have the necessary skills)

The relationship between knowledge (to know), attitude (to want) and behaviour (to can) is still not clear. But researches have pointed out that, although increasing knowledge is important, it is not sufficient to change one's behaviour (Boot, 1991).

Attitudes can be described as "the driving forces which determine how people tend to behave or perform" (Abbatt and MacMahon, 1988 p143). This description makes clear that changing attitudes is an important precondition for changing behaviour. The difficulty is that attitudes tend to change slow and much less direct and certain than knowledge and skills. It will therefore require ample time and effort to achieve any alteration in attitudes. However it is possible to influence attitudes and it should therefore never be neglected (Abbatt and MacMahon, 1988).

Regarding the motivation and organization of the communities the PEP does try to influence people's attitude; making them aware of their own responsibility towards the facilities and so creating an attitude of self-reliance. However other aspects, especially the health education, are merely directed at increasing knowledge.

Boot (1991) gives another classification of factors that influence people's behaviour. This classification includes one more factor than the three that were mentioned, namely the "reinforcing factors". This refers to the approval or disapproval of a certain behaviour by our environment. Attitudes are of course often related to this; we are more likely to have a positive attitude towards a behaviour that is positively valued by the people around us.

3.3.5 Realistic expectations

As has been said, hygiene education is an essential part of water supply programmes. It certainly can have an important impact on the result of the overall project objectives. However it is not a remedy for everything, and hygiene education goals should be formulated realistically otherwise they will be of little use. The change in behaviour that is required by the hygiene education should for example not ask too much extra time, effort or money from the target group. When necessary the project should also be willing to adapt its own procedures or construction types (Burgers et al, 1988).

Furthermore it should be looked at that sufficient resources are made available to the education section. In many projects too little priority is given to this section when it comes to the allocation of available resources (Burgers et al, 1988). For the PEP, the availability of financial or material resources is not the first constraint. A more important restriction is time and manpower. The number of visits that can be paid to every community before construction is very little to create real awareness and motivation among the villagers. The time that the PEP can be spend on the support of each extension worker is also limited. The second constraint concerns the capabilities of the extension workers who are incorporated in the programme.

3.3.6 Conclusion

Even though in global terms it is known what has to be achieved by the PEP, clear and explicit objectives can still make significant improvements in the programme. Especially the formulation of intervention goals and specific extension targets could make sure that the activities of the PEP are better oriented and adapted. This can increase the effectiveness of the programme. Moreover clear objectives and deduced indicators will make monitoring and evaluation of the programme possible. This again enables necessary adjustments and changes to be taken in time in order to improve the programme where needed.

Objectives for the PEP focus on three aspects; the motivation and organisation of the community, the proper use and maintenance of the facilities and health, hygiene and sanitation education. The first two aspects aim at an assurance of the sustainability of the facility. The last aspect is anticipating on an enlarged health impact of the new wells. For all three aspects the line of objectives, from problem to extension aims, has to be elaborated. These goals should focus on all three aspects; "to know, to want and to can".

3.4 TARGET GROUP

3.4.1 Target group of the PEP

The target group of the PEP is the rural population of three districts of the NWP. This population mainly consists of people from the Kaonde and Lunda tribe. The Kaondes, who live in Kasempa and part of Solwezi district, are hunters and practice shifting cultivation Because of this system they temporarily leave their villages every year. This shifting period ranges from a few weeks to nine months (Doedens et al, 1989). The Lundas, who live in Mwinilunga and part of Solwezi district, live in permanent settlements. In all three districts human settlements are small and a clear village identity is often not present (Hammeijer et al, 1990).

About 50-60% of the population of the NWP aged 15 and over is able to read and write. The figure for primary school attendance was in 1987 87% of the children aged 7-13 years old (Project proposal, 1991). There are two main local languages spoken in the area, Kikaonde and Lunda. The knowledge of English among the villagers is often quite poor, especially among the women.

There is a clear division of work between men and women. Like in all African societies domestic activities, which include most tasks related to the collection and use of water, are done by women. Construction activities are the responsibility of men, this will probably also apply for the construction and repair of the water facilities.

3.4.2 Different target groups

Various classifications can be made to distinguish different types of target groups. In this report the division that is made by Boot (1991) is followed. She speaks first of all of the direct target group; the group that the programme actually wants to reach. When this is a heterogeneous group, it can be divided in different specific target groups. This is for example necessary if some groups have different practices, knowledge or believes on the topic of the programme. Also political, economic or religious differences may call for the identification of specific target groups. Choosing priority target groups might be necessary if resources are too limited to reach the entire direct target group effectively.

To reach the direct target group a programme can identify indirect target groups; community members who can act as local promoters and educators for various community groups. Normally these people will need special training and support to conduct this task. Another group that can be incorporated in extension programme is called an intermediate target group; professionals who are working at different levels in different organisations or institutions.

3.4.3 Direct target group

As is written the direct target group for the RWHP is the entire population of the rural communities in the project area. This is necessary because it normally requires many people to be able to maintain the type of water wells that the project provides. Furthermore should everybody have access to and make hygienic use of the facilities in order to achieve a positive impact on the health and well being of the population (Boot, 1991).

But often communities are homogenous. Still the PEP does, besides for some trainings, not distinguish any specific direct target group. Both men, women and children attend the same meetings. A special programme is planned for children (School Hygiene Programme), but this has not been worked out yet.

For different reasons women need special attention in hygiene education. First of all lies the main responsibility for water, sanitation and hygiene of a family in the hands of women. They play an important role in the management and maintenance of water sources. Furthermore, is health knowledge often spread through informal female networks. Too often this existing knowledge is insufficiently recognized and used in hygiene programmes. A last reason to focus on women is the fact that they are a high risk group for many water related diseases (Burgers et al, 1988).

Although this important role of women is fully recognized in the project proposal, it has hardly any outcome in the actual programme. For the CSVs it is often merely mentioned that especially women are to be encouraged to attend the meetings (see annex IV). However no activities are specially organized for women. Besides organizing special meetings for women, it can also make some improvements if from time to time during general meetings men and women are divided in separate sub-groups.

3.4.4 Indirect target groups

Different people can act as local promoters or educators for the PEP. An important condition for the effectiveness of these people is that they are selected by the communities themselves, in order to ensure that they are accepted and respected by the people (Boot, 1991). For the PEP the VWC-members could take up this role of local motivators and educators, both for the organization and motivation of the communities and for the health education.

For this health education especially the caretakers could be suited. One of their responsibilities is already to educate other villagers on the proper use of the facilities, this can easily be combined with health education. Furthermore can the VCTT be a good opportunity to instruct the caretakers as hygiene promoters.

Although Burgers et al (1988) mentions that not much is known about the effect and possibilities of using caretakers as hygiene educators, I see the following advantages. Firstly, many of the caretakers are women, unlike the extension workers who are mostly men. This may facilitate the contact with the local women. Secondly, most caretakers are elected for this job because they are respected and known as clean and hygienic persons in the village. Finally, these caretakers actually live in the concerning villages. This makes the contact and accessibility even more easy than with the community based extension workers, who sometimes still have quite large catchment areas to serve.

The expectations of the role of the caretakers as hygiene promoters should however be set realistically. It will depend on the capability of the individual persons, but it should not be expected that frequent health meetings will be held by the caretakers. Their role will be much more to make individual women aware of habits that can possibly be a health risk and to inform them on other more hygienic and healthier practices.

Another possibility to use an indirect target group is investigating whether there are any other influential or respected persons in the community. These people can make an important contribution in improving hygiene and sanitation habits in their communities by giving "a good example". This is related to the importance of the reinforcing factors on people's behaviour (see 3.3.4). Which people can function as "role models" must be investigated in the concerning area, different people may be found for different target groups (Boot, 1991 p25).

3.4.5 Intermediate target groups

The RWHP presently makes use of the community based extension workers of the MOH and DOSD as intermediate target group. This group plays a very important role in the whole PEP. Normally these extension workers are referred to as one group by the project. Actually the group can be divided in three groups; Health Assistants (HAs), Social Development Assistants (SDAs) and Community Health Workers (CHWs). CHWs are no professionals but are working on a voluntary basis. In spite of this, I want to group them under the intermediate target group, because for the project they have the same function and position as the HAs and SDAs.

At this moment the approach towards the HAs and SDAs on one hand and the CHWs on the other is changing. It is recognized that the (educational) background of these two groups is so different that they cannot be trained and treated in the same way. This differentiation is especially noticed during the PEP-workshops. See 3.6.4 for more information on the extension workers.

3.4.6 Knowledge about the target group

One of the most essential conditions to make an extension programme successful is that it should be well adapted towards the (different) target group(s) (Heymann, 1988). The objectives, content, organisation and methods, methodologies and media must be suitable for the intended beneficiaries. If this is not sufficiently taken into account the programme will most probably fail to be successful. To be able to tune an extension programme to a target group, enough information about this group must be available. This information can help to identify different specific target groups as well as to decide how these groups can be reached best.

Within the RWHP there is quite some information available about the target population. One of the main sources of information are the project staff, especially the PEP-teams. First of all because some of them come, more or less, from the same population groups. Secondly they have gained a lot of experience in the past years that they have been working for the project. Besides this a baseline study is conducted in 1988 (Doedens et al, 1989).

In spite of all this knowledge that is available, some more specific information about the target group would be useful to improve the extension programme and make it better adapted towards the target group. Boot (1991) gives a list of possible practicable information that can be of interest for designing a proper hygiene education programme. This list gives many ideas and can serve as a good guideline to decide what information is necessary (and to point out what information is already available but not used at this moment). An abstract of this list is given in annex V.

3.4.7 Participation of the target group

Experiences in many projects suggest a relation between the extent to which new ideas and practices are adopted and the extent to which the target group was involved in the choice of the messages advocated (Burgers et al, 1988). Real participation throughout the programme is the best way to achieve this, implying that the target group is involved in all project stages from programme-formulation and setting of objectives, to the execution and evaluation. They should have a voice in decision-making in all these stages (Wapenaar et al, 1989).

The Project proposal (1991) emphasizes very much the adoption of a community-based approach by the project, suggesting that the communities participate and have a voice in all project stages. As already mentioned in 3.2, I think that in practice this is not really done. In that paragraph it is also explained what constraints the RWHP faces in the adoption of such an approach.

Participation of the target group can also refer to a lower level, meaning the active participation of the audience during the actual meetings. This will ask for flexible and open meetings. Also some methods and methodologies can help to increase the involvement of the participants (various methodologies are discussed in annex VI).

Despite the difficulties to apply genuine community participation, it should still be tried to improve the participation of the target group as much as possible. This will require a less rigid and tight programme. Furthermore the participation during meetings can still be improved quite a lot. To this end the CSVs have to be reviewed to incorporate more participatory methodologies. Besides the extension workers should be trained in participatory extension techniques. This has now started in the new approach for the PEP-workshops.

3.4.8 Conclusion

It is important that the entire population of the communities is taken as target group. However differentiation of the target group for some activities should not be excluded beforehand, because in this way the extension can be better adapted to the target group. One important and obvious specific target group are women, since they are most involved in water collection and use. Special activities for women would be beneficial. Besides a better adaptation to their situation, the women might so feel more free to participate.

Caretakers can be an eligible group to act as local hygiene promoters. Although this is mentioned in the Project proposal (1991) it has not resulted in concrete actions. The VCTT could be an opportunity to motivate and train the caretakers for this role. The principal way in which they can act as hygiene promoters will probably be through individual contacts and advices. Whether there are any other people suitable to act as local motivators, should be further looked at. People who could be suitable for this purpose are so-called "opinion-leaders"; influential and respected persons in the community.

The programme should be much more flexible to allow the target group to participate in the development of the objectives, content and organisation of the programme. For an increase in the participation during the meetings, participatory teaching methodologies should be used. Methodologies that not only allow increased participation but also stimulate this.

3.5 CONTENT

3.5.1 Content of the PEP

The PEP concentrates on three main topics:

a. Community participation and organisation;
b. Proper use and maintenance of the facilities;
c. Health, hygiene and sanitation.

ad a Cooperation, organisation of and motivation for self-help projects, organizing and strengthening of VWCs, roles and responsibilities of the VWC(-members), women's involvement and fund-raising.

ad b Careful and hygienic use of the facilities, cleaning of the surrounding, regular inspection of the facilities, regular preventive maintenance tasks, minor repairs and the USP.

ad c Personal and domestic hygiene, sanitation and the most prevalent diseases that are related to water: diarrhoea, malaria, skin- and eye infections and bilharzia (the last one only in the areas where this prevails).

3.5.2 Topics for hygiene education

In general the following topics are relevant for hygiene education in water supply programmes (Burgers et al, 1988):

-use of facilities

It can not be assumed that once a new facility is constructed it is exclusively and properly used by all the intended beneficiaries. Different reasons may be found why people do not use the new facilities.

-care and maintenance of the facilities

Facilities are still too often collapsing at an early stage. Therefore it is important to make the people aware of the necessity of a good care and upkeep of their facilities.

-water quantity

The use of adequate quantities of water is an important factor in the reduction of many diseases related to water. For different reasons the water use may not increase after the provision of a new facility.

-water quality

This refers both to keep the facilities in a clean condition to avoid the water from getting contaminated before actual drawing, as to a safe transport, storage and use of the water by individuals.

-waste water disposal

New water supply facilities often create additional drainage problems, which can result in new breeding places for e.g. malaria mosquitoes

-human waste disposal

Many diseases which are related to dirty water are transmitted through the faecal-oral route. Therefore it is important to give attention to sanitation too, even if the programme is only considered with the construction of water supply facilities.

3.5.3 Priorities

Like all education, hygiene education will be most effective if a few main points are chosen to focus on. From the list above it is possible to draft a long list of action points. However the more actions you ask the target group to take the less likely they are to carry out any of them (Burgers et al, 1988). Setting of priorities should be closely related to the formulation of objectives and the participation of the target group.

Within the PEP such a priority list does not exist. Only the diseases related to water that are tackled in the programme are restricted to the four most prevalent diseases in the area. But no list of action points concerning these diseases exist. Besides this limitation, no restricted points of attention are defined. The lack of clear and specific objectives for the PEP, is likely to be the cause of this.

The best way to draw up a priority list is to do this together with the target group. In the RWHP this will only be possible if the PEP-team is to a large extent involved in this, as it can not be expected that all extension workers are capable to do this. Another way to make a priority list that is adapted to the target group is to collect information on the knowledge, attitude and practices (on points of concern) of the beneficiaries as well as information on the most prevalent health problems in the area. Depending on the objectives also other information about the target group might be necessary, like level of organisation, motivation and cooperation among the villagers (see also 3.4.6).

When selecting priority points for the programme it is best to include not only harmful practices and habits but also some good habits of the people. A programme then has a more positive character, because it does not only criticize the people on their behaviours but also encourage people to reinforce some of their own practices (Burgers et al, 1988).

3.5.4 Effective messages

A first requirement that has to be fulfilled by the content of an extension programme is that it should fit the formulated objectives. It is obvious that a programme will never be successful if the message is not suitable to reach those objectives. Due to the lack of objectives for the PEP, it is hard to say whether the content of the PEP meets this requirement. Broadly the topics that are discussed seem to be suitable for the programme. When more clear and specific objectives are formulated, the content should however be reviewed to see if the messages meet these objectives.

A second provision for the messages of educational programmes is its appropriateness for the target group. The message must fit the knowledge level of the intended beneficiaries and be relevant to them. This last point means that the message should appeal to the felt needs of the target group (Heymann, 1988). It is not easy to judge these aspects, the needs of the target group are difficult to assess, as most people can not easily formulate their own needs. The easiest way to ensure the relevance of the message is, again, to involve the target group in the planning and organizing of the extension programme. If this is not done quite a lot of investigation on the target group(s) will be required.

Thirdly extension messages will be more effective as only one or very few messages are discussed at one time. Even more effect will be achieved when these messages are repeated in different ways and settings (Boot, 1991). One of the problems with the current CSVs is

that in every meeting many different topics are discussed. Consequently they are only touched superficial. A positive aspect of the fact that every meeting deals with so many topics is that this allows repetition of messages. However because not much variation in methodologies is used, meetings can easily become too similar which will decrease their attractiveness.

Finally it is important that the message itself is presented clearly and structured. Otherwise the participants will get confused and in such a situation people are not readily willing to learn or accept new knowledge, attitudes or behaviour (Wapenaar et al, 1989). The structure and clarity of the PEP meetings can still be increased. One of the main reasons why sessions are not always optimally structured is because discussion are held without any supporting material or prepared questions. Although this enables a better adaption to the audience, it might also leave the participants in confusion at the end. Some simple things can improve this: give summaries during the discussion (this is now only done at the end), visualise (with drawings, posters or written words) the main points of the discussion and/or the conclusions, use more structured discussion methods.

3.5.5 Conclusion

A detailed list consisting of a limited number of action points should be drawn up, especially in relation to health, hygiene and sanitation education. This confined list should mention the changes in behaviour which the project wants to achieve among the target group. Important is that the list is not too long and that it is very specific (this is of course closely related to the formulation of clear and specific extension goals).

When this priority list is selected together with the target group it has the highest change of being adopted. When this is not feasible, enough information on the knowledge, attitude and practices of the target population should be gathered, in order to make sure the list is relevant for and fitted to the beneficiaries.

A more limited number of messages should be chosen per meeting, to enable the discussion to be more profound. Attempts must also be made to give the session more structure, so that the audience has a clear picture of the message and discussion after the meeting.

3.6 ORGANISATION

3.6.1 Organisation of the PEP

Eight people are employed by or seconded to the PEP[4]. Those are three Participation and Education Advisors (PEAs), and five Community Health Advisors (CHAs). Their positions are reflected in the organization charts given in annex III.

The PEAs are based in Solwezi and work on project level. They are seconded from respectively MOH, DOSD, and SNV. "The overall task of the PEA is to support the development, application and coordination of the motivation and education activities" (job description for PEA, Project document 1988).

[4] Situation in June 1992. In July 1992 two seconded staff members (one PEA and one CHA in Kasempa) will leave the project, it is not known when or whether they will be replaced.

The CHAs are based in the districts, a group from one district is normally referred to as PEP-team. A PEP-team consists of three CHAs, one is directly employed by the project and two are seconded by respectively MOH and DOSD. When the project phases out of a district the two seconded CHAs will continue to work for the USP. Currently the PEP-team of Solwezi has three members, in Kasempa only two have remained. Mwinilunga is still awaiting the start of phase II.

The extension visits in the communities before and during construction are carried out mainly by project staff. The post-construction visits are handed over to the responsibility of community based extension workers from MOH and DOSD; Health Assistants (HAs), Community Health Workers (CHWs) and Social Development Assistants (SDAs). The HAs and SDAs are both employed by respectively the MOH and DOSD and have finished respectively a 3- and 2-year training. The main tasks of a HA is preventive health care, for a SDA to organize and mobilize communities and organize trainings. The CHWs, the majority of the group of extension workers, are (semi-)voluntary workers. They are selected by their communities and receive a six-week training in curative and preventive health care. They are not paid by the MOH, the HAs should supervise them and their communities should give them some support (in cash, kind or labour).

The number of wells that one extension worker supervises varies from one to ten, with an average of three. During the half-year PEP-workshop the extension workers draw up a programme for the CSVs they have to conduct at their wells. The PEP-team visits the extension workers now and then to support and assist them with these CSVs.

The majority of the activities of the PEP take place in the villages. When possible at the well site, otherwise in another central place, chosen by the villagers. The VCTT is held in a central place (e.g. a school or health centre) in the area of the invited VWCs. Only the PEP-workshop for the extension workers is conducted in the boma[5].

3.6.2 Integration with other ministries

There are different options to integrate hygiene education in a water supply project (Boot, 1991 p30-40). The RWHP has chosen for a "mixed organisational set-up", whereby the integration is established through the secondment of staff from MOH and DOSD and through the use of regular health services in the field. The main reason for choosing this set up is the likelihood that activities initiated by the project will continue after the project has phased out.

Another advantage is that a better coordination with the regular health services is possible. This will avoid a duplication of efforts and could mean a more efficient use of resources. The seconded staff can furthermore still get supervision and backstopping from their own ministries. However in the case of the RWHP the cooperation and coordination between the different ministries and departments seems to be not more than the secondment of staff. Attempts to get other government institutions more actively involved in the hygiene education activities have not been successful. As it appeared mainly because of a lack of interest from the other invited parties. Presently only quarterly meetings are organized with the DWA, MOH and DOSD, but these meetings are still not very effective.

[5] The boma is the principal town of a district where a council is situated.

3.6.3 Line of command

The PEAs are responsible to the project manager, the PEP-teams to the project supervisor (see annex III). The position of the PEAs and the PEP-teams is rather strange and the actual situation does not correspond with the structure of the organisation chart. In practice the PEAs are the supervisors of the PEP-teams. Especially in Solwezi where the day-to-day supervision is merely done by the PEAs and not as the chart shows, by the project supervisor. I think this is a better and clearer situation, because the PEP-teams can get a better supervision. The PEAs are also responsible for the monitoring and evaluation of the PEP. So they are the persons who are acquainted with what has to be done; e.g. which extension workers or communities need extra attention or which CSV needs some adaptions. It is in this situation not logical when the PS is responsible for the daily supervision of the PEP-team.

It will be more difficult for the PEAs to give the daily supervision to the PEP-team of Mwinilunga. This problem could be solved by drawing-up a two weekly planning with a PEA, PS and PEP-team, the final responsibility for this workplan should, in contrary with the present situation, be with the PEAs. The PS can than supervise the daily execution of this programme. This will also ensure that the technical and educational programmes are sufficiently matched.

3.6.4 Extension workers

The first reason for involving the community based extension workers in the programme was because the PEP-teams were not able to visit all project communities very regular. But this involvement has more advantages. Like the more effective and efficient use of the existing health services and resources, avoidance of conflicting activities and may be the most important one, an increased chance of continuity of the hygiene education after the project has phased out (Boot, 1991).

Despite all these possible advantages, in practice the cooperation poses quite some problems. The main and most obvious problem is the fact that the extension workers often do not carry out their programme. The prime explanation for this is probably lack of motivation and commitment. Clearly this is a very difficult problem to solve and to be able to do so, it is first necessary to look into the causes for this lack of motivation.

Preconditions to keep people motivated for their job are a sustained recognition and remuneration (Boot, 1991). Recognition is always a hard point when preventive health is concerned. More appreciation is normally gained from curative health services, this is a problem that both HAs and CHWs will face in their work. The project will not be able to solve this, but it can give some recognition to the extension workers through continued interest, support, supervision and training. This interest and assistance has often been lacking because the MOH and DSOD hardly give any supervision to their employees in the field, and the HAs on their turn do not consider much about the CHWs.

The problem of remuneration is mainly a problem for the CHWs (though the salaries of the HAs and SDAs are not very high either). The communities are supposed to assist the CHWs, but generally this does not happen. Leaving the CHW with nothing then his/her duties. The CHWs sometimes ask for some incentives from the project, this will however not solve the problem as the situation will be the same when the project has left. The only material support the extension workers receive from the project is the offer to buy a bicycle

for about half of the actual selling price. This is done, besides for the stimulating effect of such a bonus, to enable them to reach the communities they have to supervise more easily.

Another problem concerning the cooperation with the extension workers is their capability to do the job satisfactorily. A big difference exists in capabilities, especially between the HAs/SDAs and the CHWs. These capabilities refer to three main aspects; ability to motivate and organize the communities, skills in participatory training methods and knowledge about health, hygiene and sanitation. For the HAs and SDAs the first two aspects might be difficult. However for CHWs generally all three aspects are problematic and will need extra training. The baseline survey (Doedens et al, 1989) indicates for example that CHWs do not have more knowledge on the relation between water and diseases then other villagers. So they certainly need more training before they will be able to execute the visits properly.

Only recently the project has started to train the extension workers during the PEP-workshops. This workshop/training is very important and should be utilized more. Because when the extension workers are not performing adequately the entire PEP after construction will fail. Especially when the project wants to change its activities towards a more community-based approach, this workshop will be of the utmost importance. Because the extension workers need to be involved further in a more flexible programme. A lot of training in social and educational skills is required to enable the extension workers to conduct meetings through a genuine dialogue.

One of the most important criteria for a community based extension worker to be successful is if (s)he is accepted by the community (Burgers et al, 1988). Additionally, extensionists will be able to communicate more effectively with the people if (s)he has a similar background. In these respects the CHWs have a favourable position, because they are villagers themselves who are elected by the community. The HAs or SDAs do not necessarily come from the same area, they are placed at their duty-station by the MOH or DOSD.

One of the problems regarding the acceptance of the extension workers by the target group might be that most of them are men. This may hamper the contact with women, who are the most important target group for hygiene education. The fact that in every PEP-team one of the CHAs is a woman can of course not compensate for this. A solution could be to appoint caretakers, who are mostly women, as hygiene promoters (see also 3.4.4).

3.6.5 Budget

Because there is no separate budget for any activity of the project, there is also no special budget for the PEP. This does not hinder the programme however. The PEP is considered very crucial, so normally enough personnel, transport and funds are available.

A financial problem that is foreseen for the future, is that in the second phase the participating government departments (DWA, MOH and DOSD) have to pay allowances for their own staff[6]. This may cause problems and delays in the payment and consequently a significant decrease in the willingness of project staff to go out in the field. The PEP is likely to suffer a lot from this as most of the activities of the PEP-teams are carried out in the field.

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[6] In Zambia employees receive many different kind of allowances on top of their salaries, e.g. daily-subsistence and lunch allowance. All allowances of all project staff (so including seconded staff) are now paid by the project.

3.6.6 Conclusion

Despite all the positive sides of the integration of community based extension workers in the PEP, it is this same point that is presently one of the biggest constraints in the organisation of the post-construction programme. Too many extension workers seem not to be sufficiently motivated to execute the CSVs. This means that very much attention has to be paid to make improvements in this field. Continuing support, guidance and supervision might contribute to this. Also the provision of regular trainings can have a positive effect. Trainings can also increase the self-confidence of the extension workers, which is especially important for the CHWs.

Training is also needed to enhance the capabilities of the extension workers to execute the CSVs properly. For the HAs and SDAs this will especially mean training in participatory training methods and how to motivate and organize the communities. In addition to this also training about health, hygiene and sanitation topics will be necessary for the CHWs. The PEP-workshop that is used for this purpose has already been improved greatly to meet some of these requirements. But expansion of this training is required to be able to cope sufficiently with all the necessary aspects.

Concerning the organisation of the project staff with regard to the PEP, a change in the position of the PEAs and PEP-teams would be beneficial. When the PEAs are appointed as supervisors of the PEP-teams, in stead of the PSs, this will advance the supervision and guidance. The development and execution of the education programme will benefit from this.

3.7 METHODS, METHODOLOGIES AND MATERIALS

Decisions on methods, methodologies and materials are generally one of the final steps in the programme planning of an extension project. Like is said in the introduction of this report the questions why (objectives), for whom (target group), what (content), where, when and by whom (organisation) should first be answered before can be decided how to give the extension (methods, methodologies and material) (Wapenaar et al, 1989).

3.7.1 Definition of concepts

Often the words "*method*" and "*media*" are not used very consequent. Therefore it may be necessary to define first the distinction that will be used here between the different related concepts; methods, methodologies and materials. Although I am aware that this distinction is not completely unequivocal, it will serve here to distinguish the mentioned points.

Methods

The communication methods that can be applied in extension programmes can broadly be distinguished as shown in figure 3. (adapted from Boot, 1991).

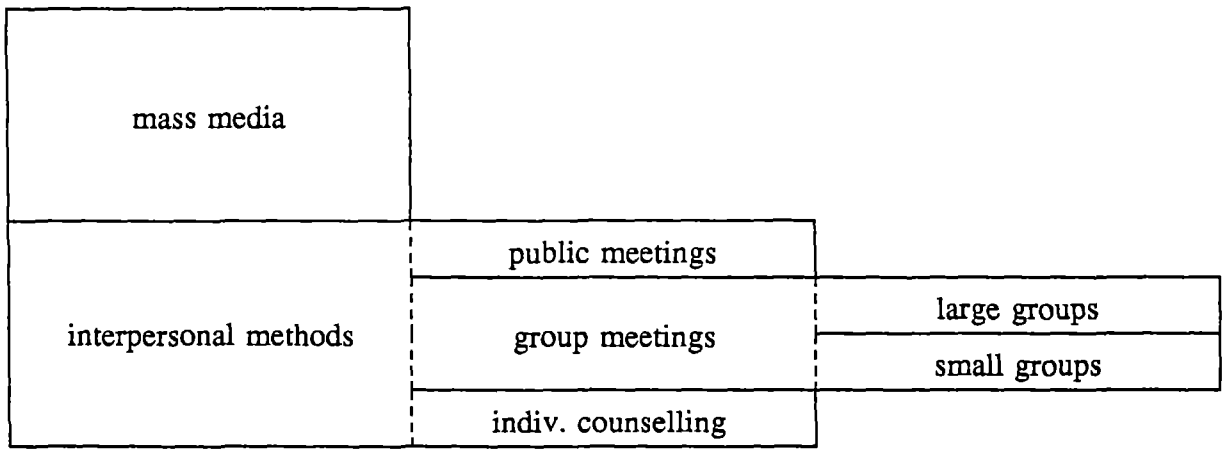

Figure 4. Classification of extension methods.

Mass media
The main characteristic of mass media is that there is no direct contact between the target-group and the extensionist (Boot, 1991). Secondly it normally intends to reach a large group of people.
Examples are: television or radio broadcasts, films, posters/bills, leaflets, periodicals.

Interpersonal methods
These methods are characterized by direct contact between the target group and the extensionist (Boot, 1991). The intensity of contact differs between the four types of interpersonal method.

Public meetings
Meetings with more than about 25 participants, and where everybody is free and encouraged to participate.

Group meetings
Meetings with less than about 25 participants, and where the number of participants is roughly known beforehand.
Large groups: 10-25 participants.
Small groups: less than 10 participants.

Individual counselling
This refers to both casual individual contacts and planned and organized visits between somebody from the target group and the extensionist.

NB: The above given numbers of participants are debatable, but merely serve to give a broad distinction.

Methodologies

These are the modes in which extension meetings can be outlined. One meeting can hereby consist of different methodologies. Some methodologies can also complement or support others (many methodologies can for example be followed by discussions).

Examples are: discussions, lectures, demonstrations, role plays, case studies. Various methodologies are discussed in annex VI.

Materials

These are the resources that are necessary for or can support certain methodologies.

Examples are: posters, flannel graphs, models, slides, videos, blackboards. Various materials will be discussed in annex VII.

3.7.2 Methods, methodologies and materials in the PEP

Nearly every CSV is open to all villagers, meaning that they are intended for a large audience. Only the trainings are for smaller groups. The VWC-training has about 6 to 12 participants, the VCTT about 15 to 20. The PEP-workshop has normally around 15 to 20 participants.

The most frequently used methodology in the PEP is discussion, or actually question-answer sessions between the facilitator and the participants. Two other methodologies that are used are; drama and practicals. During the PEP-workshop a greater variation in methodologies is being used presently.

Posters are sometimes used during CSVs to make explanations clearer or to start or stimulate reactions. These posters are black and white drawings on A3 format. The facilitator usually goes round with the picture. There are also sets of pictures available which show more or less the same scene, one in a good way the other in a bad way.

3.7.3 Public meetings

Even though public meetings are a type of interpersonal extension, the possibilities of interaction with and among the audience are normally quite limited. Because of the large number of people present the flow of information will mostly be one-way oriented from the educator to the public. Another problem with public meetings is that it is beforehand not known who and how many people will attend the meeting. In such a situation it is not always possible to plan and organize the most suitable methodology, so that the maximum effect of the meeting can not be reached (Huijs et al, 1991).

Despite these negative aspects public meetings can still be useful and necessary, especially when the whole community needs to be strengthened and united. Public meetings can be useful to arouse interest and to gain initial support for the programme, or to increase consciousness or knowledge (Boot, 1991, Heymann, 1988 and Huijs et al, 1991).

The CSVs are in principal public meetings, as they are open to all users and a high attendance is aimed at. When the actual attendance is examined a great part of the visits should however be classified as group meetings. In Solwezi district about half of the CSVs

that were visited by the PEP in the first half year of 1992 had less than 25 participants. In Kasempa district nearly all of the visited meetings in this period had a very low attendance.

For visits where public meetings are necessary (for example the first meetings for both the Programme for wells under construction and the Programme for completed wells, see annex IV) attempts should be made to increase the attendance. This will mainly depend on raising the motivation and awareness of the villagers on the importance of these meetings. Using special methodologies or materials (like drama or slides) can also help but this is only feasible for the visits which are conducted by the project staff.

For meetings where a high attendance is important it is often also essential that the audience can participate and interact sufficiently. However, in meetings with such a large audience this is not easily achieved. One way to attain this is to divide the group in smaller sub-groups.

To increase the effectiveness of public meetings the following points should be considered (Boot, 1991):

- Make sure that a public meeting is the right method for the intended objectives and messages.
- Do not let the plenary sessions take longer than 20-30 minutes.
- Make the meeting more attractive and interesting by using different media and materials. If possible try to include participatory methodologies.
- Make sure that the meeting is target group oriented, the message should be linked to the existing knowledge and experience of the audience.
- Chose a suitable time and place for the meeting, to allow everybody to attend. Take care of seating arrangements, especially concerning women.

3.7.4 Group meetings

Group meetings have some great advantages and opportunities compared to the other extension methods. Experiences have indicated that the mutual influence in a group can increase the effectiveness of a meeting. Information, experiences, skills and ideas can be exchanged within the group and so adapt the message very well to the participants. The support and encouragement from other group members and the enthusiasm of the extensionist will also have a positive contribution towards the achievements of the goals of the programme (Heymann, 1988).

Because of the possibilities of interaction, these group meetings can serve many possible programme objectives. Not only an increase in knowledge and skills can be achieved with group meetings, they can also have a great impact on attitudes and behaviour (Huijs et al, 1991).

Although group meetings have great opportunities in achieving certain targets, these targets will not be attained just like that. Very much depends on the methodologies that are applied during the meetings. To take advantage of the above mentioned possibilities it is necessary to use participatory communication methodologies. When only top-down communication from extensionist to audience takes place most benefits of group meetings are lost (Boot, 1991).

Public meetings are not suitable for every objective of the CSVs. Especially for those that aim at a change in attitude or behaviour, group meetings would be more effective. A review should be made when public meetings are suitable and when group meetings would be more effective. Organizing these group meetings will be mainly the task of the extension workers, as it is impossible for the PEP-teams to attend so many meetings. Conducting effective meetings for small groups is therefore one of the aspects that needs attention in a training for the extension workers.

In the PEP small and large group meetings are used during the trainings (VWC-training, VCTT and PEP-workshop). In these trainings the possibility of interaction between the participants should be used more. The use of other methodologies (see 3.7.6 and annex VI) and smaller subgroups might stimulate this interaction among group members, and by doing so increase the benefits of the group meeting.

3.7.5 Individual counselling

Two types of person to person discussions can be distinguished. This are firstly incidental meetings between the extensionist and somebody from the target group. These contacts are especially important to create a good relationship and trust between the target group and extension worker. This type of discussion does not need special preparation or planning. Secondly person to person discussions can be held in a more structured manner. In this way it can be used to discuss sensitive topics or personal problems and find individual solutions.

Both types of individual counselling can be useful for the PEP. The extension workers have most opportunities for these kind of contacts. But also for the PEP-team this approach is mainly important to create a good relationship, since they are the people that represent the project, especially after the well has been completed. Moreover individual problems of VWC-members can might ask for individual attention.

3.7.6 Methodologies

The suitability of a methodology in a particular situation depends on many factors. The best methodologies are normally the ones that are clear, stimulate audience participation and activate the public. Which characteristics are most important depends on the specific circumstances.

For various reasons it is effective to use a variety of methodologies in an extension programme. First of all more people will be attracted and served and the motivation and attention of the audience can be increased. By the use of different methodologies preferences and learning styles of individual target group members are considered. Moreover variation of teaching activities will constantly arouse the interest of the public (Heymann, 1988 and Thijsen, 1985). These are important points for the meetings and other activities of the PEP.

Secondly a methodology-mix can be necessary to reach different types of objectives. Knowledge, attitude or behaviour goals each require different methodologies. When PEP-objectives are elaborated more, such a mix of methodologies is presumably required.

Finally the use of different methodologies builds in the opportunity for repetition of the message, without losing the interest of the public. Repetition can both increase the chance that the message is remembered and that it is understood (WHO, 1988). Looking at the cycle of meetings for completed wells which is repeated twice a year, this point is obviously relevant for the PEP.

A number of methodologies is described in annex VI. The purposes they can serve and possible advantages and disadvantages are discussed briefly. When possible indications are given where the concerned methodology can be incorporated in the PEP.

3.7.7 Materials

Visual aids can greatly improve the outcome of a training session. Many researches have been conducted to measure the effectiveness of the spoken word, of visual presentations and of a combination of both. Although different figures have resulted from these investigations, they all show the same trend; spoken words alone are remembered least, visual presentations better, but the best result is obtained when words and pictures complement each other (Abbatt and MacMahon, 1985; Burgers et al, 1988; Karlin and Isely, 1984).

Other advantages of visual aids are that they can raise interest and attract people. Furthermore discussions can be started or stimulated with the help of visual materials and attention during a meeting will be better captured (Boot, 1984).

Though visual aids can be very effective, they can never substitute a group process of sharing and exchanging experiences and views (Burgers et al, 1988). Aids should therefore be used consciously, not killing personal communication but rather generating discussion and participation. This means that materials should not be overemphasized (Karlin and Isely, 1984).

For a visual aid to be useful and effective, above all it has to be understood by the villagers, make them think and motivate them to act. Most visual aids comprise of pictures, but understanding pictures is not natural or easy for everyone. Reading pictures is an acquired ability which must be learned just like text reading (Fuglesang, 1982).

Some important points that influence the recognition and understanding of pictures will be briefly discussed here.

Familiarity with the object

Objects or events will normally only be recognized if people are familiar with them. As Fuglesang (1982, p143) writes: "we see with our experience".

Details, colour and symbols

Both pictures with too many details as with too little details are often misunderstood. Colours attract the attention, this can be positively if they are used correctly. Generally very specific associations exist with certain colours, these have to be taken into account (Thijsen, 1985).

To understand symbols people have to be acquainted with the codes of these signs. A cross through a picture is not automatically associated by everybody with a prohibition.

Way of representing

Possible ways of presenting a picture are photos, block-outs (a photo where the background is removed), silhouettes and line drawings. Fuglesang found in an experiment in Zambia that block-outs were understood best, secondly black and white pictures. Silhouettes and line drawings were understood least (Fuglesang, 1982).

Depth and time

In essence a picture is a two-dimensional representation of a three-dimensional reality. For people who are not used to visual presentations this third dimension, in the form of depth, can be very confusing. Cues to express depths; shadows, relative size, superimposition and perspective, should therefore be used very considerately (Fuglesang, 1982).

Sometimes a fourth dimension is added; time or movement. It is virtually impossible to transfer such events in a two-dimensional picture. The recognition of this cue depends therefore mainly on the experience of the spectator (Fuglesang, 1982). Examples when this fourth dimension is present are events in the course of time, a series of successive acts or cause-effect relations. A number of pictures which are related to each other in one way or another are regularly merely seen as independent illustrations and so lose their effect.

Different kinds of materials can be used as visual support of the spoken word in extension meetings. They vary in clarity, recognizability, complexity, price and usability. These aspects will be valued distinctively for various target groups. Some types of visual aids are briefly discussed in annex VII, indications are given on possible applications during the PEP.

3.7.8 Conclusion

The PEP principally consists of public meetings. Such type of meetings have limited possibilities because little interaction can take place among the audience. Group meetings (less then about 25 participants) offer much more opportunities for interaction and exchange of information and ideas. This makes group meetings so valuable, particularly for changing attitudes and behaviour. The PEP-staff should consider carefully when public meetings are possible and when group meetings would be more effective. Individual counselling can be used for personal matters.

For the CSVs where public meetings are chosen, efforts should be made to increase the attendance. For group meetings more participatory methodologies should be used to involve and activate the participants. Possible methodologies are discussed in annex VI. Variation in methodologies in the PEP will not only increase the attractiveness of the meetings but also enlarge their possibilities and effectiveness. Moreover it can offer the opportunity of a diversified repetition of the message.

Diversification, attraction and effectiveness can also be enlarged by the use of visual materials. Simultaneously verbal and visual messages are remembered best by the majority of people. Different materials are discussed in annex VII.

4. VILLAGE CARETAKER TRAINING

4.1 INTRODUCTION

One of the trainings in the educational programme of the project is selected for a closer observation. Such a case-study makes a more detailed and deep exploration possible of the subject of study as compared to the overall analysis of the PEP.

The Village Caretaker Training (VCTT) is chosen for this case analysis for the following reasons:

- it is an important training because a proper use and maintenance of the facilities are essential to guarantee a long life;
- it is a largish course that is given by the project staff themselves and improvements in the programme seemed possible and necessary;
- the training took place a few time during my stay, which allowed me to attend and observe the training.

The research questions for the study on the VCTT were analogue with the questions for the overall analysis and are stated in the first chapter. This chapter presents the results of this case-study. Some reflections on the need of this training are described in paragraph 4.2. The on-the-job training for caretakers is briefly portrayed in 4.3. The present VCTT is described and analyzed in 4.4. There after 4.5 explains the renewed programme of the VCTT. Finally 4.6 gives some concluding remarks on the case-study. The new programme for the VCTT is appended as an addendum of the report.

4.2 SETTING OF A CARETAKER TRAINING

4.2.1 Sustainability

As could be read in 2.3.2, the overall long term objective of the project is "to provide safe and adequate drinking water facilities at affordable recurrent costs with the aim to improve the health and living conditions of the rural population". An important aspect to achieve this is to ensure that the provided facilities are durable. Therefore one of the fundamental operational objectives is to guarantee the sustainability of the facilities (Project proposal, 1991 p16).

It has been experienced by many water supply projects over the past decades, that new facilities decay too fast and too often. After completing new water supply systems, operation and maintenance still create many problems. For this reason sustainability has become the key concept of many water supply projects. This means that the facilities have to be designed, build and managed in "such a way that they continue to function reliably and well, and the funds for keeping them functioning continue to be available" (IRC, 1991, p1).

Presently a survey is being conducted in Kasempa district to assess the condition of all the wells that have been built since 1984. Although the results are not yet out, it is already known that the maintenance of the wells is one of the hindrances to the success of the aimed sustainability of the facilities.

4.2.2 Community based maintenance

Water agencies are normally not capable to achieve this concept of sustainability alone. One of the solutions frequently chosen is to reduce operation costs by sharing the maintenance and repair tasks with the communities (IRC, 1991).

Community based maintenance means that responsibility of operation and maintenance is delegated fully to the communities. Regular maintenance tasks and minor repairs can be carried out by themselves. For major repairs they have to take the initiative to ask for assistance from the water agency.

An essential advantage of community based maintenance systems is the enlarged possibility to prevent breakdowns. A reduction of the number of breakdowns can firstly result from a proper and careful use of the facilities. Secondly proper inspection and maintenance can contribute to this aim. Community members are well capable for these tasks (IRC, 1991).

Additional advantages of a community based approach are a saving on transport and labour costs. A community based approach can so reduce the maintenance costs considerably. The project has calculated that a reduction operation and maintenance costs is possible from more than Zkw 10,000 to Zkw 4,000 per well per year (prices mid 1991, Project proposal, 1991).

4.2.3 Improved health

Ensuring the sustainability of the wells is not enough to achieve an improved health of the beneficiaries. This will only be attained when the concept of "effectiveness" is considered too, meaning that the facilities have to be used exclusively by all beneficiaries in a hygienic way (IRC, 1991).

A general and exclusive use will only occur when the new supply is competitive with the former source; in convenience, reliability, affordability and acceptability of water-quality. Hygienic use involves prevention of contamination both at the water source and during transport, storage and use. Furthermore the quantity of water that is used should often be increased (IRC, 1991).

The concepts of sustainability and effectiveness are not isolated factors but are interactive. If the water service is not functioning properly an effective use may not be expected. On the other hand it is said that the conviction of the possible health benefits of the improved water source can encourage people to take up the proper operation and maintenance of that source (IRC Technical Paper 28, 1991 and Burgers et al, 1988). Whether this last point is of much importance is doubtful. The projects experience is that the main reason for using an improved well is the convenience of its location (Doedens et al, 1989).

4.2.4 Need for skills and motivation

A community based maintenance system is only feasible when the community has enough technical, managerial and financial skills and resources. Likewise people should feel motivated and responsible for the care and maintenance of the new facilities. Courses and meetings are required to fulfil these preconditions (IRC, 1991).

Like in many other projects, the RWHP operates through Village Water Committees

(VWCs). Two of their members are elected and appointed as caretakers. They are responsible for the maintenance and inspection of the facilities. Furthermore they have to see to the proper use of the facilities by all users. To enable the caretakers to carry out these tasks they receive two trainings. During the construction of the well they get an on-the-job training. After completion they can attend the Village Caretaker Training (VCTT).

Training the caretakers will not be enough however to enable them to carry out their duties. Firstly necessary materials have to be sufficiently available. For the routine maintenance this mainly concerns lubricants. For repairs also tools, spare parts, cement and other materials may be needed. This means that the VWC should be able to organize sufficient funds, implying that skills in simple budgeting and financial management have to be present (IRC, 1991). Furthermore the villagers should be willing to make necessary contributions. Sufficient attention should be paid to these points during the VWC trainings and CSVs. Secondly the materials and spare parts have to be available at a price and distance within reach of the communities. To organize this the project is in the process of setting up a Users Support Programme (USP, see 2.3.7).

4.3 ON-THE-JOB TRAINING

At least one of the caretakers should be present each day during the whole construction period. In this way they can be instructed on the construction process and techniques of the well and other facilities. No particular points which need attention during the training have been mentioned. Neither have objectives been formulated of what should be achieved after the training. However not all the involved construction stages and skills are of the same importance to the caretakers. For example (s)he will never have to place liners, but concrete mixing and working with cement mortar is necessary for doing some minor repair work.

Clear objectives of what facts and skills the caretakers need to learn during construction could make the training more effective. To this end, aspects that are most relevant to the future tasks of the caretakers should be elaborated. The formulation of clear objectives and points of particular interest will also help the construction foremen in training and supervising the caretakers during the on-the-job training.

Aspects that should be taught during the on-the-job training are among others:

-mixing and placing of concrete
-fixing poles
-mixing of cement mortar and plastering
-construction of the soak-away
-entering and working in a well

4.4 PRESENT VILLAGE CARETAKER TRAINING

4.4.1 The programme in brief

Objectives

The objectives for the VCTT are formulated as follows (from the hand-out of the VCTT):

a. to enable communities to operate and maintain their own drinking water facilities by transferring required knowledge - including technical skills - to village caretakers;

b. to introduce the concept of the Users Support Programme to the communities; and
c. to explain the link between improved water facilities and health.

Target group

The caretakers are villagers who are chosen by their communities. Every VWC can send both of their caretakers to the training. Since the training is usually conducted for ten VWCs, the number of participants per training is approximately twenty. (At this moment every VWC has only one caretaker, therefore one other VWC member is presently invited for the VCTT.)

Organisation

The VCTT is supervised by the PS, who is being assisted by one PEA and two or three members of the PEP-team. For the practical session two or three construction foremen are present. Besides the project staff also the extension workers of the area attend the course.

The training is held at a central place in the area of the invited VWCs, generally a primary school or a rural health centre. All participants are collected and brought back by the project. The training is given throughout the year, every caretaker receives one training. The intention is to give the training soon after the termination of the construction period. Duration of the training is two and a half days.

Content

The following subjects are dealt with:

-job description of a village caretaker
-daily operation activities
-minor repairs
-Users Support Programme
-sanitation and hygiene around the well
-diseases related to water

A hand-out is in use which gives a summary of all the topics, except for the practical sessions.

Methods, methodologies and materials

The VCTT is a large group meeting with around twenty participants. The theoretical information is discussed in plenary sessions, mainly in a question-answer form. Every session is facilitated by one member of the project staff.

The operation activities and minor repairs are dealt with in practicals. These practical sessions are done in three sub-groups. They take place at different well sites in the neighbourhood. No auxiliary materials are used during the training to support the discussions.

4.4.2 Objectives

The VCTT is principally conducted to inform caretakers on their duties and to provide them with the necessary skills to carry out these duties properly. The duties of a caretaker are intended to keep the facilities in a good condition to ensure its sustainability. The main points to attain this are:

* proper and careful use
* proper and regular inspection and preventive maintenance
* repairs carried out properly and on time

More specific, the duties of the caretaker can be summarized as follows:

-inform users on the proper and careful use of the facilities and see to it that these rules are observed by all users;
-perform regular routine inspection and maintenance tasks of the facilities;
-prepare and check duty schedule for the cleaning of facilities and surrounding;
-carry out minor repairs to the extent that (s)he is capable;
-assist and supervise the labour force if voluntary labour of other villagers is needed for minor repair work;
-ensure the good condition, safe storage and proper use of tools, spare parts and other materials;
-keep the VWC informed on:
    -general condition of the facilities
    -need for materials, spare parts or tools
    -need for voluntary labour
    -need for assistance of USP

The solely objectives presently formulated for the VCTT are the general overall objectives. More specific and operational objectives are missing. Due to this it is indistinct what has to be accomplished exactly by the VCTT, which skills and knowledge the participants should have obtained after the training is not worked out.

Setting elaborated and clear objectives can increase the efficiency and effectiveness of a training. The WHO publication (1988, p58) asserts that a programme can only succeed if there are clear objectives, so that it is known "what we want to do and how we are going to do it". An objective has to describe exactly what should be achieved at the end of the programme. It is obvious that the present objectives for the VCTT do not satisfy this.

The consequence of the absence of good objectives is that the programme is not in every sense complete. Another point is that the training is sometimes too superficial and only focusing on increasing knowledge and skills. The major shortcomings can be summarized as follows.

* The programme does not cover points of attention on how to use the facilities properly and carefully.
* The health session deals with all water related diseases which results in a superficial explanation.
* It is not worked out what minor repairs should be taught. There seems to be no relation between the content of the training and the prevailing breakdowns.

4.4.3 Target group

The target group of the VCTT is clearly defined. Namely the caretakers of all VWCs. At the moment one other VWC member is invited because until now every committee had only one caretaker. Although some sessions may be less relevant for these other members, this does not influence the course a lot. Besides for many topics of the training it is good that more people are acquainted with them. In the future it is however planned to appoint two caretakers in every VWC. So for the VCTT of new wells only caretakers will then attend the

training. For the trainings that still have to be conducted for old wells, the current arrangement will be continued.

The group of participants is homogenous in respect with their VWC-membership, and in the future more specifically with respect to their job as a caretaker. This also means that they are all villagers and presently living in the same area. However in many other aspects the group is heterogenous. For example both men and women as well as young and old people attend the training. The educational level will also differ among the participants (whereby not all of them might be literate). An effect of these variations between the participants is the big difference in participation. Women are frequently more silent in the plenary discussions. Especially older and/or educated people dominate many discussions.

At present most of the caretakers are women. It is not known whether this will change when every VWC appoints two caretakers. When in the future the majority of the participants are female this might influence the training because of the allocation of tasks between men and women. Firstly in relation to the practical work which needs to be done for the minor repairs. Secondly the health session might need to be adapted.

An extension programme will only be effective when it is tuned to the target group. In 3.4.6 it has been explained that information is needed to achieve this. For the VCTT this implies that the following aspects of the participants and their communities should be known:

- what knowledge, skills and attitude do the caretakers have regarding handling and maintaining the facilities properly (and what is lacking)?
- what knowledge, skills and means, necessary for the minor repairs of the facilities, are available in the communities (and what is lacking)?
- which tasks involved in the use, maintenance and repair of the facilities are exclusively ascribed to one sexe?
- what is the attitude of the communities and the caretakers towards the use and maintenance of the facilities?
- what are the problems which caretakers face with executing their job?
- what are the knowledge, believes, attitudes and behaviour of the communities regarding the health and hygiene topics that are discussed?

In 3.4.2 different types of target groups are distinguished. For most part the caretakers are of course the direct target group for this training. But as is already mentioned in 3.4.4, the caretakers can be used as an indirect target group not only for the proper use of the facilities but also for the health and hygiene education. This means that the caretakers have to be able to educate and motivate fellow users on these topics, which will need special attention during the training.

4.4.4 Content

In 3.5.4 requirements for effective extension messages are mentioned. First of all the content should be suitable to reach the formulated objectives. Because of the absence of clear objectives it is hard to say whether this condition is met by the present VCTT.

Secondly it was mentioned that the content must be suitable for and appealing to the participants. The VCTT can be expected to appeal to the caretakers if the communities, and in particular the caretakers, feel responsible for their facilities. This means that much attention

should be paid to this aspect during earlier meetings. This is being tried at present, e.g. during Ward meetings and Promotions (see annex VI). But the sense of responsibility still varies largely between the communities.

A last aspect is that the content has to be presented in a clear and structured way. In the present VCTT this is not done very well for all the subjects. This is mainly caused by the use of the question-answer method, without using beforehand formulated questions, special discussion techniques or supporting materials.

The present hand-out gives a summary of most of the discussion topics. However some of the topics are described not very well-ordered. Others are presented rather complicated and theoretical. The hand-out is also used both for the participants and for the facilitators. In my opinion these two purposes ask for different manuals.

4.4.5 Organisation

Quite a lot of project staff is involved in the current VCTT. During some trainings the number of project workers was even as much as half of the number of participants. To use the project staff more efficiently, not more than two project facilitators should be required. For the practical sessions the PS and two construction foremen can additionally be invited.

The VCTT is, in contrast with all other trainings, under the responsibility of the PS. In my opinion it would be better to give the responsibility to the PEP-section. After all it is an educational activity, and although part of this training is of a technical nature, this is not the main part. Enough consultation with the PS should of course take place, especially regarding the technical topics. He should also be present, together with some construction foremen, during the practical on minor repairs.

The extension workers of the area where the VCTT takes place are always invited. They normally do not have any specific task. (S)he may even just seem a participant. Because the caretakers should see the extension workers as an intermediary between their community and the project, it would be better to make their role more distinct. This can be done by involving them as assistants in some of the sessions, which has as second advantage that it can serve as an exercise in teaching and leading a discussion. This will need careful planning, considering the low capabilities of some of the extension workers, especially the CHWs.

The VCTT will be conducted as long as construction activities are being carried out. This means that the training will only take place as long as the project is operating in the area. Consequently the necessary means (transport, personnel, finance) are not likely to cause many problems in the future. Only good visual aids might give problems since these are presently hardly available within the project.

The VCTT has only started in 1991, therefore last year courses were mainly conducted for old wells. This means that the participants had already some experience with their job as caretaker. In the future this will vary between the participants. Still many caretakers of old wells need to be trained. But for the new wells the training is planned to be given shortly after the handing over of the new facilities. However as the training is organized for about ten wells at once, the period between handing over and the training will vary from well to well.

To give the VCTT soon after completion has the advantage that the caretakers are aware and capable of their duties right from the beginning. It can avoid caretakers (and users) to get used to improper habits regarding the use and maintenance of the facilities. And it is easier to teach new habits then to change already existing ones (Boot, 1991).

A disadvantage of holding the training so early might be that the caretakers do not have much experience yet. So the training can not build on this experience, neither is it possible to discuss the problems the participants encounter. But probably in all trainings some "experienced" caretakers will be present so this can compensate partly for this disadvantage.

Because the training is held in the field not much facilities are available. One of the constraints is that most of the time only one room is available. The type of room differs a lot, varying from a large room with chairs and tables to a small room with only benches. This can hamper group work or the use of other methodologies or supportive materials.

4.4.6 Methods, methodologies and materials

As is mentioned in 4.4.1 not much variation concerning these aspects exists in the current programme. All the theory is given for the whole group, thus for about 20 people. Real interaction and active participation of the majority of the participants is difficult to achieve with such a large group. Consequently most interaction is between facilitator and participant. Additionally the use of solely plenary "discussions" increases the change that a few participants dominate most sessions.

Another consequence of the question-answers methodology, where most session in end due to these large groups, is that lessons are rather unstructured. A beforehand prepared line of questions, special discussion techniques (e.g. brain storm technique) or the use of supportive visual materials can increase the clarity of the presentation. Special discussion techniques can also increase the participation of and interaction among more participants.

Use of other methodologies and different audio-visual material will further give more variation to the training. Another advantage is that it is possible to offer the subject matters not only verbally but also visually, which can increase the learning effect of training (see 3.7.7).

The VCTT is at present mainly directed at increasing knowledge and skills. This is not enough to ensure that the caretakers will take up their tasks and execute them properly. As is described in 3.3.4, assimilation of knowledge and skills are only two aspects are required to change someone's behaviour. A favourable attitude towards the desired behaviour is of utmost importance. Methodologies which can have some influence on attitudes are for instance (Abbatt and MacMahon, 1988, p147):

- tell participants what attitudes are appropriate
- encourage discussions about attitudes
- provide information and experience about attitudes
- provide 'role-models' and examples
- use of role play exercises

4.5 NEW PROGRAMME FOR THE VILLAGE CARETAKER TRAINING

4.5.1 Objectives

Before making a renewed programme for the VCTT more elaborated objectives have been framed. These objectives are formulated on three levels. In line with the noted problem (see 4.2) and the long-term objectives of the RWHP, two ultimate objectives are formulated for the VCTT. These are general and only indicate what should be the out-come of VCTTs in the long run. What caretakers need to assimilate in a specific VCTT to achieve these ultimate objectives is framed in the operational objectives. These have been translated again in extension aims which indicate precisely what has to be taught during a training. It has been tried to formulate not only objectives directed to an increase in knowledge and skills but to pay also adequate attention to attitude and behaviour.

The ultimate and operational objectives are shown in table 1. A list of the extension aims can be found in annex VIII.

Table 1. Objectives of the new Village Caretaker Training.

Ultimate objectives	* Caretakers are trained in and motivated for their job and responsibilities in order to improve the sustainability of the facilities. * Caretakers apply proper hygiene practices in order to minimize contamination of water and the spread of diseases.
Operational objectives	* Caretakers know their duties. * Caretakers feel responsible for their duties. * Caretakers are able to carry out their duties properly and will do so after the training. * Caretakers are acquainted with the USP. * Caretakers will prevent contamination of water as far as they are capable. * Caretakers will prevent some of the transmission routes for diarrhoea by applying a proper hygiene. * Caretakers know some ways to prevent malaria.

4.5.2 Target group

The VCTT will have the same programme for caretakers from both old and new wells. Although I think that it would be good to pay some attention to problems that are encountered by the "experienced" caretakers, because of the time restrictions no special session has been included for this. But some of the present sessions provide opportunities to pay attention to this point.

The new programme also does not include the role of caretakers as local hygiene promoters. This has been left out because it is not yet clear whether this aspect will be taken up in the rest of the PEP. Only in that case attention for this in the VCTT will be worthwhile.

4.5.3 Content

As a result of the new extension aims the content of the training has been extended. The sessions related to the duties of a caretaker have been enlarged to provide for a more careful and full attention of the different tasks, both in practice and theory. First of all a new session on a proper use of the facilities is included. Moreover are inspection and maintenance tasks first discussed in class and thereafter practised at a well site. Also a theoretical session on minor repairs has been added, to review what has been practised and explain what did not come up during the practical session. It also has been tried to make some improvements in the structure and clarity of these topics. Finally more attention will be given to attitudes towards and understanding of these duties, besides only knowledge and facts.

The health topics have changed too. Two sessions will deal with the avoidance of contamination of water, divided in possible contamination of water in the well and possible contamination of water between collection and use. This last aspect was not included in the previous programme. Although it is one of the most important routes of contamination.

The water related diseases that are discussed in the training have been restricted to only two, divided over two separate sessions. In this way more extensive and less superficial attention can be paid to them. First diarrhoea is handled. Although this is actually more a symptom than a disease, it has been chosen because it is one of the most common and dangerous diseases/symptoms for infants. Furthermore it is a problem that to a large extent can be prevented by relatively simple hygiene practices. The main emphasis will be on the importance of washing hands, food and kitchen utensils.

As second disease attention is given to malaria, because this is presently one of the main causes of morbidity and mortality in this region (Central Statistical Office, 1991) Besides, new water facilities often increase the amount of waste water which, if not properly disposed of, can become a significant health hazard. One of the most important dangers is the creation of new breeding places for malaria mosquitoes. The stress in the malaria-session will be put on the importance of the elimination of places with stagnant water around the house and the well.

4.5.4 Organisation

Minimally two PEP-staff necessary for the new programme. The PS should be present during the third day (minor repairs), preferably also two construction foremen should assist during the morning session. The technical part of the training has become relatively small. This means that it is even more logical that the VCTT is under the responsibility of the PEAs. Whenever possible it should be encouraged to involve extension workers in the training. Since this is highly dependent on the capabilities of the individual extension workers, it has to be decided by the PEP-staff to what extent a particular HA, SDA or CHW is able to assist.

The extension worker can also be involved in practical arrangements (e.g food and accommodation), which is currently done. It should be avoided however that this means that they miss great part of the training because the extension workers should be well acquainted and familiarized with the programme (objectives, content and methodologies). Especially for the CHW, the training can be instructive.

The training should be held at a venue with a functioning well. The practicals about proper handling and inspection and maintenance tasks are done in rotating sub-groups. In this way they can both be held at the trainings venue, and so saving considerable travelling time.

4.5.5. Methods, methodologies and materials

With the design of the new VCTT-programme different aspects have been taken into account regarding these aspects. First of all are quite some sessions done in sub-groups. This might increase the taking part of all participants and the interaction among the participants. Especially for the timid participants this can create a more secure environment which might stimulate their participation.

The new programme comprises of a more diversified set of methodologies. This first of all gives more variation to the training which will make it more lively and attractive. Moreover some of the methodologies ask for more activity of the participants, e.g. demonstration during the practicals, finding differences between two pictures, writing down answers. All this makes the training more vivid and will improve the learning result of many participants.

The sessions which still consist of plenary discussions are tried to be made more structured by the use of specific discussion techniques (e.g. brain storming), prepared lines of questions (e.g. malaria session), a short introduction lecture (e.g. USP session) and supportive materials (e.g. posters). All these methodologies and materials ensure a clearer and better-organized presentation of the topics which will likely improve the effect of the lessons.

Finally it is hoped that through the new methodologies more attention can and will be given to attitudes and behaviour. In the hand-out it is sometimes explicitly stressed that attention should be given to the attitudes of the participants by relating the discussion as much as possible to the situation and ideas of the participants.

4.6 CONCLUSION

Clear objectives were lacking for the VCTT, therefore new operational objectives and extension goals were formulated. The content of the training is reviewed on the basis of these objectives. It came out that "a proper use of the facilities" is not discussed or demonstrated presently. Additionally more extensive attention can be paid to both "inspection and maintenance tasks" and "minor repairs". In the renewed programme they will both be dealt with in theory and in practice.

During the health session all water related diseases are discussed at one time. In the new programme this is more restricted. Two diseases will be discussed in separate session; diarrhoea and malaria. Two session deal with hygiene practices, respectively hygiene around the well and hygiene during collection, transport and storage of water. The latter aspect is not discussed in the current programme.

Besides two practical sessions all topics are now discussed in plenary sessions without variation in methodologies. The new programme comprises of a more varied set of methodologies. Several session will take place in smaller sub-groups to encourage participation of all participants. Moreover methodologies that activate the participants are included. Finally some visual material is incorporated (though this is not yet available within the project).

5. CONCLUSION

5.1 INTRODUCTION

The initial reason for this investigation was the question to find some alternative methodologies, in first instance to substitute drama. However as is said in chapter one, an extension service can usually not be improved by merely looking at the methodologies. This is to hold for the PEP too. Therefore the emphasis on methodologies has not come out as was originally expected.

The interdependence of the five factors of Royen's wheel which already was mentioned in chapter 1 clearly emerged. Points of importance are often related to various factors. Overlap of comments over different paragraphs could therefore hardly be avoided.

This chapter is composed according to the three research questions, which are presented in chapter one. It reunites the case-study and the overall analysis of the PEP. Many of the observation on the entire education programme appear to be proved by the case-study.

A summarizing description of the PEP is presented in 5.2. This is an answer on the first research question. The second question is answered in 5.3, where a balance is presented of the weak and strong points of the current programme. As an answer on the final last research question, recommendations for improvement are discussed in 5.4. A short overview of the recommendations is given in 5.5.

5.2 DESCRIPTION OF THE PEP

The education programme of the RWHP, the Participation and Education Programme (PEP) is carried out by seven project staff members, two PEAs and two PEP-teams (June, 1992). Most of them are seconded to the project by the MOH or DOSD. The PEP-teams are the staff that are mainly responsible for the execution of the programme. The PEAs have the task to further develop and advice on the programme. Sometimes they also assist with executing meetings and trainings. Besides this project staff an important part is played by the community based extension workers of the same ministry and department.

Before construction the PEP-staff carry out a programme of five meetings to motivate and organize the communities. Additionally some hygiene and sanitation education is given during these meetings. During the construction stage the community is visited regularly by the PS and the extension worker.

After construction a cycle of six meetings is given every half year. This programme is carried out by the extension workers. The first three meetings concern the maintenance of the facilities. The other meetings deal with hygiene and sanitation.

The meetings of both programmes are open to every villager. The attendance is highly variable from meeting to meeting and from community to community. Most meetings principally consist of discussions and explanations, sometimes posters are used to support this.

Beside these programmes of community meetings a training of two and a half day is organized for village caretakers, the VCTT. This training is generally given for ten wells at one time, every VWC is allowed to send two members. The VCTT concentrates on use, inspection, maintenance and minor repairs of the facilities, besides health education given.

A last point of concern for the PEP-staff is the training and support of the extension workers. Half-yearly a workshop is organized for them. This workshop used to focus mainly on the planning of a new quarterly programme for every participant. Presently more attention is paid to the training of extension workers on basic educational principals and techniques. Besides this training the PEP-staff also support the extension workers by giving them assistance during the meetings in their communities.

5.3 STRONG AND WEAK POINTS OF THE PEP

One of the most important positive aspects of the PEP is that it receives much attention and priority. Consequently the PEP has quite many resources at its disposal. Moreover two elaborated schedules already exists for the visits to the communities.

Yet these same elaborated schedules for the CSVs cause two of the principal constraints of the education programme. Inflexibility is the main dilemma for the "Programme for wells under construction". The comprehensive and precise development of the meetings has resulted in a schedule with little scope for adjustments and exceptions of individual communities. For the "Programme for completed wells" the main problem is repetition because the same meetings are repeated every half year.

The project policy on participation of the target group is not entirely clear, the implementation of the PEP is sometimes inconsistent with this policy. The value attributed to the involvement and participation of the target population throughout the programme is unmistakable. Nevertheless in practice this participation of beneficiaries is still rather poor. Their participation consists mainly of the implementation of project procedures. A main cause for this is the nature of the project, which is directed to the implementation of only one type of water supply facilities. Additionally the programme is tight and accordingly inflexible as a consequence of the requirements from the donor regarding the number of wells to be constructed every year. Both hamper the real participation of the target group substantially.

In fact the VCTT is one of the illustrations of this ambiguity in the project policy. On one hand this training enables the communities to take up full responsibility on their facilities, according to the principals of a community-based ideology. On the other hand it is actually the result of the projects view of how a community-based maintenance has to be shaped. It assumes a VWC with one (and from now onwards two) person(s) responsible for all the tasks formulated as job description of a caretaker.

Indistinct is what the PEP exactly has to achieve because no clear objectives have been formulated for the programme. Neither are clear indicators for results available, consequently it is impossible to check the outcome and success of the current education programme. Although a lot of data is collected both on the state of the wells and on the (educational) visits that are carried out, these data are presently not used for monitoring or evaluation.

This shortcoming is found very clearly with the VCTT. For this training only global overall objectives are formulated. These do not give sufficient direction to the development of a training programme. Neither is it eventually possible to determine the success of the training. Extra more elaborated objectives have therefore been formulated for the renewed programme.

Nearly all CSVs are, regardless of their goals, public meetings meaning that they are directed to all the villagers. Taking note of the fact that the project is primarily concerned with the construction of communal water supply facilities it is correct to consider the entire population as target group. Nevertheless organizing meetings for more specific and selective target groups would be beneficial in certain occasions. With a more specific and homogenous public a meeting can be better adapted to this public.

One group that is of particular importance for hygiene education are the women. They are most involved in water collection and management and in the care for proper hygiene of the family. Although this special position of women is recognized by the RWHP, it has not yet resulted in specific activities for this group. A possibility to organize this is to activate female caretakers as local hygiene promoters. The VCTT should be adapted and prolonged if it is decided to encourage this role. But this is not sufficient, attention for this group in the rest of the programme will be needed.

To be able to plan a well adapted and appropriate extension programme it is vital to have enough knowledge about the target group. The project has one main source for this information, these are the PEP-team members. Some of them originate from the same sections of the population as the target group and experience is gained over the past years of field work for the project. However because of two factors this knowledge is not applied optimally. To begin with it mostly concerns "intracultural" knowledge, being for the greater part implicitly present and difficultly utilizable. In addition the programme is evolved by the PEAs whereas the main knowledge is present by the executive staff, the PEP-team members. Besides this not all required information is available yet within the PEP.

This point accounts for the VCTT too. When for instance more information is explicitly available about existing knowledge and capabilities with regard to maintenance and repair, the training could be better adapted to the needs. The training may increase in effectiveness and appeal more to the participants. The same applies for the health and hygiene topics.

Likely because of the lack of explicit and specific objectives no specific and confined number of topics are chosen for the PEP. Particularly for the health education the lack of priorities brings on discussions which are hardly in depth and little goal-oriented. Though a selection of five diseases has been made to concentrate on, these categories are generally discussed all five in the same meeting. Moreover topics are mainly presented in order to transfer knowledge and little to change attitudes or behaviour.

Both shortcomings are found in the VCTT. Discussions on the topics were superficial and little orientated on attitudes and behaviour. In line with the new objectives the content of the new programme has changed. Some topics are left out, others are dealt with more profoundly. Attention to attitudes and behaviour is stressed and included in different sessions.

A positive aspect of the PEP is the incorporation of the extension workers in the programme. This increases the chance of continuation after the project has phased out. Furthermore are these extension workers, especially the community health workers, very familiar with the local situation and customs. Despite this, the cooperation with these

extension workers also brings about some important complications. The most critical point is their motivation. The frequent inadequacy of this motivation is the main cause for cancellations of programmed visits. Another problem concerning the extension work is the lack of knowledge of and skills in teaching methodologies. Furthermore are many of the CHW insufficiently acquainted with health and hygiene topics.

The VCTT can have two possible functions to improve the capabilities of the extension workers. First the extension workers, especially the CHWs, can upgrade their knowledge and skills on health and hygiene by merely attending the training. Furthermore extension workers might gain some teaching experience by observing and assisting the project-staff during the training.

A largish number of project staff is involved in the PEP. Because some of this staff is seconded to the project by the MOH and DOSD, they will remain working for the USP when the project has phased out. They will continue supporting the extension workers and so possibly contribute considerably to the sustainability of the constructed facilities.

The current line of command, in which the PSs are in charge of the PEP-teams, is not advantageously for the execution and advancement of the PEP. In the present situation it is hard for the PEAs to react effectively and efficiently on suddenly occurring situations.

In the set up of the actual programme the imbalance in methodologies catches the eye. Nearly all meetings are made up of the similar plenary discussions. Although this methodology does allow the target group to participate, in practice participation remains quite low and generally dominated by some of the participants.

Few really usable materials are available. Both the PEP-teams as the extension workers have disposal of a number of posters. However because of the limited number the same posters have to be used for many occasions. Some available posters are too complex for most of the villagers (drawings with cross sections, depth effects or too many points of attention). The project has been trying to find or develop of more appropriate materials, but no suitable artist has been found yet.

These problems are also clearly seen with the VCTT. Besides the two practicals all the sessions contained of plenary discussions, mainly in the form of question-answer sessions. Neither any supportive materials are used.

5.4 RECOMMENDATIONS

A close look at the project policy and its current implementation is necessary to create more clearness and concurrence. Herewith it should be born in mind to which extent participation of the target group is feasible in this project. Moreover it should be considered how the desired degree of participation can be realised.

A further implementation of a community based approach, which is advocated in the project proposal for the second phase, will have significant consequences for the education programme. Therefore most of the recommendations following will be influenced by or related to it.

After more clarity is provided regarding the project policy clear and elaborated objectives for the PEP can be formulated. These objectives should give guidance to the selection of a restricted number of points of attention, describing accurately which changes in knowledge, attitude or behaviour should be achieved. Such a limited list of action points will contribute to a more specific and profound programme. This for its part will increase the impact of the extension programme.

A number of CSVs should be organized for a more limited and hence more specific and homogeneous audience. This enables better adapted meetings and gives more space for participation of all attendants. The intentions for a specific programme for women have to be translated into actions. This special attention to women can for instance be realized through the mobilization of female caretakers as local hygiene promoters.

More knowledge of the target group is needed for the further development of the programme. Part can be gained from the PEP-team members. For other information specific studies will be needed. This concerns for instance information on traditional water management and water use and on beliefs and knowledge of water quality. Also information about the knowledge, attitude and habits concerning water related diseases is insufficient. Finally information on traditional organisation, management and decision making structures would be beneficial.

Because of the significant role of the extension workers it is vital to have a comprehensive training for them. The PEP-workshop should therefore be extended. More attention should be paid to different education principles and techniques. Moreover should health, hygiene and sanitation topics be explained to the CHWs. A last point of concern is the motivation of the extension workers. The training in itself can already contribute to this, further should their attitude towards and opinion on their function be discussed. The importance and effect of their job should be explained and stressed.

The line of command of the project staff should be changed. The PEP will benefit from a situation in which the PEAs are in charge of the development of the PEP and of the PEP-teams. Sufficient coordination and consultation with the PS and (A)PM is necessary, especially concerning logistical matters.

A more varied compilation of methodologies should be incorporated into the programme. These methodologies should be participatory, stimulate discussion and interaction among the audience and present the topic clearly.

New materials are necessary. Primarily materials which are cheap, simple and fitting the selected methodologies. A distinction can be made between materials for the PEP-staff and materials for the extension workers. Different criteria have to be set for both types. Materials for the extension workers have to be simple and cheap. They might partly be produced by the extension workers themselves during the PEP-workshop.

5.5 RECOMMENDATIONS IN BRIEF

* Create more clarity on the project policy regarding the participation and involvement of the target group.

* Formulate clear objectives on the following levels:
  - for the PEP in general
  - for the categories of activities (see 3.8)
  - for the separate meetings

  These objectives should indicate exactly what has to be achieve by whom in what period of time.

* Compose a list with a restricted number of action points on the basis of the new objectives, indicating exactly which changes the programme is aiming at.

* Collect more relevant information about the target group.

* Set up a special programme or specific meetings for women.

* Extend the PEP-workshop in order to train the extension workers and enlarge their motivation.

* Put the PEAs in charge of the PEP-teams.

* Vary the programme through the use of different simple methodologies which stimulate participation and interaction.

* Intensify the search for new materials.

6. DISCUSSION

The impression of the RWHP and the PEP that gets across from this report might be slightly negative. This is caused by the fact that the research tried to find possible improvements in the programme. Consequently the focus came mainly on the weaker points of the programme.

Some of the given recommendations are mentioned in the project proposal for the second phase (Project proposal, 1991). However they have not yet been covered fully by the programme. Examples are the participation of the target group in the entire project cycle, the significant position of women and the role caretakers can play as local promoters of hygiene practices.

When criticizing the extent of participation of the target group in the programme, I do realize the constraints which are faced by the project to achieve a real community based approach. The project is restrained in this respect by some conditions; mainly the facts that the project only offers water supply facilities and that it is regulated by the demands of the donor. Both aspects together make it next to impossible to implement a real community based approach. The reason why I paid so much attention to the policy on participation is that there is certainly room for improvements towards a better and more profound collaboration with the target group. These opportunities will however only possibly be utilized when the present situation is sincerely observed and recognized.

Although the incorporation of extension workers has many positive effects, it causes some significant problems too. It will take considerable time to make alterations in their knowledge and capabilities. Even more difficult and likely more critical to change is their motivation and commitment for the PEP. Training and support of the extension workers is of crucial importance. Though the PEP-workshop is influential it is not sufficient, in every possible field this should be kept in mind.

More investigation on the target group has been proposed. This is both very important and very difficult and time consuming. Many of the necessary information (e.g. beliefs on different diseases, attitudes towards changes in hygiene practices) is hard to obtain. Because good research in this field is time consuming it is necessary to consider carefully which information is needed most.

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ANNEX I ABBREVIATIONS

CHA	-Community Health Adviser
CHW	-Community Health Worker
CSV	-Community Support Visit
DC	-District Council
DCP	-Drought Contingency Project
DOSD	-Department of Social Development
DWA	-Department of Water Affairs
HA	-Health Assistant
MOH	-Ministry of Health
NWP	-North Western Province
PEA	-Participation and Education Adviser
PEP	-Participation and Education Programme
PS	-Project Supervisor
RWHP	-Rural Water for Health Project
SDA	-Social Development Adviser
SNV	-Netherlands Development Organisation
USP	-Users Support Programme
VCTT	-Village Caretaker Training
VWC	-Village Water Committee
Zkw	-Zambian Kwacha, currency of Zambia

ANNEX II CONCEPTS AND DEFINITIONS

Caretaker (or village caretaker):
VWC-member who is responsible for the daily care, inspections and maintenance of the facilities. When repairs are necessary (s)he should report this to the VWC.

Community Support Visits (CSVs):
All meetings of the Programme for wells under construction and Programme for completed wells. This are all the PEP meetings that are conducted in the communities, except for the VCTT.

Extension workers:
Refers to the community based employees and volunteers of the MOH and DOSD; HAs, SDAs and CHW.

Hygiene education:
"All activities aimed at encouraging behaviour and conditions which help to prevent water and sanitation related diseases" (Boot, 1991 p4).

PEP-staff:
Refers to both PEAs and PEP-team.

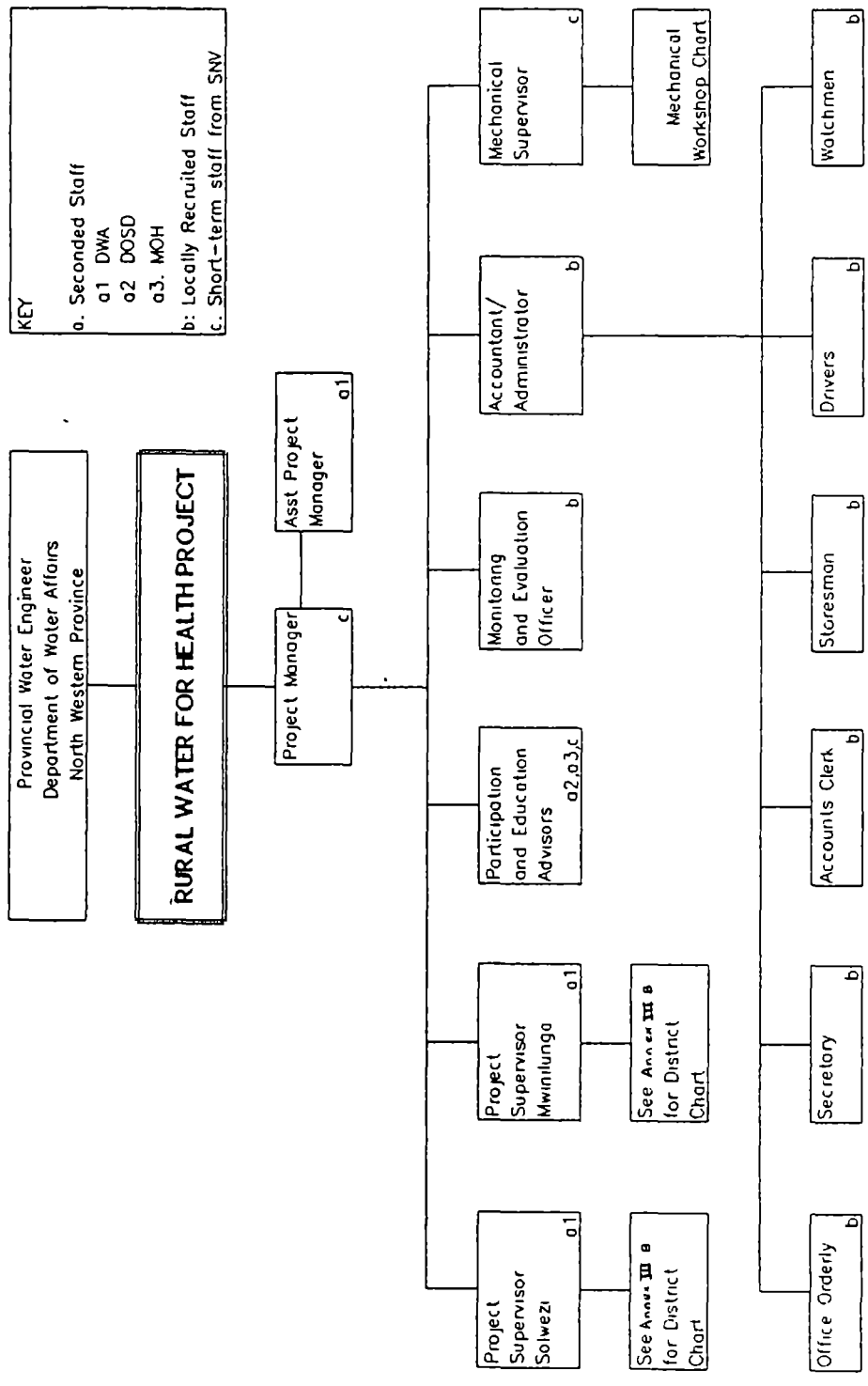
PEP-team:
Refers to the executive staff of the PEP on district level, consisting of two or three CHAs.

PEP-workshop:
Training for the extension workers, presently given twice a year.

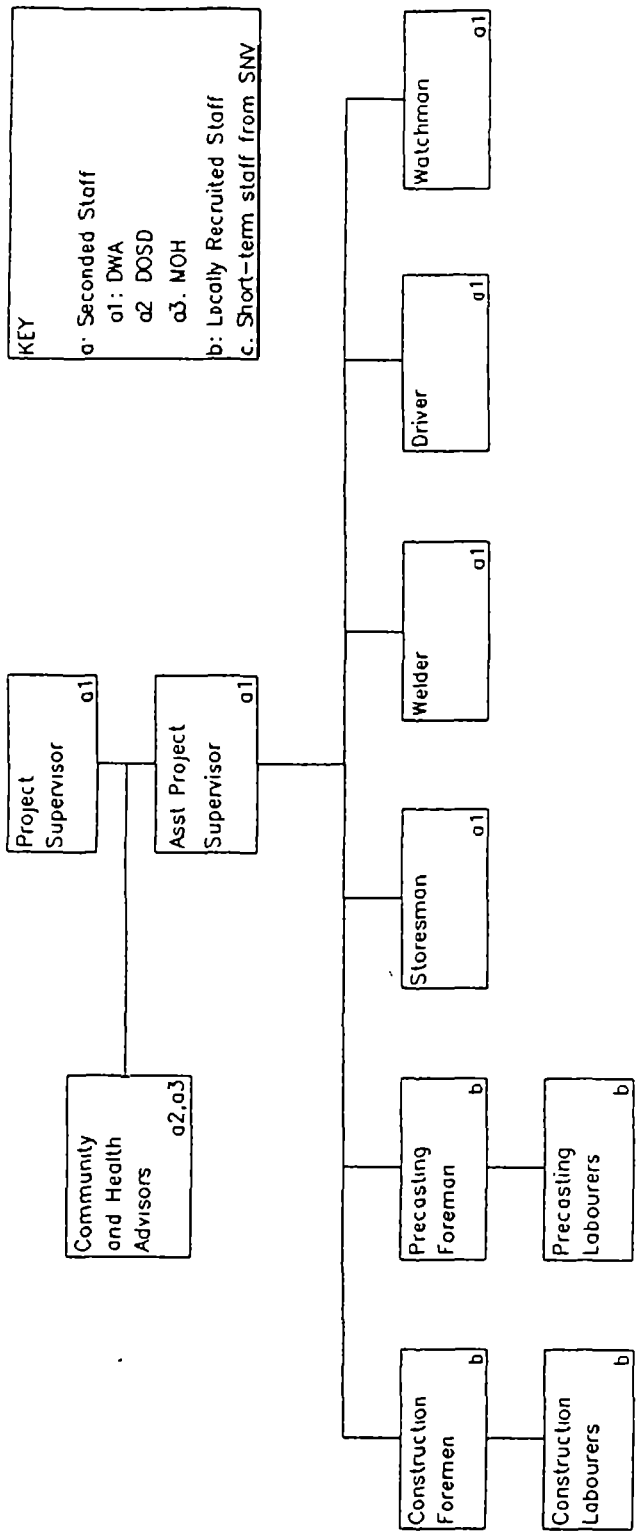
Village Water Committee (VWC):
Committee which is established in every community that receives an improved water supply facility. Each committee consists of six elected members; chairman/lady, secretary, treasurer, caretaker and two members (from now onwards: two caretakers and one member).

ANNEX III ORGANISATION CHARTS

A- Overall project organisation chart (Project proposal, 1991, p88).



B- District level organisation chart (Project proposal, 1991, p89).



ANNEX IV COMMUNITY SUPPORT VISITS

A summary is presented from the all Community Support Visits as they are found in the so-called "Blue file", a hand-out for both the PEP-staff and the extension workers.

PROGRAMME FOR WELLS UNDER CONSTRUCTION

* Ward meeting (WM)

Purpose: -To introduce the project in a new ward.
-To obtain data from that ward.

Content: -History, objectives, policy and implementation procedures of the project. Advantages of protected wells. How communities can apply and are selected.
-Present water and sanitation state, other self-help projects, (women)participation, health and education facilities, social and economic aspects.

Method: Plenary explanation (first purpose) and group discussion (second purpose).

Participants: No restrictions, everybody allowed to attend

Facilitators: Extension worker, PS, PEA, PEP-team.

* Assessment (ASS)

Purpose: To determine whether a community qualifies for assistance.

Content: To obtain data from the applying community.

Method: Visit community, accompany women to existing water source, making sketch map (by facilitators), discussions.

Participants: All villagers.

Facilitators: Extension worker, one PEP and one PEA or PS.

* Promotion meeting (PM)

Purpose: -Create awareness on benefits of a protected well and the need for community participation.
-Prepare villagers for the following stages.

Content: -Advantages of protected wells and need for continued operation and maintenance.
-Self-help, VWC, site-selection, women's involvement, implementation procedures.

Method: Drama, discussion, posters.

Participants: All villagers.

Facilitators: Extension worker, two PEP, one PEA or PS.

* VWC training

Purpose: Prepare the VWC-members on their future role and responsibilities.

Content: Site-selection, roles and responsibilities of VWC members, sanitary use of facilities, cooperation, self-help activities, fund-raising methods, importance of VWC.

Method: Drama, discussion.

Participants: All villagers, VWC-members are obliged to attend.

Facilitators: Extension worker, three PEP and one PEA or PS.

* Tools delivery (TD)

Purpose: To enable community to start digging.
Content: Delivery of tools, proper handling of tools, measurements of well, health.
Method: Discussion.
Participants: VWC-members (especially two caretakers), all other villagers.
Facilitators: Extension workers, PS and one PEP.

* Construction monitoring visit (CMV)

Purpose: Monitor construction progress and if necessary assist the community (VWC) with problems.
Content: Construction progress, (if applies) encountered problems.
Method: Check progress, if any problems encountered conduct a meeting with VWC.
Participants: VWC-members, any other villagers present.
Facilitators: Extension worker and/or PS.
Timing: These visits should be done once a week during digging above water level and twice a week if the construction team is present.

* Preparation for handing over (PHO)

Purpose: To assist the VWC in preparing a programme for the handing over ceremony.
Content: Advantages of a protected well, proper handling, operation and maintenance of the water facilities, roles and responsibilities of VWC, fund-raising methods, USP.
Method: Discussion (find out what participants know and elaborate on this knowledge), practical demonstration (proper handling), explanation.
Participants: All VWC-members.
Facilitators: Extension worker, two PEP or one PEP and one PEA.

* Handing over ceremony (HOC)

Purpose: -Make people aware of importance of a protected well to ensure sustainability.
-Ensure that hygiene and maintenance standards are maintained.
-Make people understand their responsibilities regarding their water facilities.
-Introduce the USP.
Content: Advantages of a protected well, proper handling, operation and maintenance of the water facilities, role and responsibilities of VWC, fund-raising methods, USP.
Method: VWC-members present the first four topics, project staff presents on USP and role of extension worker, well handing over form. Inspection of facilities, drink some water, signing of handing over form. VWC continue with programme.
Participants: VWC-members (facilitators), all other villagers.
Facilitators: Extension worker, same project staff as with PHO.

PROGRAMME FOR COMPLETED WELLS

* Assessment and appointment (ASS &APP)

Purpose: -To see whether the well is properly maintained and if the people feel responsible.
-To find out whether the well is serving its purpose.
-To see whether the VWC is active.

Content: -Check on the condition of the well, the usage of the well and the average number of users.
-Check on the existence and functionality of the VWC.

Method: Ask and talk to people, check yourself.

Participants: Whoever is found at the well and in the villages.

Timing: 1-1.5 hour.

* Action plan (APL)

Purpose: -To create awareness among the well-users on their responsibilities.
-To make people understand their problems and distinguish between major and minor ones.
-To let them solve their problems on their own.
-To help them take up their responsibilities.
-To assist the VWC in organizing themselves.

Content: -Identification of the problems related to the well and its use and discuss on priorities.
-Discuss possible solutions.
-Draw up an action plan, discuss actions for VWC.

Method: Ask questions, discussion, assist people only if necessary. Use newsprint to write action plan down. Discuss separately with VWC.

Participants: All well users, VWC-members.

Timing: Half a day.

* Check (CHK)

Purpose: -Review previous visit, see the improvements.
-To make people aware of the importance of maintenance and the possibilities how to do it.
-To let people know how their well can remain in good condition.
-Strengthen the VWC.

Content: -Check on the action plan.
-Maintenance system (fund-raising, cleaning of well and surrounding, lubricants).
-Instruction on handling of the well.
-Tasks of VWC.

Method: -Asking people and check yourself, let people explain, use of posters and a demonstration of well use by participant.

Participants: All people present.

Timing: Half a day.

* Sanitation I (SAN I)

Purpose: -To avoid contamination of well water in order to maintain the health standard.
-To make people understand the relation between cleanliness and health.
-To make people aware of the relation between unprotected water and some diseases.
-To explain the relation between faeces and health, health hazards of childrens' faeces.
-To discuss solutions on how to keep the surrounding clean.

Content: -A clean well and surrounding.
-Waterborne and water related diseases.
-Pit latrines, toilet cleaning.
-Rubbish pits.

Method: -Check yourself the well, latrines and rubbish pits in the villages.
-Discussion, posters and explanation.

Participants: All well users, VWC-members, health worker and teachers.

Timing: Half a day, if necessary two half day visits.

* Sanitation II (SAN II)

Purpose: -To make people aware of the relation between unprotected water and some diseases.
-To explain relation between faeces and health, especially childrens' faeces.
-To discuss on solutions how to keep the surroundings clean.

Content: -Waterborne and water related diseases.
-Pit latrines, toilet cleaning.
-Rubbish pits.

Method: -Ask people what they already know, add what is left out.
-Posters and discussion.
-Check in villages.

Participants: All well users, VWC-members, health workers, teachers, any other people.

Timing: Two hours.

* Domestic and personal hygiene (DPH)

Purpose: -To assess and raise knowledge on the importance of a clean house.
-To avoid possible contamination of water and food and to know storing facilities.
-To find out cooking and preparation methods.
-To raise awareness on the relation between health hazards and body cleanliness.
-To raise awareness on the effects of the use of dirty clothes and beddings.

Content: -Clean house.
-Storage of water and food.
-Clean cooking utensils and use of dishracks.
-Hand and body washing, child washing.
-Washing of clothes and beddings.

Method: Ask people and discuss, use posters.

Participants: All well users, VWC-members, health workers, teachers, officers of other departments.

Timing: Half a day, if necessary two half day visits.

ANNEX V CHECK-LIST FOR INFORMATION ON TARGET GROUP

This is a check-list for possible useful information about the target group of a water supply and sanitation programme, it is summarized from Boot (1991 p66-68)

1. **Demography**
   - population groups (social, economic, ethnic, religious)
   - division of tasks and responsibilities in households, role of women.

2. **Housing**
   - settlement structure;
   - types of houses and their physical condition;
   - in-house water and sanitation.

3. **Physical infrastructure**
   - water supply and sanitation facilities (public, private);
   - needs/obstacles to improve present facilities.

4. **Health**
   - major health problems and relative importance of water and sanitation-related diseases (related to gender and age);
   - seasonal variations;
   - knowledge and perceptions about diseases and health (related to gender and age);
   - use of government and non-government health services (related to gender and age);
   - ongoing formal and informal health education activities; target groups;
   - specific environmental health dangers.

5. **Water availability**
   - water source(s), water point(s), distance, accessibility, reliability, quantity, quality;
   - seasonal variations;
   - protective measures/health risks at water sources/points;
   - water rights and water source management.

6. **Water use practices (related to gender and age)**
   - preferred sources of water by purpose;
   - water collection, transport and storage practices;
   - personal and domestic use of water (drinking, hand washing, bathing, clothes washing, dish washing, vegetable washing, cleaning, anal cleansing);
   - quantity of water by purpose, reuse of water;
   - criteria applied to decide on suitability of water for different purposes;
   - obstacles to adoption of improved practices.

7. **Sanitation practices (by gender and age)**
   - existing defecation practices;
   - cleansing and ablution materials and practices (also prevalence of bathing in latrines)
   - beliefs and restrictions related to latrine use (e.g. location, sharing);
   - latrine cleaning and maintenance practices;
   - latrine emptying and sludge reuse practices;
   - waste water and solid waste disposal practices;

- latrine emptying and sludge reuse practices;
- waste water and solid waste disposal practices;
- food storage, handling and preparation practices;
- household/kitchen hygiene;
- availability and use of soap for personal hygiene;
- obstacles to adoption of improved practices.

8. **Organization and participation**
   - local organizations and type of membership;
   - local leaders (males, females) and leadership structures, local decision-making;
   - informal leaders and key-persons (males, females);
   - major local political or social factors which might affect participation;
   - local traditions and practices for operation, maintenance and repair of water supply, sanitation and other structures.

9. **Level of interest**
   - evidence of popular interest (males, females) in improving water supply and sanitation, compared to other potential improvements in the community;
   - evidence of leadership commitment to improvements.

10. **Willingness and ability to pay (related to gender and socio-economic characteristics)**
    - income;
    - expenditure pattern;
    - borrowing and saving customs.

11. **Local technology and resources available**
    - local availability of building materials;
    - availability of skilled and unskilled labour (males, females, noting seasonal variation).

12. **Education and communication**
    - education and literacy level;
    - numbers of school-going children (boys, girls), dropouts and level of education;
    - adult education and vocational training;
    - availability and relative importance of communication channels.

ANNEX VI METHODOLOGIES

Lectures

The principal aim of lectures is to increase knowledge (Thijsen, 1985). Although this methodology has fallen into disuse, it is incorrect to keep off lectures fully. They can be very effective, provided that the choice for this methodology is well considered for the situation at hand.

The main advantage of lectures is that it is an easy way passing on knowledge. Information can be presented briefly and clearly. Conditions are that the lecture is plain, conveniently arranged and adapted to the audience. Other advantages are that it is cheap and relatively many people can be reached at one time (Thijsen, 1985).

A disadvantage can be that generally little contact and interaction is possible with the audience and that the audience has an entirely passive role. Furthermore a significant risk is the possible selective attention and remembrance of the audience (Thijsen, 1985). A lecture should furthermore not take too long, at most 15 to 20 minutes.

In many cases it would be beneficial to use (audio-)visual materials to support a lecture. This increases the clarity because of the visualization of the spoken word and it assists the public to keep up with the presentation (see for further comments on visual materials 3.7.7). Finally a lecture will often be more effective if it is followed by another methodology, which can for instance repeat the information or enable the audience to participate and become more active.

Presently lectures have been excluded from the PEP meetings and trainings. However for passing on knowledge it can be an effective methodology. Especially when taking into account the capabilities of the extension workers lectures might be useful because of its relative simplicity. As was said it is best to combine the lectures with visual materials and preferably let it be followed by a more participative methodology enabling the audience to assimilate the new information.

Group discussions

Discussions can be used for different purposes. Most important is their possible contribution to attitude and behaviour changes (Abbatt and MacMahon, 1985). But discussions can also help to assimilate new knowledge, to become aware of one's own situation and of possible solutions (Huijs et al, 1991).

Group discussions are so valuable because they allow interaction and exchange of ideas and knowledge between participants (Abbatt and MacMahon, 1985). Group discussions can also be well adapted to the experiences and situation of the participants (Thijsen, 1985). All these points contribute to the motivation of the audience and increase the change that the meeting is remembered and will be effective.

Group discussions should preferably be held with a group of 5-10 participants. Groups larger than 20 participants should be divided into smaller groups (Abbatt and MacMahon, 1985). This means that a relative small number of people can be reached at one time. Moreover discussions require quite something from the capabilities of the facilitator.

Discussions are often used in combination with other methodologies, nearly every methodology is rounded off with a discussion. Various materials can be used to start, support or guide a discussion.

Discussion is the principal methodology used in the PEP. However the possibilities of discussions are not optimally used. Groups are often quite large and interaction hardly takes place among the participants. Ways to improve this are: inviting smaller groups or dividing the group in sub-groups, combining the discussions with other methodologies and training the facilitators in participative discussion methods. Because discussions have such a wide range of possible outcomes, it can be used throughout the PEP. However variation should be give to the application of discussions.

Demonstrations

Obviously demonstrations can be used to teach skills. Besides, they can bring about an increase in knowledge (Huijs et al, 1991). During a demonstration every step should be explained adequately and the main points should be recalled after the demonstration. When local materials are used the demonstration is most relevant for and easily recognized by the spectators (WHO, 1988).

A disadvantage of demonstration is that the audience remains passive. The effect can be increased if participants are given the opportunity to practise the acts or new skills themselves (WHO, 1988). This creates also the possibility to check the learning process of the participants.

Demonstrations can be used in the PEP for lessons on the use, maintenance and repair of the facilities. Also during health education, new practices can be instructed through demonstrations.

Role-plays

Role-plays can be used for teaching attitudes, communication skills and decision-making skills. They provide the opportunity to discuss beliefs and values in an open and safe way (Abbatt and MacMahon, 1985). A role-play can also aim to increase the insight of the participants in a particular situation or to practice new routines. Furthermore people can learn to imagine themselves in the position of somebody else (Thijsen, 1985).

During role-plays real-life situations are imitated, people have to put themselves into someone else. The situation and characters are elaborated more or less precise by the facilitator (WHO, 1985). Great commitment is normally achieved through role-plays (Thijsen, 1985).

The preparation time given to the players depends on the situation but is normally short. Still role-playing is a time-consuming methodology. Its success depends largely on the imagination and daring of the participants (Guilbert, 1987). Also for the facilitator it can be a demanding methodology. Generally discussion is needed after a role-play to discuss the feelings of the players and the opinion and ideas of the spectators. The facilitator should have clearly in mind what is aimed by the role-play to conduct a meaningful follow-up (Abbatt and MacMahon, 1985).

An important place for role-plays in the PEP is during the PEP-workshops, so that the communication skills of the extension workers are improved. Role-plays which simulate educational meetings in a village can provide a good exercise in teaching skills. Also for trainings of VWC-members it will be a suitable methodology, for example to discuss some common problems of VWCs.

Stories

"Stories can be used to give information and ideas, to encourage people to look at their attitudes and values, and to help people decide how to solve their problems" (WHO, 1988 p211). Story telling is in many cultures a traditional form of learning. Therefore stories can be very effective to initiate discussion about everyday behaviour and knowledge (Boot, 1984). Either a real life situation or a fictitious story can be used. But preconditions are that the story is recognizable and adapted to the local circumstances. Furthermore it has to be lively, concrete, believable and told in normal every day language. It should appeal upon the emotions of the listeners and be open-ended. Five or ten minutes is normally sufficient. Visual materials can be used to illustrate the story.

In the PEP, stories can be used in many occasions to start and stimulate discussion. Stories should best be written for a specific target group (e.g. women, caretakers) to ensure that this audience can imagine themselves in the story. Also for a school hygiene programme the methodology is very suitable because children love stories (Young and Durston, 1987).

Exercises

Exercises can be used to apply or revise newly adopted knowledge or to check the results of a lesson. Exercises exist in many different types, from simple questions to exercises that require special materials and adequate preparation. Exercises can be made around pictures, to increase the effect of these visual aids. Exercises can best be done individually or in small groups.

Exercises would be beneficial in most trainings of the PEP, to review the information and to give some opportunities for practice. Simple exercises on health and hygiene topics which the extension workers can use in their meetings could be thought up by the PEP-staff.

Songs

Songs can be used to draw attention to an important point and to help people remember this point (Boot, 1984). Songs can be a very effective tool to pass on a short message in societies where songs traditionally contain messages. A song should be on a familiar tune and with an easy text, the message should be unambiguous and short.

Songs about the proper use of the water well or about specific favourable hygiene or sanitation habits can be good means to increase the effect of the PEP. Also for a school programme songs will be very suitable.

Games

Games can be used to increase or assimilate knowledge (Huijs, 1991). The positive aspect of games is that they make learning enjoyable. When simple games are used which are liked by the people, they might be repeated at home and so reinforces learning (Abbatt and MacMahon, 1985).

A risk of using competitive games is that people concentrate too much on winning and so miss the message of the game. This might especially happen when the game is played with children. Therefore it is important to discuss the game afterwards (Young and Durston, 1987). The easiest way to make a educational game is to adapt an existing game. Dominoes, happy families or game of goose can for instance be adapted for various educational objectives and topics.

A school hygiene programme of the PEP could very well use games to teach children certain health messages. But also adults can like to learn through games. When a lot of materials are required for a game they can best be used during trainings given by the PEP-staff. Simpler games can also be used by the extension workers during their meetings.

ANNEX VII MATERIALS

Real objects

These materials are the easiest to recognize, especially if the objects are known to the audience. They will often be used during demonstrations. However it will not always be possible to use real objects, for instance because the objects are to big or not available at the right time.

The most obvious objects which can be utilized during PEP activities are the water facilities. Explanations on use, maintenance and repair can best be done at the site of these facilities.

Models

If it is not possible to use real objects, models can be a valuable alternative. They also show the object in three dimensional perspective and can be used to demonstrate both function and construction (Guilbert, 1987). Models are more difficult to recognize, for example if the size is very different from the real size or because the object is seen without its usual surroundings.

Posters

This a very broad and widely used category of visual aids. Posters can represent single pictures, various pictures, only words or a combination of pictures and words. Some comments on the use of pictures have been given in 3.7.7.

Posters can be used for different purposes; to increase knowledge, to give instructions or to improve remembrance. Their use is very flexible. Posters can simply support a lecture, they can be used to start discussion or questions can be asked about what the people see. People can also be asked to invent a story around one or more posters, or be asked to group some pictures together. Another assignment can be to have the audience making their own posters.

Flannel graphs

This is a piece of flannel, or comparable material, on which figures can be adhered. These figures can be added and taken off when ever required during the meeting. In this way it is possible to illustrate a sequence of events or a process. Flannel graphs can be used in a variety of situations because the presentation can be different every time, provided that sufficient figures are available.

Flannel graphs can support the spoken word step-by-step and if well used they will help to hold the attention of the public (Guilbert, 1987). They can also stimulate participation if the audience is involved in the creation of the total picture on the flannel. Furthermore are flannel graphs usually cheap and can be easily transported. The use of flannel graphs is however restricted to small groups (Boot, 1991).

Blackboards

Another easy and cheap aid which also allows for step-by-step explanation is a blackboard. This can be easily maintained but the use depends partly on the artistic skills of the facilitator (Boot, 1991).

Some points are important to remember when using a blackboard. First of all a facilitator should never write and talk at the same time. The writing or drawing should be legible and visible, also from the back of the room. What is written or drawn on the board should be related to what is said and has to be selective (Abbatt and MacMahon,1985).

Slides

This is probably the visual aid that suits best to large audiences. However, when the public is very large discussions will be more difficult (Boot,1991). Slides are a rather popular medium as people often like to see them (Boot, 1984). They are suitable to show distant things or sequences. However they may be rather costly and laborious in use.

ANNEX VIII
EXTENSION AIMS VILLAGE CARETAKER TRAINING

a
1- all participants can explain and understand why the maintenance and repair of the facilities are the responsibility of the community
2- all participants can explain what the duties of a caretaker are
3- all participants can explain why these duties are important
4- all participants execute their duties properly when they are back in their villages

b
1- all participants can explain and understand the importance of a proper handling of the well
2- all participants can explain what a proper handling of the well involves
3- all participants can operate the well in a proper way
4- all participants operate the well in a proper way when they are back in their villages

c
1- all participants can explain and understand why regular inspection of the condition of the facilities and the surrounding is important
2- all participants can explain and understand why regular maintenance of the facilities is important
3- all participants can tell the daily, weekly and monthly inspection and maintenance tasks of a caretaker and other users
4- all participants can execute these tasks correctly
5- all participants perform the necessary inspection and maintenance tasks when they are back in their villages

d
1- all participants can explain and understand why the facilities and its surrounding should be cleaned regularly
2- all participants can explain what has to be cleaned regularly at the facility and its surrounding
3- all participants can organise this cleaning (making and controlling a duty roster)

e
1- all participants can explain and understand why it is important to do repairs on time
2- all participants can explain which minor repairs they have to carry out themselves
3- all participants can explain when these repairs are necessary
4- all participants can explain how they can do the minor repairs
5- all participants can execute the most important minor repairs

f
1- all participants can explain what services they can get from the USP
2- all participants can explain how to apply for assistance from the USP

g
1- all participants can tell what they have to explain other users about a proper and careful handling of the facilities
2- all participants can explain why they have to enlighten other users on a proper and careful handling of the facilities

h 1- all participants can explain and understand why (well) water has to be prevented from contamination
2- all participants can explain and understand how (well) water can be contaminated
3- all participants can explain and understand how this contamination can be prevented
4- all participants will prevent this contamination when they are back in their villages (as far as they are capable)

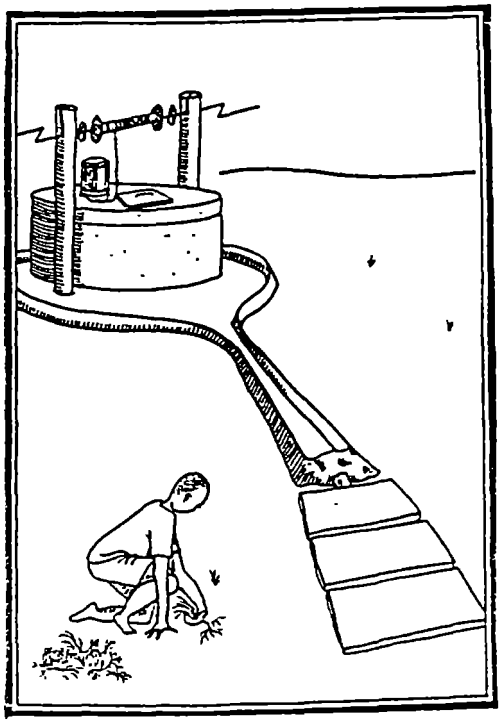
i 1- all participants can explain why diarrhoea is dangerous
2- all participants can explain and understand how diarrhoea can be caused by dirty water, hands, food or kitchen utensils
3- all participants can explain and understand how these transmissions routes can be prevented
4- all participants avoid these transmission routes when they are back in their villages

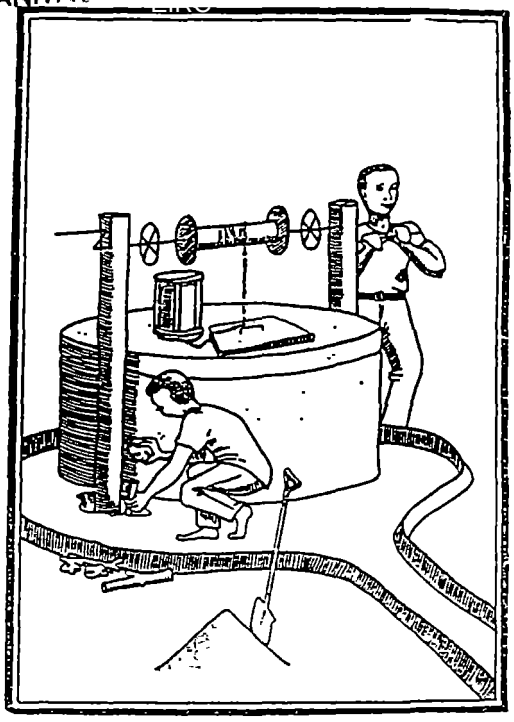
j 1- all participants can tell the cause of malaria
2- all participants can explain and understand why stagnant water is related to malaria
3- all participants can explain and understand why tall grass around the house is related to malaria
4- all participants can explain and understand where and how they should prevent breeding and hiding places of mosquitos

HANDOUT

VILLAGE CARETAKER

TRAINING





Addendum to the report

"Teaching well Teaching better"

HAND-OUT VILLAGE CARETAKER TRAINING

This hand-out gives a complete description of the village caretaker training. First some general points are mentioned, which refer to the whole training. After this a time schedule is given and then separate descriptions for all sessions.

Objectives of the VCTT

Ultimate objectives

* Caretakers are trained in and motivated for their job and responsibilities in order to improve the sustainability of the facilities.
* Caretakers apply proper hygiene practices in order to minimize contamination of water and the spread of diseases.

Operational objectives

- Caretakers know their duties.
- Caretakers feel responsible for their duties.
- Caretakers are able to carry out their duties properly and will do so after the training.
- Caretakers are acquainted with the USP.
- Caretakers will prevent contamination of water as far as they are capable.
- Caretakers will prevent some of the transmission routes of diarrhoea by applying a proper hygiene.
- Caretakers know some ways to prevent malaria.

Organisation

Throughout the hand-out members of the PEP-team and PEAs are shortly referred to as PEP/PEA.

At least two PEP or one PEP and one PEA are needed for the training. The PS should attend the third day of the training to supervise the practical and theory session on minor repairs. If possible two construction foremen should assist the PEP/PEA with the practical on minor repairs. They should then also be available on the third day. The practical session starts early in the morning (± 08.45 h) so it should be looked at every training whether it is necessary for the PS and construction foremen to arrive the afternoon of the second day.

It should be tried to involve the extension workers as much as possible in the training. This will give them some teaching experience and will make sure that the villagers see them as intermediaries between the village and the project. Because it depends very much on the capabilities of the individual extension worker to what extent (s)he can assist no general indications are given for this. It has to be decided for every training by the PEP/PEA how far the involved extension worker is capable for this.

Give the extension worker a good preparation and explanation of what is expected from him/her. Avoid that the extension worker misses a large part of the programme because (s)he is involved in too many practical arrangements of the training.

Venue and time

The training has to take place at a site with a functioning project well and additional facilities, so that all practicals can be held there. Only for the practical on minor repairs two other wells in the neighbourhood are necessary. It would be best if in the afternoon of the second day two rooms are available.

A precise time table is provided for the entire training and for every separate session. The facilitators should keep strictly to this schedule
because otherwise the completion of the programme will be problematic.

Discussions

Quite many of the sessions involve discussions in smaller groups. Some points that the facilitators should keep in mind for these discussions are:

* Try to stimulate discussion among the participants. The discussion leader should try to talk very little. E.g. ask people to react on each other in stead of giving a reaction yourself.
* Try to relate the discussion as much as possible to the situation and experience of the participants themselves. Don't discuss the topics only in general but ask them their opinion and ideas, if the participants have any experience with what is discussed or what they would do themselves and why.
* Stimulate quiet participants to participate in the discussion. And try to restrain participants who are too talkative.
* Try to keep the discussion structured. E.g. by giving from time to time a summary of what is said.

Subgroups

The same subgroups can be used for the first and second day the training. Divide the participants in such a way that people from the same well are placed in different subgroups. For the third day new groups have to be formed as then three groups should be formed.

TIME SCHEDULE

DAY 1	DAY 2	DAY 3
09.00-09.15 Introduction 09.15-09.30 Introduction game 09.30-11.00 Duties of a caretaker	09.00-10.00 Inspection and maintenance, theory 10.00-11.00 Hygiene around the well	08.45-11.30 Minor repairs practical (in three sub-groups)
11.00-11.30 Tea-break	11.00-11.30 Tea-break	11.30-12.00 Tea-break
11.30-12.30 Diarrhoea	11.30-12.30 Users Support Programme	12.00-13.00 Minor repairs theory 13.00-13.30 Evaluation
12.30-14.00 Lunch-break	12.30-14.00 Lunch-break	13.30-14.30 Lunch-break
14.00-14.45 Malaria group 1 2 14.45-15.30 a b 15.35-16.20 b a a= Proper handling practical b= Responsibility caretaker	group 1 2 14.00-14.45 a a 14.50-15.35 b c 15.40-16.25 c b a= Cleaning of facilities and surrounding b= Clean water from well to mouth c= Inspection and maintenance, practical	14.30 Departure

INTRODUCTION GAME

WHY OBJECTIVES

- All participants and facilitators have introduced themselves (name, village and function in VWC).
- A pleasant atmosphere is created to start the training.

WHAT SUBJECT

Every participant and facilitator mentions his/her name together with and adjective which begins with the same letter/sound. Participants also mention their village they and their function in the VWC, facilitators also mention their function.

HOW METHOD

Introduction (15 min)
First a facilitator introduces him/herself, then one by one the participants and other facilitators stand up and give an introduction in the same way.
Examples (in English):

- I am clever Kalwala and I am a caretaker from ..... village
- I am marvelous Manda and I am a caretaker from ..... village

DUTIES OF A CARETAKER

WHY OBJECTIVES

- All participants can explain what the duties of a caretaker are.
- All participants can explain why these duties are important.

WHAT SUBJECT

The main points of the caretakers duties are:

* to ensure a proper and careful use
* to carry out proper and regular inspection and preventive maintenance tasks
* to ensure that repairs are carried out properly and on time

The duties of a caretaker can therefore be summarized as follows:

- inform users on a proper and careful use of the facilities and see to it that these rules are observed by all users;
- perform regular routine inspection and maintenance tasks of the facilities;
- prepare and check the duty schedule for the cleaning of facilities and surrounding;
- carry out minor repairs to the extent that (s)he is capable;
- assist and supervise the labour force if voluntary labour of other villagers is needed for minor repairs;
- ensure the good condition, safe storage and proper use of tools, spare parts and other materials;
- keep the VWC informed on:
  -general condition of the facilities
  -need for materials, spare parts or tools
  -need for voluntary labour
  -need for assistance of USP

The participants will compile their own list. This list will serve as a checklist for the facilitator to ensure that no important points are forgotten.

HOW METHOD

Brain storming (1 hour 30 min)

09.30 Introduction (10 min)

Explain the topic; compiling a list of duties of a caretaker.

Explain the technique; stress on the two ground rules
-any idea that the participants have should be given, no hesitation: the more ideas the better.
-no discussion, comments, clarification etc. during brain storming.

Explain the question; what are the duties of a caretaker?

09.40 Brainstorming (10 min)
All participants are free to give their ideas.
Write these down on (2 or 3) newsprints or on a blackboard

09.50 Discussion (60 min)
All ideas are reviewed and discussed:
- what does this idea mean/involve?
- is that a task of a caretaker?
- why is this task important?

10.50 End, tea-break
One PEP/PEA should make an ordered list of the tasks that were agreed upon.

11.20 Conclusion (10 min, after tea-break)
An ordered list should be compiled from the tasks that remained. The list that is prepared by the project (see above) can be given now and briefly compared with the outcome of the brain-storm session.

11.30 End

WHO **FACILITATORS**
Two PEP/PEA, or one PEP/PEA and one extension worker.
One facilitator should lead the whole session. The second facilitator (or extension worker) should assist with the writing during the brainstorm.

WHAT **MATERIALS**
- two forms about brainstorming (general and this session)
- 6 newsprints
- 2 markers
- tape (and the flip-over board)

(if a blackboard is available this could be used, necessary materials in that case: chalks, 2 newsprints, one marker and tape)

DIARRHOEA

WHY **OBJECTIVES**

- All participants can explain why diarrhoea is dangerous.
- All participants can explain and understand how diarrhoea can be caused.
- All participants can explain and understand how these transmission routes can be prevented.
- All participants avoid these transmission routes when they are back in their villages.

WHAT **SUBJECT**

The danger of diarrhoea; loss of too much water.
The different causes of diarrhoea which need attention are:

- dirty water
- dirty food (not washed, flies)
- dirty hands (when cooking or eating/feeding)

When/how they occur, how they can cause diarrhoea, how they can be prevented.

Practices that should be encouraged/promoted are:

- only drinking clean water
- hand washing after defecation
- hand washing after changing a babies nappy
- hand washing before preparing foods
- hand washing before eating
- keeping all food covered

NB: the occurrence of dirty water can be dealt with briefly as the contamination of water between source and use will be discussed in more detail in a later session.

HOW **METHOD**

Discussion and posters (1 hour)

11.30 Introduction (5 min)
Divide the group in 3 subgroups. The "sitting-arrangement" should be so that the participants can discuss in these small groups and can attend and participate in the plenary session without moving or changing places.

11.35 Plenary: show poster with a child suffering from diarrhoea (5 min).
Ask what they see ->child with diarrhoea.
Ask whether this happens at their homes.

11.40 In sub-groups: danger of diarrhoea (10 min)
Why is diarrhoea dangerous -> loss of too much water.
What experiences do people have with diarrhoea patients?

11.50 Plenary: visualization of dehydration (5 min)
Show a fresh plant, leave or fruit and one that is dried and "dead", what happened to the dry object -> lost water and died.
What can happen with a child that loses a lot of water because of diarrhoea? ->can die because of the loss of too much water.

11.55 In sub-groups: causes of diarrhoea (25 min)
Show the different pictures one by one (see under materials) and ask for each picture if and how it can cause diarrhoea (± 5 min per picture).

12.20 Plenary: preventive measurements (10 min)
Show the posters with the causes one by one and ask how diarrhoea can be prevented, hang these posters next to them.

12.30 End

WHO **FACILITATORS**
Three PEP/PEA, or two PEP/PEA and one HA.

WHAT **MATERIALS**
- fresh and dried plant, leaves or fruit
- posters:
  causes:
  - -child with diarrhoea
  - -some drink and food
  - -somebody coming from latrine and eating something
  - -somebody changing a babies nappy and then eating something
  - -somebody preparing food
  - -somebody eating nshima and a fruit
  - -a plate of nshima with flies

  prevention
  - -somebody washing her/his hands
  - -a plate of nshima which is covered

MALARIA

WHY **OBJECTIVES**

- All participants can tell the cause of malaria.
- All participants can explain and understand why stagnant water is related to malaria.
- All participants can explain and understand why tall grass around the house is related to malaria.
- All participants can explain and understand where and how they should prevent breeding and hiding places of mosquitos.

WHAT **SUBJECT**

Malaria can only be caused by mosquito bites.
Mosquitos need stagnant water as breeding places for their eggs, therefore it is important to eliminate all places with stagnant water around the house and well; pounds, ditches, tins, improper soak-away, etc. Malaria mosquitos hide in dark places like tall grass.

HOW **METHOD**

14.00 Short game (10 min)
3 min: explanation and distribution of the drawings to couples
4 min: participants look for the differences
3 min: brief plenary check of the differences, does anybody know what the session is about?

14.10 Question-answer (35 min)
-What causes malaria? -> mosquito bites.
-Where do malaria mosquitos breed? -> stagnant water. If possible show a glass with water and mosquito eggs and larvae.
-Where can stagnant water be found? -> pounds, ditches, tins, soak-away etc.
-When are mosquitos normally seen? -> in the evening -> -> they like darkness that is why they hide in dark place during day time.
-(look to the drawings of the game again) What do the differences indicate -> possible breeding and hiding places of mosquitos.

14.45 End

WHO **FACILITATORS**

One PEP/PEA

WHAT **MATERIALS**

- 15 small papers with the drawings for the game
- one of each of this drawing on A3-format
- one coloured marker
- glass with malaria eggs and larva

RESPONSIBILITY AND MOTIVATION OF THE CARETAKER

WHY OBJECTIVES
- All participants can explain why the duties of a caretaker are important.
- All participants will execute their duties when they are back in their villages.

WHAT SUBJECT
As the topic involves the motivation and attitude of the caretakers, the content will mainly come from the participants themselves.

HOW METHOD
Story telling (2 sub-groups, 45 min)

5 min Explanation

10min Story
Tell or read the story aloud.

30min Discussion
Use discussion questions if necessary. Try to relate the discussion to the attitude and situation of the participants themselves. Eg. by asking how they would act or feel in the situation in the story.

WHO FACILITATORS
One facilitator per sub-group -> two PEP/PEA.

WHAT MATERIALS
- the story and discussion points.

PROPER HANDLING, PRACTICAL

WHY OBJECTIVES

- All participants can explain and understand the importance of a proper handling of the well .
- All participants can explain what a proper handling of the well involves.
- All participants can operate the well in a proper way.
- All participants operate the well in a proper way when they are back in their villages.
- All participants can tell what they have to explain other users about a proper and careful handling of the well.
- All participants can explain why they have to enlighten other users on a proper and careful handling of the well.

WHAT SUBJECT

*General	-use the facilities with care and keep it clean -prevent objects from falling in the well -prevent children from playing on or nearby the facilities
*Bucket	-lower slowly and carefully -draw up carefully, avoiding clashing with cover and lid -always store it on the hook, inside the well -never put it on the apron -never touch it with dirty hands
*Lid	-always close it after use -open and close it carefully, do not let it fall back
*Chain	-never touch it with dirty hands -don't pull it against well opening -don't put it on the apron
*Windlass	-always lower it slowly and carefully (never let it roll on itself without handling) -don't misuse or play with it
*Washbasin	-clean it always after use -don't wash nappies or kitchen utensils in it

Attention should also be given to what might be the consequence if the rules are not properly observed by everybody.

HOW METHOD

Demonstration and discussion (in 2 sub-groups, 45 min)

10min Let one participant demonstrate and explain how to use a well carefully.

10min Let other participants comment on this. Check if all points from the list above have been mentioned.

15min Let another participant do the same, pretending (s)he is teaching other users about this. Attention should also be given to possible consequences if rules are not followed by everybody.

10min Let rest of the participants give comments on what was explained and how it was explained.

WHO **FACILITATORS**
One PEP/PEA per subgroup -> two PEP/PEA.

WHEREPLACE
At a well site

WHAT **MATERIALS**

INSPECTION AND MAINTENANCE, THEORY

WHY OBJECTIVES
- All participants can tell the daily, weekly and monthly inspection and maintenance tasks of a caretaker and other users.

WHAT SUBJECT
See list of inspection and maintenance tasks, p.t.o.

HOW METHOD
Group discussion (1 hour)

09.00 Introduction (5 min)
Explain session and divide the group in three.

09.05 Group work (25 min)
Group one should define the daily inspection and maintenance tasks, group two the weekly and group three the monthly tasks. All groups should write "their" tasks on a newsprint.

09.30 Making the final lists (30 min)
Plenary session to compare and discuss the three lists.A final list with all inspection and maintenance tasks is compiled and written on a new newsprint (facilitator: check with the prepared list (p.t.o.), when points are missing bring them in for discussion).

10.00 End

WHO FACILITATORS
Three PEP/PEA or two PEP/PEA and one extension worker. One PEP/PEA should explain the session and lead one sub-group and the plenary discussion. The other PEP/PEA (and extension worker) can assist the other two sub-groups.

WHAT MATERIALS
- 6 newsprints
- 4 markers
- tape

REGULAR INSPECTION AND NECESSARY MAINTENANCE OR REPAIRS

Inspection	Maintenance or repair work if any problem encountered
daily	
-if found necessary, lock and unlock lid on agreed times	
-check if cleaning has been done properly	-talk to the responsible person (mt)
-check for children playing on the facilities	-talk to children/mothers, if no improvement inform VWC (mt)
-check for animals around the facilities	-talk to owners, if no improvement inform VWC (mt)
-check if facilities are used properly by all users	-inform people on proper handling of the facility (mt)
-check on general condition of the facilities	-take necessary action and/or report to VWC
weekly	
-check the hinges	-apply grease (mt)
-check the joint of poles and windlass	-apply grease (mt)
-check connection of bucket with chain	-reinforce connection (mt)
-check bucket on any leakages	-repair leakages or replace bucket (mr)
-check if facilities are clean	-(re)organize people to clean regularly; duty-roster (mt)
-check if surrounding is clean (grass, other dirt)	-(re)organize people to clean regularly; duty-roster (mt)
-check drain on leaves, soil and stagnant water	-(re)organize people to clean regularly; duty-roster (mt)
-check soak-pit on stagnant water	-clean soak-pit (if this happens often, improve soak-pit (mr)
-check if any objects have fallen in the well	-remove these objects (mr)
-check fence on any damages	-repair fence (mr)
-check backfill of soil around facilities	-add sufficient soil (mt)
	-report encountered problems to VWC
monthly	
-check on apron for cracks	-repair cracks as soon as possible (mr)
-check on the welds of the windlass for cracks	-bring for repair to USP (mr)
-check on the welds of the lid for cracks	-report to USP (Mr)
-check on the poles if they are shaking or defective	-fix or replace poles (mr)
-check on condition of the chain, especially near the bucket	-remove worn out part or replace/add chain (mr)
-check the inside of the liners on algae or dirt	-remove algae, roots or other dirt (mr)
-check water level	-report to USP (Mr)
-check water contamination (colour/taste/smell)	-report to USP (Mr)

HYGIENE AROUND THE WELL

WHY OBJECTIVES

- All participants can explain and understand why well water has to be prevented from contamination.
- All participants can explain how well water can be contaminated in the well.
- All participants can explain how this contamination can be prevented.
- All participants will prevent contamination at their wells (as far as they are capable).

Note: The first goal will be mainly dealt with during the diarrhoea session, the importance of clean water should however be repeated briefly in the beginning of this session.

WHAT SUBJECT

* Contamination through opening in the cover plate.

Main points to avoid this are:

- drawing water with clean hands
- bucket should always be stored under the lid
- when drawing water keep bucket on cover plate (do not put it on slab)
- never use mud or soil to repair leaking bucket
- always use a clean bucket, a communal one fixed to the windlass is the best
- avoid any items to fall in the well (e.g. the cloth that women use on the head for carrying the bucket)
- always close lid after use

* Contamination through the ground(water).

It has to be made clear how water is purified by natural filtration passing a long way through the soil. (Is there a comparison that can help people to understand this more easily) Points to avoid this contamination are:

- regular cleaning of the facilities and surrounding
- latrines sited more than 30 m. and down stream from the well
- piggeries/kraals sited more than 100 m. from the well and avoid any animals around the well
- blocks/bricks moulding sited more than 50 m. from the well
- vegetable gardens sited more than 30 m. and downstream from the well

HOW METHOD

Posters (and a model of the well), explanation and discussion.

10.00 Ask why clean water is so important (5 min).
Relate this session to the diarrhoea session of the first day in order to stress the importance of a good hygiene around the well.

10.05 Show a poster of well with surrounding (5 min).
Ask through which ways/routes the water in the well can get contaminated.

10.10 Contamination through opening in the cover plate (15 min)
Ask which practices/habits can cause contamination of the water through this route (see list above).

10.25 Contamination through under ground (20 min)
Show a poster (or model) of a well with the surrounding and a part under the surface.
Ask how water can be contaminated through this route -> flow of water under the ground.
Ask how this can be prevented -> contaminating objects/practices should be sited/done far a way from the well (-> then dirty water passes a long way through the soil so that it is cleaned by the sand)
What things should be sited far away, and how far? -> see list above.

10.45 Repetition at well site (15 min)
Go to the well site to see in reality what the different distances mean and to repeat the contamination through the opening in the cover plate.

11.00 End

WHO **FACILITATORS**
One PEP/PEA.

WHEREPLACE
Classroom and at the end at a well site

WHAT **MATERIALS**
- posters (and model):
    * well and surrounding
    * to explain underground flow of water

USERS SUPPORT PROGRAMME

WHY OBJECTIVES

- All participants can explain and understand why the maintenance and repairs of the facilities are the responsibility of the community.
- All participants can explain what services they can get from the USP.
- All participants can explain how to apply for assistance from the USP.

WHAT SUBJECT

Tasks of the USP:

- to give technical advice for carrying out minor repairs to the communities.
- to give technical support; stock and sell spare parts and other necessary materials and do repairs of the parts on cost recovery basis.
- when possible give assistance to the communities for major repairs.
- to give continued education to improve the hygiene and sanitation in the communities.

When the facilities have been handed over to the community they belong to them. This means that daily operation, preventive maintenance and repairs are solely the responsibility of the VWC and the community.
As far as possible necessary materials and spare parts will be procured and stocked by the USP/DWA. Communities can buy them at cost recovery basis. The necessary funds have to be organized by the VWC.
Requests for assistance for major repairs from the USP should be channelled through the extension worker or in case of that person's absence directly to the OIC-DWA.

HOW METHOD

11.30 Lecture (15 min)
A short lecture to give a clear overview of the USP.

11.45 Questions, discussion (45 min)
Time for the participants to ask questions about the USP.

12.30 End

WHO FACILITATORS

One PEP/PEA.

WHAT MATERIALS

CLEANING OF FACILITIES AND SURROUNDING

WHY OBJECTIVES

- All participants can explain and understand why the facilities and its surrounding should be cleaned regularly
- All participants can explain what has to be cleaned regularly at the facilities and the surrounding.
- All participants can organise this cleaning (making and controlling a duty-roster)

WHAT SUBJECT

Cleaning of the facilities

- Slab, clean with sufficient water
- Outside of top liner
- Drainage, remove dirt and stagnant water
- Wash basin
- Surrounding, sweep regularly and slash when ever required

HOW METHOD

Discussion (in two sub-groups, 45 min)

10min What has to be cleaned?
Show a poster of a well (or use a model) and ask what needs to be cleaned regularly.

10min Who is responsible for the cleaning?
Discuss the advantage when all users are involved in the cleaning of the facilities -> commitment and effort of all users.

15min How to organise the cleaning of the facilities.
Let the participants find some possibilities how this can be organised, discuss this in detail.

10min Motivation of users to clean the facilities.
Discuss shortly how caretakers can motivate other users to cooperate with the cleaning activities.

WHO FACILITATORS

One PEP/PEA per sub-group -> two PEP/PEA.

WHAT MATERIALS

- poster of a dirty well or a model of a well

CLEAN WATER FROM WELL TO MOUTH

WHY **OBJECTIVES**

- All participants can explain and understand how well water can be contaminated after/during collection.
- All participants can explain and understand how this contamination can be prevented.
- All participants will prevent this contamination when they are back in their villages.

WHAT **SUBJECT**

Clean well water can be contaminated at the following stages and in the following ways:

- collection	-collecting water with dirty hands -using a dirty bucket to carry the water
- transport	-dirt (leaves, dust, etc.) falling in the water -holding the bucket on top whereby hands touch the water -leaves that are put in the water to stabilise it during the walk
- storage	-storing in a dirty bucket or container -storing the water without cover
- use	-using a dirty or used cup for taking and drinking the water

HOW **METHOD**

Exercise (in two sub-groups, 45 min)

5 min Explanation and distribution of the drawings to couples of two participants.

25min Exercise
Participants have to find how water can be contaminated in the action shown on the drawings. They can write them under the pictures.

15min Plenary discussion
Discuss the answers for each picture.

WHO **FACILITATORS**

One PEP/PEA per sub-group -> two PEP/PEA.

WHAT **MATERIALS**

- 15 papers with the drawing
- 8 pens

INSPECTION AND MAINTENANCE, PRACTICAL

WHY **OBJECTIVES**

- All participants can explain and understand why regular inspection of the condition of the facilities and the surrounding is important
- All participants can explain and understand why regular maintenance of the facilities is important
- All participants can tell the daily, weekly or monthly inspection and maintenance tasks of a caretaker and other users
- All participants can execute these tasks correctly
- All participants perform the necessary inspection and maintenance tasks when they are back in their villages

WHAT **SUBJECT**

See lists of inspection tasks and maintenance tasks (p.t.o.).

HOW **METHOD**

Demonstration/practical (2 sub-groups, 45 min)

5 min	Introduction
10min	Daily inspection and maintenance tasks. Let one participant demonstrate and explain the daily inspection tasks. Let participants discuss why the separate tasks are important and when and what action might be necessary in relation to every aspect.
15min	Weekly inspection and maintenance tasks. Same as for daily tasks, another participant should do the demonstration.
15min	Monthly inspection and maintenance tasks. The same.

WHO **FACILITATORS**

One PEP/PEA per sub-group -> two PEP/PEA.

WHEREPLACE

At a well site

WHAT **MATERIALS**

MAINTENANCE TASKS OF A CARETAKER

* Lock and unlock lid (if found necessary by community)

* Apply grease to the hinges of the lid

* Apply grease to the joint of the poles and windlass

* Maintain backfill of soil around the facilities

* Maintain a strong connection between the chain and bucket

* Perform minor paint work to lid and windlass

* Discuss with people if facilities are not handled properly

* Discuss with parents if their children cause problems around the facilities

* Discuss with the owners if animals are seen around the facilities

* Organize the cleaning of the facilities (duty-roster)

* Discuss with responsible people if cleaning is not done properly

MINOR REPAIRS, PRACTICAL

WHY OBJECTIVES

- All participants can explain how they can do (some of) the minor repairs.
- All participants can execute the most important minor repairs.

WHAT SUBJECT

Depending on
* the well where the practical is conducted
* the outcomes of the survey in Kasempa
* whether the training is for caretakers of old or new wells,

the following aspects can be practised:

- entering in the well (to remove items or to clean inside liners),
- working with cement
- improving soak-away and soak-pit
- improving backfill.
- fixing poles

HOW METHOD

Practical (3 sub-groups, 2 hours 45 min)

08.45 Departure
Executed at three different well sites.

11.30 Return

WHO FACILITATORS

PS, two PEP and if possible two construction foremen.
Construction foremen to assist the PEP.

WHEREPLACE

At three different well sites.

WHAT MATERIALS

- depends on the repairs that have been selected.

MINOR REPAIRS, THEORY

WHY OBJECTIVES

- All participants can explain which minor repairs they have to do.
- All participants can explain and understand why it is important to do the different minor repairs on time.
- All participants can explain and understand when the minor repairs have to be done.
- All participants can explain how these minor repairs have to be done.

WHAT SUBJECT

* Repair or replace bucket
* Repair or replace (part of the chain)
* Repair fence
* Fix or replace poles
* Repair cracks on the apron
* Clean or improve soak away
* Clean inside of liners
* Remove objects out of well
* Bring windlass for repair

Aspects that need attention are: when and why these repairs are necessary and how they should be done.

HOW METHOD

Slides, models and explanations (1 hour)

WHO FACILITATORS

PS or one PEP.

WHAT MATERIALS

- slides
- slide projector + adaptor
- day-light screen
- posters (if needed and available)
-?leaking bucket
-?piece of worn out chain