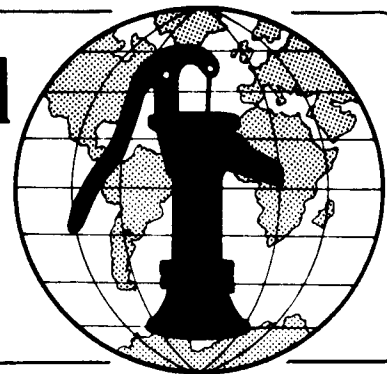


Water for the World



Planning Operation and Maintenance Training

Technical Note No. HR. 3.P

Planning operation and maintenance training programs for rural village water and sanitation systems requires choosing a training method and arranging a training program schedule. It is imperative that plans for training begin while the system is being designed so that those who will be operating and maintaining it will know how to do so. For more information, refer to the design and the operation and maintenance technical notes for the specific system being constructed.

A good training approach should transmit the practical skills and knowledge a worker needs to operate and maintain a system. Each task should be carefully defined and analyzed so that it is relevant to the system's operation. Extraneous material not directly related to the operation of the system should not be included. All parties concerned with planning, design, construction, management, and operation should help define these tasks. Teaching should always stress the practical aspects of the subjects covered, including more demonstrations and practice than lectures.

Choosing a Training Method

Instructional programs will be influenced by many factors: the subjects to be covered, the place the training can be conducted, the facilities available, the skills and experience of the trainees, the trainers available, the transportation available, the length of time the trainees can spend at a training site, the length of time trainers can spend with the trainees, the funding that is available, the local conditions under which the operators will have to work, and the backup support the action agency will provide to local operators. In order to select the type of training program most appropriate for local circumstances, these aspects of training must be considered:

1. Identify job tasks. These will be the basis of the training program. Fully describe the operation and maintenance job:

- List all tasks (daily, weekly, monthly).
- List schedules and hours needed to perform these tasks.
- List qualifications personnel will need in order to perform each task (any special skills or knowledge will need emphasis in training).
- List the number of operators necessary to perform each task.
- Describe the working environment of the operators. Check to see if the action agency or any other agency has already trained operators to manage similar water and sanitation facilities in the region. If records have been kept of job tasks, they may, with appropriate adaptations, be useful guidelines for the training program.

2. Identify the trainees' understanding of, experience in and abilities to perform the job tasks. Which tasks will need special or intensive training? Identify the number of participants in the training program. How will tasks be divided among local personnel?

3. Identify local constraints for participating in a training program, such as access to transportation, accessibility of training site to trainees, accessibility of trainees to instructor, length of time trainees are able to spend in training, dates for training and places for training. The location and mobility of trainees must be considered when deciding whether to take the trainees to the training or the training to the trainees. At the village level, it usually costs less and is more effective to take the training to the trainees.

4. Identify trainers and their qualifications. In most situations, the people selected to do the training will not be full-time trainers. They will most likely be people with technical experience in the subject area but with little practice in training others. If possible, there should be an efficient and effective training program to prepare trainers for their duties. They should be taught how to use the technical notes on operating and maintaining various systems, to conduct training sessions, and to assist the village water committee in selecting candidates for the operation and maintenance positions. Trainers should be well-versed in the technical aspects of the system, be acceptable to the rest of the group as trainers, and have the potential and personality to become trainers. The following list summarizes some of the attributes that should be considered in selecting trainers:

- communicates at the level of the trainees,
- is technically competent,
- is able to teach all subject matter related to the job tasks,
- is able to use training aids and audio-visual equipment, where more sophisticated training materials are available,
- motivates trainees,
- clarifies points and assists trainees,
- evaluates trainee performance,
- accepts advice from trainees and training staff,
- is supportive of trainees,
- allocates time for preparation of training, training sessions, and follow-up.

5. Identify physical facilities, supplies and equipment available and needed for training:

- regional training center,
- local site,
- specialized equipment,
- safety equipment.

List the training resources available:

- supplies,
- equipment,
- support at village system site,
- audio-visual equipment,
- instructional materials.

6. Identify funds available. List all allocations in cash or in kind from the action agency, the village and any outside resources.

7. Define training objectives and priorities based on conditions identified. Analyze as accurately as possible the training needs of the village operation and maintenance personnel and the capabilities of the action agency to deliver that training.

Choose the training style that best accommodates the objectives and priorities of training, the trainees and the training situation. Refer to "Methods of Operation and Maintenance Training," HR.3.M, for information on training methods. Table 1 suggests a method for choosing a training site.

Arranging a Training Program Schedule

Once a training program coordinator and/or instructors for the program have been selected, they should:

1. Determine how much time is needed to teach the subject matter and decide on the duration of the training program.

2. Schedule use of training facilities or times for training sessions in the village.

Table 1. Choosing a Training Site

| IF | AND | AND | AND | AND | THEN |
|-----------------------------|--|---------------------------------|---|--|---|
| Many trainers are available | | | | | Train on-site ¹ |
| Few trainers are available | Equipment and supplies are only available on-site | | | | Train on-site ¹ |
| | Equipment and supplies are available at central site | Job tasks are site-specific | | | Train on-site ¹ |
| | | Job tasks are not site-specific | Trainees can spend time at central site | Transportation for trainees is available | Train at central training site ² |

¹The advantages of training on-site are:

- trainees have more time for training
- lower costs
- trainees learn on own equipment, no special facilities required
- local conditions can be integrated into training
- entire community realizes importance of training

²The advantages of central-site training are:

- trainers available to trainees at all times
- standardization of operation and maintenance practices
- lower costs for trainers
- more teaching aids available

3. Put the information to be presented in sequence. Operation and maintenance personnel should be trained for the specific technical functions they will perform. Design lessons according to the job tasks defined. Training should also extend beyond technical details to explain the basic reasons for maintaining the quality of the water. Operators should be given a sense of pride in their work and of their responsibility for protecting the health of the community.

4. List training equipment, supplies, aids and reference materials needed. Include their costs and where to obtain them.

Trainers should provide system operators with manuals specific to the equipment for which they are responsible. Manuals should be prepared in a

form which the trainees can use and understand, whether they can read or not. Local languages and many illustrations should be used. The manuals can serve as textbooks during training and references while on the job.

A supply of spare parts should be maintained at the village level for routine repairs. A similar supply should be fully explained and repair procedures demonstrated during training. Proper storage of spare parts should be covered.

Occasional refresher training sessions should be planned to maintain operators' interest in their duties, to review operators' duties, to teach any new procedures and to introduce any new equipment.