WATER AND SANITATION
FOR HEALTH PROJECT

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CDM and Associates

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1611 N. Kent Street, Room 1001
Arlington, VA 22209-2111 USA

Telephone: (703) 243-8200
Fax (703) 525-9137
Telex WUI 64552
Cable Address WASHAID

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FOURTH TRAINING - OF - TRAINERS WORKSHOP ON OPERATION AND MAINTENANCE OF RURAL WATER SYSTEMS IN ZAIRE

WASH FIELD REPORT NO. 293

JANUARY 1990

Prepared for
the USAID Mission to Zaire
WASH Task No. 089

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FOURTH TRAINING-OF-TRAINERS WORKSHOP ON OPERATION AND MAINTENANCE OF RURAL WATER SYSTEMS IN ZAIRE

Prepared for the USAID Mission to Zaire
under WASH Task No. 089

by

Tom Leonhardt
and
Alan Malina

January 1990

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APPENDIX

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We would also like to thank those at SANRU who have supported these TOTs through their administrative and financial assistance, especially SANRU Project Manager Frank Baer.

By allowing their staffs to participate in this fourth TOT as ENFEA members, other organizations supported to this effort: SNHR and its Director, Cit. Sowa Lukono; CNAEA and its Permanent General Secretary, Kadima Muamba; and PNA and its Director, Cit. Mbusu Ngamani.

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The consultants are deeply grateful to the ENFEA members who, despite difficult logistical conditions and extremely long and arduous work hours, rose to the occasion and not only delivered excellent sessions but also helped develop a Zaire-specific manual on Operations and Maintenance of Rural Water Systems.

ACRONYMS

AIDRZ	Association Internationale de Développement Rural au Zaire
CNAEA	Comité National d'Action de l'Eau et de l'Assainissement (National Action Committee for Water and Sanitation)
ECZ	Eglise du Christ au Zaire
ENFEA	Equipe Nationale des Formateurs en Eau et Assainissement (National Water and Sanitation Training Team)
FONAMES	Fonds National Medical Social
GOZ	Government of Zaire
HPN	Health, Population, and Nutrition office of USAID/Zaire
IEM	Institut de l'Enseignement Medical
INADES	Institut Africain pour le Développement Economique et Social
NGO	Non-governmental Organization
O&M	Operation and Maintenance
OIT	Organisation Internationale du Travail
PNA	Programme National d'Assainissement
RHZ	Rural Health Zone
RWC	Rural Water Coordinator
RWS	Rural Water Supply
SANRU	Projet de Soins de Santé Primaires en Milieu Rural (USAID 660-0107)
SNHR	Service National d'Hydraulique Rurale
SOW	Scope of Work
TOT	Training of Trainers
USAID	U.S. Agency for International Development
VDC	Village Development Committee
WASH	Water and Sanitation for Health Project
Z	Zaire Currency (approximately US$1= Z450, November 1989)

EXECUTIVE SUMMARY

From 13 November to 9 December 1989, Alan Malina and Tom Leonhardt, both WASH consultants, undertook a technical assistance mission to USAID/Zaire. The overall purpose of this trip was to help the National Water and Sanitation Training Team (ENFEA) adapt the draft WASH Training Guide for Operations and Maintenance of Rural Water Systems (Technical Report No. 58) to the Zairian context so that it can be used to train local rural water coordinators and technicians to apply the operation and maintenance (O&M) strategy developed during the O&M round table. (See WASH Field Report No. 273[1]) The workshop took place in Kikwit, 20 November-1 December 1989. In addition to the previous ENFEA members, there were 6 new participants, making a total of 16 participants.

Two specific objectives of this mission were to continue the work done during the first three training-of-trainers (TOT) workshops and to pilot test the training guide on O&M with the ENFEA trainers as participants.

In order to carry out the above objectives, the consultants adopted a strategy whereby the ENFEA team members would prepare and deliver the 12 sessions in the training guide. Feedback after each session helped the trainers focus on improving their delivery skills; content feedback helped modify each session to better fit the Zairian context. Immediately following this TOT, several ENFEA members were to use this revised version of the training guide to train rural water coordinators in Luputa. The modified version will be the one field tested with the appropriate audience, i.e., the rural water technicians and coordinators.

To arrive at a revised version, each session was closely followed by the consultants and a secretary who noted revisions. Then a committee comprising team members, consultants, and a secretary met to finalize each session in the training guide. Using WASH diskettes containing the French text, the secretary typed all revisions and modifications onto a laptop computer hard disk.

Adding the task of field testing the training guide to the original scope of work influenced the way in which the workshop was conducted and the nature of the final product. A second Zaire-specific revision of the training guide will be necessary after the Luputa field test with the rural water coordinators and technicians, and the training guide itself should be field tested again following the incorporation of the generic modifications from Kikwit.

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[1] Development of an Operations and Maintenance Strategy for Rural Water Supply in Zaire, Phase I Report, by Robert E. Hall and Alan Malina.

Based on a final evaluation of the training program, the participants made the following recommendations:

1. Furnish new ENFEA members with all past TOT documentation

2. Have WASH send pertinent water and sanitation publications in French to each ENFEA member.

3. Hold a seminar for ENFEA members to help them develop a strategy for incorporating new members into ENFEA and to synthesize all past learnings, including past TOT documentation and a review of training techniques.

4. Allow ENFEA to sponsor a training program (on a selected topic such as management) for various directors whose staff are part of the ENFEA.

The consultants recommend the following:

1. The sponsoring agency for all subsequent training programs should designate a full-time person whose sole task will be to handle the program's logistical aspects.

2. A mechanism or strategy should be developed to help ENFEA reconcile the two versions of the O&M training guide (Kikwit and Luputa) after the field test in Luputa, so that it becomes a useful training tool for Zaire.

3. A concerted effort should be made to strengthen ENFEA as a national team; for example, steps might include helping it find an organization to coordinate its activities.

4. Two ENFEA members should visit a water project in a Francophone African country where training materials have already been developed for village-level O&M programs.

5. Manuals should be field tested with their intended audience.

Chapter 1

INTRODUCTION

1.1 Background

Since 1981, projects financed by the U.S. Agency for International Development (USAID) have installed hundreds of water systems throughout Zaire. The most common systems include capped springs, gravity-fed piped water systems, and handpumps. Projects and government institutions (i.e., SNHR, SANRU, etc.) have worked closely with community members, established a rural water coordinator position in approximately 35 percent of the rural health zones, and supported the establishment of a national training team for water and sanitation (ENFEA). However, the concept of community responsibility for the operation and maintenance (O&M) of water systems has never been fully realized.

Recognizing the need to better address this issue, USAID asked the Water and Sanitation for Health (WASH) Project to provide technical assistance to the Department of Rural Development regarding operation and maintenance of rural water supplies. The objectives were to (1) assess O&M procedures and strategies, emphasizing capped springs, gravity-fed piped water systems, and deepwells with handpumps; (2) provide recommendations for O&M strategies; and (3) present an operational plan for field testing O&M recommendations, which would be accomplished in a subsequent phase of the assignment.

On 2 April 1989, a WASH team consisting of an engineer and a social scientist arrived in Kinshasa to carry out phase one. The team focused its efforts on O&M needs and practices of the two major USAID-funded projects and worked closely with senior staff and field personnel. Detailed discussions were held with USAID/HPN (Health, Population, and Nutrition) project officers, Government of Zaire (GOZ) officials, and representatives of non-governmental organizations (NGOs) and international organizations active in the rural water supply (RWS) sector.

The team presented 28 recommendations for discussion at a round table organized by the National Action Committee for Water and Sanitation (CNAEA) on 24 May 1989. All recommendations were accepted, after some revisions and additions. One recommendation was a fourth training-of-trainers (TOT) workshop, to be organized by SANRU with technical assistance from WASH. The workshop was to focus on the following issues: (a) O&M systems requirements; (b) community organization for O&M; and (c) community financing options. It was also recommended that visual aids be developed and integrated into this training program. The visual aids consultancy was supposed to take place prior to the TOT, but because the consultant became ill, the consultancy was postponed until January 1990.

In order to implement in a timely manner the recommendation for a fourth TOT, USAID asked WASH to facilitate a program. SANRU would sponsor the two-week TOT with the assistance of a WASH community education trainer and a WASH water engineer. Participants would include all of the national training team (ENFEA)

members. This TOT would build upon the first three conducted by WASH during 1986-87. Whereas the first three TOTs focused on building training skills, the fourth aimed at developing skills in operations and maintenance and updating training skills.

1.2 Scope of Work

The scope of work (SOW) called for six key activities during this four-week visit:

- Review the materials from the three previous TOTs.
- Collaborate with the ENFEA to design a TOT, based on the three previous workshops, that gave the ENFEA members major roles.
- Include in the TOT basic O&M requirements for the three major water systems as well as community development requirements in organization and financing.
- Field test the WASH O&M training guide.
- Help ENFEA develop curricula for O&M.
- Evaluate the workshop results and prepare a draft report prior to departure.

The complete scope of work appears in Appendix A.

Chapter 2

PREPARATION

2.1 Stateside Preparation

During a two-day team planning meeting at WASH, 8-9 November 1989, the consultants drafted a work plan that included a two-part statement of purpose and outlined several issues that would need to be resolved in Zaire. Also drafted was a list of expected end products. It was agreed that the mission to Zaire would take place in four phases:

- Early preparation 12-17 November
- Workshop on O&M 18-29 November
- Technical assistance 1-5 December
- Report draft preparation 6-9 December

The overall purpose was defined as follows: To assist ENFEA in preparing a training curriculum on the operation and maintenance of rural drinking water systems; the curriculum would be based on a revised, Zaire-specific training guide adapted from the draft WASH training guide.

Three issues would have a significant impact on the assignment:

- ENFEA members had requested time to practice their training skills in a TOT setting.
- Three ENFEA members would depart Kinshasa for Luputa immediately following the Kikwit workshop to give an O&M training workshop, using the revised manual.
- The WASH training guide would not be fully field tested, as such a process would require using the training guide with its intended target group and remaining completely faithful to the content and process while delivering the sessions.

In light of these three issues, the consultants developed a three-part strategy: (a) the participants, in teams of two and three, would study, prepare, and deliver the 12 sessions in the training guide; (b) each session would be followed by feedback on both process and content (technical) levels; and (c) revisions from the feedback session would be discussed by consultants and team members and incorporated onto the diskette holding the text of the training guide. This revised document would then be printed in Kinshasa for use by the training team in Luputa.

By following the outlined strategy, the consultants hoped to arrive at the desired end products: a Zaire-specific O&M manual and a revised version of the WASH training guide.

2.2 In-Country Preparation

A meeting was held in Kinshasa on 12 November with Rhonda Smith (USAID/HPN project officer for SANRU) to discuss the proposed work plan. The next day, the consultants visited several organizations to explain the goals of the workshop and to collect relevant technical information for the upcoming training. (See Appendix B for persons contacted.) On 14 November, a meeting was held with Cit. Itoko to discuss in depth the strategy for the upcoming workshop and to develop an agenda for the following day's meeting with the ENFEA members. On Wednesday (15 November) the team met with the ENFEA members. At this meeting each participant received a copy of the WASH training guide, the recommendations of the O&M round table, and technical information (including prices) on the India Mark II pump. At the meeting the team explained the objectives of the Kikwit workshop, distributed materials, discussed training team assignments, and finalized logistical plans.

Thursday afternoon was spent preparing for departure, and on Friday, 17 November, the team left for Kikwit. The trainers devoted Saturday to preparations at the site.

Chapter 3

THE WORKSHOP

3.1 Goals and Objectives

One of the two overall goals for this workshop reflected the need to prepare a Zaire-specific O&M training guide for rural water coordinators and technicians. This need could best be met by addressing two different but complementary concerns. First, the ENFEA team that would eventually be responsible for training rural water technicians and coordinators needed strengthening in the technical aspects of O&M. This could be achieved by using the WASH training guide on O&M as a working document and revising it to fit the Zairian context. The second overall goal was to continue improving the training skills of the ENFEA members and help them gain more practical experience in the delivery of sessions in general, and more specifically on such topics as community participation, health education, TOT, and technical O&M issues.

In response, the consultants adopted a strategy whereby ENFEA team members would prepare and deliver the sessions in the WASH guide, revising them during preparation to fit the Zairian context. After each session, the trainers received feedback on their training skills and incorporated this feedback into the delivery of the second round of sessions.

The ultimate objective of these training activities was to begin a process that would help ensure the survival of the many rural water systems now being put into place. At present, little or nothing is being done to ensure that water systems are maintained and operated properly. This workshop was the first step toward incorporating O&M into the complicated process of bringing drinking water into rural zones.

The goals of the WASH training guide, which provided the workshop content, were the following:

- Identify the operation and maintenance tasks that must be performed to assure that rural water supply systems deliver water according to their design, in sufficient quantity, and with good quality.
- Increase awareness of the important role that community participation and health education play in the O&M process.
- Clarify roles and responsibilities of water technicians, community promoters, community water committees, and water system caretakers.
- Develop strategies for community financing of rural water supply systems, and recurrent costs in particular.

- Build skills in health and user education, and in training design and delivery.
- Describe the elements of good monitoring and evaluation, identify what to monitor and evaluate in water systems, and develop approaches to doing it.
- Develop a back-home plan to strengthen the O&M process.

3.2 Workshop Participants

As noted in WASH Field Report No. 216[2], the ENFEA trainers have a broad range of professional and field experience in diverse disciplines related to the needs of the RWS/S sector. For the fourth TOT, the ENFEA composition was modified with the addition of six new members—four from the Service National d'Hydraulique Rurale (SNHR), one from the Projet de Soins de Santé Primaires en Milieu Rural (SANRU), and one from the Fonds National Medical Social (FONAMES). Cit. Kabagema of the Shaba Refugee Water Project was unable to attend due to project obligations, and Cit. Kalomba was promoted and called to other activities. Two participants (Cits. Vita and Sekerse) were able to attend only part of the TOT. The following are the parent organizations from which the ENFEA members are seconded:

Organization	Number of Trainers
CNAEA	1
FONAMES	1
IEM	1
INADES	1
OIT	1
PNA	1
SANRU	3
SNHR	7

New Members	
Cit. Kasongo	SANRU
Cit. Luvula	SNHR
Cit. Lumu	SNHR
Cit. Mavinga	SNHR
Cit. Mudahama	SNHR
Cit. Munginda	FONAMES

Appendix C contains a complete listing of the workshop participants.

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[2] Training of Trainers Workshop III and Training Materials Development for the Water and Sanitation Component of Sanru II, by Henry L. Jennings and Agma Prins.

3.3 Logistics

The training was held at the Office des Routes Training Center in Kikwit, 5 kms from the center of town. Kikwit is in Bandundu Province, 525 kms from Kinshasa.

Most participants were lodged on the grounds of the Center, but a few stayed at a hotel in town. Two SANRU vehicles were available for transporting participants to and from the Center and for logistical errands; however, having all the participants lodged at the same site would have greatly facilitated logistical arrangements. Trainer teams who were preparing sessions had to make complicated transportation arrangements since those who were staying at the hotel were often without electricity in the evenings. Water was sporadic at both places and often unavailable in the mornings, which contributed to lower morale. Diesel fuel was purchased to keep the generator working so that participants could work in the evenings preparing their sessions. Even so, electricity was also sporadic.

The food was judged unacceptable by the participants, and efforts to remedy the situation were of no avail. The poor logistical conditions point once again to the necessity for a full-time person to take care of such aspects—so critical to the well-being of workshop participants. These same conditions contributed to the frustration felt by the participants, who worked many long hours to prepare their sessions.

ENFEA members were unclear about their status during the workshop, which also affected morale. Many felt they were being used as consultants (since they were revising a manual) and should therefore receive a higher per diem than they were getting as participants. This problem remains from other workshops and should be resolved as quickly as possible.

3.4 Workshop Design and Content

3.4.1 Workshop Design

The workshop was designed to be a giant simulation, with participants playing the role of rural water technicians and coordinators. Each training team would prepare and deliver two sessions, based upon those found in the WASH training guide, to the "participants." Following each session was a time for feedback, when the "participants" and the consultants provided constructive criticism to the team that had just delivered the session. This feedback aimed at helping ENFEA team members improve their delivery skills, and thus responded to the second objective of the fourth TOT. Following this process-oriented feedback, the participants and consultants discussed the session's technical content and made recommendations on how to adapt it to the Zairian context. All revisions were noted by the secretary and transferred to a laptop computer, which permitted a revised copy of the training guide to be printed immediately upon returning to Kinshasa. Thus, the Luputa training team was able to take the newly revised O&M training guide with them.

While delivering the 12 sessions, the participant trainers tried to think of themselves as rural water coordinators and technicians, imagining that they were attending the O&M training. This part of the strategy did not work well, since it is difficult to carry out such an extended simulation of this type. Thus, the training guide was not actually field tested during the Kikwit workshop, since it was not delivered to the intended audience. But it would be so tested in its revised form during the two-week Luputa workshop. In keeping with the scope of work, the consultants made notes on the training guide during the presentation of the sessions.

The above strategy had been discussed with Cit. Itoko and agreed upon as the most efficient way to proceed, given the number of different variables. A copy of the revised training guide (Kikwit revision) can be found in WASH files.

3.4.2 Workshop Activities

On the first day in Kikwit, the six training teams started preparing the sessions they were to present and modifying each to take into account the Zairian reality (including the round table recommendations). To allow for immediate postsession feedback, they had to adjust the timing of each session so the workshop could remain within a more reasonable time frame.

The training teams (and the sessions for which they were responsible) follow:

Team members	Sessions
Itoko Sekerse Lumu*	6,8
Ngoy Luthongo Luvula*	1,10
Bondo Kasongo*	4,11
Vita Kalonji Mudahama*	2,7
Masumbuko Mavinga*	5,9
Bakambu Lwanuna Munginda*	3,12

* New members of ENFEA

The workshop proceeded according to the following schedule:

November 1989

Day	Date	Session No.	Session Title
1/Sun	19	1	Introduction to the workshop
		2	Selection and operation of RWS systems
2/Mon	20	3	Maintenance of RWS systems
		4	Relationship of O&M to system design
3/Tue	21	5	Field trip
4/Wed	22	6	Community participation and long-term sustainability
5/Thu	23	-	Session preparation
6/Fri	24	-	Session preparation
7/Sat	25	7	Organizing for O&M
8/Sun	26	8	Financing O&M
		9	Developing health and user education programs
9/Mon	27	10	Design and delivery of O&M training sessions
10/Tue	28	11	Monitoring and evaluation of RWS systems (without the field trip)
11/Wed	29	12	Application planning, evaluation, and workshop closure

By Day Three of the workshop, it became apparent that the original schedule would have to be reworked to allow more time for session preparation. Thus, the field trip programmed for Session 11 was cancelled and an extra day added for preparation. At this time it was also noticed that due to the amount of work needed to adapt the training guide, the Round Table recommendations were not being included in the sessions. The appropriate recommendations were then posted with the session in which they could be included. (The recommendations deemed appropriate were 1, 2, 3a, 3b, 4, 5, 6, 7, 10, 13, 15, and 16. See Appendix D for the round table recommendations).

Within the context of the TOT, the participant trainers decided it would be useful to hold a special session on training issues raised during the workshop, particularly during feedback sessions. Ten issues were noted, and during this special session the four most relevant issues were voted on by all the participants:

- inductive and deductive training approaches
- estimating times for training activities
- relationship between trainer and logistics
- how to lead a discussion

Due to time constraints, only the first three themes were discussed.

3.5 Workshop Methodology

The consultants adopted an experiential approach for carrying out the workshop activities. The participant trainers would first study and then deliver sessions (the experience) from the WASH training guide. After each session they reflected upon their experience. The participants were encouraged to talk about how the experience went for them, what problems they encountered, and what they did to resolve them.

After each team member had time to talk, the "participants" expressed their reactions to the session by giving feedback to the trainers. Most feedback given at this time was on a process level. When appropriate, the consultants asked for lessons learned that would be applicable to future training. This allowed the participant trainers to begin the generalization process and moved the discussion from the specific, feedback to individuals, to a more generalized level for future application. Training issues of special interest to the participants were also discussed during these feedback sessions.

Chapter 4

ASSESSMENT AND RECOMMENDATIONS

4.1 Participant Assessment

The participant trainers (ENFEA members) evaluated the workshop/training experience on two levels. They first evaluated the two objectives agreed upon for the TOT: revising the training guide and improving training skills. These objectives were first presented to the ENFEA members during the initial planning meeting in Kinshasa and were approved by them at that time. The consultants asked the participant trainers to express their level of satisfaction on a scale of 50 percent to 100 percent; for training guide revision the average score was 80 percent, for skill improvement a score of 85 percent was noted. The slightly lower score for training guide revision was attributed to the fact that the modifications had been made on diskette and no product was yet visible.

During the oral evaluation, the participant trainers felt they had done an excellent job and expressed a great deal of satisfaction with what they had accomplished. They also evaluated the O&M workshop. The first part of the evaluation form was a self-assessment based on the objectives of the O&M workshop. With the exception of "developing a community financing strategy" (75 percent), the participants gave a rating of 80 percent or higher to the achievement of all the other objectives. (See Appendix E for a complete summary of the evaluation scores.)

The second part of the evaluation form asked for written feedback on the workshop. The participants believed the two most positive aspects of the workshop to be these:

- willingness of ENFEA members to produce something very positive
- interaction of the participants and the consultants' feedback, which allowed them to improve their adult training skills

Two aspects of the workshop received negative comments:

- logistics (poor food, no water, limited electricity, and transportation problems)
- workload too heavy

Other pertinent comments included these:

- The written workshop evaluation assessed process rather than content. (One participant believed this was an important oversight.)

- Distinctions need to be made between logistical responsibilities and training functions.

4.2 Participant Recommendations

Based on the evaluation results (both written and oral) and the results of an informal discussion with ENFEA team members on the last workshop day, the participants made the following recommendations:

1. Furnish new ENFEA members with all past TOT documents.

2. Include ENFEA members on the WASH mailing list of water and sanitation publications in French and send each member the WASH publications catalogue.

3. Hold a fifth seminar that would have two principal objectives:

   - to help ENFEA develop a strategy for integrating new members into the team

   - to review and synthesize all past learnings, including a review of past TOT documents and a review of adult training techniques

4. Allow ENFEA to sponsor a short (two-day) training workshop for the various directors whose staff are part of the ENFEA. This workshop would permit the team to show off its training skills and would also allow these directors to become more acquainted with adult training methods.

5. Outline and print the conditions and rules for paying per diem and contract specifications for using ENFEA team members as trainers and consultants, so that ENFEA members will know the terms of their employment. (This was also a recommendation made at the end of the third TOT.)

4.3 Trainer Assessment

4.3.1 General

The two major objectives set for the workshop were met. The WASH training guide on O&M was revised, and there was a definite improvement in the training-skills level of ENFEA members. This improvement was noticeable even from the beginning of the workshop, when the members delivered the first round of sessions, to the last week when they began to incorporate feedback suggestion into their delivery of the second round.

The end products for the consultancy, agreed upon during the team planning meeting at the WASH office, were delivered as well: the Kikwit revision of the

training guide; the final report on the technical assistance mission to USAID/HPN/Kinshasa; and the memorandum concerning the field test.

4.3.2 The ENFEA

Once again, the ENFEA members proved themselves to be graduate trainers. Using the sessions in the WASH training guide as a model, they modified, prepared, and delivered the 12 sessions, using appropriate experiential training techniques. The job was made more difficult by their having to use generic sessions as models, and initially they felt they should adhere to the content of the guide. They also felt constrained by the limited time within which to accomplish their tasks, but by working long hours they managed to achieve excellent results.

The ENFEA members came to appreciate themselves as graduate trainers, feeling satisfied with themselves as trainers and with the work just done. They even applauded their own successes. Since they had worked so hard on the training guide revisions, one of their disappointments was not having the chance to see it in its final form.

4.3.3 Logistics

The relationship between logistics, participant well-being, and the success of any training program is well documented. The consultants were disappointed that recommendations made during the first three TOTs concerning the separation of trainer and logistics responsibilities had not been realized. As a result, one person tried to fill two roles. The poor food, lack of water, and uneven meal schedule had a significant impact on the morale of the participants and on the ability of the consultants to manage the workshop. The participants are to be congratulated for continuing to perform under difficult conditions.

A previous recommendation, vehicle availability at the workshop site, was honored. Having two vehicles in excellent working order greatly facilitated the transportation of hotel-based participants to and from the training hall. Since the training site was several kilometers from the center of town, vehicles and drivers allowed the participants to go out in the evenings for some recreation. However, participants who wanted to stay at the training site where there was electricity until 2300h had to make complicated transportation arrangements, and it would have been better to lodge everyone at the same site.

4.3.4 Scope of Work

The original SOW, based on Recommendation 16 of WASH Field Report No. 273[3], called for a TOT during which an O&M training guide would be developed using ENFEA training resources. The guide would be based on the recommendations for a national O&M strategy developed at the round table. (See Appendix D.)

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[3] Development of an Operations and Maintenance Strategy for Rural Water Supply in Zaire, Phase I Report by Robert E. Hall and Alan Malina.

However, this SOW was modified to include field testing of the WASH training guide, a generic O&M training guide, since it was felt the guide would be appropriate to Zaire. Upon the consultants' arrival in Kinshasa, the SOW was again modified to include the integration of six new members of the ENFEA into the TOT process.

The consequence of the first modification was the production of a revised training guide based more on the WASH training guide and less on the specific recommendations of the O&M round table, since the ENFEA team members felt they needed to model their sessions directly on those in the WASH guide.

After feedback, and realizing that the WASH training guide should serve principally as a reference document, the participants felt less constrained by the training guide during the second round and developed sessions that better reflected the local situation. These sessions took into account the knowledge and skill levels of the potential audience and were based on round table recommendations.

The second modification to the SOW was easier to accomplish due to the diligence and quality of the new ENFEA members and the experience of the veteran members. New members paired with veterans to prepare and deliver the sessions. This co-facilitation allowed them to practice their training skills in a relatively safe environment. During the feedback sessions, the participants were careful not to overload new members with too much feedback.

4.3.5 The Workshop

Reflecting SOW requirements, the workshop tried to accomplish too much within too short a time, leaving inadequate preparation time for the ENFEA. The members had little or no experience in the art of adapting predesigned training sessions, a topic never addressed in past TOTs; thus, they felt obliged in the beginning to stick with the session designs. Given also the fact that they were co-facilitating the sessions, additional preparation time was essential to allow them to work out details of timing and responsibility. This compressed time frame and heavy workload brought about the modification of the two-week schedule to allow for one preparation day in the middle of the program (as well as keeping the one day off). This modification could only be accomplished by shortening the final sessions of the manual. But even with extra preparation time, the consultants and participant trainers had to put in very long hours to keep up with the revisions being made concurrently with the planning, delivery, and feedback. This workload, coupled with the poor logistical arrangements, contributed to some tension and low morale among the ENFEA members, which was aggravated by concerns about the conditions of per diem payment.

4.3.6 The WASH Training Guide on O&M

The WASH training guide was difficult to relate to the Zairian context. O&M supervisors as such do not exist in Zaire, and the ENFEA team members had a difficult time imagining their target group as technicians and coordinators who

would make repeated visits to villages to follow up on the operation and maintenance of a water system.

The participants found some sessions difficult to follow, and also experienced problems with the French translation. Most of the difficulties centered on session activities with no corresponding objectives and vice versa. The training guide contains information on too many topics, some of it not relevant to the Zairian context. It was sometimes hard for trainers to know what to keep and what to leave out as they adapted the sessions.

Some sessions in the training guide are designed for long periods of time (10 and 16 hours). These long periods made it difficult for the trainers to focus on the session content. The participants said they felt overwhelmed by the amount of material.

Structuring sessions around the three water systems commonly found in Zaire (gravity-fed, handpumps, and springs) was difficult due to the relative complexity of the issues and aspects concerning pumps, for example, and the less complicated systems such as capped springs that demanded less time.

4.4 Trainer Recommendations

1. The next activity programmed for ENFEA should definitely take into consideration the team's high level of training sophistication and be structured accordingly. A concerted effort should be made to strengthen ENFEA as a national team; for example, steps might include helping ENFEA find an organization that will coordinate its activities. Also, two ENFEA members should visit a water project in a Francophone African country where training materials have already been developed for village-level O&M programs.

2. The sponsoring agency for all subsequent training programs should designate a full-time person whose sole task will be to handle all logistical aspects of the program.

3. Conditions and rules for paying per diem and contract specifications for using ENFEA team members as trainers and consultants should be outlined and printed so that ENFEA members will know the terms of their employment. (This recommendation was also made at the end of the third TOT.)

4. The revised training guide for Zaire needs sessions up front to help participants deal with the technical aspects of the various water systems. This will also make the rest of the training guide less theoretical and more practical in nature. Also, a mechanism or strategy should be developed to help ENFEA reconcile the two versions of the training guide (Kikwit and Luputa) after the field test in Luputa.

   Participants should use the WASH training guide as a reference and follow the classic procedure for developing curricula. This would produce a Zaire-specific training guide and one that the trainers will feel

comfortable with since they developed it themselves. It should then be tested in the field and revisions and modifications made.

5. In general, field testing should only be done with the intended audience. In this case, testing the guide with ENFEA members instead of field technicians and rural water coordinators did not work as well as the consultants would have liked. The ENFEA trainers knew much of the content beforehand and were therefore unable to be true participants in the workshop sessions.

4.5 Visual Aids Recommendations

Visual aids, not integrated into the workshop due to consultant illness, were to be the subject of a discussion with ENFEA members. However, due to lack of time this was not accomplished.

Based on interviews and discussions with other concerned parties, the consultants make the following recommendations:

1. Help SNHR finalize the photographic "Artisan Reparateur" repair manual for the modified Mark II pump.

2. Help the SNHR finalize the SNHR-produced modified Mark II repair video.

3. Develop visual aids (posters, flip charts, etc.) that define village-level O&M activities for spring capping, gravity-fed piped water systems, and handpumps that will remain in the village.

4. Develop visual aids that help health center personnel, rural water coordinators (RWCs) and SNHR technicians reinforce the O&M message.

APPENDIX A

Original Scope of Work
Modified Scope of Work

APPENDIX A

Original Scope of Work

The contractors will provide technical assistance in conducting the fourth workshop in a series of TOT programs designed to teach basic O&M system requirements and community organization, education, and financing strategies for the O&M of water systems. Specific duties and responsibilities will include but not necessarily be limited to the following:

1) Review the design and results of the first three TOT workshops in January and September of 1986, and August , 1987, all documents concerning O&M of water systems in Zaire, and the visual aids/teaching materials designed during the previous consultancy.

2) In collaboration with SANRU and SNHR training staff, design a two-week TOT which builds on the skills developed in the first three TOTs. Contractors should maximize trainee participation by giving the participants the opportunity to develop objectives, design sessions, and to the extent possible, participate in experiential field exercises. Emphasis should be placed on helping participants plan, implement, and evaluate workshops for rural water coordinators (RWCs) and other field agents, as well as training RWCs, etc. to train village workers in the basic concepts of O&M. Content design for the workshop must include the following issues:

   a. Basic O&M requirements for all three types of water systems;

   b. Community organization for O&M including the strengthening of village development committees, ensuring a basic understanding of the reasons behind the need for potable water, clarifying the issue of day-to-day operational responsibilities, etc.;

   c. Community education methodologies and techniques. Specifically, to designate a caretaker for each unit of the system (standpipe, pump, spring) to train community members in its correct utilization and to assure regular O&M. Previously developed visual aides and education materials should be integrated; and

   d. Community financing options including discussions concerning alternative resource mobilization strategies and community practices for raising and managing money.

Modified Scope of Work

The modified SOW contains the following paragraph under consultant responsibilities:

"The overall approach to the TOT is to use the draft training guide on O&M developed by WASH under ACT 332 as the basis for the workshop design. The intent is to have the ENFEA trainers experience the workshop and at the same time upgrade their knowledge and skills in O&M. Following the workshop, a group of the participants will modify the training guide as appropriate and subsequently use it in running workshops for SNHR staff and rural water coordinators."

Under specific responsibilities was added the following item:

"Field test the O&M training guide developed under WASH Activity No. 332 and report the results to WASH."

APPENDIX B

People Contacted

APPENDIX B

People Contacted

Ray Martin	Division Chief, HPN
Rhonda Smith	Project Officer, HPN
Chris McDermott	Project Officer, HPN
Cit. Sowa Lukono	Director, SNHR
Nicolas Adrian	USAID TA, SNHR
Cit. Mbusu Ngamani	Director, PNA
Dr. Franklin Baer	Project Manager, SANRU II
Prof. Kadima Muamba	Permanent General Secretary, CNAEA
Guy Petit	Administrateur Delegue, AIDRZ

APPENDIX C

Workshop Participants

APPENDIX C

Workshop Participants

NOMS	TITRE/FONCTION	ADRESSE 1.Service, 2.Prive
Alan Malina	Formateur/WASH	1.WASH, 1611 N.Kent St. Arlington, VA 22209-2111,USA 2.rua do M.Olivete,29 RC 1200 Lisboa,Portugal
Mavinga Lelo	Chef de Station SNHR	1.SNHR,BP 15096,Kinshasa 2.SHR,BP 77,Rutshuru,N.Kivu
Bakambu-ba-Kionga	Directeur,Ecole des Tech.d'Assain. IEM/Kinshasa	1.IEM,BP 483,Kinshasa I
Luvula Agnen-a-Mbat	Adjoint Tech. SNHR	1.SNHR,BP 15096,Kinshasa 2.4 rue Ilunga,z.Nasime,Kin.
Bondo Fwanba	Chef de Station SNHR	1.SNHR,BP 15096,Kinshasa 2.SHR,BP 61,Goma,N.Kivu
Tom Leonhardt	Senior Training Consultant	1.1021 Prince St.S/C TRG Alexandria,VA 22314 2.1657-31st St.NW Washington DC,20007
Kalonji-Nsenga	Coordinateur des Projets d'eau SANRU	1.SANRU,BP 3555,Kinshasa/ Gombe 2.rue Nsele,no.2039,Kin/Lemba
Lumu Kateba Muana	Chef de Station SNHR	1.SNHR,BP 15096,Kinshasa 2.BP 4474,Kin/Ouest
Itoko Y'oluki	Coordinateur Formation E&A	1.SANRU,BP 3555,Kinshasa/ Gombe
Mudahama Terera Sheja	Chef du Projet Hydr. du Lualaba	1.Projet Hydr.du Lualuba BP 169,Lubumbashi/BP 46 Sandoa
Masumbuko Rugina	Chef de Bureau Planif. SNHR	1.SNHR,BP 15096,Kinshasa
Ngoy	Chef de Division PNA	1.PNA,719 av.des Tropiques Kinshasa/Limete 2.BP 15577,Kinshasa/I

Kasongo Ntanbwe	Chef de Division Infras. SANRU	1.SANRU,BP 3555,Kinshasa/ Gombe 2.27/C,Quartier Mboloko Kinshasa/Matete
Munginda E	Chef de Bureau Eau et Assain.	1.FONAMES,BP 3726,Kin/Gombe
Lwanuna W. Bin Asumani	Chef de Service Etude et Suivi CNAEA	1.CNAEA,BP 12599,Kinshasa I 2.rue Itaga no.36 bis,z/Barumbu Kinshasa
Luthongo Vengenivake Kisalima	Resp.du Cours d'Apprent.Agric.par Corresp.INADES	1.INADES,BP 5717,Kin/Gombe 2.rue Nganga,no.20,z/Kintambo, Kinshasa
Vita wa Ngongo	Chef de Station SNHR	1.SNHR,BP 15096,Kinshasa 2.Kinzao Vuete,Route de Boma Bas-Zaire
Sekerse Kasimbiri	Ing.Tech.en Agronomie/Cons. Tech O.I.T au Proj. Femme et Dev.	1.OIT,BP 4940,Kin/Gombe

APPENDIX D

Round Table Recommendations

ANNEX D

RAPPORT FINAL DE LA TABLE RONDE SUR LA MAINTENANCE DES OUVRAGES DE L'HYDRAULIQUE RURALE

Le Comité National d'Action de l'Eau et de l'Assainissement " CNAEA ", appuyé par l'équipe de WASH, a organisé ce mercredi 24 mai 1989, sous la présidence du Citoyen TSHIONGO TSHIBINKUBULA wa TUMBA, Secrétaire Exécutif du CNAEA et Président Délégué Général de la REGIDESO, une Table Ronde sur la Maintenance des Ouvrages de l'Hydraulique Rurale.

Les séances de travail ont eu lieu dans la salle de conférence de l'Administration Centrale de la REGIDESO et ont connu une participation active des représentants de Services et Organismes intéressés au Secteur de l'Eau Potable dont la liste se trouve en annexe.

Dans son mot d'ouverture, le Secrétaire Exécutif a salué la présence dans la salle du Représentant Résident du PNUD ainsi que celle dés représentants d'autres organismes internationaux et souhaité plein succès aux travaux de la Table Ronde. Pour orienter ces travaux, le Secrétaire Exécutif a souligné la bienvenue de l'initiative et regretté l'absence des consommateurs de l'eau aux discussions étant donné qu'ils sont les premiers bénéficiaires de services fournis.

Pris par d'autres occupations, le Secrétaire Exécutif du CNAEA et Monsieur le Représentant Résident du PNUD se sont excusés et les discussions et débats ont continué sous la présidence déléguée du Citoyen KADIMA MUAMBA, Secrétaire Général Permanent du CNAEA.

Les participants ont passé en revue l'évolution de l'hydraulique rurale au Zaïre, les hypothèses de base pour une bonne maintenance des ouvrages ainsi que les composantes d'un programme de fonctionnement et entretien.

Après un échange des vues très animé, les participants ont arrêté les résolutions suivantes :

L'Ouvrage

1. Le choix du système d'AEP doit tenir compte de la capacité et de la volonté de la communauté à le prendre en charge.

La Communauté.

2. La définition des responsabilités mutuelles entre le service technique et la communauté bénéficiaire doit être faite par écrit (convention d'engagement mutuel et public).

3a. La communauté doit être consciente des coûts estimés de l'entretien et du fonctionnement du système d'AEP bien avant l'exécution des travaux.

3b. La communauté doit être encadrée par un Comité de Développement comprenant des représentants choisis par elle et en son sein.

4. Une contribution financière doit être exigée de la communauté et déposée par le Comité de Développement et/ou de l'eau auprès du service intervenant comme action préalable à l'exécution des travaux.
Pour les adductions et les pompes manuelles, la contribution sera échangée directement contre des pièces de rechange. Dans le cas des sources à aménager, elle sera utilisée pour défrayer une partie du coût de captage.

5. Après la remise de la contribution, tous les fonds recueillis par le Comité de Développement et/ou de l'eau doivent être utilisés directement pour une dépense bien précise. L'utilisation de ces fonds doit se faire le plus tôt possible pour diminuer les risques de baisse de valeur dûs à l'inflation et pour éviter les fuites..

6. Une cérémonie d'inauguration doit avoir lieu à la fin des travaux.
A cette occasion un certificat de transfert de propriété reprenant les obligations des bénéficiaires leur sera remis.

7. Un responsable, de préférence une femme, doit être désigné par le Comité pour chaque unité du système (borne-fontaine, pompe, source) afin de veiller à son fonctionnement correct et son entretien.

8. Le statut juridique et les droits du Comité doivent être étudiés pour que le Comité puisse connaître ses possibilités d'action.

SERVICE TECHNIQUE

Formation

9. Vu la difficulté d'un suivi régulier, il est important de développer un matériel didactique visuel (boîte à images, poster, manuel des étapes d'entretien) à déposer dans les villages, les centres de santé et chez les agents de services pertinents.

10. Vu la complexité des tâches exigées du Comité de Développement, un programme de formation pour les membres clefs (Trésorier, Président) s'avère nécessaire. Ce programme doit se baser sur les différentes méthodes de mobilisation des ressources financières et aux principes du développement communautaire.

11a. Les services techniques intervenant dans les villages doivent bénéficier d'une formation en développement communautaire participatif et en éducation des adultes.

11b. Les services techniques doivent former les réparateurs locaux et les agents de développement communautaire.

EVALUATION

12. L'évaluation de tout programme d'hydraulique rurale doit prendre en considération non seulement les quantités d'ouvrages mais aussi en qualité de la prise en charge par les bénéficiaires.

BON FONCTIONNEMENT

13. Le suivi régulier de l'état des systèmes d'approvisionnement en eau potable et des Comités de Développement doit être la responsabilité des Zones de Santé. Une composante sur l'eau et l'assainissement, l'état des ouvrages d'eau potable, et l'efficacité du Comité doivent faire partie intégrante du rapport périodique du Centre de Santé.

14. La compréhension et l'appui des autorités politiques, administratives et traditionnelles doivent être obtenus pour assurer la survie des ouvrages à long terme.

15. Dans les six mois qui suivent l'inauguration, le service technique doit être tenu à effectuer une visite de suivi pour s'assurer que le système répond toujours aux critères techniques, que les activités de fonctionnement et entretien sont exécutées par la communauté, et pour le recyclage des responsables communautaires.

L'ANIMATION

16. Un programme structuré d'animation avec des étapes bien définies est essentiel pour assurer la bonne participation communautaire avant, pendant et après la construction du système, et pour la prise en charge de l'ouvrage par la population.

17. Vu l'importance de la participation communautaire à la survie des ouvrages, il est utile d'attacher directement à chaque station SNHR un spécialiste en développement communautaire.

18. Vu le rythme accéléré des travaux dans le cas particulier des forages avec pompes manuelles, pour chaque foreuse il doit y avoir au moins deux animateurs à plein temps responsables de la sensibilisation des communautés bénéficiaires. Ces animateurs doivent coordonner leurs activités directement avec l'équipe technique et la Zone de Santé.

LES PIECES DE RECHANGE

19. Un système de ravitaillement en pièces de rechange, de gestion de stock et un circuit financier et d'inventaire, doit être mis en place dans l'immédiat pour les programmes de forage et d'installation des pompes manuelles.

20. Pour faciliter la distribution des pièces de rechange, il est souhaitable de standardiser le type de pompe, donc d'en encourager la production locale.

APPENDIX E

Workshop Evaluation

Note 12.1

Evaluation de l'atelier

I. Est-ce que le but a été atteint?

Veuillez encercler le numéro qui convient pour indiquer dans quelle mesure on a atteint les buts de l'atelier.

Je peux à présent:	Pas du tout	Un peu	Assez bien	Bien	Très bien	
A. Identifier les tâches du fonctionnement et d'entretien pour les systèmes prédominants.	1	2	3	4 9	5 4	86%
B. Décrire le rôle que la participation communautaire et l'éducation sanitaire jouent dans le processus du fonctionnement-entretien.	1	2	3	4 8	5 5	87.6%
C. Décrire les rôles et responsabilités du technicien d'eau, des promoteurs communautaires, des comités de l'eau et des responsables des systèmes d'eau.	1	2	3 2	4 8	5 3	81.5%
D. Elaborer des stratégies pour le financement communautaire du système d'alimentation en eau en zone rurale.	1	2 1	3 4	4 5	5 3	75.4%
E. Mettre en place éducation sanitaire et des usagers, et concevoir et dispenser une formation.	1	2	3 1	4 10	5 2	81.5%
F. Décrire les éléments d'un bon suivi et d'une bonne évaluation, identifier ce qu'il faut suivre et évaluer dans les systèmes d'alimentation en eau en zone rurale et élaborer des méthodes d'approche pour cela.	1	2	3 1	4 8	5 4	84.6%
G. Elaborer un plan pour renforcer le fonctionnement et l'entretien une fois de retour au travail.	1	2	3 2	4 9	5 2	80%