



WATER AND SANITATION
FOR HEALTH PROJECT

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WELL IMPROVEMENT WORKSHOP

AGUA AZUL, HONDURAS

SEPTEMBER 14 TO 25, 1987

WASH FIELD REPORT NO. 222

OCTOBER 1987

The WASH Project is managed by Camp Dresser & McKee International Inc. Principal cooperating institutions and subcontractors are: Associates in Rural Development, Inc.; International Science and Technology Institute, Inc.; Research Triangle Institute; Training Resources Group; University of North Carolina At Chapel Hill.

Prepared for
the USAID Mission to Honduras
and the U.S. Peace Corps
WASH Activity No. 361

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by

Scott A. Loomis
and
Oscar Larrea

October 1987

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ACKNOWLEDGMENTS

The well improvement workshop in Honduras required a significant amount of preparation and planning. We would like to acknowledge those who helped make this workshop possible. Maria Nagorski and Charles Pineo were responsible for drafting the training guide and instructional materials which we were piloting. Jaime Henriquez at Peace Corps headquarters in Washington provided much of the pre-workshop groundwork. To Guy Branch, Peace Corps/ Honduras, we owe a great deal of gratitude. He selected the very comfortable location for the training, obtained all of the required materials, coordinated the selection of the participants, provided logistical and administrative support throughout the in-country consultancy period, and assisted as a co-trainer. We appreciate his determination and energy. Finally, we wish to express our thanks to Jeff Ratcliff, PCV/Honduras, for doing the manual work which made the workshop possible.

GLOSSARY OF ACRONYMS

APCD	Associate Peace Corps Director
OTAPS	Peace Corps Office of Training and Program Support
PCV	Peace Corps Volunteer
PRASAR/SANAA	Water and sanitation project with the Ministry of Health, funded by AID
USAID	United States Agency for International Development
WASH	Water and Sanitation for Health Project

EXECUTIVE SUMMARY

A workshop on open-well improvement was held in Agua Azul, Honduras, 14 to 25 September 1987, for 17 participants. Five of the participants were Peace Corps Volunteers (PCVs) serving in Honduras, two were associate Peace Corps directors (APCDs) in Ecuador and the Dominican Republic, eight were employees of the Honduran Ministry of Health, and two were employees of PLAN Honduras (the Honduran extension of Foster Parents). The overall purpose of the workshop was to provide the participants with the skills and knowledge to assist communities in organizing and implementing well-improvement projects and to pilot the draft training guide developed by the Water and Sanitation for Health (WASH) Project. The workshop was conducted by two consultants, a technical specialist supervisor sponsored by the Peace Corps, and a training specialist funded by WASH. Substantial training assistance was provided by the APCD from Honduras responsible for supporting the workshop.

The workshop's goals represented a balance between the technical skills needed to improve a well site and the community development skills needed to mobilize communities to assume responsibility for their water improvement project. The training methodology was experiential and highly participatory. The technical sessions emphasized hands-on, practical construction skills needed to improve an open well. The classroom activities were also participatory, though they focused on the more non-technical aspects of the workshop such as community involvement and decision making, project planning, user education, and adult learning.

Many of the Honduran participants held supervisory positions at the regional level within the ministry and were civil engineers, not the level of participants envisioned in the training design. This led to some questioning of the appropriateness of the workshop's goals. The participants quickly overcame their initial resistance and actively collaborated on all aspects of the workshop.

The participants felt that most, but not all, of the learning objectives were met. They cited the following as the most important aspects of the workshop:

- Practical construction tasks, such as mixing concrete and carefully measuring the wood,
- Working as a team, and
- Training methodology and techniques.

The workshop component that they felt was not fully satisfied was working with the community and understanding how to more fully involve key community leaders and users.

Regarding the workshop follow-up, the consultant team recommended the following:

1. One of the PVCs in the area where the two wells were improved should follow up to complete all the improvements and to work with the community to ensure greater local involvement in well maintenance.
2. All participants should be contacted within six months to ascertain the impact of the workshop on their on-going work and inquire as to what additional training might be useful.
3. The other WASH training manuals should be distributed to Peace Corps/Honduras to be used for future in-service PCV training.

Chapter 1

INTRODUCTION

1.1 Background

WASH Project consultants Maria Nagorski and Charles Pineo completed a draft training guide for A Workshop Design for Well Improvement in February 1987. WASH discussed the pilot testing of the training guide with Jaime Henriquez, the Peace Corps water and sanitation sector specialist. Initially, Peace Corps/Senegal was approached, but Peace Corps/Senegal felt that the Volunteers had already had similar training. Subsequently, Peace Corps/Honduras expressed interest in hosting the workshop. The entire activity was designed as a joint undertaking between WASH and the Peace Corps. Peace Corps provided the technical trainer, and WASH provided the training specialist. Moreover, Peace Corps/Honduras was responsible for all in-country arrangements, including selecting and preparing the site, coordinating the selection of participants, and arranging all logistics.

1.2 Scope of Work

The overall purpose of the workshop was to provide the participants with the skills and knowledge to assist communities to organize and implement well improvement projects and to pilot the draft training guide developed by WASH. The focus was to make the wells more sanitary, not to increase the yield of the wells. The workshop, to be conducted in Spanish, was scheduled for 14-25 September 1987.

The scope of work for the consultants included the following responsibilities:

1. Read and become completely familiar with the training guide on well improvement.
2. Participate in a team planning meeting at the Peace Corps headquarters prior to going to Honduras.
3. Make any necessary adjustments in the training guide in order to adapt it to the Honduran context.
4. Assure that all logistic arrangements have been carried out prior to the workshop.
5. Using the WASH training guide on well improvement, conduct a two-week workshop.

6. Provide detailed feedback to WASH on the training guide both orally and in writing.
7. Write a final report which describes the workshops, assesses the results, and makes recommendations for follow-up.
8. Conduct debriefings at the WASH and Peace Corps offices.

The debriefings, held 29 September at WASH and 5 October 1987 at Peace Corps/Washington, covered both the workshop and comments on the training guide.

Chapter 2

PLANNING

2.1 Initial Planning

Initial planning focused on delineating and coordinating the respective responsibilities of WASH, Peace Corps/Washington, and Peace Corps/Honduras. The following individuals were designated as contact points for their organizations:

Fred Rosensweig - WASH Project activity manger
Jaime Henriquez - Peace Corps/Washington project manager
Guy Branch - Peace Corps/Honduras workshop coordinator

Roles and responsibilities were broken down by organization:

- WASH
All consultant costs for the training specialist.
All training materials, including handouts.
Advising Peace Corps/Honduras on the criteria for selecting the sites and the exact quantities of materials needed.
- Peace Corps/Washington--Office of Training and Program Support (OTAPS)
Cost of all construction materials.
Participant food and lodging costs.
Participant per diem and travel costs.
All consultant costs for the technical trainer.
- Peace Corps/Honduras
Selection of the appropriate training site.
Arrangements for food, lodging, in-country transportation.
Obtaining the necessary tools and materials.
Preparation of the construction site, including concrete blocks.

Participants were to include Peace Corps Volunteers in Honduras, their Honduran counterparts, and PCVs from neighboring countries. Two Peace Corps staff members, one from Ecuador and the other from the Dominican Republic, were also added. The total number was to be about 20.

2.2 Materials Preparation

The WASH training guide for A Workshop Design for Well Improvement served as the primary source of the workshop materials. The draft training guide contains an introduction and instructions for conducting 17 sessions. The eighteenth session was missing and had to be developed by the trainers. Each session begins with a set of learning objectives, continues with a series of sequential steps involving different training techniques, and finishes with a list of required materials (not all sessions contained the materials list). Copies of all the handouts for the participants are included in the training guide. The handouts were supplemented and revised to meet participant needs within the Honduran context and to meet the requirement for the improvement of two wells instead of the one as envisioned by the guide. Minor adjustments in the sequence of activities were made to accommodate the need for a consolidated period of field work.

2.3 Trainer Preparation

The two trainers, Oscar Larrea and Scott Loomis, were brought to the Peace Corps/Washington office to conduct a two-day planning session. During this period, the trainers had the opportunity to meet their respective sponsors, get briefed on the project's background, discuss their own expectations, develop a work plan, and begin to evolve an effective co-trainer working relationship.

2.4 In-country Workshop Preparation

The consultants arrived in Honduras approximately one week prior to the beginning of the workshop. The initial meeting was held with Guy Branch, who was responsible for coordinating all in-country arrangements. At that point he had selected the workshop site at Agua Azul, located approximately two and one-half hours from Tegucigalpa on Lago Yojoa just off the main road to San Pedro Sula. Participant housing and classroom facilities were provided by the Motel Agua Azul, a popular location which had been used previously by the Peace Corps for training events. Numerous community wells were within a 10-minute walk from the motel. Unfortunately, most of these wells were no longer in use as a government-supplied aqueduct had been constructed four months earlier. The nearest community using wells on a regular basis was over an hour's drive from the motel. Though not the ideal site, the location did seem to offer several benefits; and, at the time, the consultants thought it was the only viable choice. Much later, it was revealed that another site had been considered where wells were in active use, but that alternative had been discarded for fear that its proximity to an urban area and the beach would provide too many distractions for the participants.

Courtesy visits were made to the Peace Corps country director and to the USAID Mission to explain the purpose of the workshop and to ask for their continuing cooperation and assistance. Both the country director and USAID personnel did make short, productive visits to the workshop.

The remainder of the week was spent assisting Guy Branch in collecting the required materials (much of the materials list had to be modified to accommodate the Honduran context and to provide for the two wells), making a site visit, and preparing additional training materials.

A major issue that cropped up initially was that the Ministry of Health was on strike, and it was uncertain whether any of the selected Honduran participants would arrive at the training site. Fortunately, the strike was resolved, though it did result in many participants being informed of the workshop dates very late, in some cases the day before the beginning of the training.

Chapter 3

WORKSHOP IMPLEMENTATION

3.1 Workshop Goals

The overall workshop goals were for the participants to be able to:

1. Work with village leaders and groups to initiate, implement, and follow through a sanitary-improvement project for dug wells.
2. Assist villages to assess the need for improving well conditions and identify the major categories of improvements.
3. Articulate reasons for well-improvement projects.
4. Describe the importance of a continuing well-sanitation program with on-going maintenance.
5. Recognize construction problems in existing wells and know whether to repair or replace structures.
6. Estimate and plan type, quantity, and basic costs of material and labor needs for a proposed project.
7. Form and make use of concrete blocks.
8. Form and pour concrete with appropriate reinforcement.
9. Design and construct headwalls.
10. Design and construct a sloped apron with adequate backfill and appropriate structure for draining water.
11. Develop user education strategies demonstrating clean-water storage and handling techniques and well maintenance and usage.

The workshop goals represented a balance between the technical skills needed to improve a well site and the community-development skills needed to mobilize communities to assume responsibility for their water-improvement project.

3.2 Participants

Twenty-four people were invited to the workshop. Seventeen actually participated. Of that number, seven were affiliated with the Peace Corps-- five PCVs serving in Honduras and two associate Peace Corps directors, one from Ecuador, the other from the Dominican Republic. Of the 10 Honduran nationals, eight were from PRASAR/SANAA, the AID-funded water and sanitation project with the Ministry of Health, and two were from PLAN Honduras, the Honduran version of Foster Parents.

The participants represented a range of experience and education. Three of the Hondurans were civil engineers and two of these were regional supervisors. Several of the Hondurans had many years (over 10) of field or community development experience. The PCVs each had approximately nine months of work experience at their sites. Only two of the Hondurans had day-to-day involvement with communities. The rest had large geographic areas of responsibility which limited their time in any one community. Nevertheless, only a limited number of participants had extensive practical construction experience. The design of the workshop, with its emphasis on participant involvement and hands-on training, capitalized on the different strengths and interests so that participants could serve as a resource to each other and, indeed, to the trainers as well. A list of participants is included in Appendix A.

3.3 Training Staff

The workshop was conducted by two lead trainers. The technical trainer, a native Spanish speaker and a sanitary engineer with extensive training skills, was a Peace Corps consultant. The training specialist, a former PCV in Colombia and skilled in workshop design and delivery, was the WASH consultant. Both trainers had the advantage of having worked previously in Honduras. The technical trainer assumed the training lead in those activities focusing on the technical aspects of well improvements and on the construction tasks. The training specialist took the lead on those activities dealing with community education, planning, learning, and project evaluation. The training specialist also had overall responsibility for the workshop delivery.

In addition, Guy Branch assumed a significant training role by helping put several of the sessions within a Honduran context. Each of the three Honduran civil engineers and the two associate Peace Corps directors were asked to give short presentations on selected portions of the sessions.

3.4 Logistics

The training site was located at the Agua Azul Motel on picturesque Lago Yojoa approximately two and one-half hours from Tegucigalpa and about a 45-minute drive from San Pedro Sula. All classroom facilities and lodging were provided by the motel. The two wells were located within a kilometer of the motel, an easy 10-minute walk. There were always sufficient vehicles available, as Peace Corps had two and there were normally two ministry pick-ups assigned to the senior participants.

The delivery of the materials and supplies was well orchestrated by Guy Branch and Jeff Ratcliff, the PCV appointed as a support person. Most of the items

were either available at the Peace Corps warehouse in Tegucigalpa or in the local area of Agua Azul.

3.5 Workshop Content and Schedule

The workshop schedule is presented in Figure 1. The workshop was originally designed for 11 days, but we were able to complete all of the sessions in nine. This was done without sacrificing any of the activities or modifying the sequence of the sessions. Much of the field work could be accomplished more rapidly than had been envisioned in the manual, perhaps due to the more experienced and knowledgeable nature of the participants.

One minor problem arose early. The second day of the workshop was scheduled to fall on a national holiday, Honduras Independence Day. Because the timing of the apron pour was crucial and had to be completed by the weekend, there was no recourse but to work at least part of the holiday. This was done with a minimal amount of grumbling.

Typically, a training day began at 7:30 a.m. in the classroom continued until lunch, with about an hour break, and resumed until 4:30 or 5:00 p.m., although on a couple of occasions the sessions went until dark. Field activity was interspersed throughout the nine days of the workshop.

3.6 Methodology

The training was experiential and participatory. All sessions were conducted in Spanish. Spanish handouts were provided to all participants and handouts in English were available to the PVCs. Participants had an opportunity to practice construction skills associated with the improvement of an open well. These skills included locating the center of a well, building forms, mixing concrete, making concrete blocks, constructing a well apron and headwall, and designing and building a water lifting device. Emphasis throughout was on practical, hands-on activities.

There were sessions devoted to community involvement, user education, project planning, and evaluation. Specific techniques used included small group tasks, role playing, brainstorming, and lecturettes.

Because there were two wells to be improved, the participants were divided into four groups, with two groups each working on a single well. The two smaller groups tended to merge into one construction task group quickly and a mild sort of competition evolved between the groups over who could do the best job most quickly while assuring that everyone had a chance to participate. The groups were divided so that the most experienced members were equitably distributed and that the PCVs were split between the two groups. The two APCDs were also divided between the two.

Before each field activity, each group was asked to spend time planning its respective tasks, taking into mind the required materials. After the end of each field work, the participants were asked to review their planning efforts and their learning from the session. By the end of the workshop, group planning had improved markedly, resulting in much more efficient and effective work teams.

Figure 1
WORKSHOP SCHEDULE

DAY ONE	DAY TWO	DAY THREE	DAY FOUR	DAY FIVE	DAY SIX
Workshop Introduction	Assessing Well Conditions	Excavate and Build Foundation (Field work)	Mix and Pour Concrete Blocks*	Preparation for Apron Pour	Mix and Pour Apron
-----	-----	-----	LUNCH	-----	-----
Community Assessment and Decision Making	Preparing for Field Work	↓	Apron and Headwall Design	↓	↓
APPENDIX A					
DAY SEVEN	DAY EIGHT	DAY NINE	DAY TEN	DAY ELEVEN	DAY TWELVE
(SUNDAY)	User Education	Headwall Construction	Project Completion - Disinfection - Water Lifting	Repair of Existing Structures	Back Home Planning
-----	-----	-----	LUNCH	-----	-----
	Cost Estimating and Planning	↓	Field Work Review Evaluating the Project	↓	Evaluation of the Workshop

* Work crew to complete foundation work

Chapter 4

WORKSHOP ASSESSMENT

4.1 Participant Assessment

The last session scheduled was designed to provide the participants an opportunity to formally evaluate the workshop. However, the participants felt quite free to provide informal feedback throughout the course of the workshop. The participants were asked to fill out an evaluation form where they could rate each of the 17 sessions on a scale from 1 to 5 in terms of accomplishing that session's stated learning objectives. Appendix B contains a copy of that form. For the majority of the sessions the average scores were about 4.3, with two of the sessions receiving scores of 3.9 and 4.0. These sessions will be discussed below.

4.1.1 Goal Attainment

Participant comments on goals fell into two general categories: appropriateness of the goal and goal attainment. Initially, there was participant resistance to the goals of the workshop. Several felt that simply improving open wells was insufficient and that the workshop should instead deal with handpump installation and maintenance. The trainers had to make it very clear that the intent of the workshop was limited to open-well improvement and that there was very little modification that could be done to meet their desires at that point. After some initial unhappiness, most participants accepted the goals as a set of givens and focused on the work at hand.

In terms of actual goal attainment, most participants expressed a good deal of satisfaction in meeting the goals with a few exceptions. (See Table 1 for a listing of evaluation results.) Those goals dealing with community involvement were felt not to have been attained. The manual really did not provide for much actual community interaction, where there could have been more. The greatest amount of satisfaction was expressed in terms of the actual construction tasks and, surprisingly since it was not an overt goal, in the training methodology used. Though many of the Hondurans were senior ministry personnel, very few of them had any significant practical experience in well improvement or construction. Thus, many of the construction tasks enabled them to learn and practice new skills. Because they were experienced and much of their work involves education and training, they were also able to see the utility of the different training techniques as well as the overall workshop methodology. This was an unexpected benefit.

4.1.2 Workshop Organization

There was no substantial criticism of the workshop's organization, though one PCV expressed a preference for the practical work rather than the classroom sessions.

Table 1
Summary of Evaluation Results

Session Title	Score
Introduction to the Workshop	4.7
Community Assessment	4.2
Assessment of Well Conditions	3.9
Preparation for Field Work	4.4
Excavation and Foundation	4.6
Mixing and Pouring Concrete Blocks	4.3
Design of Apron and Headwall	4.5
Preparation for Apron Pour	4.5
Mixing and Pouring Apron	4.1
User Education	4.1
Cost Estimating and Planning	4.1
Headwall Construction	4.5
Project Completion	4.3
Field Work Review	4.1
Evaluation of the Well-Improvement Project	4.0
Repair of Existing Wells	4.3
Back Home Planning	4.1

Note: Scale of 1 to 5 with 1 being goal not achieved and 5 being achieved very well.

4.1.3 Training in the Workshop Setting

As mentioned previously, the participants particularly enjoyed the experiential and participatory nature of the workshop. They appreciated the fact that all participants were encouraged to give presentations as a result of their small group work, that the lectures were kept to a minimum, that there was a significant amount of practical field work, and, interestingly, that the trainers kept them on an ordered timetable.

4.1.4 Technical Handouts

In general the technical handouts were well-received. There were minor problems associated with the translations and, in some cases, the accuracy of the figures used. The PCVs initially had problems reading the Spanish version of the handouts because of the plethora of unfamiliar technical terms. This was quickly remedied by simultaneously providing the volunteers both a Spanish and English version of the handouts.

4.1.5 Community Involvement

This was one problem area that the participants noted. The sessions provided ample opportunity to talk about community involvement, but little in actually meeting with and involving members of the community. Community involvement can be programmed more directly into the design so that participants can actually interact with well users and those responsible for maintaining the well.

4.2 Trainer Assessment

Much of the trainers' assessment matched the observations of the participants, although from a slightly different perspective.

4.2.1 Workshop Goals

The workshop goals were not entirely ideal, though probably appropriate, in the Honduran setting with these particular participants. The policy of the Ministry of Health of Honduras, supported by USAID funding, is to provide community wells with handpumps that are maintained by the community. The senior members of the government's regional staffs adhere to that policy, and several regional staffers were participants. Thus, their needs were not met by the workshop goals. On the other hand, the workshop is targeted at community promoters, not regional supervisors. Moreover, there is the stark reality in Honduras, as in many countries, that many communities continue to rely on open wells for their water and many handpumps become inoperable within two years of installation. Consequently, the hidden demand for a more simple technology is very real and pressing. Indeed, the goals are appropriate given the appropriate audience.

Nevertheless, as mentioned earlier, many of the goals did meet trainee needs. They felt much of what they learned could be applied in a variety of work settings.

4.2.2 Planning and Site Preparation

There was obviously a miscommunication somewhere in the planning. In more ideal circumstances, the participant level would have been commensurate with the focus of the workshop and the site would have included community wells in actual use. Probably because of the number of parties involved (WASH, Peace Corps/Washington, Peace Corps/Honduras, USAID/Honduras, and the Ministry of Health) and the distances involved, the planning suffered slightly from a lack of consistent follow-up and coordination.

The site preparation was handled well. The areas around the wells were cleaned and all materials were available in a timely fashion.

4.2.3 Support

Upon arrival in country, the consultants were met by Guy Branch who provided continuous, responsive logistics support. Peace Corps/Honduras provided all of the necessary building materials, tools, and training items (flipcharts, markers, tablets, etc.) needed. Support was never an issue, thanks to the diligence of Guy Branch and Jeff Ratcliff.

4.2.4 Schedule

There were no significant problems with the schedule. Though the trainers were kept quite busy, work hours were within reasonable bounds. As previously mentioned, several of the sessions were completed much more rapidly than envisioned, thus allowing some time flexibility. Moreover, the entire workshop was shortened by about two days, without losing the integrity of any session.

4.2.5 Staff

The combination of a technical trainer and training specialist worked quite well. There were never any significant problems that arose that one or the other of the consultants could not resolve.

The two consultants encouraged the participation of Guy Branch as a co-trainer, and he actively involved himself in several presentations and in facilitating selected activities. Moreover, because of the experience level of the participants themselves, the APCDs and the three Honduran civil engineers were asked to make presentations on at least one technical aspect of the workshop. With one exception, all did a first-rate job. As importantly, this type of participation seemed to increase the participants' involvement and ownership of the workshop content and methodology.

4.2.6 Methodology

The participatory and experiential approach to adult learning received high praise from the participants. Their involvement in the problem solving required for the construction tasks, in the small group tasks, and, in some cases, in the presentation of the workshop content helped overcome some initial resistance to the workshop's overall purpose. Nevertheless, there are some modifications that can be made in some of the techniques employed. A good example is with community participation/ involvement. Rather than talking about it in the abstract sense or even conducting a simulation, direct contact with members of the community should occur.

4.2.7 Participants

The relatively senior level of many of the Honduran participants injected a biased flavor into the pilot. Many of the suggested changes to the manual need to be taken within that context. In spite of their reservations, almost every participant participated actively in the entire workshop. Such committed participation makes the trainers' job a lot easier.

Chapter 5

RECOMMENDATIONS

5.1 Comments on the Training Guide

The successful experience of the workshop demonstrated that the overall focus, goals, and structure of the design are appropriate. Most of the suggested modifications involve the non-technical components in the sessions. These are briefly discussed below.

5.1.1 Non-technical Session

As previously noted, those sessions dealing with community involvement and community decision making can be strengthened by actually having the participants interact with the community and by actually completing a community well inventory form. This could provide an experience rich in learning that could be used throughout the course of the workshop.

Another key modification is the need to have an activity/lecturette on team-planning skills. Issues about how the various groups planned and organized themselves for the field work arose repeatedly, yet there was no one activity that really helped the group process their experiences. There are specific approaches to team planning that could be presented and used as a framework for analyzing team-task and process behaviors.

Because of the participants' extensive background, a number of user education strategies were proposed. Nevertheless, the participants felt that the workshop provided insufficient content on successful user educational strategies. Enough experience exists to provide participants with concrete examples of user education programs that have proved successful in the community development/health sector areas.

5.1.2 Technical Sessions

The improvement of two wells instead of just one proved to be a very successful strategy. Approximately eight participants worked on each well. Having a significantly larger number of participants at each well could result in a lot of people not having much to do. If the host agency can afford the materials and there are two wells within reasonably close proximity, it would probably be better to improve two wells when the total number of trainees exceeds 15.

5.1.3 Session Structure and Sequence

The consultants found that it was important to sequence the field activities for any given session in such a way that it would only be necessary to go and return from the field once, rather than multiple times, as envisioned in one

or two of the sessions. Also, the classroom preparation for Sessions 8 and 9 (Preparation for Apron Pour and Apron Pour) could be consolidated, allowing time for both field activities to be done on the same day.

Finally, Sessions 14 and 15 should be resequenced to allow the evaluation part of the project cycle to be discussed prior to a review of the field work. The objective of the current Session 14 focuses on reviewing the learning derived from the field work and applying it to each participant's work situation. Session 15 then follows with the evaluation step of the project cycle. Not surprisingly, the participants confused the project evaluation with the workshop evaluation. A simple swap in the order of sequence would probably alleviate this potential confusion.

5.2 Recommendations for Follow-up for Peace Corps/Honduras

One of the PCVs has his site in the nearby vicinity of the wells. He plans to follow up with the community to insure that an adequate maintenance plan is being followed, that some additional improvements to the wells are made, and that the water lifting device on one of the wells is completed.

All participants should be contacted within two to six months to ascertain:

- How successfully their work plans were followed;
- Which of the skills acquired in the workshop have been used the most;
- What significant problem areas in terms of well improvement continue to confront them;
- If they have maintained contact with other participants as a potential resource network;
- What follow-up training/consultancy might be most useful to them.

The other four WASH training manuals should be distributed to Guy Branch to be used as resources for additional in-service training for PCVs working in the water and sanitation sector.

5.3 Recommendations for Use of the Workshop in Other Settings

The manual, once revised, is certainly appropriate for use in other settings where two conditions exist: open wells are in actual use by the community as a source of drinking water and community promoters are available to attend the workshop. These conditions exist in Latin America but are much more prevalent in other parts of the world, especially the Sahel region of Africa. Future training sessions should be conducted by two co-trainers, one technical, the other a training specialist. This is an effective combination. Finally, where possible, the trainers should have some input to final site selection.

APPENDIX A

Workshop Participants

APPENDIX A

Workshop Participants

- | | | |
|-----|----------------------|-------------------------|
| 1. | Edgardo Villeda | Plan en Honduras |
| 2. | José Orellana | Plan en Honduras |
| 3. | Ing. Santiago Romero | PRASAR/SANAA |
| 4. | José Armando Rojas | PRASAR/SANAA |
| 5. | Miguel Mendoza | PRASAR |
| 6. | Cornelio Diaz | PRASAR |
| 7. | Ing. Mauricio Andino | PRASAR |
| 8. | Ing. Jorge Flores | PRASAR |
| 9. | Herman Bueso | PRASAR |
| 10. | Bilander Santander | PRASAR |
| 11. | Eileen Cavanaugh | PCV |
| 12. | Paige McKay | PCV |
| 13. | Dan Stanton | PCV |
| 14. | James Wahl | PCV |
| 15. | Jeff Ratcliff | PCV |
| 16. | Napoleón Cevallos | APCD Ecuador |
| 17. | Alberto Rodriguez | APCD Dominican Republic |

APPENDIX B

Evaluation Form (Spanish)

EVALUACION DEL TALLER PILOTO SOBRE MEJORAMIENTO
DE POZOS EXCAVADOS ABIERTOS

Evaluación de metas del taller: Indique el grado de cumplimiento de las metas de cada sesión, como se detalla abajo. Haga un círculo alrededor del número que usted considera que representa el grado de cumplimiento, p.e., 1=meta no alcanzada, 3=Regular, 5=Muy Bueno, etc.

A. Cumplimiento de las metas de cada sesión

1. Introducción al Taller. La Meta fué:

- Familiarizar a los participantes con los objetivos y metas del taller y con algunos tipos de mejoramiento de pozos excavados abiertos.

Marque su opinión:

No alcanzado		Regular		Muy Bueno
1	2	3	4	5

2. Evaluación de la comunidad y toma de decisiones. La meta fué:

- Describir el principio del ciclo del proyecto, evaluar las necesidades generales de mejoramiento sanitario de la comunidad y la toma de decisiones para priorizar los proyectos de mejoramiento.

Marque su opinión:

No alcanzado		Regular		Muy Bueno
1	2	3	4	5

3. Evaluación de las condiciones de los pozos. La meta fué:

- Determinar las condiciones específicas de los pozos en una comunidad e identificar el potencial de necesidades de mejoramiento. Conseguir y asegurar la aceptación y apoyo de la comunidad para ese propósito:

Marque su opinión:

No alcanzado		Regular		Muy bueno
1	2	3	4	5

4. Preparación para el trabajo de campo. La meta fué:

- Proporcionar a los participantes una explicación global sobre el proyecto de mejoramiento de pozos abiertos y describir los pasos principales en la construcción de esos mejoramientos.

Marque su opinión:

No alcanzado		Regular		Muy bien
1	2	3	4	5

5. Excavación y construcción de cimiento con bloques de concreto. La meta fué:

- Iniciar a los participantes en el trabajo práctico para construir obras de mejoramiento para pozos excavados abiertos. realizar la excavación necesaria para el cimiento, colocación de bloques, uso del nivel, mezcla y preparación de mortero de cemento.

Marque su opinión:

No alcanzado		Regular		Muy bueno
1	2	3	4	5

6. Mezclado y fundido de bloques de concreto. La meta fué:

- Proporcionar a los participantes la información y práctica en la mezcla y vertido del concreto y la preparación de moldes para fabricar bloques de concreto.

Marque su opinión:

No alcanzado		Regular		Muy bueno
1	2	3	4	5

7. Diseño de plataforma y del brocal del pozo. La meta fué:

- Familiarizar a los participantes con la necesidad de construir la plataforma y el brocal del pozo para protegerlo y mejorar sus condiciones sanitarias, así como con ciertos materiales y métodos constructivos.

Marque su opinión:

No alcanzado		Regular		Muy bueno
1	2	3	4	5

8. Preparación para fundir la plataforma: La meta fué:

- Proporcionar a los participantes la información necesaria para planificar las actividades previas a la fundida de la plataforma, incluida la colocación del hierro de refuerzo.

Marque su opinión:

No alcanzado		Regular		Muy bueno	
1	2	3	4	5	

9. Mezclado del concreto y fundida de la plataforma: La meta fué:

- Familiarizar a los participantes con la preparación del concreto para la plataforma y realizar la fundida de la misma en una sola sesión:

Marque su opinión:

No alcanzada		Regular		Muy bueno	
1	2	3	4	5	

10. Educación del usuario. La meta fué:

- Describir algunas estrategias para educación del usuario en relación con los beneficios derivados del mejoramiento de los pozos y preparación de material apropiado para esa actividad:

Marque su opinión:

No alcanzado		Regular		Muy bueno	
1	2	3	4	5	

11. Estimación de costos y planificación. La meta fué:

- Proporcionar a los participantes los principios y la mecánica para planificar las acciones y secuencia adecuadas para obras de mejoramiento de pozos y la correspondiente estimación de costos unitarios, totales y por habitante beneficiado.

Marque su opinión:

No alcanzado		Regular		Muy bueno	
1	2	3	4	5	

12. Construcción del brocal. La meta fué:

- Construir un brocal con bloques de concreto para protección del pozo, excavar y construir un canal de drenaje y preparar la parte superior del brocal para soportar el sistema de extracción del agua que se vaya a utilizar.

Marque su opinión:

No alcanzado		Regular		Muy bien
1	2	3	4	5

13. Terminación del proyecto: La meta fué:

- Realizar la instalación del sistema de extracción de agua seleccionado, efectuar la desinfección del pozo y completar la limpieza del sitio de trabajo.

Marque su opinión :

No alcanzado		Regular		Muy bien
1	2	3	4	5

14. Repaso y revisión del Taller. La meta fué:

Identificar los aspectos críticos del adiestramiento, elementos de la planificación para la construcción, actividades de trabajo práctico, etc. Identificar los puntos de mejor importancia en el aprendizaje.

Marque su opinión

No alcanzado		Regular		Muy bien
1	2	3	4	5

15. Evaluación del proyecto de mejoramiento de pozos: La meta fué:

- Describir los pasos básicos para evaluar los beneficios del mejoramiento de pozos abiertos. Evaluar las deficiencias y puntos salientes del taller e identificar aspectos que puedan mejorarse en el futuro.

Marque su opinión:

No alcanzado		Regular		Muy bien
1	2	3	4	5

16. Reparación de pozos existentes. La meta fué:

- Preparar recomendaciones para mejoramiento de pozos en una comunidad, planificar como puede realizarse el mejoramiento y estimar los recursos necesarios.

Marque su opinión:

No alcanzado		Regular		Muy bueno
1	2	3	4	5

17. Planificación y seguimiento. La meta fué:

- Desarrollar un plan para aplicar en el mejoramiento de pozos abiertos en comunidad del área de trabajo de cada participante. Preparar un plan de trabajo para los siguientes primeros dos meses:

Marque su opinión:

No alcanzado		Regular		Muy bueno
1	2	3	4	5