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**TECHNICAL ASSISTANCE REPORT**

**VILLAGE LEVEL WATER AND SANITATION (VLWS) PROJECT**

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Country : Belize

Project : Village Water Level and Sanitation (VLWS)

Evaluators : Salvador Balidizón, RTA/PHC, Team Leader  
Peter Heffron, CARE-Guatemala Water Project  
Manager, Team Member

Date : October 29, 1991

PROJECT TITLE : VILLAGE WATER LEVEL AND SANITATION (VLWS)

COUNTRY : BELIZE

EVALUATION TEAM: SALVADOR BALDIZON, RTA/PHC, Team Leader  
PETER HEFFRON, CARE-GUATEMALA WATER PROJECT  
MANAGER, Team Member  
VLWS PROJECT MANAGER AND FIELD STAFF, Data  
collection and tabulation

EVALUATION EXERCISE DATES: Aug 12-15: Planning and design  
Aug 26-Sep 13: Data collection and  
tabulation  
Sep 16-20: Data validation and  
field interviews  
Oct 10-15: Report writing

REPORT SUBMISSION DATE : Oct 29, 1991

## EXECUTIVE SUMMARY

The Village Level Water and Sanitation Project (VLWS) is a six year project divided into two funding phases and implemented by CARE-Belize between FYs 1986 and 1991. The project was funded by USAID, CARE, the Government of Belize (GOB) and the Target Communities. Total funding for the project, including in-kind contributions, was US\$ 2,488,645.

The project's goal was to increase the health status of the population of 24 communities located in the Corozal and Orange Walk districts. The project's purpose was to reduce the incidence of water and excreta-related diseases through the use of potable water, appropriate excreta disposal facilities and the practice of good hygiene. Main project activities included "construction of one Ventilated Improved Pit (VIP) latrine per participating family, installation of one hand pump per an average of 10 families, construction of Rudimentary Water Systems (RWS) where hand pumps were not appropriate, the transfer of health education to school children and adults, and the provision of training in leadership to the community organizations working with the project."

A mid-term evaluation of the project was conducted in 1987, approximately eight months before the end of the first funding phase. The five recommendations made to the project from this evaluation were:

1. Develop a project management system.
2. Conduct periodic reviews of project staff and performance.
3. Increase project staff.
4. Improve prospects for project sustainability
5. Provide more technology alternatives to each community.

In addition to the mid-term evaluation the project received at least seven other consultancies: WASH (2), CARE-Costa Rica (2), PHC RTAs (2) and Glessima Research & Services (1).

The final evaluation of the project was conducted utilizing a participatory approach. Project staff were involved in the design, data collection, tabulations and discussion of results. The main instrument for project evaluation was the questionnaire used by project staff to collect baseline information. Project staff carried out a survey of 25% of the participating families, and also did data tabulation. Two external evaluators (the water project manager from CARE-Guatemala and the LA RTA PHC) carried out the data validation by re-interviewing 10% of all households surveyed by project staff. The external evaluators were very impressed with the job done by project staff as they found over 95% data accuracy during data validation. In addition, the evaluators believe that project staff are more aware of the usefulness of baselines, the need to fill out questionnaires completely and they have a better

understanding of the evaluation results because of their participation in the process.

This is one the few projects in Latin America where baseline data has been used to measure project performance. Although there were some difficulties in using the baseline data (the questionnaire had been modified by project staff and tabulation of 253 questionnaires had to be repeated because original baseline results were not found), having this information to compare endline (final baseline) results was fundamental for a fair judgment of the project.

Evaluation results show that the VLWS project was very efficient not only in accomplishing but even exceeding its goals. The only exception was in regard to VIP latrines since only 1690 (90%) of the targeted 1832 were completed by the end of the project. Nonetheless, communities show such a high degree of ownership and are so proud of their latrines that construction is very likely to continue, especially in those communities where funds have been allocated by water committees for helping new families build their VIP latrines.

In terms of utilization of services, 53% of families are using the water provided by the project as their main source of domestic water. This percentage changes according to water technology and season. In communities with RWSs an average of 65% of families use the service during the dry season; in those communities with hand pumps, 46% of families use the service during the same season. An impressive 20% of the families continue using rainwater for drinking and cooking during the dry season and a little over 30% do so during the rainy season. It is a well known fact that Belizeans prefer to consume rainwater if it is available. Because of that, any future water project in Belize will need to seriously consider rainwater catchment and storage as a significant water source alternative.

Although the percentage of families owning a latrine was already high before the project (93%) the project's main contribution was in increasing use from 76% to 95% and increasing the sanitary conditions of the latrines to above the 80% mark. A significant finding was that families consider the VIP latrine safer for children than the traditional latrine.

Measuring adoption of hygiene practices was the most difficult part of the evaluation both because the questionnaire did not include a substantial number of items on this topic, and because the project's health education component focused more on measuring the number of sessions aimed at transferral of knowledge than on measuring adoption of personal and environmental hygiene practices. Evaluators found community leaders and households to have a fair knowledge of the relationship between water/sanitation and health, but little evidence of practical applications. In other words, transfer of knowledge took place but we do not how people used that

knowledge.

The evaluators did not find any indication that the School Health Education component significantly contributed to project success. Most teachers trained by the project had been transferred to other schools and the material developed by the project (highly appreciated by the teachers) had gone with them. The evaluators agree that school children should be exposed to the health education component of water projects but developing school modules and training teachers in a few isolated schools is not sustainable. Project staff should first define and simplify a few key health messages to promote hygiene practices and then community leaders should work with local teachers to ensure that children are exposed to the messages and practice/adopt the promoted behaviors.

Project sustainability in the case of VLWS will depend on the capability of the community groups to identify and solve problems, as well as plan and manage new community activities. The evaluators found water committees in all the communities visited. The level of activity and integration varies widely among the different communities, i.e., some committees actively involved in the maintenance of project services while others expressed doubts about their purpose after the project ends.

Although it is not easy to generalize after visiting six communities, it is the evaluators' impression that in those communities with RWS the water committees have a clearer understanding of their present and future roles. In those communities with hand pumps, the committee has less understanding of their future role given that the maintenance of the pumps can be done by individuals. The question is: How far is a project expected to go? During the discussion of these findings with project and mission staff, opinions ranged from some considering that project responsibility ends at the output level to others who feel that it is important to sustain the project benefit for several years after the project ends. This underscores the need for CARE, as an institution, to continue its efforts to define development in terms and actions that project staff can operationalize and incorporate into their project design and implementation.

The VLWS cost per capita was compared with that of two other water projects in Belize. VLWS ranked in the middle with US\$ 179.24 in comparison with 238.09 (the highest) and 103.21 (the lowest). One salient feature in the comparison is that VLWS is building 1 latrine per every 6 people while the corresponding figure for the project with the highest cost is 1/11 and for the project with the lowest cost is 1/23. A theoretical exercise was done to compare the cost of the project's two water technologies per family. For the RWS the cost per user family (65%) was estimated at US\$ 1,538 and for the hand pump (46%) at US\$ 1,630.

Other issues raised by the evaluators for consideration in future water and sanitation projects are:

1. To consider the use of rain water as an alternative that communities can choose from.
2. To reconsider the construction of pit latrines in areas where family compounds are becoming smaller and latrines cannot be placed as far as necessary from water sources thus increasing potential contamination of underground water sources.
3. Promotion of a participatory management style for water projects to increase the performance of field teams and to increase the potential transferral of this management style to community groups.

The evaluators concluded that VLWS has been a successful project. CARE-Belize and especially the project staff have gained six valuable years of experience which they have consolidated through their full involvement in this evaluation exercise. Given this experience and its unquestionable commitment to delivery of water services to the population of this country, CARE-Belize should continue its efforts to develop and implement new water and sanitation projects. Such projects will not only boost the trend toward higher health indicators in Belize, but also will protect the country from new health threats such the current Cholera epidemic which has yet to affect Belize.

**EVALUATION ABSTRACT  
(FOR CARE INTERNAL USE ONLY)**

DATE OF EVALUATION: September 1991

REGION

COUNTRY NAME: Belize

- Latin America
- West Africa
- East Africa
- Asia

PROJECT TITLE: Village Level Water and Sanitation  
PROJECT NUMBER: PN 15 FOOD-AIDED ( ) YES (x) NO  
YEAR OF INITIAL CARE FUNDING: FY 86  
WHEN WAS THE LAST EVALUATION CONDUCTED: April 1987

**FINAL GOAL:**

"To improve the health status of the population of the villages in the Orange Walk and Corozal Districts" (final goal) and "to reduce the incidence of water and excreta-related diseases through the use of potable water, hygienic excreta disposal facilities and the practice of good hygiene" (purpose)

**INTERMEDIATE GOALS:**

- \* Increase to 80% the number of families that consume potable water for drinking and cooking purposes.
- \* Increase to 80% the number of families that build and use a Ventilated Improved Pit latrine.
- \* Increase by 80% the number of families that improve, adopt and maintain good hygienic practices.

**PROJECT ACTIVITIES:**

- Construction of one latrine per participating family.
- Installation of one hand pump per an average of every 10 families.
- Construction of water systems where pumps are not appropriate.
- Transfer of health education to school children and adults.
- Provision of training in leadership and community development to village councils and health committees.

**WHO EVALUATED THE PROJECT?**

- Salvador Baldizón, RTA PHC LA, Team Leader.
- Peter Heffron, Water Project Manager, CARE-Guatemala; CARE Belize Project Manager and Field Staff, Team Members.



## **WHY WAS THE EVALUATION CONDUCTED?**

At the request of CARE-Belize, to use findings and lessons learned for its new water project activities funded by UNICEF.

**ABSTRACT PREPARED BY:** Salvador Baldizón.

## **EVALUATION SUMMARY**

In relation to project efficiency, VLWS completed and frequently exceeded 100% of its target outputs except in one item. Latrine construction was still pending 10% completion at the time of the final evaluation. Intermediate goal No. 1 was achieved to the level of 53%; Intermediate Goal No. 2 to 94%; and Intermediate Goal No. 3 was difficult to evaluate because of the scarce data obtained from the baseline questionnaire.

## **DESIGN**

The project was designed following AID format. Because of that, intermediate goals and their indicators were not clearly spelled out. Apparently a different proposal was written for CARE-NY but it was not used to guide project implementation.

## **SUCCESSSES**

The project was very successful in introducing the self-help nature of its activities which lead to an increased sense of ownership of the services developed. The school health modules developed by the project have been highly praised by several consultants.

## **PROBLEMS**

The biggest problem for the project was the full implementation of the recommendations made by so many consultants who visited during the implementation period. The most effective way to incorporate these recommendations could have been a redesign of the project after the mid-term evaluation. Apparently this redesign occurred when a new proposal was written for CARE-NY during the second funding phase. The USAID format which is highly output oriented was also used for this redesign.

## **SUGGESTIONS**

The success of any development project depends on the management capabilities and commitment of its staff. Any mid-term evaluation should take a careful look at the project management style and performance. Even the soundest recommendations will not be fully implemented if project management does not receive careful attention and all necessary support.

## **COMMENTS**

CARE as an institution needs to increase its commitment and activities to develop project management excellence. All other training activities such as project design, information for decision making, supervision, non-formal education, etc, are pieces of the big puzzle called management. Without addressing management, no matter how well staff know each individual piece of the puzzle, it will be difficult for them to put it together.

## **KEY WORDS**

Water and sanitation; project efficiency; project effectiveness.

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## CHAPTER I

### BACKGROUND INFORMATION ON THE VLWS PROJECT

The Village Level Water and Sanitation Project (VLWS) is a six year project divided into two phases: FYs 85-87 (OPG signed Aug/84) and FYs 88-91 (OPG signed Sep/88). The project began in July, 1984 and was expected to end in June, 1991 covering a total of 24 villages in two districts (Corozal and Orange Walk) of Belize.

In both phases the project's final goals and purposes were stated in equivalent terms: "To improve the health status of the population of the villages in the Orange Walk and Corozal Districts" (final goal); and "To reduce the incidence of water and excreta-related diseases through the use of potable water, hygienic excreta disposal facilities and the practice of good hygiene" (purpose)<sup>1</sup>.

Project intermediate goals are embodied in the project purpose as stated on page two of the project proposal. Three intermediate goals can be drawn from this statement and have been rephrased by the project evaluators in order to make them more specific and measurable. The target set for each of these intermediate goals is 80% of all families in the project area.

#### A. Intermediate Goals

No. 1:

Increase to 80% the number of families that consume potable water for drinking and cooking purposes.

No. 2

Increase to 80% the number of families that build and use a Ventilated Improved Pit latrine.

No. 3

Increase to 80% the number of families that improve, adopt and maintain good hygienic practices.

#### B. Purpose Indicators

- Number of villagers using potable water.

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<sup>1</sup>: VLWS GRANT PROJECT PROPOSAL. Revised July, 1988. For practical purposes only this document is used for describing project background.

- Number of villagers using improved excreta disposal facilities.
- Number of households practicing personal, domestic and environmental hygiene.
- Number of Health Committees actively managing their water and sanitation systems and promoting good hygiene practices.

**C. Project Primary Activities**

- Construction of one latrine per participating family.
- Installation of one hand pump per an average of every ten families.
- Construction of water systems where pumps are not appropriate.
- Transfer of health education to school children and adults.
- Provision of training in leadership and community development to village councils and health committees.

**D. Project Constraints**

- Well-drilling rigs: These belong to the GOB and any delays in their allocation to a project site retards project implementation.
- Lack of District Counterpart: There is no formal counterpart assigned to the project; nonetheless district public health inspectors collaborate with the project when they are requested to do so and can afford the time.
- Cane Season: From December to June most men spend 6 days a week involved in cane harvesting and transporting. Labor contributed to the project decreases substantially during this period.
- Coordination (among GOB, CARE, USAID, District and Village Organizations): Although listed as a constraint, it is also stated that past experience "has been good."

## F. Project Financing

USAID	US\$ 1,196,636
CARE	527,408
GOB	<u>68,499</u>
Sub-total	1,792,543
Community In-kind	276,000
GOB In-kind	<u>218,000</u>
TOTAL	2,286,643

## G. Technical Assistance Received

The project received several technical assistances as summarized below:

1. Richard Z. Donovan, WASH, January-June 1985.<sup>2</sup>  
During this period Mr. Donovan made three trips in order to:
  - a) Work on the design and implementation of a baseline survey.
  - b) Refine village selection criteria.
  - c) Design and implement village water and sanitation profiles.
  - d) Develop scoring sheets and a process for analysis of the village profiles.

As a result of Donovan's consultancies:

- indicators for the project's eight intermediate goals were reviewed
- a baseline questionnaire was developed, pretested and finalized
- extensive training was provided to project staff for data collection and analysis
- village water and sanitation profiles were developed for 58 villages from which project sites (16) were selected.

2. J. Ellis Turner, WASH, April 16-24 1986.<sup>3</sup>  
As a follow-up to a Water and Sanitation Workshop conducted by CARE in Trujillo, Peru (April 1986), Mr. Turner visited the VLWS project. He was asked to:

- provide advice on water technology to be used in communities with specific characteristics (artesian well in San Antonio, hydrogen sulfide in the water in Douglas, a deteriorated concrete storage tank in San Pablo)

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<sup>2</sup>: WASH Field Report No. 147, January, 1986.

<sup>3</sup>: Wash Field Report No. 193, July 1986.

- assist in the development of standard procedures for:
  - \*project agreements with communities and the Ministry of Health,
  - \*design and construction criteria
  - \*community training
  - \*operation guidelines
  - \*a monitoring plan

One of Turner's most important findings was poor drilling practices which did "not enable the drillers to seal out the poor quality aquifers and develop the good ones." His recommendation was to implement a workshop for drillers and field inspectors. Mr. Turner also foresaw that people would continue using rainwater and suggested that advice be included on how to clean storage tanks. He also suggested that the use of hand-dug wells be discouraged and that they be sealed off after the water systems were completed.

3. J. L. Turner and Shirley Buzzard, WASH, March 27-April 10, 1987.<sup>4</sup>

Turner and Buzzard, conducted a Mid-term Evaluation of the first phase of the VLWS project, which was scheduled for completion in December, 1987. Although this evaluation was conducted eight months before the end of the project, it focussed on processes and progress in implementation. The evaluation found the project to have very low percentages of targets completed in relation to hand pump installation (28%), latrine construction (16%) and health education sessions for adults (19%) and school children (20%). In addition, they found project weaknesses in relation to:

- community participation in planning and evaluation of the project,
- village water committees lacking training in leadership, planning, management, and supervision of community progress toward adoption of hygienic habits,
- lack of a strong government counter-part to ensure community follow-up and support,
- under-staffing of the project and available staff lacking skills in "community participation and development, technical capability and experience, and project planning and monitoring",
- insufficient participation of women in water committees and health education sessions, and
- lack of alternative water technologies for those communities not interested in hand pumps and able to afford other types of water systems.

On the positive side they found a good new school health education curriculum and very successful development of the project's self-help concept that lead to a strong community sense of ownership of

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<sup>4</sup>: WASH Field Report No. 206, May, 1987.



hand pumps and VIP latrines. Their report includes 20 recommendations addressed to the different institutions involved: USAID (6), the GOB (6), the MOH (3) and CARE (5). The five recommendations made to CARE:

- Development of a project management system,
- Periodic review of project staff capabilities, responsibilities and performance,
- Increase project staff,
- Improve prospects for project sustainability,
- Provide more water source/system alternatives to each community

were monitored on a monthly basis to ensure that they were addressed by the mission and project staff. Results varied from increasing project staff (100% completion), to offering alternative water systems (0% completion).

4. Myrtle Palacio, Glessima Research & Services, August 1987.<sup>5</sup>

Ms. Palacio was asked to analyze the project Village Level Survey (profile) and the Household Level Survey (baseline). Both had been questioned by WASH evaluators who also suggested improvements for the instruments. She found that two types of questionnaires had been used for the household survey: 511 were interviewed with the long form (26 questions), and 419 with the short form (13 questions). She did a tabulation of the data collected with these questionnaires and the Village Profile questionnaire as well. Her conclusions were that:

- a) the questionnaires were poorly designed (format and wording of the questions) and, apparently, not pretested,
- b) the staff had not been appropriately trained,
- c) surveys took place without adequate quality control.

Donovan's report, however, had stated that pre-testing and training did take place and that the questionnaires were being considered for use all over the country. No concrete recommendations were given by Palacio in relation to the identified problems.

5. Dan O'Brien, RTA-Health/Nutrition CARE-NY, September 13-19, 1987.<sup>6</sup>

Part of the RTA's assignment was to address at least two of the WASH report recommendations (Project sustainability and staff capabilities in community development). Some of O'Brien's findings

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<sup>5</sup>: Palacio Myrtle, Glessima Research and Services: An analysis of Two Surveys for CARE. The Village Level Survey & the Household Level Survey. August 11, 1987.

<sup>6</sup>: O'Brien, Dan. CARE-NY: Belize Technical Assistance Report, September 13-19, 1987.

coincided with those from WASH (a delay in implementation schedule, lack of staff skilled in project organization and management), emphasized others (he considered the health education component the weakest part of the project, although with good educational materials), and detected progress in relation to WASH recommendations (hand-pump caretakers well-trained and with appropriate tool kits, water committees with a procedure to keep track of expenses and movement of material). O'Brien, however, was not in complete agreement with WASH's conclusion about lack of community and women's participation. As he said, "The project is doing what its eight intermediate goals say it will do. The proposal does not mention involving communities in decision making nor promotion of the role of women. In addition, the document suggested by WASH to be used as a guide for project implementation (CARE's Framework and Guidelines for Water and Sanitation Projects) was published almost two years after the first VLWS project was designed." O'Brien's most penetrating question was: "...why did CARE Belize not redesign the VLWS project after the framework and guidelines document was published and after three of its staff participated in the Trujillo workshop which specifically addressed community involvement in water projects." And he answered, "The bottom line is that neither CARE-New York, nor USAID, who funded the project, required a redesign to allow communities to take a more active role (in) project management and, as a result, no significant changes were made." O'Brien's main recommendations were:

- a) to conduct a participatory (including staff and communities) evaluation of the VLWS project based on a similar evaluation recently conducted in Bolivia, and
- b) to ask WASH to implement its Community Participation Workshop (if possible, to conduct both simultaneously) by the end of 1987.

To our knowledge these activities were not implemented.

6. Rodríguez A, Edith, CARE-Costa Rica, no dates.<sup>7</sup>

Ms. Rodríguez was invited to visit CARE-Belize after the Country Director learned of the successful approach of the non-formal education program in CARE-Costa Rica. Ms. Rodríguez visited VLWS, a Maternal and Child Health (MACH) and an income generation project (GROWTH). Her conclusions refer to all three projects with emphasis on the first two. She concluded that:

- a) The projects had a community participation component with a salient role played by community boards, but not by all project participants;

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<sup>7</sup>: Rodríguez A, Edith. Notes on observations conducted during a field visit to CARE-Belize projects.

- b) Children needed to be excluded from adult health education sessions and receive training as a separate group; and
- c) Field workers needed to be better equipped with training skills in order to be more effective.

She concluded with a question, "Have we trained community leaders enough to anticipate that they will perform and obtain the positive results that we expect?"

7. Mata, Eduardo. CARE-Costa Rica, June 1989.<sup>8</sup>

Mata conducted a non-formal education workshop with field staff. This workshop concentrated on defining objectives for health education sessions. Salvador Baldizón (RTA-Health/ Nutrition) had an opportunity to observe a training session soon after the training and his conclusion was that a good effort had been made to establish objectives, but that the methodology was too theoretical (teaching the latrine construction in a classroom instead of using a model latrine already built in the community), not very participatory, and that there was no effort to evaluate session objectives. A second observation raised by Baldizón was the apparent lack of plans to complete transfer of administration, operation and maintenance of water services to community organizations.

8. Baldizón, Salvador R. CARE-New York. Nov 27 - Dec 1, 1989.<sup>9</sup>

Baldizón was invited to visit CARE-Belize in order to:

- become familiar with CARE/Belize staff and PHC programs;
- discuss current project status and identify areas that need improvement; and
- define appropriate dates for follow-up visits.

Three projects were visited: PN 15 VLWS, PN 19 MACH, and PN 21 SOLID. As stated in the scope of work, the three projects were "presently at their mid-point of implementation and it is the general consensus of the mission and headquarters that a mid-term evaluation should be carried out before June 1990". MACH was evaluated a few months later. Talks were held to evaluate VLWS in May, 1990 but a scope of work was not developed.

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<sup>8</sup>: No report provided.

<sup>9</sup>: No report provided.

## Chapter II

### EVALUATION METHODOLOGY

#### A. EVALUATION OBJECTIVES

Evaluation objectives, planning, design, implementation, and data tabulation and analysis were highly participatory with the project manager and field staff carrying out the bulk of data collection and tabulation. Data validation was conducted by two other evaluators who re-interviewed 10% of all households surveyed.

After discussing several evaluation schemes with project staff it was decided that given the myriad of technical assistance received by the project, which focused on project process and strategies, and given current resource and time constraints, the final evaluation should concentrate on project performance and effectiveness. In addition, if data were available, the cost of specific project elements would be included. The following objectives were defined:

1. To document project efficiency, effectiveness and cost (if data were available or could be processed by the CARE-Belize accounting department).
2. To incorporate project staff in all phases of the project evaluation.
3. To document lessons learned.
4. To make recommendations to CARE-Belize for future water projects.

#### B. EVALUATION PLAN

The evaluation was conducted in four phases:

1. Design (Aug 12-15)
2. Data collection: endline survey/data and tabulation (Aug 26-Sep 13)
3. Data field validation and analysis (Sep 16-20)
4. Final report writing (Oct 14-18)

#### C. EVALUATION METHODOLOGY

Data collection was to be primarily an Endline (final baseline) survey using the same questionnaire developed by Donovan

in 1985. Since this instrument had been used for the baseline survey in each community (either the long or the short form) no major changes were made for its use in the endline survey. A few questions considered irrelevant for the evaluation were eliminated. Questions on knowledge of the VIP latrine components, place where children defecate and probing regarding the existence of a place and equipment for hand washing (bowl, soap, towel) were added.

Project staff were asked to observe the following points:

- The questionnaire would be administered, by the same project staff who conducted the baseline survey, to 25% of the population of the nine selected communities.
- The sample in each community would be selected at random from a list of all participants (names drawn from a box)
- Information should also be collected on the number of families that did not participate in the project and the reasons for not participating.
- Ensure that the nine selected communities have a baseline and that the data is tabulated in order to allow for comparisons with endline results.
- Cost breakdown will be conducted at the office level by the CARE-Belize accounting/financial department on the items already identified.
- Tabulation will be carried out by project staff using the tables developed by Donovan in 1985.
- Although the original questionnaire instructions advised interviewers to rephrase questions if people did not understand them, for the endline the question should be repeated slowly or said in Spanish using a standard translation that is already available.

Endline surveys were conducted in nine of the 24 communities selected at random. Three of these communities correspond to Rudimentary Water Systems (RWS): San Antonio, Douglas and San Lazaro; the other six, to India Mark II Hand Pumps: Santa Cruz, Buena Vista, Cristo Rey, Chunox, San Pedro and Pactchakan.

Data validation was conducted by the 2 external evaluators who re-interviewed 10% of all the families interviewed by project staff. The outside evaluators were very impressed with the work performed by the project staff: an impressive 95% data accuracy was found during the validation. Another important aspect of the staff's work was the dramatic reduction in the percentage of "No Answer" that can be seen at the endline as compared to the baseline. It is clear that the staff had become more conscious of the need for completely

filled out questionnaires. During their visits to communities for data validation the evaluators also interviewed water committee members, operators, and community health educators.

Unfortunately, the results of the baseline survey conducted at the beginning of project activities could not be found. The original questionnaires were located, however, and were retabulated. Since the endline survey covered 266 households, approximately the same number of questionnaires (253) from the baseline survey were tabulated for comparison purposes.

Another complication for comparing baseline and endline results was that two versions of the questionnaire were used in the baseline (some households were interviewed with the long version and others with the short one). Because of that (and the new questions added) not all data from the endline can be compared with the baseline and a N/Av (not available) will be found instead.

The number of responses is different for some questions because in some cases more than one answer was acceptable and not all responses are used all the time for comparison purposes.

## CHAPTER III

### FINDINGS

#### A. Project Efficiency

This is defined as the capacity of the project to accomplish its target outputs during the implementation period. For VLWS I & II, outputs are number of:

- systems built,
- pumps installed,
- latrines constructed,
- water committees established,
- operators/caretakers selected,
- community health educators selected,
- school teachers involved,
- school health education sessions conducted,
- adult health education sessions conducted.

Table 1 presents a comparison of outputs planned and completed by the project.

Table 1

**SUMMARY OF TOTAL PROJECT OUTPUTS  
(VLWS I AND II)**

OUTPUTS	TARGET	ACHIEVED	% DIFFERENCE
Communities	24	24	0
Families	1,832	2,200	+20
Participants	10,461	13,000	+24
RWS constructed	5	5	0
Hand Pumps Installed	130	133	+2
VIP Latrines Built	1,832	1,650	-10
Health Committees Established & Trained	22	22	0
Operators/Caretakers Selected & Trained	21	21	0
Community Health Educators Selected & Trained	22	22	0
School Teachers Trained	44	44	0
School Sessions	718	980	+36
Adult Sessions	1,190	1,760	+48

In terms of its target outputs VLWS was very efficient. It accomplished 100% or more of what was planned except in the case of latrines where 10% still lacked completion. As was explained by the project staff, some families did not rush to build their latrines if they had just finished a new one before the project started. Other families delayed construction until they could afford materials for the latrine walls. Learning from their initial experience, when the model latrines were built with expensive and not always available materials, the project staff were careful to build subsequent models with locally available materials.

In the midterm evaluation the project was criticized for insisting that communities finish their latrines before starting the water component of the project. According to these evaluators, the use of this strategy would not permit measurement of the effectiveness of the health education component. In fact, before the project started there was already a high rate of latrine use among the target population (although the latrines were not always sanitary) and all VIP latrines are being used now. This corroborates communication



scholars' claim that the relationship among Knowledge--Attitudes-and-Practices is not necessarily a straight line but a triangle. Depending on the level of awareness and readiness of each population, projects can start their interventions at any of these three corners. That is what VLWS was doing.

#### **B. Project Effectiveness**

This is defined as the project's capability to achieve appropriate utilization of the services established, learning of project health education messages and adoption/improvement of healthy habits. (As a complement to this section, Section C looks at output quality.) To measure utilization of project services, adoption of hygiene practices and knowledge of health messages the original baseline questionnaire was used as the data collection instrument.

Project effectiveness was measured against the project's three intermediate goals.

##### Intermediate Goal No. 1:

Increase to 80% the number of families that consume potable water for drinking and cooking purposes.

Seven items of the survey questionnaire directly refer to water consumption and availability. Four of those items are used to describe project accomplishments in this area. An effort was made to investigate the amount of water used daily by each family. Surprisingly the number of gallons reported to be used at the endline (57.68) was much lower than that reported in the baseline (80.05). The evaluators do not believe that the population is using less water now. A possible interpretation is that because access to water is much easier now, the population is less conscious of the amount they are using. In addition, number of buckets (pre-system) is easier to measure than water from a tap (post-system).

Table 2

Comparison of Water Source During Dry and Wet Seasons  
Between Baseline and Endline Surveys

Topic	Response	Baseline		Endline	
		N	%	N	%
Water source during dry season:	Well	143	56	63	21
	Vat	59	23	66	22
	Hand Pumps	7	3	89	29
	RWS	0	0	72	24
	Hand Pumps+RWS	(7)	3*	(161)	53*
	Other	45	18	11	4
<b>Total</b>		<b>254</b>		<b>301</b>	
Water source during wet season:	Well	121	47	58	20
	Vat	102	40	88	31
	Hand Pump	13	5	78	27
	RWS	0	0	57	20
	Hand Pump+RWS	(13)	5*	(135)	47*
	Other	21	8	6	2
<b>Total</b>		<b>257</b>		<b>287</b>	

\* Total % will add to more than 100 because hand pumps and RWS are counted twice.

Table 2 shows that:

- The project has reduced the use of wells as the source of drinking water by approximately 30% during both seasons. This is especially important when considering that water analysis of five unprotected wells found two of them to be highly contaminated with fecal bacteria.
- The use of rainwater continues to be above 20% during the dry season and above 30% during rainy season.
- There is a significant increase in the use of hand pumps and RWS during both seasons leading to an overall use of 53 and 47% during the dry and wet seasons, respectively.

When communities with RWS and hand pumps are analyzed separately, a wider difference can be seen in the use of the services. In those communities with RWS, 65% of the population use it during the dry season. In those communities with hand pumps, only 46% of the families use it during the same season. Although RWS are more expensive than hand pumps their cost per user might be the same or even lower than hand pumps considering its greater acceptability.

Table 3 provides complementary information related to water sources. The goal of the project was for every family to have a water source no farther than 200 feet from the household. Unfortunately, this condition could not be analyzed because data

was tabulated (according to baseline instructions) in different categories.

Table 3

**Comparison of Water Source Distance and Availability  
Between Baseline and Endline Surveys**

Topic	Response	Baseline		Endline	
		N	%	N	%
Distance to drinking water	< 100 feet	139	57	215	68
	> 100 feet	<u>104</u>	43	<u>99</u>	32
	Total	243		314	
Is there ALWAYS enough water?	Yes	N/Av		206	79
	No	N/Av		23	8
	No Answer			8	3
	N/Applic.			<u>26</u>	10
Total			261		

Intermediate Goal No. 2

Increase to 80% the number of families that build and use a Ventilated Improved Pit latrine.

Tables 4, 5 and 6 show project accomplishments in relation to the latrine component.

Table 4

**Comparison of Latrine Status and Type  
Between Baseline and Endline Surveys**

Topic	Response	Baseline		Endline	
		N	%	N	%
Latrine Status	Own	181	75	229	84
	Own & Share	44	18	37	14
	Share	7	3	4	1.4
	No Latrine	<u>10</u>	4	<u>2</u>	0.6
Total		242		272	
Latrine Type	VIP	0	0	253	94
	Trench Latrine	0	0	3	1
	Wood Floor Pit	91	37	5	2
	Concrete Slab	121	50	7	2.6
	N/Answer/N/App	<u>31</u>	13	<u>1</u>	0.4
Total		243		269	

According to Table 4 latrine ownership increased from 75 to 84% and the percentage of households with no latrines decreased from 4% to 0.6%. The overwhelming success of the project is in increasing the

ownership of VIP latrines from 0% to 94%.

Table 5 shows the location of latrines in relation to the nearest water source. The percentage of families building their latrines at least 100 feet from their water source (the project's initial recommendation) increased from 38% to 63%. Although the project promoted placement of the latrine downhill from the water source the table shows a lower percentage doing this at the endline survey and a higher percentage placing it at the same level. These results have more to do with the Belizean topography than with project effectiveness. The percentage of families placing the latrines above the water source did decline from 27% to 19%.

Table 5

**Comparison of Latrine Distance and Location  
Between Baseline and Endline Surveys**

Topic	Response	Baseline		Endline	
		N	%	N	%
Distance of latrine to nearest well or other water source	< 45 feet	32	13	19	7
	46-99 feet	84	35	72	28
	=> 100 feet	92	38	166	63
	N/Answer/N/App	<u>35</u>	14	<u>6</u>	2
<b>Total</b>		<b>243</b>		<b>263</b>	
Latrine location in relation to water source	Level	72	29	172	65
	Uphill	65	27	51	19
	Downhill	84	35	40	15
	N/Answer/N/App	<u>22</u>	9	<u>2</u>	1
<b>Total</b>		<b>243</b>		<b>265</b>	

Initially the project promoted the idea of placing the latrine at least 100 feet away from the water source. Later, as family yards became smaller, the project shifted to a minimum distance of 50 feet. The evaluators disagree with this approach. If there are technical reasons for placing latrines 100 feet away from water sources, those reasons do not change just because people have smaller lots. If it is really dangerous to have this type of latrine closer than 100 feet to a water source but, at the same time yards are too small to comply with that rule, then an alternative type of latrine should be investigated instead of simply dividing that distance in half. We believe that properly constructed and managed compost latrines could ameliorate this problem in the future.

In Table 6 some characteristics of latrine conditions and use can be compared. Latrine structure was significantly improved during the project. This improvement not only occurred in terms of what was provided by the project (e.g., slab) but also in terms of family contribution (wall materials and construction). Latrine use

also increased from 76% to 95%.

Table 6

**Comparison of Latrine Conditions and Use  
Between Baseline and Endline Surveys**

Topic	Response	Baseline		Endline	
		N	%	N	%
Latrine wall condition	Good	41	17	212	80
	Bad/Mediocre	175	72	46	17
	N/App	27	11	8	3
<b>Total</b>		<b>243</b>		<b>266</b>	
Latrine slab condition	Good/Ok	78	46	254	95
	Bad	68	41	2	1
	N/Answer/N/App	22	13	11	4
<b>Total</b>		<b>168</b>		<b>267</b>	
Latrine use	Seems used	128	76	251	95
	Doesn't	6	4	6	2
	N/Answer/N/App	34	20	8	3
<b>Total</b>		<b>168</b>		<b>265</b>	

Since one could be tempted to underestimate the project's accomplishment in light of the high percentage of latrine ownership and use found at the baseline, Table 7 is presented to illustrate the long list of problems that these latrines were found to have at the baseline.

This is not to say that problems miraculously disappeared with VIP latrines. The biggest changes occurred in the None category from 8% to 55% of households reporting no problems; Odor from 25% to 4.5%; flooding from 13% to 3%; and a very impressive one is that the percentage of families that considered the latrine unsafe for children dropped from 5% to 1%. VIP latrines are expected, however, to have fewer problems than the percentage reported at the endline survey. Project staff will have to investigate the nature and severity of such problems in order to correct them for future projects.

Table 7

**Comparison of Problems Found with Latrines  
Between Baseline and Endline Surveys**

Topic	Response	Baseline		Endline	
		N	%	N	%
Latrine problems reported	None	34	8	170	55
	Slab unstable	23	5	14	4.5
	Odor	114	25	14	4.5
	Flies/mosquitos	102	22	43	14
	Cockroaches	0	0	3	1
	Snakes	6	1	3	1
	Flooding	61	13	10	3
	Unsafe childrn	24	5	3	1
	Too far away	11	2	6	2
	Splashes body	18	4	5	2
	'Caves in'	25	6	3	1
	Privacy/heat	9	2	10	3
	N/Answer	22	5	2	1
	N/App	11	2	22	7
<b>Total</b>		<b>460</b>		<b>308</b>	

Intermediate Goal No. 3

Increase to 80% the number of families that improve, adopt, maintain good hygienic practices.

The survey questionnaire does not include many questions regarding the knowledge and practices that the project intended to promote. During the evaluation design, project staff observed that there were so many groups doing health education that it was going to be hard to attribute any knowledge about personal and environmental hygiene to the VLWS project. It was agreed then to add four questions to exclusively address knowledge of the VIP latrine components. Unfortunately during the survey these questions were changed from testing knowledge (Why is it important for a VIP latrine to have..?) to requesting an opinion (Is it important for a VIP latrine to have..?). Staff explained that they changed the question because it was confusing for the people to answer the original question.

Some practices promoted by the project and the percentage of families that adopted them are described in the following table:

Table 8

Comparison of Answers Related to Adoption of Good Hygiene  
Practices Between Baseline and Endline Surveys

Topic	Response	Baseline		Endline	
		N	%	N	%
Container used to store water	Closed cont.	206	85	213	82
	Open contain.	33	14	36	14
	Other	<u>4</u>	1	<u>10</u>	4
	<b>Total</b>	<b>243</b>		<b>259</b>	
Place where the container is kept	On the floor	30	12	17	6
	Up/off floor	201	83	236	89
	Other	<u>12</u>	5	<u>13</u>	5
	<b>Total</b>	<b>243</b>		<b>266</b>	
Latrine interior condition	Clean	124	51	224	83
	Not clean	86	35	37	14
	N/Answer/N/App	<u>33</u>	14	<u>8</u>	3
	<b>Total</b>	<b>243</b>		<b>269</b>	
Children's excreta disposal	Latrine	N/Av		82	31
	Chamber pot			92	34
	Open field			16	6
	Other			8	3
	N/Answer/N/App			<u>71</u>	26
	<b>Total</b>			<b>269</b>	
Probing place and equipment to wash hands	Bowl/wash basin			232	89
	bucket			21	8
	Other			5	2
	N/Answer			<u>3</u>	1
<b>Total</b>			<b>261</b>		
Ways to dispose trash	Burn	194	78	193	70
	Put in pit	9	4	12	4
	Truck away	0	0	16	6
	Throw in bush	34	13	38	14
	Other (bury)	10	4	13	5
	N/Answer	<u>3</u>	1	<u>2</u>	1
	<b>Total</b>	<b>250</b>		<b>274</b>	
Was household yard clean at interview?	Yes	N/Av		180	68
	No			<u>85</u>	32
	<b>Total</b>			<b>265</b>	

Although endline results show an impressively high percentage of families appropriately protecting and storing their water, baseline data shows that the percentage was already high at the beginning of

the project. The most substantial improvement, shown in this table, is in relation to cleaning of latrine interiors which increased from 51% to 83%. The percentages of families reporting appropriate disposal of children's feces and showing a place where family members wash their hands are also impressively high, but it is hard to judge to what extent it is part of the project's accomplishments given the lack of baseline data and the high percentage of positive results that the baseline shows for other areas of personal and environmental hygiene.

### C. Quality of Project Outputs

This section of the evaluation refers to the institutional and individual roles developed as part of project implementation. Specifically this section gives an overview of the capability and performance of water committees/operators/health educators, school teachers, and women's status.

To evaluate these aspects of the project, the evaluators conducted interviews in each of the six communities visited for endline data validation. For these interviews the evaluators developed a list of questions previously determined during the planning phase of the evaluation.

#### 1. Water and Sanitation Committees

All six communities have a Water and Sanitation Committee with different degrees of integration and activities. Only one of these has two women as part of the committee. Some committees are very alive and ready to attend meetings when they are called; others are still integrated but without a strong sense of purpose and direction.

In San Lazaro, where a RWS was built, the committee has a clear understanding of their function in the long run. They already have a bank account of B\$ 3,500 (US\$ 1,750) and know what their duties are. Three of the four members interviewed earn money for their activities in the committee. In communities where hand pumps were built some members expressed doubts about the need for the committee's continued existence.

Some committees from communities with hand pumps are also active. The one in Patchakan, for example, has a bank account with B\$ 1,224, (US\$ 612) to provide loans to new families interested in building VIP latrines. This implies that they expect to continue functioning although they seem to think that the committee chairman is sufficient to carry out all the activities. This committee does not have a plan for periodic meetings (although all expressed interest in such a plan) and the chairman must hunt them up every time something (like this interview) comes up. Even among project staff there seem to be disagreements in relation to how long committees should last and how frequently their members need to meet on a periodic basis.



To their credit, WATER & SANITATION COMMITTEES should be recognized for their tremendous contribution during project implementation. According to endline responses a committee member visited families (93%), gave advice on latrine construction (92%), discussed health topics with families (80%) and invited families to attend village meetings (90%). Unfortunately these committees (especially in hand pump communities) were left without a clear plan and training for their future existence.

## 2. Health Educator

Four of the six communities did not have a formal health educator at the moment of the interview. There is a high dropout rate for health educators because they are volunteers or school teachers who are periodically transferred. Some members of water committees expressed that they could do some of the activities of the health educators (especially in relation to overseeing latrine use and maintenance) but it was not clear to the evaluators if they had been trained for such a task. In places where MACH has been implemented, its community volunteers are collaborating in health education sessions.

The two health educators interviewed did not seem to have a clear idea of what their role was supposed to be in the future. No plans existed for new training sessions or monitoring of progress or of community health status. During discussions of these findings with project staff a suggestion was made for future projects to identify existing GOB community workers (Malaria Workers, Red Cross, MACH) before trying to create new ones.

The health modules developed by the project were highly praised by several project visitors. The final evaluators believe that although the modules represent a commendable effort, the same should be simplified and built around a few specific messages aimed at achieving behavioral changes and not only increasing knowledge about water and sanitation.

## 3. Operators

The system operators in each community appear to be active and effective. They receive good, prompt backup support from the GOB. A problem mentioned by some is the lack of money to carry out light maintenance (primarily greasing of the chains in the hand pumps). Some communities, however, have funds available because they charged a small fee (B\$ 10) when latrine materials were delivered. With the exception of one of the pumps seen by the project evaluators, all were found in very good condition, functioning appropriately, the surrounding area clean and soakaways functioning.

## 4. School Health Education

Students and teachers from six community schools were interviewed. In at least three of these schools teachers trained by the project had already been transferred to another community and the training

curriculum developed by the project had gone with them. Teachers and students, nonetheless, seem to have a basic understanding of the relationship between water and health and the need to appropriately dispose of trash to protect their health. From theory to practice, however, there is still a long way to go and in some schools latrines were found to be dirty or inappropriately managed (e.g., door open). Although the project has been praised in the past for the quality of the school health modules we did not see any evidence, one way or the other, of project influence in the schools visited. There is no mechanism to ensure that the materials will be available on a long term basis nor to ensure that new teachers are incorporated into these activities when they begin working in the communities.

#### D. Project cost

During the planning of the evaluation it was proposed to estimate cost per system, cost per pump and cost per capita for both RWS and hand pump alternatives. If data were available it was suggested that costs be itemized (following WASH guidelines for project evaluation<sup>10</sup>) as follows:

- construction of water system/pump installation;
- construction of latrines;
- health education;
- operation and maintenance;
- community participation;
- administration.

Unfortunately, the accounting department of CARE-Belize could not provide this data. Using a study published in May/90<sup>11</sup> a table has been built comparing the three projects presently implementing Water and Sanitation Services in Belize.

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<sup>10</sup> WASH Technical Report No. 64. May 1990.

<sup>11</sup>: Godfrey, Michael and Estilito Loria: Situational Analysis for Water Supply and Sanitation in Belize. CARE/UNICEF. May, 1990.

Table 9

Comparison of Project Services and Cost Among Three Water and Sanitation Projects Operating in Belize

Projects:	TWSSP	IPTBH	VLWS
Institution	UNICEF	GOB	CARE
Funding Period	1984-89	1985-92	1986-91
Budget	US\$ 867,000	3,000,000	1,900,000
Target Population	8,400	12,600	10,600
Target Hand Pumps	140	108	140
Target RWS	0	8	3
Target Latrines	365	1,174	1,800
Population/latrine	23	11	6
Total cost/capita	US\$ 103.21	238.10	179.25

Source: 12.

Although some figures for Table 9 differ from other tables of this report we have kept them the way they were published in the study. VLWS seems to be in the middle ground in relation to cost per participant. Although VLWS is not the least expensive intervention it should be noted that the project with the lowest cost does not include any RWS and that its population per latrine is almost four times greater than VLWS.

In terms of cost it is worth noting that hand pumps are not necessarily the least expensive intervention when cost per beneficiary family is analyzed. According to VLWS staff a hand pump system for 100 families will cost approximately B\$ 75,000, and RWS for the same number of families will cost B\$ 100,000. According to our endline data, in communities with hand pumps, 46% of the families use the water during the dry season and 65% of families use it in communities with RWS. If you divide cost per the number of families (75,000/46 and 100,000/65), the cost per family using the service is higher for hand pumps (\$1,630) than for RWS (\$1,538).

#### CHAPTER IV

#### CONCLUSIONS

The VLWS project has accomplished its goal of providing a reliable source of water for human consumption to 24 communities of Orange Walk and Corozal districts. The project endline survey included 6 communities from VLWS I and 3 from VLWS II and (except for one hand pump without a soakaway) in all of them the water source built by the project was functioning as planned.

As was already recognized in the mid-term evaluation, the VLWS was fundamental in introducing the self-help concept in project activities and the same resulted in communities which are more conscious of their roles in securing and maintaining their water and sanitation services and a high degree of ownership of the services developed during the project.

Responding to the water problem in Belize is by no means an easy task for any project. Rain-water seems to be most acceptable to the population for human consumption but no easy technology is available for collection and storage of rain water all year long. Hand pumps seems to be the technology of choice for funding agencies but the water provided is used by less than half of the population even during the dry season. RWS seems to be more acceptable than hand pumps (65% use during the dry season) but the initial investment could be up to one third more than that for hand pumps. Nonetheless, any new project aimed at providing water and sanitation services should include several alternative water technologies to allow communities to choose the one that most appeals to them and which is appropriate to their needs and resources.

The VIP latrine is probably the most successful component of the project. Although the pre-project rate of latrine use in Belize was already high, the adoption and use of a VIP latrine represents a tremendous advance given the sanitary and safety level of the latrine. The evaluators, nonetheless, raised the issue of how safe it is to continue building pit latrines in the lowland coastal areas of Belize where the water table is very close to the surface and where compounds continue to shrink due to population growth, not allowing placement of latrines far enough from water sources. The evaluators believe that alternative models such as the compost latrine should be tested and strongly promoted as an alternative to the VIP latrine.

The Health Education component of this project went well beyond its target in relation to the number of adult sessions planned and implemented. It was difficult to evaluate this component because of the lack of baseline data and because indicators for measuring its effectiveness were never developed. The activity placed too much emphasis on number of sessions and on the dissemination of information without defining a set of specific messages to be learned and behaviors to be adopted by the target population.

School Health Modules were highly praised by several visitors to this project. The evaluators nonetheless found little or no effect of this project component in the schools, teachers and students interviewed. The materials were not available at the school, teachers that had been trained by the project had been transferred and no new teachers had been trained. Students seemed to understand the relationship between water and health irregardless of having teachers trained or materials developed by the project.

All the Water and Sanitation Committees established by the project in the last six years continue to exist until now. The level of integration and activity is very low in most committees, especially those where hand pumps were installed. It is not clear how long these committees will continue to exist after the project ends and project staff visits cease. It is obvious that the committees do not have a plan for continued operation after the project ends (except in the communities with RWS) nor do they have (at present) the capability to develop plans for future activities.

It is remarkable that the project staff has been working together for almost the entire six years of project implementation. At the same time it was the evaluators' impression that the staff does not function as an integrated team to the extent that they could. They show a lot of uncertainties about what they know and do and, during this evaluation exercise, divergent individual points of view as opposed to a group position were expressed in relation to project activities. They do not seem to be used to planning, implementing and evaluating the results of their work. The evaluators believe that the staff has gained valuable experience and is very committed, but needs more opportunities to participate in decision making and more explicit criteria to monitor project progress in quantitative and qualitative terms.

## CHAPTER V

### RECOMMENDATIONS

Any institution seriously attempting to deal with the issue of water for human consumption in Belize's lowland coastal areas, should pay careful attention to the collection, storage and use of rainwater as the most appealing source of water for the Belizean population. Previous visitors and evaluators have reached the same conclusion but no concrete suggestions have been proposed for effective collection and use of rainwater. Turner in his first visit to the project found that some communities had installed and were operating "large masonry ground-storage tanks with catchment roofs."<sup>12</sup> In addition Loria and Godfrey report "more modern methods used on a large scale for the provision of clean domestic (rain) water" by Mennonite communities.<sup>13</sup> Nonetheless it is the project staff's responsibility and it should be their crusade to demonstrate that rainwater is a viable alternative in Belize.

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<sup>12</sup>: WASH Field Report No. 193. July 1996.

<sup>13</sup>: Loria, Estilito, and Mike Godfrey: Situational Analysis for Water Supply and Sanitation in Belize. CARE/UNICEF, May 1990.

In addition to rainwater, other water technology alternatives beyond India Mark II Hand Pumps should be offered to communities by future water projects. RWSs seem to be highly appreciated and desired and more used by the communities. Although the initial investment is higher for RWS than for hand pumps, when considering the cost per user, RWS are not necessarily more expensive given the higher percentage of families that use it. Furthermore, there are many communities that seem to have the resources to cover the extra construction cost. Since new technologies need to be tested before offering them on a large scale, a portion of project budgets should be allocated to operations research activities.

By their nature, water projects should have a strong participatory management style in order to develop/consolidate effective field teams. The two main reasons for this are:

- a) "When groups are operating effectively they can solve more complex problems, make better decisions, release more creativity and do more to build individual skills and commitment than individuals working alone"<sup>14</sup>; and
- b) A key element for project sustainability is the transferral of this participatory management style to community organizations. Some of CARE's missions are implementing a "Quality Cycle" in order to increase their participatory management approach.

The health education component of the project should go beyond the number of adult sessions and the dissemination of information. The component should be developed around a number of key messages aimed at the adoption/improvement of a number of personal and environmental hygiene practices. Such practices should be evaluated during baseline surveys and then monitored by project staff and community groups on a periodic basis.

The school curriculum component as it was designed and implemented did not contribute to the project's effectiveness. Without a formal agreement with and commitment from the Ministry of Education the school curriculum is an isolated effort and not part of the system. It should be substituted, then, by a simpler and more effective activity. Rather than using the school curriculum to derive adult education sessions, the key messages of the project's community health education component should be targeted to children through local schools. Since messages must be simple, no sophisticated training will be needed for teachers. If no sophisticated training is required, community groups can take charge of ensuring that health education messages and healthy

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<sup>14</sup>: Blanchard, Kenneth, et al: The One Minute Manager Builds High Performing Teams. William Morrow and Company, Inc. New York 1990.

practices are disseminated through the community schools.

## CHAPTER VI

### LESSONS LEARNED

#### A. Baseline survey

This is one of the first health projects in Latin America where a baseline survey has been used for the final evaluation. Although this baseline was a combination of project promotion, needs assessment and determination of project entry level, the data was useful to determine project achievement in selected issues. The changes in the survey questionnaire after a few communities had been surveyed, the impossibility of locating baseline results during the final evaluation, and the difficulties for locating the original baseline questionnaires point out that the staff did not have a clear idea of how to use baseline results. New CARE PHC Evaluation strategies should consider specific guidelines for designing and conducting baseline surveys, for data analysis and interpretation and for more effective utilization of results by project staff and project participants during and after project implementations.

#### B. Project Design and Re-design

This project received several consultancies during its six years of implementation. Many of the consultants coincided on the findings and on the recommendations. Many efforts were made to follow recommendations but those efforts never went far enough to produce a significantly different approach in areas such as community participation and the health education component. The bottom line is that when substantial changes in strategy are necessary for improving project performance such changes will not take place without re-writing the project proposal or at least a new Detailed Implementation Plan. Regardless of all the recommendations given by consultants, project staff continued using the project proposal approved by AID as their implementation guidelines.

#### C. The Positive Aspects of Participatory Evaluation

A special effort was made during the final evaluation for involvement of project staff and other mission staff during the different phases of the evaluation. The evaluators were very impressed with the participation of project staff from the design phase to collection and tabulation of data and discussion of results. The implicit messages for project staff in this evaluation were: a) we trust you, and b) we believe you are capable of doing a good job. And they did, as the evaluators were able to corroborate during re-interviewing of 10% of households surveyed. Project staff manifested that in the last evaluation they were used as drivers, but in this evaluation they were participants. This type of involvement should be helpful for the staff to better appreciate the role of project evaluation, to understand evaluation

results, to facilitate implementation of evaluation recommendations and, in general, in building high performance teams.

**D. Project Management: the key to success**

Multiple training activities are constantly taking place in order to increase staff performance. Workshops on information for decision making, non-formal education, community participation, monitoring and evaluation, project design, development of training materials, and supervision, among others, are common events. The evaluators consider that all these activities are elements of good MANAGEMENT and that without effectively addressing management issues, for project staff it will continue to be a very difficult task to put the puzzle together, no matter how well they have mastered the knowledge of each piece.





ANNEX 1 FINANCIAL DATA

BUDGET/DISBSD	PLAN VLWS I	PLAN VLWS II	PLAN TOTAL	% TOTAL	DISBURSED	PLAN DISBSD % DIFF
AID	\$700,000	\$500,000	\$1,200,000	56%	\$1,193,536	0%
GOB	\$45,000	\$63,000	\$108,000	5%	\$68,499	-37%
CARE	\$340,000	\$206,346	\$546,346	26%	\$527,408	-3%
COMMUNITIES	NA	NA	\$276,000	13%	NA	NA

(1)

TOTAL	\$1,085,000	\$769,346	\$2,130,346	100%	\$1,792,543	
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(2)

MATERIALS COSTS	\$471,140	\$266,669	\$737,809	NA	NA	
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(3)

COST/BENEFIT	PLAN VLWS I	PLAN VLWS II	PLAN TOTAL		ACTUAL	% DIFF
# COMMUNITIES	16	6	22		24	9%
#FAMILIES	1,152	432	1,584		2,200	39%
#PARTICIPANTS	8,500	4,126	12,626		13,000	3%

GLOBAL COST/PARTIC	\$128	\$186	\$169		\$138	-18%
MTRLS COSTS/PARTIC	\$55	\$65	\$58		NA	NA

(4)

NOTES:

1. Data for Community in-kind contributions was not available. \$276,000 in in-kind contributions was budgeted for.
2. The Total figure consists of USAID, GOB and CARE disbursements plus Community budget as actual Community in-kind contributions were not on record.
- 3., 4. Materials costs data were not available.

Sources:

1. "Mid-Term Evaluation," WASH Field Report#206, May 1987.
2. CARE Belize Records
3. VLWS II Project Proposal

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ANNEX 1 FINANCIAL DATA

FINANCIAL ANALYSIS OF 9 SITES VISITED BY EVALUATION TEAM

COMMUNITY	POP	FAMILIES	#PUMPS	PUMPS \$	#RWS	RWS \$	#LATRINES	LATRINES \$	TOTAL COST MATERIALS	AVG COST /PARTIC
PATCHAKAN	866	160	16	\$50,000			134	\$13,400	\$63,400	\$73
SAN LAZARO	784	130			1	\$26,500	117	\$12,200	\$38,700	\$49
CHUNOX	590	103	10	\$31,250			97	\$10,025	\$41,275	\$70
CRISTO REY	587	100	12	\$37,500			101	\$10,100	\$47,600	\$81
DOUGLAS	521	88			1	\$35,000	87	\$9,000	\$44,000	\$84
SAN ANTONIO	363	72			1	\$50,000	72	\$7,575	\$57,575	\$159
BUENA VISTA	345	49	7	\$21,875			47	\$4,700	\$26,575	\$77
SAN PEDRO	322	63	7	\$21,875			63	\$6,300	\$28,175	\$88
SANTA CRUZ	170	30	4	\$12,500			30	\$3,600	\$16,100	\$95

	POP	FAMILIES	#PUMPS	PUMPS \$	#RWS	RWS \$	#LATRINES	LATRINES \$	TOTAL COST MATERIALS	AVG COST /PARTIC
TOTAL	4,548	795	56	\$175,000	3	\$111,500	748	\$76,900	\$363,400	NA
MINIMUM	170	30	4	\$12,500	1	\$26,500	30	\$3,600	\$16,100	\$49
MAXIMUM	866	160	16	\$50,000	1	\$50,000	134	\$13,400	\$63,400	\$159
AVERAGE	505	88	9	\$29,167	1	\$37,167	83	\$8,544	\$40,378	\$86
STD DEVIATION	227	40	4	\$13,356	0	\$11,899	33	\$3,297	\$15,098	\$30

	PUMPS \$	RWS \$	RWS \$
AVG COST/PUMP, RWS, LATRINE >>	\$3,125	\$37,167	\$103
AVG MATERIALS COST/PARTIC >>	\$61	\$67	\$17

Source: "Summary of Project Costing (Materials Only--9 sites) In U.S. Dollars," Estilito, 17 SEP 91

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DISTRICT \_\_\_\_\_ VILLAGE \_\_\_\_\_ HOUSE NUMBER \_\_\_\_\_

FAMILY NAME \_\_\_\_\_ PERSON(S) INTERVIEWED \_\_\_\_\_

DATE COMPLETED \_\_\_\_\_ ENUMERATOR(S) \_\_\_\_\_

HOUSEHOLD LEVEL WATER AND SANITATION SURVEY

Purpose:

1. To document water supply, sanitary conditions and community participation of each household in rural villages.
2. To increase familiarity of village residents with project goals, objectives and procedures.
3. To introduce project staff to village residents.

The information gathered with this survey will be used to design, implement, monitor and evaluate a village-level water and sanitation program. This program will emphasize community participation, therefore, questions are included which discuss local organizations.

Instructions:

IN ORDER TO MAKE THIS SURVEY USEFUL, ANSWER ALL THE QUESTIONS CAREFULLY AND COMPLETE THE FORM. If a question is inappropriate or not possible to answer, write N/A. It is important that hand writing is legible, especially numbers. If a question seems awkward or not understood by the interviewee, please rephrase the question. WRITE WITH BLACK INK.

1. How many FAMILIES live in your household? Number \_\_\_\_.

	MALE		FEMALE	TOTALS
Children birth to 5 years old:	_____	+	_____	= _____
Children 6 to 14 years old:	_____	+	_____	= _____
Adults 15 years old and older:	_____	+	_____	= _____
<u>SUM TOTAL</u>	_____	+	_____	= _____

2. Where do you get your DRINKING water? ASK TO SEE SOURCE.

	SOURCE	DISTANCE
Dry Season	_____	_____
Rainy Season	_____	_____

IF DRINKING WATER SOURCE IS HAND DUG WELL:

- a) Is there ALWAYS enough water? Yes \_\_\_ No \_\_\_.  
IF NOT, When and how long is the shortage? \_\_\_\_\_
- b) Is the hand dug well covered now? Yes \_\_\_ No \_\_\_

IF DRINKING WATER SOURCE IS HANDPUMP OR RUDIMENTARY WATER SYSTEM:

- a) Is there ALWAYS enough water? Yes \_\_\_ No \_\_\_.  
IF NOT, When and how long is the shortage? \_\_\_\_\_
  - b) How often does the water system breakdown?  
Daily \_\_\_ Weekly \_\_\_ Monthly \_\_\_ Other \_\_\_
  - c) On the average, how many days per month is the water system broken? Days \_\_\_.
  - d) Who fixes the water system when it breaks? \_\_\_\_\_
  - e) Who fixed it the last time? \_\_\_\_\_
  - f) IF RWS, How much is your monthly users fee? \$ \_\_\_\_\_
5. Has your drinking water ever been tested to determine if it is safe to drink without purification? Yes \_\_\_ No \_\_\_.
6. Do you know the district public health inspector from the Ministry of Health? Yes \_\_\_ No \_\_\_ EXPLAIN ROLE OF DPHI.
7. a) What container is used to collect or store water?  
Pig-tail bucket \_\_\_ Galvanized bucket \_\_\_ Plastic tub \_\_\_  
Other \_\_\_\_\_
- b) Where is it kept? (ASK TO SEE) Floor \_\_\_ Off floor \_\_\_
- c) Is the stored water covered? Yes \_\_\_ No \_\_\_.
8. How much water does your household use ON AN AVERAGE DAY?  
MEASURE OR ESTIMATE VOLUME PER BUCKET = \_\_\_\_\_ GALLONS.
- \_\_\_\_\_ Buckets for drinking = \_\_\_\_\_ Gallons.
  - \_\_\_\_\_ Buckets for laundry = \_\_\_\_\_ Gallons.
  - \_\_\_\_\_ Buckets for dishes = \_\_\_\_\_ Gallons.
  - \_\_\_\_\_ Buckets for bathing = \_\_\_\_\_ Gallons.
  - \_\_\_\_\_ Buckets for garden = \_\_\_\_\_ Gallons.
  - \_\_\_\_\_ Buckets for animals = \_\_\_\_\_ Gallons.
  - \_\_\_\_\_ Buckets for other = \_\_\_\_\_ Gallons.
  - TOTAL GALLONS PER DAY= \_\_\_\_\_ Gallons.
9. Is there ALWAYS enough water for your household? Yes \_\_\_ No \_\_\_  
IF YES, GO TO NUMBER 10.
- IF NO, What is needed to solve the water problem? CIRCLE
- a) Deeper well
  - b) New well
  - c) Handpump repair
  - d) New handpump
  - e) Repair existing community water system
  - f) Extend pipe lines of existing community system
  - g) Install new community water system
  - h) Other, explain \_\_\_\_\_
10. Do you own or share a latrine? Own \_\_\_ Share \_\_\_ Neither \_\_\_  
IF SHARE OR NEITHER, GO TO QUESTION 11.

IF OWN, REQUEST TO SEE THE LATRINE AND ASK THE FOLLOWING:

- a) What type of latrine? CHECK ALL THAT APPLY.  
Trench \_\_\_ Bucket \_\_\_ Wood Floor Pit \_\_\_ Aqua Privy \_\_\_  
Concrete Slab \_\_\_ Flush with Septic Tank \_\_\_
- b) How many people use YOUR latrine? Individuals \_\_\_.
- c) Who cleans your latrine? Children \_\_\_ Women \_\_\_ Men \_\_\_
- d) Do you have problems with your latrine? Yes \_\_\_ No \_\_\_.  
IF YES, CHECK ALL THAT APPLY.  
Unstable slab/structure \_\_\_ Flies/insects \_\_\_ Snakes \_\_\_  
Flooding \_\_\_ Difficult for children \_\_\_ Splashes \_\_\_  
Odor \_\_\_ Privacy \_\_\_ Far \_\_\_ Other \_\_\_\_\_

NOT A QUESTION: INTERVIEWER, RATE THE LATRINE CONDITION BY CHECKING ALL THAT APPLY.

Latrine exterior is Good \_\_\_ Bad \_\_\_ Mediocre \_\_\_  
Latrine interior is Clean \_\_\_ Not clean \_\_\_  
Latrine slab is Good \_\_\_ Bad \_\_\_ Mediocre \_\_\_  
Latrine pit is Empty \_\_\_ Full \_\_\_ Half-full \_\_\_  
Latrine is how far from NEAREST well or water source?  
Estimate number of feet \_\_\_\_\_ Feet.  
Latrine is situated from water source? Up hill \_\_\_  
Down hill \_\_\_ Level \_\_\_

11. Do you want a VIP latrine? Yes \_\_\_ No \_\_\_.
12. When a latrine is NOT AVAILABLE, What do the people in your household use for excreta disposal? Bush \_\_\_ Other \_\_\_\_\_
13. Do the members of your household wash their hands after defecating? Yes \_\_\_ No \_\_\_ Sometimes \_\_\_.
14. Do the members of your household wash their hands before eating or preparing food? Yes \_\_\_ No \_\_\_ Sometimes \_\_\_.
15. How does your household store trash?  
Bag \_\_\_ Bucket \_\_\_ Pit \_\_\_ Pile \_\_\_ Other \_\_\_\_\_
16. How does your household dispose of trash?  
Burn \_\_\_ Bury \_\_\_ Other \_\_\_\_\_
17. What health problem does your family suffer from most often?  
Cold/cough \_\_\_ Diarrhea \_\_\_ Worms \_\_\_ Fever \_\_\_ Scabies \_\_\_  
Eye \_\_\_ Vomiting \_\_\_ Lice \_\_\_ Malaria \_\_\_ Hepatitis \_\_\_
18. What causes these illnesses? \_\_\_\_\_
19. Where did you learn about the causes of these illnesses?  
School \_\_\_ Work \_\_\_ Family \_\_\_ Health worker \_\_\_ Church \_\_\_  
Books \_\_\_ Other \_\_\_\_\_
20. Where do you go for medical care? \_\_\_\_\_

21. Do you listen to the radio? Yes \_\_\_ No \_\_\_
22. Do you watch television? Yes \_\_\_ No \_\_\_
23. Do you read the newspaper? Yes \_\_\_ No \_\_\_  
IF YES, Which one(s)? \_\_\_\_\_

COMMUNITY ORGANIZATION AND PARTICIPATION

24. Whose responsibility is it to improve individual and community water conditions? Explain \_\_\_\_\_
25. Are you aware of the water and sanitation program that is starting in this village? Yes \_\_\_ No \_\_\_ IF YES, Where did you learn about it? \_\_\_\_\_
26. Are you interested in participating in a water/sanitation improvement program in your community? Yes \_\_\_ No \_\_\_  
IF YES, What could you contribute to improve water and sanitation conditions in your village?  
CHECK ALL THAT APPLY.  
 Labor \_\_\_ Construction skills \_\_\_ Sand \_\_\_ Gravel \_\_\_ Cement \_\_\_  
 Wood \_\_\_ Wire \_\_\_ Steel \_\_\_ Money \_\_\_ Other \_\_\_\_\_
28. What outside assistance will the village need to improve the water/sanitation facilities? \_\_\_\_\_
29. Is your family active in any organization? Yes \_\_\_ No \_\_\_  
IF YES, List \_\_\_\_\_
30. What organization is active in your community? \_\_\_\_\_
31. If your village wishes to begin a community water/sanitation program, what organization do you think is most likely to work with the village on this project? \_\_\_\_\_  
 Explain \_\_\_\_\_

NOTES OR COMMENTS

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

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DISTRICT \_\_\_\_\_ VILLAGE \_\_\_\_\_ HOUSE NUMBER \_\_\_\_\_  
 FAMILY NAME \_\_\_\_\_ PERSON(S) INTERVIEWED \_\_\_\_\_  
 DATE COMPLETED \_\_\_\_\_ ENUMERATOR(S) \_\_\_\_\_

HOUSEHOLD LEVEL WATER AND SANITATION SURVEY

Purpose:

To document water supply and sanitary conditions at each household in rural villages.

The information gathered during this survey will be used to evaluate a village-level water and sanitation program. This program will emphasize community participation, therefore, questions are included which discuss local institutions.

Instructions:

IN ORDER TO MAKE THIS SURVEY USEFUL, ANSWER ALL THE QUESTIONS CAREFULLY AND COMPLETE THE FORM. If a question is inappropriate or not possible to answer, write N/A. It is important that hand writing is legible, especially numbers. If a question seems awkward or not understood by the interviewee, please *rephrase the question slowly.* *repeat*  
DO NOT WRITE WITH PENCIL

1. Has the district public health inspector from the Ministry of Health visited your home over the past 12 months? Yes \_\_\_\_\_  
 No \_\_\_\_\_ EXPLAIN ROLE OF DPHI.

2. How many children birth to 5 years old live in your household?  
 Number \_\_\_\_\_. MALE \_\_\_\_\_ + FEMALE \_\_\_\_\_ = TOTALS \_\_\_\_\_

3. Where do you get your drinking water? ASK TO SEE SOURCE.

	SOURCE	DISTANCE
Dry Season	_____	_____
Rainy Season	_____	_____

IF SOURCE IS HAND DUG WELL:..

Is it covered now? Yes \_\_\_\_\_ No \_\_\_\_\_.

Do you think it is sanitary? Yes \_\_\_\_\_ No \_\_\_\_\_



IF SOURCE IS HANDPUMP OR RUDIMENTARY WATER SYSTEM:

- a) Is there ALWAYS enough water? Yes \_\_\_\_\_ No \_\_\_\_\_. IF NOT,  
When and how long is the shortage? \_\_\_\_\_
- b) How often does the water system breakdown?  
Daily \_\_\_\_\_ Weekly \_\_\_\_\_ Monthly \_\_\_\_\_ Other \_\_\_\_\_
- c) On the average, how many days per month is the water system  
broken. Days \_\_\_\_\_.
- d) Who fixes the water system when it breaks? \_\_\_\_\_
- e) Who fixed it the last time? \_\_\_\_\_
- f) IF RWS, How much is your monthly users' fee? \$ \_\_\_\_\_  
Have you paid your last month's fee? Yes \_\_\_\_\_ No \_\_\_\_\_
4. What container is used to collect or store water? \_\_\_\_\_
5. Is stored water covered? (ASK TO SEE) Yes \_\_\_\_\_ No \_\_\_\_\_
6. Where is stored water kept? OFF GROUND \_\_\_\_\_  
ON GROUND \_\_\_\_\_
7. How much water does your household use DAILY?  
ESTIMATE BELOW:  
Measure or estimate volume per bucket = \_\_\_\_\_ Gallons.  
Estimate number of buckets daily = \_\_\_\_\_.  
Multiply volume by number of buckets = \_\_\_\_\_ TOTAL GALLONS.
8. Do you have a water problem? \_\_\_\_\_ If YES: go to Question 9.  
If NO, go to Question 10.
9. What is needed to solve the water problem? CIRCLE LETTER  
a) Handpump repair \_\_\_\_\_  
b) New handpump \_\_\_\_\_  
c) Deeper well \_\_\_\_\_  
d) New well \_\_\_\_\_  
e) Extend pipe lines of existing community water system \_\_\_\_\_  
f) Repair existing community water system \_\_\_\_\_  
g) Install new community water system \_\_\_\_\_  
h) Other, explain \_\_\_\_\_
10. Do you own or share a latrine? Own \_\_\_\_\_ Share \_\_\_\_\_ Neither \_\_\_\_\_.  
IF SHARE or NEITHER, Do you want a latrine? Yes \_\_\_\_\_ No \_\_\_\_\_.

IF OWN. REQUEST TO SEE THE LATRINE AND ASK THE FOLLOWING:

- a) What type of latrine? CHECK ALL THAT APPLY.  
Trench \_\_\_\_\_ Wood Floor Pit \_\_\_\_\_ (Cover \_\_\_\_\_ No Cover \_\_\_\_\_)  
Concrete Slab \_\_\_\_\_ (Cover \_\_\_\_\_ No Cover \_\_\_\_\_)  
Flush with Septic Tank \_\_\_\_\_ VIP \_\_\_\_\_
- b) How many people use YOUR latrine? Individuals \_\_\_\_\_ Families \_\_\_\_\_
- c) Where does your child defecate? \_\_\_\_\_
- d) At what age does your child use the latrine? Years \_\_\_\_\_.
- e) How far is your latrine from the NEAREST well or water source?  
Feet \_\_\_\_\_.

2/1

- f) (Observation Question) Where is your latrine situated from the well or nearest water source? Uphill \_\_\_\_\_ Downhill \_\_\_\_\_ Level \_\_\_\_\_
- g) Who cleans your latrine? Children \_\_\_\_\_ Women \_\_\_\_\_ Men \_\_\_\_\_ Nobody \_\_\_\_\_
- h) Do you think your latrine is sanitary? Yes \_\_\_\_\_ No \_\_\_\_\_
- i) Any problems with your latrine? CHECK ALL THAT APPLY.  
 Unstable structure \_\_\_\_\_ Broken slab \_\_\_\_\_ Flies/insects \_\_\_\_\_  
 Snakes \_\_\_\_\_ Flooding \_\_\_\_\_ Difficult for children \_\_\_\_\_  
 Splashes \_\_\_\_\_  
 Odor \_\_\_\_\_ Privacy \_\_\_\_\_ Far \_\_\_\_\_ Other \_\_\_\_\_

NOT A QUESTION: INTERVIEWER. RATE FOR THE LATRINE CONDITION BY CHECKING ALL THAT APPLY.

*Screen* → sew pipe \_\_\_\_\_ is good \_\_\_\_\_ bad \_\_\_\_\_ Doesn't have \_\_\_\_\_

Latrine walls is Good \_\_\_\_\_ Bad \_\_\_\_\_ Mediocre \_\_\_\_\_

Latrine roof is Good \_\_\_\_\_ Bad \_\_\_\_\_ Mediocre \_\_\_\_\_

Latrine door is Good \_\_\_\_\_ Bad \_\_\_\_\_ Mediocre \_\_\_\_\_

Latrine interior is Clean \_\_\_\_\_ Not clean \_\_\_\_\_

Latrine slab is Good \_\_\_\_\_ Bad \_\_\_\_\_ Mediocre \_\_\_\_\_

Latrine appears to be used \_\_\_\_\_ Not used \_\_\_\_\_

Other \_\_\_\_\_

11. When a latrine is NOT AVAILABLE, what do the people in your household use for excreta disposal? Bush \_\_\_\_\_ Other \_\_\_\_\_
12. Do the members of your household wash their hands after defecating? Yes \_\_\_\_\_ No \_\_\_\_\_ Sometimes \_\_\_\_\_.
13. Do the members of your household wash their hands before eating or preparing food? Yes \_\_\_\_\_ No \_\_\_\_\_ Sometimes \_\_\_\_\_.
14. Where do members of your household wash their hands? \_\_\_\_\_  
 (Check if there is soap? \_\_\_\_\_ bowl? \_\_\_\_\_ towel? \_\_\_\_\_)
15. How does your household store trash?  
 Bag \_\_\_\_\_ Bucket \_\_\_\_\_ Pit \_\_\_\_\_ Pile \_\_\_\_\_ Other \_\_\_\_\_
16. How does your household dispose of trash?  
 Burn \_\_\_\_\_ Bury \_\_\_\_\_ Other \_\_\_\_\_  
 (Observe if environment is clean \_\_\_\_\_ not clean \_\_\_\_\_)
17. What health problem does your family suffer from most often?  
 Cold/cough \_\_\_\_\_ Diarrhea \_\_\_\_\_ Worms \_\_\_\_\_ Fever \_\_\_\_\_ Scabies \_\_\_\_\_  
 Eye \_\_\_\_\_ Vomiting \_\_\_\_\_ Lice \_\_\_\_\_ Malaria \_\_\_\_\_ Hepatitis \_\_\_\_\_
18. What causes these illnesses? \_\_\_\_\_
19. Where did you learn about the causes of these illnesses?  
 School \_\_\_\_\_ Work \_\_\_\_\_ Family \_\_\_\_\_ Health worker \_\_\_\_\_ Church \_\_\_\_\_  
 Books \_\_\_\_\_ Radio \_\_\_\_\_ Television \_\_\_\_\_ Newspaper \_\_\_\_\_  
 Other \_\_\_\_\_

20. Do you think that a VIP latrine is a better latrine than the traditional type latrine? Yes \_\_\_\_ No \_\_\_\_.

If Yes, Why? \_\_\_\_\_

If No, Why? \_\_\_\_\_

21. Why is it important that a VIP latrine have the following:

a) Ventpipe \_\_\_\_\_

b) Screen \_\_\_\_\_

c) Door \_\_\_\_\_

d) No Cover on Riser \_\_\_\_\_

COMMUNITY ORGANIZATION AND PARTICIPATION

22. Whose responsibility is it to improve individual and community water conditions? CHECK ALL THAT APPLY.

Individual residence \_\_\_\_ Gov't \_\_\_\_ Village Council \_\_\_\_ Village Health Committee \_\_\_\_ Other \_\_\_\_

23. What did you and your family contribute to improve water and sanitation conditions in your village? CHECK ALL THAT APPLY.

Labor \_\_\_\_ Construction skills \_\_\_\_ Sand \_\_\_\_ Gravel \_\_\_\_ Cement \_\_\_\_  
Wood \_\_\_\_ Wire \_\_\_\_ Steel \_\_\_\_ Money \_\_\_\_ Other \_\_\_\_\_

24. During the period of the project were you approached by a member of the Village Health Committee? Yes \_\_\_\_ No \_\_\_\_

If Yes, How? CHECK ALL THAT APPLY.

a) Advice on latrine construction? \_\_\_\_\_

b) Discussions on health - related topics? \_\_\_\_\_

c) Invitations to attend Village Meetings? \_\_\_\_\_

d) Other? \_\_\_\_\_

25. What did you like the most in this project?

\_\_\_\_\_  
\_\_\_\_\_

26. What did you like the least in this project?

\_\_\_\_\_  
\_\_\_\_\_

NOTES OR COMMENTS

\_\_\_\_\_  
\_\_\_\_\_

ANNEX 4.

GUIDE TO INTERVIEW WATER AND SANITATION COMMITTEES  
(COMITES DE AGUA Y SANEAMIENTO)  
CARE-BELIZE VLWS FINAL EVALUATION

PROCESO (PROCESS)

1. Cuánto tiempo duró el proyecto? Fue más largo o corto de lo planeado?
2. En qué forma motivaron a la comunidad para participar en actividades del proyecto?
3. En qué forma aseguraron que todos tuvieran la misma oportunidad de participar en el proyecto?
4. En qué forma supervisaron la construcción de letrinas, sistema de agua y actividades de educación de salud?
5. En qué forma resolvieron problemas encontrados?
6. Qué tipos de problemas resolvieron?
7. Quién ayudó a resolver los problemas?
8. Qué problemas no han sido resueltos?

CONOCIMIENTO DE LOS BENEFICIOS DEL PROYECTO (KNOWLEDGE OF PROJECT BENEFITS)

9. Cuáles fueron (son) los beneficios del proyecto de agua y letrinas?
10. Que enfermedades pueden ser prevenidas por tener agua limpia?
11. Para qué necesitamos letrinas?
12. Para qué se necesita la educación de salud?
13. En qué temas se necesita?
14. Cómo saben si la gente ha aprendido los mensajes de salud?
15. Cómo saben si la gente pone en práctica los mensajes de salud?

ACTIVIDADES ACTUALES (CURRENT ACTIVITIES)

16. Que tipo de ayuda técnica han solicitado y han recibido de

CARE y WASA desde que empezó el proyecto?

17. Cómo participan en actividades de educación de salud?
18. Qué actividades realizan para mantener el sistema de agua?  
las letrinas?  
las bombas de mano?
19. Mantienen archivos de juntas, fondos, gastos, etc?
20. Mantienen inventario?
21. Han recibido algún entrenamiento en los últimos 6 meses? (en qué?)

ROL DE LA MUJER (WOMEN'S ROLE)

22. Han participado/participan las mujeres en el proyecto?
23. En qué forma participan?
24. Les parece que es adecuada esa participación?
25. En qué otras actividades pueden/deben participar las mujeres?
26. Por qué es importante la participación de la mujer?
27. Hay mujeres en el comité de agua? \_\_\_\_\_ Qué les toca hacer?
28. Tienen usted preguntas o comentarios?

ANNEX 5.

GUIDE TO INTERVIEW HAND PUMP CARETAKES/RWS OPERATORS  
(GUARDIANES Y OPERADORES)  
CARE-BELIZE VLWS FINAL EVALUATION

1. Me puede explicar y demostrar las actividades de mantenimiento que realiza?
2. Qué otras actividades realiza?
3. Qué tipo de asistencia ha requerido del equipo de mantenimiento (WASA/MNR)?
4. Qué tipo de archivos mantiene?  
Reparación de bomba\_\_ Fondos\_\_ Comentarios de Usuarios\_\_
6. OBSERVAR BOMBA CON GUARDIAN  
Lubricado\_\_ Limpio\_\_ Protegido de animales\_\_  
Protegido de óxido\_\_ Alrededor limpio\_\_  
No derrame de agua\_\_  
Agua se drena lejos del pozo\_\_ tuercas/tornillos apretados\_\_  
Está limpia la base\_\_ Sin rajaduras/grietas\_\_

ANNEX 6.

GUIDE TO INTERVIEW COMMUNITY HEALTH EDUCATORS  
(EDUCADORES DE SALUD COMUNITARIOS)  
CARE-BELIZE VLWS FINAL EVALUATION

CONOCIMIENTO GENERAL DEL PROYECTO

1. Qué actividades realiza de rutina?
2. En qué forma supervisa  
higiene personal\_\_\_\_  
higiene doméstica\_\_\_\_  
mantenimiento de letrinas limpias\_\_\_\_
3. Cada cuánto tiempo organiza charlas de salud?
4. Cuándo fue la última vez que organizó un charla?
5. Dónde se reunieron?
6. Sobre qué tema fue?
7. Quiénes asistieron a la charla?
8. En qué forma evaluó la charla?
9. Hace visitas domiciliarias?
10. Para qué hace visitas?
11. Cómo decide a qué familia va a visitar?
12. Cómo lleva control de las familias visitadas?
13. Cómo sabe si su visita fue efectiva?
14. Qué tipo de problemas tiene para su trabajo?
15. Qué soluciones ha encontrado?
16. Quién le ha ayudado?
17. Qué problemas no se han resuelto?

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ANNEX 7.

GUIDE TO INTERVIEW SCHOOL TEACHERS AND STUDENTS  
(MAESTROS Y ALUMNOS DE ESCUELAS)  
CARE-BELIZE FINAL EVALUATION

A) TEACHERS:

1. What are the principal messages related to health and sanitation that you share with your students?
2. How do you verify how much of these messages are absorbed/applied?

B) STUDENTS

1. Can you name and relate the prevention and control of two water-related diseases?
2. Why is it important for you to know it?
3. What are the most appropriate means of waste disposal in Belize?
4. Which ones do you and your family use?

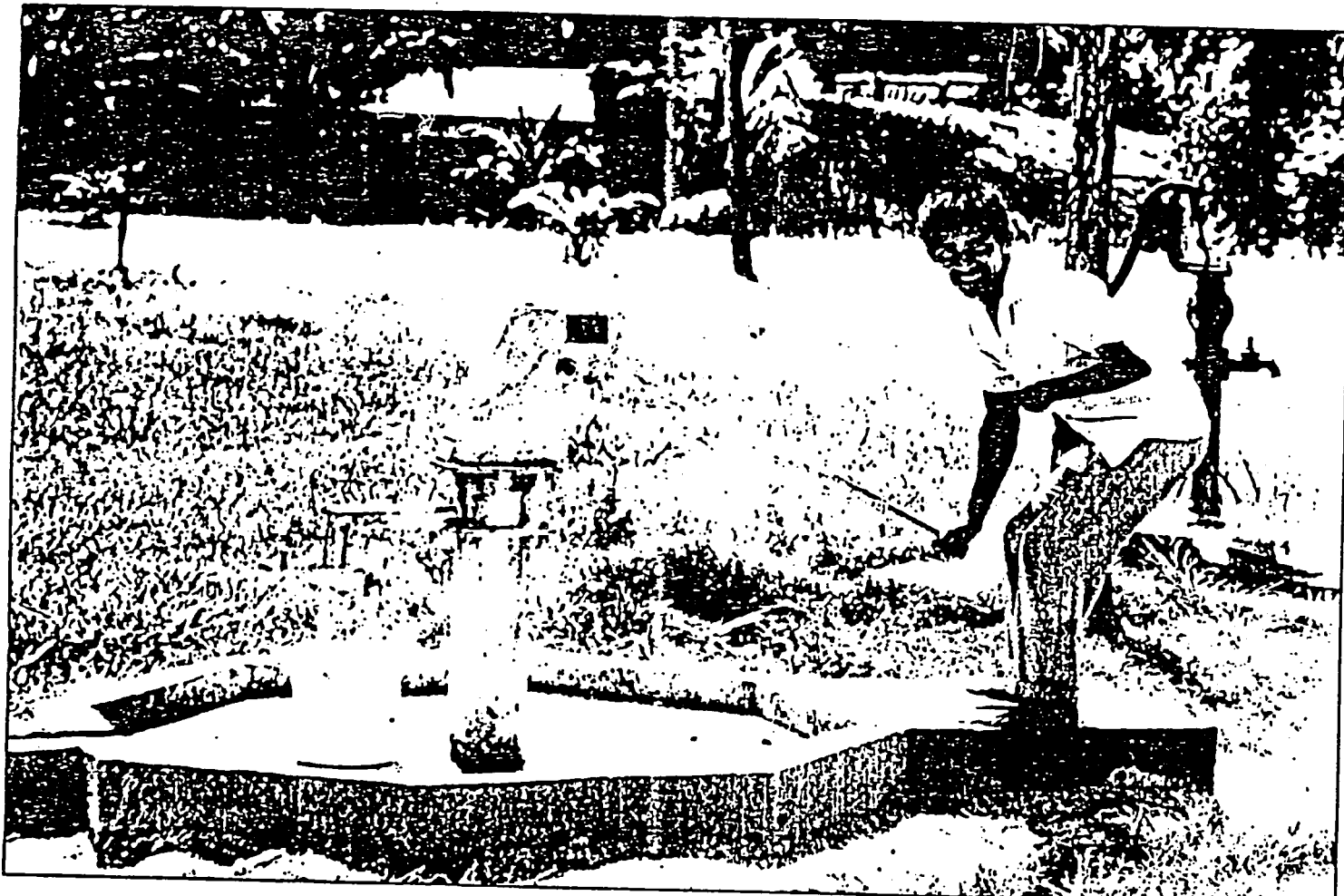


ANNEX 8.

A PICTURE OF AN INDIA MARK II HAND PUMP

AND

AN EXAMPLE OF A HEALTH MESSAGE DISSEMINATED BY  
THE MATERNAL AND CHILD HEALTH (MACH) PROJECT  
IN A CALENDAR FORMAT



CARE PHOTO—STEVE MAINES

After using the toilet, be sure to wash your hands with soap and water. In order to prevent illness, it is also important to wash your hands before handling food.

*Después de usar el excusado, asegúrese de lavarse las manos con agua y jabón. Para prevenir enfermedades, también es importante, lavarse las manos antes de preparar los alimentos.*



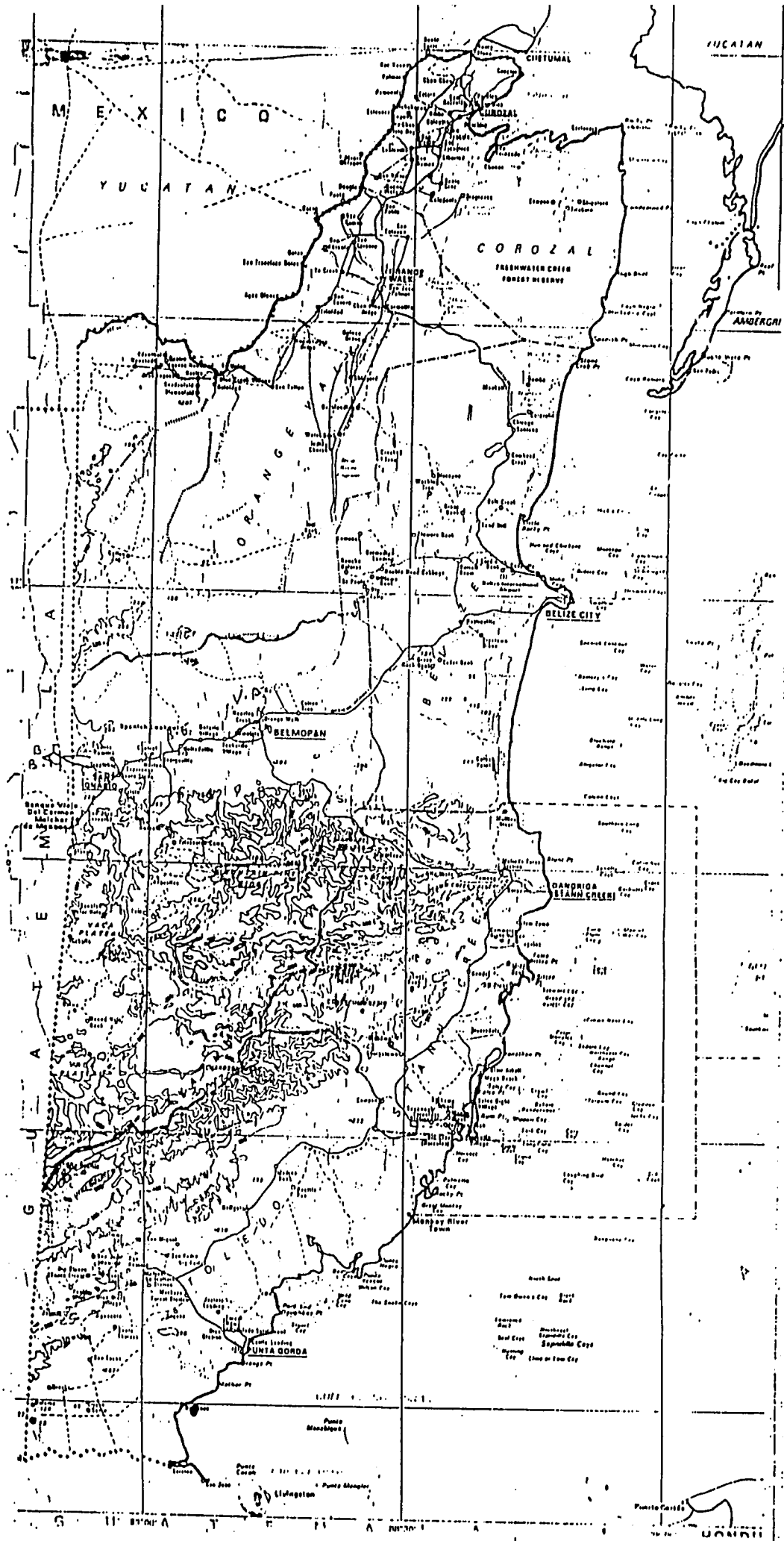
**CARE**



ANNEX 9

MAP OF BELIZE

COROZAL AND ORANGE WALK DISTRICT BORDERS ARE HIGHLIGHTED



CONSULTANT EVALUATION FORM

FROM: \_\_\_\_\_ TO: \_\_\_\_\_

PREP. BY: \_\_\_\_\_ DATE: \_\_\_\_\_ LETR. NUMBER: \_\_\_\_\_

CONSULTANT'S NAME: \_\_\_\_\_

COUNTRY WHERE ASSIGNED: \_\_\_\_\_

PROJECT NAME AND LOCATION: \_\_\_\_\_

ASSIGNMENT DATES: \_\_\_\_\_

TYPE OF ASSIGNMENT:

- 1. project design \_\_\_\_\_
- 2. evaluation \_\_\_\_\_
- 3. baseline survey \_\_\_\_\_
- 4. feasibility study \_\_\_\_\_
- 5. project revision \_\_\_\_\_
- 6. workshop or training \_\_\_\_\_
- 7. other \_\_\_\_\_

PERFORMANCE AND QUALIFICATIONS:

(use a check mark to indicate your assessment for those areas that apply; 5 highest, 1 lowest)

	5	4	3	2	1
knowledge of specialty					
administrative skills					
ability to meet deadlines					
writing skills					
communication skills					
adaptability					
language proficiency					
relations with CARE staff					
relations with counterparts					
relations with dev. community					
_____					
_____					

DO YOU RECOMMEND THAT CONSULTANT BE HIRED AGAIN?:

NO \_\_\_\_\_ YES \_\_\_\_\_

COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_

add. comments other side

CONSULTANT EVALUATION FORM

FROM: \_\_\_\_\_ TO: \_\_\_\_\_

PREP. BY: \_\_\_\_\_ DATE: \_\_\_\_\_ LETR. NUMBER: \_\_\_\_\_

CONSULTANT'S NAME: \_\_\_\_\_

COUNTRY WHERE ASSIGNED: \_\_\_\_\_

PROJECT NAME AND LOCATION: \_\_\_\_\_

ASSIGNMENT DATES: \_\_\_\_\_

TYPE OF ASSIGNMENT:

- 1. project design \_\_\_\_\_
- 2. evaluation \_\_\_\_\_
- 3. baseline survey \_\_\_\_\_
- 4. feasibility study \_\_\_\_\_
- 5. project revision \_\_\_\_\_
- 6. workshop or training \_\_\_\_\_
- 7. other \_\_\_\_\_

PERFORMANCE AND QUALIFICATIONS:

(use a check mark to indicate your assessment for those areas that apply; 5 highest, 1 lowest)

	5	4	3	2	1
knowledge of specialty					
administrative skills					
ability to meet deadlines					
writing skills					
communication skills					
adaptability					
language proficiency					
relations with CARE staff					
relations with counterparts					
relations with dev. community					

DO YOU RECOMMEND THAT CONSULTANT BE HIRED AGAIN?:

NO \_\_\_\_\_ YES \_\_\_\_\_

COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_

add. comments other side

50

**CARE USA  
REGIONAL TECHNICAL ADVISOR  
CROSS-CHARGES OF SERVICES**

RTA NAME: SALVADOR BALDIZON      PERTAINS TO:      MONTH DICIEMBRE      FY: 92

**CREDITING INFORMATION**

RTA HOME OFFICE	COUNTRY CODE	PROJECT NAME	PN	FUND CODE	RATE	X	DAYS	=	TOTAL
GUATEMALA	42	RTAT	29	2200-4581	250	X	15	=	3,750.00

**DEBITING INFORMATION**

COUNTRY	COUNTRY CODE	PROJECT NAME	PN	FUND CODE	RATE	X	DAYS	=	TOTAL
BELICE	36	VLWS PROJECT	15	1121-4589	\$250	X	15	=	3,750

PREPARED BY: *Salvador N. Baldizon*

APPROVED BY (NYHQ USE ONLY) \_\_\_\_\_