ENVIRONMENTAL HEALTH PROJECT

ACTIVITY REPORT

No. 103

Midterm Evaluation of the
USAID/El Salvador Public Service Improvement Project
(Project No. 519-0320)

Water and Sanitation for Health Program
(PROSAGUAS)

September 2000

by
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Prepared for the USAID Mission to El Salvador
under EHP Project No. 26568/Other.SV1.WSSEVAL

Environmental Health Project
Contract No. HRN-I-00-99-00011-00
is sponsored by the Bureau for Global Programs, Field Support and Research
Office of Health and Nutrition
U.S. Agency for International Development
Washington, DC 20523

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ACKNOWLEDGMENTS

The members of the evaluation team greatly appreciate the collaboration and support provided by USAID/El Salvador and CARE/El Salvador. Staff members were very helpful in providing information and logistical support.

In particular, we would like to thank Jose Antonio Ramos Chorro from the USAID/El Salvador Health Strategic Objective team (SO3) for providing clear guidance on the needs and perspectives of the Mission. Jose Antonio also participated in many of the field visits and provided valuable insights. We also want to thank Ricardo Mancia and Jonathan Claros, PROSAGUAS director and deputy director respectively, for their role in organizing and facilitating many details of our itinerary in the three regions of El Salvador to which we traveled. It would have been much more difficult to visit the communities and have meaningful discussions without their support and introductions. In addition, the PROSAGUAS regional directors and their staffs were also extremely helpful in answering questions and bringing us together with their communities. Not only do we thank all of the above for their support but we also commend them for their strong personal dedication and commitment to the well-being of the communities with which they are working.

The evaluation team would also like to acknowledge the contributions of Carlos Linares for providing valuable background information, much of which is included in the background section of this document.

ACRONYMS

ADESCO	Asociaciones de Desarrollo Comunal (Community Development Associations)
AGUA	Acceso, Gestion, y Uso de Agua (Access, Management and Water Use—USAID SO4 Program)
ANDA	Administracion Nacional de Acueductos y Alcantarillados (National Water and Sewage Administration)
ANDA/GSR	Gerencia de Sistemas Rurales—ANDA (Rural Division of ANDA)
BID	Banco Interamericano de Desarrollo (Interamerican Development Bank)
Barriles	Barrels of water used as common measurement for purchase from private water vendor. One barrel is reportedly roughly equivalent to 200 liters.
BEO	USAID Bureau Environmental Officer
CALMA	Centro de Apoyo de la Lactancia Materna (Nicaraguan PVO: Center for Support of Maternal Breastfeeding)
Cantaro	Traditional household water storage container
Cantarero	Community standpipe
CARE	Cooperation for American Relief Everywhere—international NGO that has Cooperative Agreements with USAID/El Salvador to implement the PROSAGUAS, MAS and AGUA projects.
CENTA	Centro Nacional de Tecnologia Agricola (MAG) (National Center for Agricultural Technology)
Colones	Salvadoran currency (about 8.75 colones = US$1.00)
COMURES	Corporacion Municipal de la Republica de El Salvador (association of mayors)
CREA	Creative Associates International Inc
DASAGUAS	CARE engineering design office
EA	Environmental assessment
EHP	Environmental Health Project
EU	European Union
FISDL	Fondo de Inversion Social para el Desarollo Local—GOES (Social Investment Fund for Local Development)
FIS-SCALA	Financial Information System for CARE International
FUNDEMUNI	Fundacion para el Desarrollo Municipal (Municipal Development Foundation)
GOES	Government of El Salvador
h/h	Household
IR	Intermediate Result (USAID)
IRC	International Reference Center for Water Supply and Sanitation
KAP	Knowledge, attitudes, and practices
LAC	USAID Bureau for Latin American and the Caribbean
M&E	Monitoring and evaluation

MAG	Ministerio de Agricultura (Ministry of Agriculture)
MAS	Mitch Agua y Saneamiento (USAID Hurricane Mitch Reconstruction Program)
MOH	Ministry of Health
MSPAS	Ministerio de Salud Publica y Asistencia Social Ministry of Health
NGO	Nongovernmental organization
O&M	Operation and maintenance
PAHO	Pan American Health Organization
PCI	Project Concern, International
PLANSABAR	Plan de Saniamiento Basico Rural (Rural Sanitation Program)
PROSAGUAS	Programa de Agua y Saniamiento para la Salud (Water and Sanitation for Health Program)
PROSEGUIR	CARE land titling program
PVO	Private voluntary organization (usually refers to U.S.-based NGOs such as CARE)
RFA	Request for Assistance (a USAID term)
RAS ES	Red de Agua y Saneamiento de El Salvador (National WS&S Network)
RTI	Research Triangle Institute – contractors for USAID Municipal Development Project
RWSS	Rural water supply and sanitation
SALSA	Salvadorenos Saludables (Healthy Salvadorans—USAID SO3 Health Program)
SARAR	Self-esteem, Association with others, Reacting with ingenuity to problems, Actualization and Responsibility for sustainable solutions to problems; a participatory training methodology
SO	Strategic Objective (USAID)
UME	Unidad de Monitoreo y Evaluacion (CARE's monitoring and evaluation unit)
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VIP	Ventilated improved pit latrine
WASH	Water and Sanitation for Health Project
WS&S	Water supply and sanitation

Executive Summary

Background

The USAID/El Salvador Health Strategy for the period 1997-2002 states that the lack of access to water and sanitation is a major constraint to the improvement of health in rural areas, and that the large difference in infant and child mortality rates between urban and rural areas is closely connected to this lack of water and sanitation infrastructure. The primary causes of child mortality (for children1 to 5 years of age) are acute respiratory infections (28%),dehydration from diarrhea (24%), and measles (13%). In rural areas, 30% of infant deaths are reportedly due to dehydration from diarrhea, as compared to 22% in the urban areas.

It is estimated that only 57% of El Salvador's total population has access to clean water: 78% in urban areas and 25% in rural areas. El Salvador has the lowest figure for overall water coverage in Central America. In the area of sanitation, some 60% of those living in urban areas nationwide have access to sewerage systems. Approximately 52% of the rural population has access to sanitation systems, predominantly latrines

In response of those figures and as part of its Health Strategic Objective (SO3), USAID/El Salvador signed a cooperative agreement with CARE/El Salvador to implement the Water and Sanitation for Health Program (in Spanish, *Programa de Agua y Saniamiento para la Salud,* generally called by the acronym, PROSAGUAS).

Purpose of PROSAGUAS

The purpose of the PROSAGUAS program is to reduce the incidence of diarrheal diseases in children under five years by providing access to potable water supply and sanitation systems to the communities where the activities are carried out. The program was funded in the spring of 1998 for a five-year period.

Beside the water and sanitation facilities to be provided, USAID requested that promotion, organization, and health education activities be developed in the beneficiary communities. In addition, a participatory methodology approach was to be used to make community individuals and local government authorities active participants in the construction, operation, utilization, maintenance, and administration of the potable water and sanitation facilities installed under this program.

The PROSAGUAS program is now at its midpoint, and USAID/El Salvador requested that the Environmental Heath Project (EHP), a technical assistance project funded by USAID/Washington, carry out an evaluation of the program in July 2000.

Scope of Work for the Evaluation

The purpose of the midterm evaluation and assessment of the PROSAGUAS program was to undertake the following:

- Assess the current status and sustainability of benefits of earlier (pre-PROSAGUAS) USAID-funded rural water supply and sanitation (WS&S) programs. (These were implemented by CARE, Creative Associates International Inc., and Project Concern International in a previous phase of USAID Project no. 519-0320.)

- Evaluate the current PROSAGUAS program and assess progress to date in achieving the expected results.

- Identify lessons learned from both past and current programs.

- Recommend improvements for the second half of the PROSAGUAS program.

- Identify possible inputs for future USAID strategic objectives and WS&S and Health programs in the short- to medium-term.

This evaluation reviews the results to date and effectiveness of the overall PROSAGUAS program and each of its major components. The various components are community organization, health education and hygiene behavior change, water supply and sanitation infrastructure, environment and source water protection, program management and administration, monitoring and evaluation, operation and maintenance, and coordination with other USAID Strategic Objective teams and programs.

Findings and Conclusions

1. Phase I Program

The overall conclusion of the Evaluation Team is that the Phase I WS&S program represents a major success story with regard to sustaining the benefits of the original projects over a relatively long time period. It is apparent that communities have been very resourceful, and in most cases successful, in resolving a range of problems related to system operation, repair, administration and financing, including the direct contracting of goods and services from the private sector. The team viewed the impact of the program on general sanitary and hygiene conditions at household and community levels as relatively positive, given the fact that the original program did not have an explicit health focus.

Regarding incorporation of positive lessons learned from the first phase, PROSAGUAS staff have made sincere and vigorous efforts to include new approaches and to modify existing elements of the program design. These modifications include adding an environmental education component to the program; extending the post-construction program presence in communities to six months; urging increased involvement of women

in project management; monetizing work on health and environment committees; creating a paid position for health promoters; and requiring universal installation of water meters.

2. The Current PROSAGUAS Program: Overall Progress

As noted, the overarching purpose of PROSAGUAS is the reduction of diarrheal disease in children under five year. The quantitative data for diarrheal rates presented by PROSAGUAS to the Evaluation Team was limited to the nine projects constructed to date, with a comparison being possible in only three of the cases, where prevalence has been reduced by 81.2%, 68.5% and 39% respectively, over the course of one year. This is significantly higher than the 26% target. In the absence of comparisons with control groups or other evidence that this is not simply a single year-to-year variation, the Evaluation Team cannot state with absolute certainty that this reduction is attributable to the interventions under the PROSAGUAS program. However, this scale of impact is consistent with what would be expected, given the quality and integrated nature of this WS&S and hygiene behavior change intervention.

The overall conclusion of the Evaluation Team is that the PROSAGUAS program is being successfully implemented and is meeting most of the targets set out for each objective. More specifically, PROSAGUAS is ahead of schedule in reaching the planned number of beneficiaries with installation of both water supply and sanitation infrastructure. Equally important, significant progress has been made in establishing viable and effective community management structures, including an increase in the participation of women, to ensure the sustainable operation and administration of water supply systems.

Considerable progress has been made in the overall health component, both in numeric terms and in qualitative impact on awareness, improved hygiene practices and changes in behavior among the target population. There has been slower progress in meeting targets of the environmental component, and it is unlikely that PROSAGUAS will meet its tree-planting goal. Limited progress has been made in providing technical assistance to communities following the construction phase. The objective of developing designs for future water supply and sanitation systems has not yet been addressed, as of the time of the evaluation.

Other points noted by the Evaluation Team include lack of attention to environmental impact mitigation during construction; the presence of graywater around households resulting from increased water use, especially in more urbanized areas; limited success in achieving synergy with other USAID SOs; ineffective use of the program monitoring system; and lack of support mechanisms for long-term technical assistance for community water systems.

Overall, the team found that PROSAGUAS has for the most part been successful in terms of achieving an appropriate balance between meeting physical outputs and investment in the qualitative, or “software,” aspects of project implementation. It is premature to draw any conclusions about the sustainability of community projects initiated under

PROSAGUAS. However, based on the strong performance of Phase I community-managed systems and the improvements since made in the program approach of PROSAGUAS, the team is confident that the current projects will be viable in the long term.

2.1 Summary Recommendations

The team considers PROSAGUAS, overall, a success. Nonetheless, there are a number of areas where weaknesses were identified and the program could be improved still further. The recommendations summarized below are based on the detailed findings and conclusions presented in the body of the report.

2.2 Recommendations for CARE

PROSAGUAS Program Management

- Improve program monitoring to analyze and disseminate the data in a timely manner and use the results to inform management decisions. Ensure feedback of monitoring data to both the field staff at regional level and the communities and individual households in a timely manner

- Improve horizontal lines of communication and provide mechanisms to share lessons learned across regional teams.

- Systematize, document and disseminate PROSAGUAS program methodology for a wider audience both nationally and regionally.

- Include the integration of relevant health, rural WS&S coverage and poverty indicators in community selection criteria.

Community Development and Health Education

- Strengthen involvement by water committees in project design and construction so that communities are more fully appraised of design decisions and strategies.

- Refocus the health monitoring and evaluation system to include greater analysis of health results and ensure feedback to the community and individual households.

- Revise the KAP surveys to identify the most important, highest-risk behaviors related to diarrhea incidence and focus educational interventions on those key behaviors.

- Assess the impact of the educational materials for different target populations (urban and rural) and adapt the materials as necessary to increase their effectiveness.

Water Supply and Sanitation Infrastructure

- Broaden the current PROSAGUAS menu of sanitation options to include technologies that are more appropriate for semi-urban areas.

- Begin to assess the financial and management impact of provision of wastewater services in more semi-urbanized locations (an inevitable offshoot of the program).

- Develop and promote the use of performance benchmarks for small-scale community-run utilities.

- Calculate and document the full costs for both the water and sanitation systems by specific project system and per beneficiary.

- Reduce the household subsidy for latrines; make household subsidies of water supply dependent on household income level.

Environment and Source Water Protection

- Retarget environmental activities, so that they reflect priority issues in the watershed, including graywater discharge.

2.3 Specific Recommendations for USAID for the Second Half of PROSAGUAS

- Consider amending the contract to significantly reduce or revise the results for the environmental objective. (Even if PROSAGUAS were able to meet the targets (number of trees planted), that would not notably contribute to the overall purpose of improving health--or source water protection, either.)

- Enforce compliance with USAID environmental regulations and work with PROSAGUAS to develop a specific checklist for all construction sites and beneficiary communities.

2.4 Broader Issues for USAID to Consider with regard to PROSAGUAS

- Review program goals related to relieving rural poverty. The majority of projects implemented under the first two years of the PROSAGUAS program are serving populations in what can best be described as small towns or "semi-urban" areas rather than truly rural. USAID should consider the consequences of selection of such project areas as it relates more generally to the goal of addressing (and reducing) rural poverty.

- Engage in policy dialogue with the Government of El Salvador. At present there is no coherent engagement by USAID of the GOES and other stakeholders regarding the reform of the *rural* WS&S sector as part of the broader water sector reform

process underway in El Salvador. USAID is one of the most important donors in the rural sector and CARE is probably the biggest single implementing agency, and certainly has some of the best experience (in terms of both engineering and software) in the country. By participating in the development of a sound rural WS&S sector, USAID will also be able to replicate and scale up the PROSAGUAS approach.

2.5 Opportunities for the Second Half of PROSAGUAS Using "Surplus" Funds

In its first two years of operation, PROSAGUAS has made rapid progress toward meeting the targets for WS&S service provision. Thus, there is a good chance that a considerable amount of funds will remain in the budget after all the targets have been met. The evaluation team has identified the following possible options for re-programming this surplus; the list is not exhaustive and these suggestions are not presented in any order of priority:

- Continue working with the PROSAGUAS approach and increase the number of WS&S projects and beneficiaries served under this current cooperative agreement.

- Use resources from the PROSAGUAS program (human, logistical and material) to provide a sanitation and hygiene complement to the AGUA project under SO4.

- Work together with ANDA and the Water Supply and Sanitation Network ("Red Nacional") to develop coherent and viable guidelines and norms for rural WS&S that could then be used by other donors, NGOs, and municipalities.

- Provide technical assistance to local municipalities, ANDA, the MOH and possibly others to begin to develop a national technical support program for community-managed or small municipal water systems.

2.6 Recommendations for Future USAID/El Salvador Strategy

In light of the success of the PROSAGUAS program, the Evaluation Team unequivocally recommends that the Mission continue to support water supply, sanitation, and health programs in its future five-year strategy. In addition, the team makes the following final suggestions:

- USAID programs should continue to use an integrated approach which combines water, sanitation and hygiene/health, particularly if the Mission chooses to implement future water programs through a Strategic Objective team other than the Health SO team.

- The Mission should seek to improve integration with other health SO3 programs and to look for synergy in achieving health impacts and preventing disease.

1 INTRODUCTION AND EVALUATION METHODOLOGY

1.1 Purpose of the Evaluation

The midterm evaluation and assessment of the El Salvador Rural Water and Sanitation for Health Program (PROSAGUAS) was carried out by a team from the Environmental Health Project (EHP), a USAID-funded technical assistance project, at the request of USAID/San Salvador. The purpose of the evaluation was to:

- Assess the current status and sustainability of benefits of earlier (pre-PROSAGUAS) USAID-funded rural water supply and sanitation (WS&S) projects;
- Evaluate current PROSAGUAS projects and assess progress to date in achieving expected results;
- Identify lessons learned from both past and current projects;
- Recommend improvements for the second half of the program;
- Identify possible inputs for future USAID strategic objectives and WS&S and health projects.

The evaluation addresses each issue and question contained in the Scope of Work (see Appendix A) and analyzes inputs, results, and effectiveness of each of the following major project components:

- Community organization
- Health and hygiene behavior change
- Water supply and sanitation infrastructure development
- Environment and source water protection
- Program management and administration
- Monitoring and evaluation
- Operations and maintenance (O&M)
- Coordination with other USAID strategic objectives

1.2 The Evaluation Team

The evaluation team was composed of a senior EHP staff member, two EHP consultants, and a USAID/Washington staff member. Together, the team represented a wide range of

disciplines relevant to water supply, sanitation, and health programs with significant experience with USAID-funded and NGO-implemented WS&S programs. All team members are fluent in Spanish and have lived or worked in Central America. The members of the team were as follows:

Eduardo A. Perez: team leader, engineer, project management – EHP staff

Morris Israel: engineer, environmental specialist – USAID/Washington

Patricia Martin: gender, community organization, and health specialist – EHP consultant

Harold Lockwood: rural WS&S specialist, O&M, sector reform – EHP consultant

1.3 Evaluation Methodology

The team used the following methods for collecting and assessing project-related information:

a. Interviewed CARE personnel at the national, regional, and project level (see list of persons interviewed, Appendix B, and guides for questions, Appendix C and D).

b. Reviewed project-related documents (see Appendix E).

c. Interviewed USAID personnel from the health strategic objective team as well as from the environment and democracy strategic objective teams.

d. Interviewed personnel from other institutional stakeholders, including agencies of the Government of El Salvador (GOES) and external donors.

e. Made field trips to 11 project sites from the previous project; also visited 8 project sites from the current PROSAGUAS program in various stages of completion in the three geographic regions of the country (see Appendix F, list of projects visited). Field trip activities included:

   - Interviewing various stakeholders (see Question Guide for previous-phase projects, Appendix C, and Question Guide for Current PROSAGUAS Projects, Appendix D):

     - members of the water management boards (j*unta* administrativa),
     - staff of the water users' associations *(*administrators, plumbers, health promoters, meter readers, etc.)
     - health committees
     - environment committees

    - water committees
    - Ministry of Health/ health clinic personnel
    - municipal officials

- visiting households to interview project beneficiaries; inspecting the water supply and sanitation infrastructure; observing household environmental health conditions (general cleanliness of house and yard, household water storage containers, handwashing stations, etc.)

- inspecting community infrastructure such as water storage tanks, wells, pumps, etc.

Selection of Phase I project sites to visit was based on communities geographically near to each other to maximize the number visited, representative examples of systems built by the three implementing NGOs, and representative samples of different types of communities and water system technologies. All communities participating in the current PROSAGUAS project at the time of this midterm evaluation were visited.

1.4 Organization of the Report

The report follows the proposed outline in the scope of work, with a specific focus on answering the questions contained in it. Following this introductory chapter, a background chapter provides the context for the project, including health, water and sanitation sector, and governmental reform of the public sector. The following chapter assesses the status of projects that were built with USAID funding prior to the PROSAGUAS program with an eye toward capturing lessons that may be applied to PROSAGUAS. The next chapter documents the findings of the PROSAGUAS program by key components. The last two chapters are overall conclusions/lessons learned and, the final one, recommendations.

2 BACKGROUND

2.1 Country Overview

El Salvador is the smallest and most densely populated country in the Western Hemisphere. It has a population of approximately 5.7 million in an area about 21,000 square kilometers, roughly the size of Rhode Island. The population is about evenly divided--50% living in urban settings, and 50% in rural areas. Population growth trends show El Salvador becoming even more urbanized in the next few years, with 25% of the country's population living in the Metropolitan Area of San Salvador, which comprises 14 municipalities. These highly urban municipalities have an average population distribution of 80% urban/20% rural.

El Salvador's Gross Domestic Product (GDP) showed positive signs of growth in the post-war period of 1988 to 1997, increasing at an average rate of 2.2% per year. GDP in 1997 was US$7,663 million (in 1990 US$). Measured in constant 1990 US$, GDP per capita in 1997 was US$1,293, only slightly higher than the 1988 value (US$1,274) due to a slow-down in economic growth, reported in 1996 and 1997. El Salvador has one of the lowest GDPs per capita in Latin America. There is great inequality in income in both urban and rural areas. However, the incidence of poverty is much greater in rural areas than urban.

2.2 Health Status

The USAID/El Salvador Strategy for 1997 to 2002 states that lack of access to water and sanitation is a major constraint to the improvement of health in rural areas, and that the large difference in infant and child mortality rates between urban and rural areas is closely connected to this lack of water and sanitation infrastructure.

The primary causes of child deaths (1- to 5-year-olds) are acute respiratory infections (28%), dehydration from diarrhea (24%), and measles (13%). In rural areas, 30% of infant deaths are due to dehydration from diarrhea; the comparable figure for urban areas is 22%. Respiratory infections and diarrheal diseases are the main infant and child health problems. In 1990, the reasons given for 80% of outpatient visits for children under five were acute respiratory infections (ARIs), intestinal infections, and intestinal parasites. Lack of access to potable water, inadequate disposal of sewage and garbage, and other contamination (of both in food and water) contribute to the spread of infectious and parasitic diseases. In a 1992 study in 80 sentinel locations, the prevailing diagnosis was diarrheal disease. The Metropolitan and Eastern areas had rates around 30%, while the other regions (Central, Paracentral, and Oriental) had rates between 40% and 42%.

2.3 Status of Current Water Sector and WS&S Sector

The primary source of water for El Salvador is the Lempa River. It is used to generate electric power, irrigate farmland, and supply drinking water. The principal user of water resources, although not the main consumer, is the electricity sector; hydrogenerating plants produce over 60% of the country's electricity. Irrigation of some 46,000 hectares of farmland consumes the largest proportion of water. Of the total water resources available to El Salvador, it is estimated that 63% comes from the Lempa River basin, while the remainder is drawn from other surface and underground sources. Human consumption of water is relatively low, averaging 120 liters/person/day in San Salvador and even less in the smaller municipalities and rural areas, due to reduced production capacity.

The dumping of untreated wastewater into bodies of water has seriously compromised water quality. Only 2% of all municipal and industrial discharges receive any kind of treatment before reaching a receiving body of water. Various studies indicate that some 90% of the country's rivers and streams are contaminated and are unsafe for human consumption without treatment. Water shortages are widespread, yet El Salvador does not have an agency responsible for overall management of water resources. What exists instead is the disjointed and unsustainable use of the resource within each sector.

It is estimated that only 57% of El Salvador's total population has access to clean water: 78% in urban areas and 25% in rural areas (El Salvador has the lowest figure for overall water coverage in Central America.) For those with access to piped water, there is a great deal of variation in level of service. Very few, if any, cities in El Salvador have water service 24 hours a day. Higher-income families, certain institutions, and private enterprises compensate for fluctuating service by using water storage tanks with automatic pumping systems. In the area of sanitation, some 60% of those living in urban areas nationwide have access to sewerage systems. In rural areas, the use of sewage systems is practically nonexistent, but the use of latrines accounts for a total 52% of the population. These factors have a direct impact on the serious public health and environmental sanitation problems that confront the country.

The problems of the WS&S subsector can be traced primarily to its management structure. The National Water and Sewage Administration (ANDA), which was created in 1961 as an autonomous public service agency reporting to the Ministry of Public Works, is responsible for providing services throughout the country. According to the original legislation, ANDA is the only institution authorized to regulate, standardize, plan, set tariff rates, and operate water and sewage services. Provision of water and sewage services, up to now, can thus be described as a centralized public monopoly. Operating in parallel, there are a growing number of private, informal operators not subject to any kind of regulation, along with various independent water systems in urban and rural communities, supported by external donations and lending programs. The Ministry of Health is responsible for sanitation services; latrine construction programs, for example, do not fall under the aegis of ANDA.

Neighborhood associations (*Juntas Vecinales de Agua*) in rural communities manage their own systems, usually built with external funding and without ANDA participation. A regulatory entity to oversee such WS&S operations, provide technical assistance, or monitor compliance with norms and standards does not exist in El Salvador.

ANDA operates 150 water and sewage systems in 181 of El Salvador's 262 municipalities, ranging from the country's largest, the Greater Metropolitan Area of San Salvador with 300,000 connections, to some of its smallest, towns with less than 200 connections. There are 78 municipalities that operate their own (urban area) systems, without ANDA participation. 72 of these are managed—de facto—by the municipal government directly, and 6 others are managed by other indirect means, such as an NGO, private concession, or mixed-economy model.

Two important characteristics of El Salvador with relevance to the WS&S sector are: a) a highly fragmented municipal administrative structure (in a small country with 262 municipalities with an average area of 80 square kilometers each); and b) a large number of small towns with populations under10,000 (89% of all urban areas fall into this category).

2.4 Status of Reform Efforts for WS&S Sector

A draft of a Water Law has been prepared, covering broad water resource issues. According to informal discussions with Salvadoran sector professionals, this law provides for the establishment of a water authority that will regulate the use of water resources and the allocation of water rights. Thus promoting a private market-oriented approach to the management of water resources.

The law to regulate the water supply and sanitation sector, a subsector of the larger water sector**,** is still being drafted. It is too early to tell what the nature of this law will be. However, according to Salvadoran sector professionals, there appears to be widespread agreement that the basic thrust of the reform will be decentralization using a variety of models of private, semi-private, indirect municipal administration and community based administration of WS&S systems. These models are based on present day experiences, including autonomous municipal companies, mixed economy companies, and other community-based associations, NGO's, and concession contracts to private companies.

2.5 Status of Public Sector Reform

The GOES has made significant strides in modernizing and reforming the country's public sector. Reform programs introduced by the government have redefined the concept of public service and are bringing about changes in areas were the government operated centralized state monopolies. Positive and profound changes have already occurred in such areas as energy, telecommunications, transport, ports, and financial services, limiting the state's role to regulation, policy making, and promotion.

Efforts to reform both the water resources sector and the WS&S subsector began early in 1995 with the creation by executive decree of the Coordinating Committee for Restructuring of the Water Resource Sector (COSERHI). The purpose of this new body was coordination of studies and activities to initiate the modernization of the water sector.

COSERHI, through its technical arm—the Coordinating Unit on Modernization (UCM)— and with special support from the Office of the Chairman of ANDA, worked closely with the Inter-American Development Bank (IDB) during 1997 and 1998 to prepare a loan proposal for US$60 million to launch a Reform Program for the water sector and the water supply and sanitation subsector. In mid-1998, the IDB approved this sectoral reform loan (the total amount of US$60 million includes a $43.7 million loan, donations, non-reimbursable technical assistance funds, and local counterpart funds).

Disbursement of funds, however, is contingent upon the presentation of two laws to the Salvadoran Congress. The first is a General Water Law to provide a framework for managing water resources, and the second, a law to provide the regulatory framework for the WS&S subsector. The GOES, through ANDA and with support from the President's Technical Secretariat (STP), has been actively involved in the process of preparing these two laws. (Two IDB-financed consultants have also provided assistance.)

The election of President Francisco Flores in the spring of 1999 brought about a dramatic change in the importance of the water sector. President Flores gave top priority to reform of the water sector and the decentralization of WS&S systems in small towns. This gave renewed impetus to reform efforts.

2.6 Purpose of PROSAGUAS

The purpose of the PROSAGUAS project, as described in the original USAID Request for Assistance (RFA)**,** is to reduce the incidence of diarrheal diseases in children under five years by providing communities with access to potable water supply and sanitation systems. The project, funded for a five-year period, was to be undertaken in municipalities meeting the USAID Mission Poverty Focus criteria, specifically those in the Model Municipalities category as determined by USAID i.e., San Francisco Menendez in the Department of Ahuachapan; Corinto, Department of Morazan; and Berlin and Jiquilisco, Department of Usulutan.

In addition to provision of water and sanitation facilities, USAID requested that promotion, organization, and health education activities be developed in the beneficiary communities. The project was to use a participatory approach to bring in community members and local government authorities as active participants in the construction, operation, utilization, maintenance, and administration of the new water and sanitation facilities.

The USAID RFA also recognized that other USAID/El Salvador activities designed to increase municipal government capacity often included construction of water systems but did not include community organization and health education activities. Therefore, USAID mandated that, where feasible, these activities should be added as part of the PROSAGUAS project to enhance the sustainability of the systems and the health impact for those communities.

3 ASSESSMENT OF PHASE I RURAL WS&S PROGRAMS

3.1 Introduction

From 1993 to 1997, USAID-funded a rural water supply and sanitation program which developed 80 rural systems, benefiting a total of 130,400 persons. (The program operated under USAID project numbers 519-0320 and 519-0394.) This overall program was implemented by three PVOs: Project Concern International (PCI), Creative Associates International Inc. (CREA), and CARE International/El Salvador. The experience gained in implementation of that first phase was instrumental in refining the design and implementation of the follow-up program, PROSAGUAS.

3.2 Diagnostic Study of Phase I Results

One of the tasks identified in the Scope of Work for EHP for the midterm evaluation of PROSAGUAS was to determine the lessons learned and sustainability issues related to water and sanitation systems constructed under the earlier phase. Beginning in 1998, as part of the PROSAGUAS program, CARE conducted a diagnostic study of 55 systems developed under the first phase. The results are presented in the document, *Agua Potable–Una Experiencia Para Compartir* (*Potable Water and Sanitation–An Experience to Share*), published in 1999. In that document, a number of findings and recommendations were made with respect to key issues and project sustainability. By identifying a short list of systems with specific needs, the diagnostic study served as the baseline document for objective 8 of the PROSAGUAS program, the objective which focuses on technical assistance to Phase I projects. The main findings of the study are as follows:

- On the whole, communities have been successful in managing and sustaining their water supply systems. Household latrines have been used and maintained since the project implementation phase—good sustainability in that regard.
- Legalization of community management structures was a key factor for sustaining services in the medium-term.
- There has been an overall positive impact on the health status of communities benefiting from RWSS systems, with improved personal and household hygiene conditions.

The most notable weaknesses or deficiencies common to many of the systems are as follows:

- Few women participated in management of the systems; if they did have a role, they were generally in very low-level positions.

- Health committees formed during the project did not receive follow-up support on a permanent basis.
- There was no environmental component to oversee the protection of the water source.
- Technical knowledge and skills in design, operation, and repair of the water supply systems were not transferred successfully to communities.
- The managerial and administrative capacities of communities were weak; they were not able to improve overall operation of their systems and ensure financial sustainability.
- The program lacked long-term external support, or a back-up mechanism, to provide communities with the necessary assistance and guidance for a range of technical and social issues that would inevitably arise.

Based on these findings from Phase I, USAID and CARE applied some of the key lessons in the design of the current phase, both in terms of general program design or focus as well as quite specific operational elements. For example, the program design included installation of household water meters in all systems, an increased number of women on various committees, and an environmental component for long-term protection of the water source.

3.3 Phase I Evaluation by the EHP Team

The Phase I portion of the PROSAGUAS midterm evaluation was set up to complement the findings of the diagnostic study mentioned above and to validate the conclusions, given the benefit of two additional years of water system operations. Due to the limited time available to the EHP team in the field, the observations and findings presented in this chapter represent an assessment and analysis of specific community projects from the previous phase, not a qualitative judgment of the project as a whole. In general, the assessment of Phase I systems provides a rare opportunity to review water systems that have been functioning for six or seven years. The communities visited by the Evaluation Team are summarized in the following table:

Table 1. Communities Visited by EHP Team

Community	Municipality/ Department	Executing Agency	Year	COVERAGE OF SERVED POPULATION AS % OF TOTAL COMMUNITY	
				AT COMPLETION	JULY 2000
El Señor	Quetzaltepeque/ La Libertad	CREA	1994	100	60
Pandeadura	Tacuba/ Ahuachapan	CREA	1995	100	97
El Sincuyo	Tacuba/ Ahuachapan	CREA	1996	100	72
La Puebla	San Matías/ La Libertad	CREA	1995	57	58
Rosario Tablón	Tenancingo/ Cuscatlan	PCI	1997	81	69
Conquista	Suchitoto/ Cuscatlan	PCI	1998	100	100*
Montepeque**	Suchitoto/ Cuscatlan	PCI	1996	N/A	N/A
El Palón	Lolotique/ San Miguel	CARE	1996	97	94
El Jalacatal	San Miguel/ San Miguel	CARE	1998	86	86
San Matías	Ciudad Barrios/ San Miguel	CARE	1996	100	100
Teponahuaste	Ciudad Barrios/ San Miguel	CARE	1997	95	N/A

* There was a 25% reduction in community size due to security concerns.
** Standpipe system

3.3.1 Overall Findings

The overall conclusion of the Evaluation Team is that the Phase I WS&S program represents a major success story with regard to sustaining the benefits of the original projects over a relatively long time period. It is apparent that communities have been very resourceful, and in most cases successful, in resolving a range of issues such as system operation, repair, administration, and financing—including drawing up contracts with private vendors for goods and services. This conclusion is particularly noteworthy as some of the technologies for water supply (e.g., electrical pumps) and sanitation (e.g., composting latrines) are relatively complex and costly to sustain.

Equally important, the Evaluation Team agrees in general with the findings, analysis, and recommendations of the PROSAGUAS diagnostic study. The team is of the opinion that by undertaking that study, CARE was successful, with a few exceptions, in identifying the most critical issues and shortcomings of the initial program phase. With the benefit of another two years of operational history, the Evaluation Team now found that most of

the conclusions reached in 1998/9 still hold true today, with only a relatively small number of changes.

Technical Issues

In terms of technical performance of systems, a majority of the communities have been able to maintain water supply benefits at end-of-project levels for the original beneficiary population. Almost every community organization has been successful in carrying out some type of repair to its system, mainly without assistance from CARE. In a minority of cases, the water supply schemes have partially failed due to poor construction (El Jalacatal) or a lack of understanding of the system design and inappropriate technology choice (El Señor), or failed completely, due to external factors such as Hurricane Mitch (San Matías).

Population Growth

The diagnostic study did not examine the issue of whether or not community organizations have been able to expand to keep up with population growth. The Evaluation Team looked into this question. In general, while new connections have been made in almost all cases, the overall coverage levels as a proportion of total community population have not kept pace with community growth (from natural population growth and migration).

Household Benefits

Benefits to individual households from correct use and up-keep of latrines (both VIP and composting types) have generally been maintained at, or near, end-of-project levels for the original beneficiary population. Unfortunately, sanitation benefits have not been extended to all new households as population grows, except in certain localities where progress was made due to other donor interventions (i.e., the E.U. latrine construction program in Pandeadura).

Given the overall ability of communities to maintain WS&S services in the medium term, the Evaluation Team considers the technologies employed appropriate for the context of rural and peri-urban El Salvador. The areas served typically have high population densities, generally well developed physical infrastructure (road access, electrification), and a significant proportion of the population engaged in, or having access to, the formal cash economy.

Community Organization Structure

The water management boards, which are responsible for management of systems, have been able to continue operating at end-of-project levels in most communities visited by the Evaluation Team. In several cases, membership of these community organizations has changed through a democratic process, and the majority of the water management boards are functioning now as effectively as when first formed. The Evaluation Team is

of the opinion that the establishment of formal, legalized organizations, with title to the physical infrastructure and clear operational guidelines (*estatutos*), are critical factors in ensuring project sustainability. In those cases where legal title has not been clearly established, the lack of documentation could pose a threat. In La Puebla, for example, having legal papers establishing community ownership of the assets successfully stopped a threat by the local mayor to take over the system infrastructure.

Finance Issues

In most Phase I communities visited by the Evaluation Team, the tariff collection system has been well administered, resulting in a surplus income which has been put into savings accounts for repairs and maintenance in the future. Several communities have made substantial investments in their systems (El Señor, El Sincuyo, Pandeadura). In some cases the total savings built up over time have been very substantial, running into the hundreds of thousands of Colones (Pandeadura, El Señor, El Palón). A smaller number of communities have been less successful in building up capital reserves (San Matías, Teponahuaste, La Conquista). These communities generally have smaller total populations, are more rural in nature, are not fully integrated into the formal cash economy, and usually consist of systems that do not rely on electricity. Typical tariff rates in those communities are substantially lower than in the larger, more complex systems (5 or 10 Colones per month as compared to 45 or 50). Other factors that limit the capacity to save money include less continuity of service, absence of household water meters, and less willingness on the part of the water management board to collect tariffs.

Health Results and Health Committees

In the majority of Phase I communities visited by the Evaluation Team, there were no health committees as such established after the project execution phase. Surprisingly in two of the smaller, more rural communities (San Matías and Teponahuaste), the health committees are still active after four and five years respectively. This is explained by the fact that the both the water management boards and health committees were incorporated into a pre-existing legal community structure (Asociación de Desarollo Comunal – ADESCO).

There have been mixed results in maintaining the health and hygiene behavior benefits provided during the initial period of project implementation. The main benefit has been adoption and use of household latrines. The most critical hygiene practices observed by the team included poor handling and storage of household drinking water, lack of drainage for household greywater, and unsafe disposal (or absence of disposal) of children's excreta. Having highlighted these concerns, it should also be stated that the Phase I program appears to have had an overall positive impact on health conditions which is especially remarkable considering that the focus of the program was on increasing access to WS&S facilities and not specifically improvement of health, in contrast to the current phase which does specifically target health benefits.

3.3.2 Critical Issues Arising from Phase I

Most of the findings are in agreement with and validate the main conclusions of the PROSAGUAS diagnostic study. However, there are a number of important issues that were not emphasized in the study or have become relatively more important in the last two years. These issues have implications for modification of the remainder of the PROSAGUAS program (due to end in 2002) as well as for USAID's longer view of rural WS&S provision in El Salvador and regionally:

- Increased fees for electricity have forced many communities with electro-mechanical pumps to increase their monthly tariffs; that situation was anticipated in the diagnostic study. Recently, however, the central government has threatened to end subsidies for electricity in rural areas. That would be a potentially disastrous development and could push many economically fragile systems over the edge, especially in communities that cannot afford a significant increase in tariffs.

- The lack of general technical information, know-how, and skills flagged in the diagnostic study seems to be an even more pressing concern for Phase I communities today (a year later). Indeed, this lack of involvement of water management boards is already causing problems for community management of current PROSAGUAS systems (see Section 4.3 in the next chapter.) There seems to have been a reluctance on the part of the NGO technical staff in the earlier projects to involve communities in a meaningful way from the outset of the activities, thereby allowing them to act as "co-managers" of the whole process. The lack of understanding of system design, procurement channels, construction, and maintenance was repeatedly stated as a constraint to sustainable management (in Pandeadura, El Señor, El Sincuyo, El Palón, El Jalacatal, and Montepeque).

- Following on the previous observation, there is an overwhelming and unequivocal demand for long-term external support, or a back-up mechanism, to give communities assistance and guidance in a range of technical, administrative, legal, and social issues. This point was raised in the diagnostic study, and USAID/CARE developed a limited response in the form of technical assistance for about 18 to 20 communities of the previous phase (Objective 8). However, given the scale of the demand (i.e., all rural WS&S projects regardless of implementing agency) and the need to institutionalize this type of support over the long term, a much more comprehensive solution is required at the national level.

3.3.3 Lessons Learned from Phase I Experiences

PROSAGUAS program planners and implementers have incorporated lessons learned from the first phase in the current program. They have made sincere and vigorous efforts to include new approaches and modify existing elements of the program design. The diagnostic study was very useful in identifying key problems from Phase I, and implementers of PROSAGUAS have also shown a great willingness to continue to

modify its approach on the basis of experiences from the earliest communities in the current program.

It is clear from visits to communities in the current phase that the PROSAGUAS program has incorporated many positive aspects both in program design and operational activities. These changes include the environmental educational component, extending the post-construction project presence to six months, increased involvement of women in project management, monetizing work on health and environment committees, creating a paid position for health promoters, and installing household water meters in all project communities.

3.3.4 Conclusions

All of the examples of lessons from Phase I and design modifications mentioned above are signs of positive progress. PROSAGUAS should be encouraged to continue on the same path for the duration of the current program. Particular attention should be paid to the three critical issues listed in Section 3.3.2. Indeed, the single most pressing need is long-term back-up for rural communities, as mentioned in the third bullet.

There is a clear need to establish some type of support mechanism or clearinghouse through which communities can get access to reliable sources of information or referral to other organizations. Several possibilities to explore with regard to such a support mechanism include ANDA, the MOH, municipal governments, NGOs and the private sector, or some combination of these organizations and institutions working together in combination. Dealing with this issue of long-term support or back-up is an important factor for sustaining benefits USAID has achieved through expenditure of tens of millions of dollars in the rural sub-sector to date. The solutions are long-term, but both USAID and CARE need to begin thinking through the issue now. The rich and varied operational experience gained in both program phases is a good place to start.

4 EVALUATION OF PROSAGUAS: FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

This chapter provides the detailed findings, conclusions, and, recommendations of the PROSAGUAS project at midterm. It is broken down into sections dealing with overall project management, implementation at the community level, community organization, health programs, water supply and sanitation infrastructure, and environmental management at the local level.

4.1 Program Management and Administration

4.1.1 Introduction and Definition

The Evaluation Team looked at CARE's technical capacity to manage the PROSAGUAS program in the most efficient and effective manner possible. The team also looked at the broader issues relating to coordination of PROSAGUAS with external agencies and programs. This section discusses the overall progress of the program in reaching its targets (by objective) as well as presenting a qualitative assessment of outputs to date.

4.1.2 Progress in Meeting Overall Program Objectives

To assess overall progress the team reviewed quarterly and annual reports prepared for USAID, as well as up-dated information presented by the PROSAGUAS team at the beginning of the team's assignment.

PROSAGUAS's *program purpose* is the reduction of diarrheal disease in children under five years of age, with particular reference to (a) the incidence, (b) the prevalence, and (c) the mortality rates attributable to diarrheal diseases in the target population. Quantitative data for diarrheal rates presented by PROSAGUAS was limited to the nine projects constructed to date, with a pre- and post-project comparison being possible in only three project communities, where prevalence has been reduced by 81.2%, 68.5%, and 39% respectively, over the course of one year. This is a significantly higher reduction than the 26% target figure. In the absence of control groups or other evidence that this is not simply a one-year variation, it is not possible to state with absolute certainty that this reduction is attributable to the effect of the PROSAGUAS program. However, the impact is consistent with what would be expected given the quality and integrated nature of the WS&S and hygiene behavior change intervention. The Evaluation Team fully expects the PROSAGUAS program to achieve these major results in other communities.

Progress to date (half-way through the five-year program) with regard to the 12 main program objectives is presented in the table below; it should be noted that progress here

is identified by major objective and does not include all the relevant sub-indicators, which are given in Appendix F.

Table 2. Assessment of PROSAGUAS Program Progress, as of July 2000

OBJECTIVE	UNIT OF MEASURE	PROGRESS TO JULY 2000	TOTAL PROGRAM TARGET	OBSERVATION/DESCRIPTION
1. Increase access to water supply	Person	30,775	45,000	68% of target in 9 systems
2. Sustainable water supply	System	4	(18 – 20 current estimate)	9 communities completed to date – most are newly on-line
3. Sustainable water sources	System	4	(18 – 20 current estimate)	Physical tree-planting program objective is behind schedule (24%)
4. Increase access to h/h latrines	House-hold	4,032	4,700	86% of target in 9 systems (new objective is to reach up to 11,000 h/h)
5. Adoption of improved hygiene practices	House-hold	4,077	9,000	45.% of target achieved – multiple areas addressed
6. Provide assistance to Health Promoters	Person	12	48	25% of target achieved
7. Promote adoption of other health practices	House-hold	3,660	9,000	41% of target achieved – wide range of practices to address and measure
8. TA to previous USAID projects	System	17	48	35% of target achieved--this objective has been slower to start up than anticipated
9. TA to other communities	System	0	Maximum of 5	Objective not clearly defined; independent role of DASAGUAS
10. Measure program impact on diarrhea	Communi-ty	23	No pre-defined number.	To date 9 systems constructed serving 35 distinct communities or barrios
11. Design of futureWS&S systems	System	0	4	Limited importance for PROSAGUAS management
12. Program monitoring, evaluation and reporting	Reports	9	18	100% compliance in reporting progress to USAID.

Note: *System* is used to describe the physical water supply infrastructure, which can often include multiple communities (up to as many as 10 in the largest), hence the discrepancy between no of systems and number of communities.

It was not possible (and was beyond the scope of work) for the Evaluation Team to review and assess the indicators and sub-indicators related to each objective. The following findings do relate, however, to one or more of these principal objectives of the program. It was also not possible to draw any quantitative conclusions, and thus the team's observations are for the most part qualitative, drawing where possible on hard data provided by CARE.

The Evaluation Team's overall conclusion is that the PROSAGUAS program is being successfully implemented and is meeting most of the stated targets by objective. More specifically, in terms of physical infrastructure, PROSAGUAS is ahead of schedule in reaching the planned number of beneficiaries, 45,000 for water supply and 4,700 for sanitation. Equally, it is clear that significant progress has been made in establishing viable and effective community management structures, including increased participation

of women, to ensure the sustainable operation and administration of water supply systems.

In general the Evaluation Team found that considerable progress has been made in the health areas (Objectives 5, 6, and 7), both in numerical terms (numbers of committees formed and promoters trained) as well as qualitative effect. The Evaluation Team noted that these interventions are having an impact on the level of awareness and hygiene practices among the target population. In contrast, progress has been slower than expected in reaching the targets in the environmental component. It is clear that PROSAGUAS will not meet the tree-planting goal (Objective 3). And even where trees have been planted , the desired impact—source water protection—is rarely occurring.

Progress to date on Objectives 8 and 9—technical assistance to Phase I project communities and to other communities with USAID funding—has been very limited. No progress has been achieved in Objective 11, developing designs for future water supply and sanitation systems.

A monitoring and reporting system (Objective 12) has been established by PROSAGUAS; information and data have been gathered and fed into quarterly and annual progress reports for USAID.

While program progress is considered positive overall, the Evaluation Team has some concerns about certain aspects of project implementation and the appropriateness of the some of the original objectives. These issues are addressed in the findings and recommendations sections which follow and in the conclusions and recommendations, the last two chapters of the report.

Evidence from the midterm evaluation suggests that PROSAGUAS has been successful in achieving an appropriate balance between meeting targets for physical outputs under the agreement and meeting the qualitative, or software, goals as well. Obviously it is premature to draw any definitive conclusions with regard to the sustainability of Phase II projects. The Evaluation Team feels optimistic in that regard, however, given the generally strong performance of community-managed systems that were implemented under Phase I of the program.

4.1.3 Findings

Financial Management

Comprehensive and professional accounting and financial tracking systems have been put in place by CARE. These systems are largely based on financial accounting programs developed by CARE International for use globally; they are designed to satisfy the stringent demands of an external audit. Currently the San Salvador office is in the process of upgrading its main financial information management software system. The existing system is very good at collecting and tracking large volumes of data, but it is not

flexible enough to provide senior management with meaningful analytical models; for example, the total program cost per community or cost per beneficiary.

As part of the financial tracking system, the PROSAGUAS management team is also able to account for matching fund contributions on the part of the community beneficiaries. Contributions in the form of cash, labor, and in-kind services or materials are recorded at project level; and that information is reported to the central office and entered into the computerized system. Contributions are tracked both for the community as a whole, in the case of the water supply system; and for each individual household, in the case of latrines. Equally, PROSAGUAS is able to track and separately account for counterpart funding from other national and international agencies (e.g., E.U., municipalities, Rotary Club, etc.).

Personnel Management and Communication

With respect to personnel management and administration, the team was equally impressed by the professionalism of both the central office in San Salvador and the regional offices. There is a clear understanding of roles and task-sharing between the two senior managers (program manager and deputy manager). Management team meetings are held monthly in San Salvador with all regional coordinators to monitor overall progress. Regional team meetings are held every week, with contact- and information-sharing facilitated via e-mail between San Salvador and all three regions.

Vertical communication between senior management and field-based teams appears to be good; however, horizontal information sharing and communication among the three field-based teams is more problematic. It is apparent that field promoters from one office are not regularly informed as to how their colleagues are implementing projects in other regions. This limits cross-fertilization of ideas or sharing of innovative approaches, such as the household level diarrheal monitoring activity in Múltiple La Loma.

Program Reporting and Monitoring

According to the latest benchmark updates from CARE, the reporting and planning systems of the PROSAGUAS program are fully established and producing the anticipated outputs in terms of data collection (17 communities until March 2000), as well as providing USAID with regular progress reports. There is some concern over the slow start-up of the KAP studies:only two have been completed to date. (Information from KAP studies is key to targeting health education messages.) There is also concern about the time lag in making baseline and evaluation data available.

The Evaluation Team found that CARE has developed relatively sophisticated systems for collecting large quantities of data in the PROSAGUAS program, mainly relying on the Monitoring and Evaluation Unit of the central CARE office. However, the data collection mechanisms do not allow for timely feedback to field-based project staff, much less to beneficiaries. The focus of this monitoring system seems to be geared toward reporting on indicators to satisfy the donor's requirements. There was little evidence that

this bank of raw data was being analyzed systematically for the purpose of informing senior managers about the strengths and weakness of the program processes and impacts.

Management Absorption Capacity

Although the team was primarily engaged in an evaluation of the PROSAGUAS program, it was possible to discuss the implications of activities carried out by CARE under other USAID-funded programs (e.g., MAS, AGUA) and to see first hand how the organization has scaled up its management and field activities in response to this increased workload. In general, the EHP team was very impressed by CARE's capacity to expand its operations and to bring on new staff. It is noteworthy that despite this relatively recent expansion of programs, CARE has continued to recruit high-quality staff, demanding exacting standards of professionalism and commitment, and has continued to provide them with the necessary orientation and training. This capacity has undoubtedly been a key factor in CARE's ability to expand operationally without compromising the quality of outputs. The Evaluation Team is not in a position to predict whether CARE could expand further beyond its current workload.

Liaison and Coordination

CARE has been very effective at leveraging funds for project-specific operations from other organizations (e.g., European Union, Rotary Club, municipalities). Insofar as this was one of the key community selection criteria set by USAID in the RFA, the PROSAGUAS program has been very successful. It has also been successful in forging local-level alliances, particularly with municipalities and the MOH promoters at the local level, with numerous specific examples of fruitful collaboration during the project execution phase.

However, the Evaluation Team feels that PROSAGUAS has been less effective in forging strategic relations with other externally funded programs and even some internally funded, i.e., with other USAID-funded programs within CARE. For example, coordination and synergy with the USAID-funded environment project (SO4), "AGUA", also managed by CARE, has been much more limited to date than was originally anticipated by the Mission. In addition, very limited integration or even communication was noted between PROSAGUAS and the Mission's urban development project (SO2) being managed by RTI. That represents a lost opportunity, especially since many PROSAGUAS project experiences are quite relevant for small towns.

It appears that from the start, the PROSAGUAS program has had a more conciliatory position about working with ANDA, both at the operational level and with senior management. The EHP team feels that this is very beneficial and encourages further engagement with that key agency.

Apart from the close working relation with CALMA, a key PROSAGUAS sub-contractor, the Evaluation Team observed very limited involvement by local NGOs. The inclusion of local NGOs in project execution appeared to be based on existing relations

between the community and those particular agencies, with PROSAGUAS taking advantage of such pre-existing linkages (e.g., ACID in El Palón, AGAPE and CARITAS in San Matías). Based on the EHP team's field visits, PROSAGUAS does not appear to be actively or systematically engaging local NGOs in order to strengthen institutional capacity or with a view to replicating the project's approach elsewhere.

Relations with ANDA – Gerencia de Sistemas Rurales (GSR)

The team was impressed by the generally positive, open, and mutually supportive relations between PROSAGUAS and the GSR (the rural division of ANDA), both at operational and managerial levels. It is clear that wherever possible PROSAGUAS consults with the director of GSR on key decisions and consciously adheres to the agency's norms and procedures, where these are clearly established. The GSR, like ANDA as a whole, is going through a period of great uncertainty while the various legal reforms are in progress, GSR also has limited technical and human resource capacity. Despite these limitations it is particularly positive to note that PROSAGUAS has made efforts to include the GSR as a partner of the program and is building a solid basis for future relations.

It is clear that GSR is in general agreement with the PROSAGUAS project implementation methodology and its approach to service provision (i.e., level of service), even going as far as to cite the project as an exemplary model in terms of community participation and management.

4.1.4 Conclusions and Recommendations

On the basis of the findings as presented above, the Evaluation Team concludes that in general the PROSAGUAS program is being well managed and administered, with high-quality and dedicated professional staff at both central and field level. CARE has successfully put into place sound financial, accounting, and reporting systems which make it possible to monitor program activities closely and measure progress. Furthermore, CARE successfully managed to scale up operations to include two new USAID cooperative agreements last year (MAS and AGUA), without having significant negative impact on the PROSAGUAS program.

However, the team did observe certain specific weaknesses within the overall program management of PROSAGUAS which, if addressed, would contribute to improving the performance in the remaining time period of the cooperative agreement. To this end the EHP team has the following recommendations for improving overall management and administration:

- **Financial Tracking.** The new FIS-SCALA financial information management system should be used for greater flexibility in tracking and analysis of financial data. Specifically, the Evaluation Team recommends that PROSAGUAS configure the new system in such a way that it will allow calculation of costs per system and costs per beneficiary by system or latrine type. The calculation should make it possible to

distinguish between direct and indirect program costs, other cash contributions, and in-kind (materials and labor) inputs. Reaching that level of detail is critical if CARE is to engage in the sector policy reform process with ANDA or other international agencies. Transparent and credible financial data will be an important part of informing that debate at the national level.

- **Internal Communications.** PROSAGUAS management should make an effort to improve horizontal lines of communication and develop mechanisms for field-level staff from the three regional offices to share experiences. That would provide support among the regional staff and might bring a greater degree of creative innovation and consistency of approach within the program. The team recommends that regular meetings be held for the exchange of information and ideas among the three regions.

- **Program Monitoring.** Given the quantity of data available to PROSAGUAS, the team strongly recommends that greater efforts be made to analyze this data bank and use the results to inform management decisions and adjust program direction and focus as necessary. The analysis of data should concentrate on qualitative aspects of program performance as well as numerical progress.

In terms of the relations between PROSAGUAS and ANDA/GSR, the Evaluation Team believes that significant progress has been made to involve the state institution in a meaningful way as a partner in the program. Moreover it is clear that PROSAGUAS has been able to establish the necessary degree of trust and communication between the two institutions, which bodes well for the future of the sub-sector. As one of the principal nongovernmental actors in rural water and sanitation, CARE is in a good position to play a critical role in discussions, as is USAID. Together they will be able to participate knowledgeably in discussions and have an influence over aspects of the reform process.

- **Engagement with ANDA.** The Evaluation Team recommends that PROSAGUAS continue this positive engagement with ANDA and become active in the policy debate with regard to sector reform as far as possible within the existing program terms of reference set out by USAID.

4.2 Community-Level Project Implementation

4.2.1 Introduction and Definition

In the context of the PROSAGUAS program, community-level implementation is taken to mean the combined approach, or methodology, which is applied at the individual project level, referring to one water supply system; in most cases, a single system serves more than one community. As such, "project implementation" consists of a series of activities and inputs which, when applied in a particular community or group of communities, determines the end products contained in a project, including the physical water supply and sanitation infrastructure, health benefits, and social and organizational

outputs. The project implementation process has a diverse range of considerations, including the following:

- Material and physical inputs
- Project selection criteria
- Implementation duration and time management
- Quality and quantity of human resources
- Implementation approaches
- Coordination at the local level, participation and ownership
- Training and transfer of knowledge and skills
- Monitoring and modification of methodology

An assessment of some of the particular components is taken up in other sections of this chapter (i.e., health, community organization, and WS&S systems), however this particular section presents the findings of the Evaluation Team with respect to some of the more qualitative issues in community-level project implementation.

4.2.2 Objectives and Indicators

In general, no individual objectives, indicators, or benchmarks were established in the program design to measure the quality of these aspects of project-level implementation. As such, the most relevant program objectives are those most directly concerned with project implementation and sustainability and include:

Objective No. 1: to increase access to potable water supplies;
Objective No. 4: to increase access to latrines;
Objective No. 2: to ensure sustainable water supplies via adequate operation, maintenance, and administration;
Objective No. 5: to ensure the adoption of proper hygiene practices and proper latrine use and maintenance practices.

4.2.3 Findings

Project Implementation Cycle

The average project cycle has been a period of 18 months. The Evaluation Team felt that this is a reasonable period, given the magnitude and complexity of some of the individual projects. The rhythm of project implementation is usually dictated by progress (or delays) in the physical construction, which in several cases was caused by the lead-time necessary to import specialized equipment from the United States (for example, in El Jalacatal, El Señor).

The current practice of extending the post-construction project presence for up to six months is a very positive modification in the overall PROSAGUAS program. It was also

observed that in a number of cases, CARE was flexible in terms of extending this period where communities required additional and targeted assistance.

Project Implementation Teams

The Evaluation Team was consistently impressed by CARE field personnel's level of professionalism and dedication to the job. Staff often go well beyond the normal call of duty in terms of hours worked and making visits to communities on weekends. The strong performance and genuine dedication of CARE staff was repeatedly mentioned during the course of meetings with the water management boards and is obviously greatly appreciated.

The practice of assigning one fully integrated field team to a particular project for most of the implementation phase is a very positive factor in the community development process, especially in terms of continuity. Associated with this is the CARE approach of using a four-person implementation team in every project. The implementation team includes an environmental promoter, health promoter, social organizer, and project engineer.

Community Selection Criteria

At the regional level, PROSAGUAS staff has been consistent in applying criteria in the selection of communities for inclusion in pre-feasibility studies. The field staff has also been rigorous in assessing community requests for assistance based on the selection criteria as defined in the program documentation. As the overall PROSAGUAS goal is to improve health, it is surprising that the community selection criteria do not include health conditions or poverty indicators.

Documentation of Project Methodology

In the course of visits to the regional offices and discussions with program field staff, the Evaluation Team found that PROSAGUAS has been successful in documenting most of the project implementation methodology and approaches. The team was generally impressed by the scope and quality of the various training and extension modules developed for both PROSAGUAS staff and community promoters. These are discussed at greater length in Sections 4.3 and 4.4. CARE has made efforts to capture and systematically record the various elements of project implementation in a document entitled, "*Estrategias Operativas para la Implementación de PROSAGUAS."* That document is the nearest approximation to an official implementation guide which explains the "PROSAGUAS approach", and it appears that most field staff use it regularly as a reference tool.

Community Agreements

The Evaluation Team was generally impressed by the quality and level of detail of the agreements drawn up between CARE and the community. More often than not these

contracts are multi-institutional documents that include agencies such as ANDA, MSPAS, the Ministry of Education, and local municipalities. The contracts are very inclusive and detailed with respect to the execution of projects, clearly setting out expected activities, obligations and inputs of all parties, including formation of committees, tariff systems, and health and environmental concerns. Details of post-project arrangements are less explicit; they tend to be much more open-ended, partly due to uncertainty about which mechanism or institutions will be involved in long-term support to communities.

Community-Level Monitoring

The PROSAGUAS program has put into place systems to monitor activities and impacts at field level. These systems have been successful in assessing the physical progress of individual projects, as well in the collection of data for reporting purposes. Overall the Evaluation Team noted that this monitoring process is mainly designed for reporting to USAID; its use for program or project adjustment is limited, or at least not carried out in any systematic way. Of even greater concern is that there appears to be little or no feedback of monitoring results to the communities or households involved. One example is the diarrheal data, collected by CARE's Monitoring and Evaluation Unit (UME) but not reported back to either project staff or communities. The positive exceptions to this are in La Loma and Cara Sucia, where health promoters have introduced a very innovative household-level diarrheal monitoring system.

4.2.4 Conclusions and Recommendations

On the basis of the field visits and discussions with community members and PROSAGUAS field staff, the Evaluation Team concludes that the program has developed a very effective implementation methodology. The approach adopted by PROSAGUAS is progressive, allows for a high degree of community participation, and is effective in ensuring the integration of both social and technical components during the project execution phase. The team is also of the opinion that the quality and dedication of PROSAGUAS field staff have been key factors in the success of the projects to date.

Regarding the selection process, however, the Evaluation Team concluded that the final community selection process in the first two years of PROSAGUAS has been consistently geared towards larger, generally more resource-rich, semi-urban communities. Although providing services to these communities is not without merit, their selection represents a distancing from the original target population of the program—defined as areas of rural poverty with communities of generally less than 2,000 inhabitants.

Two areas where the performance of the PROSAGUAS program could be improved still further are as follows:

- **Documentation and Dissemination of Methodology.** The strategic objective document developed by PROSAGUAS is clearly composed of disparate parts,

patched together; it does not address all issues in a systematic way. PROSAGUAS should be encouraged to complete this important document since it would be useful in assuring a consistent approach within the program and would also make it easier to disseminate information about PROSAGUAS's experience to a wider audience—nationally and regionally.

- **Community-Level Monitoring.** The Evaluation Team strongly suggests that the monitoring data currently collected by PROSAGUAS be made available to both the field staff at the regional level and the communities and individual households, so that community residents can be active participants in resolving their own problems, and regional staff can replicate successful interventions. Much innovative work has been done on community-based monitoring and corrective actions by the International Reference Centre for Water Supply and Sanitation (IRC) in The Netherlands, generally available in Spanish.

4.3 Community Organization

4.3.1 Introduction and Definition

According to PROSAGUAS strategy guidelines, communities should participate in:

- selecting water service levels and latrine types
- determining the administrative model for the water system (community, municipal, ANDA, or mixed)
- developing the system design
- protecting water sources
- providing labor and local materials, and material storage and control
- providing cash payments for a portion of the costs
- legalizing titles to water sources and land
- forming organizational structures, which include both men and women, to achieve and maintain health, water, and environmental objectives.

The initial organizational structures promoted by PROSAGUAS include water, health, and environmental committees, to be formed and trained once a community project has been deemed feasible; finally, a water management board is formed to administer the system, if the community administrative model has been selected. According to PROSAGUAS guidelines, members of the water management board should be drawn predominantly from the various committees. The PROSAGUAS social promoter, in coordination with the health and environmental promoters, discusses the functions of these committees and requirements; members are chosen or approved by community assemblies. PROSAGUAS guidelines emphasize the importance of trying to achieve the best possible gender balance in committee membership. They set a goal of at least 33% women on water committees and water management boards, they also seek similar representation of men on health committees, where women tend to predominate.

The water, health, and environmental committees generally stand for the 18-month project implementation period. After that, the functions of the water committee are usually assumed by the water management board, which is responsible for administration, operation, and maintenance of the system once it becomes operational. The health and environmental committees are not required to continue past the 18-month commitment of their members (though they may do so voluntarily), but according to the guidelines, efforts are made to ensure that the functions of these committees continue through local promoters paid by the water system, Ministry of Health (MOH) promoters, or other actors such as other environmental projects or NGOs.

The water committee organizes human, material, and financial resources during project implementation, and is also responsible for coordinating activities with the other committees. The health committee is responsible for educating community members in basic sanitation and measures to promote child health and reduce diarrheal disease. The environmental committee promotes protection of water sources through education, tree planting, and soil-conservation activities.

All committee members receive technical training related to their committees' area of responsibility, as well as leadership skills; all the program's training also incorporates sensitivity to gender. Committee members are trained in community participation and organization, leadership development, teamwork, and group facilitation, using the participatory SARAR methodology to empower committee members and promote replication of this empowerment throughout the community. The SARAR methodology emphasizes development of capacity to resolve problems, use resources effectively, and generally develop greater control by people over their own lives and environment. The five basic qualities promoted through the SARAR method are: Self-esteem, Association with others, Reacting with ingenuity to problems, Actualization, and Responsibility for sustainable solutions to problems. Training materials for all program components incorporate these elements.

Community work groups are organized during the construction period, and accounts are kept of the labor contributed by each beneficiary family. Service on committees during the entire project period counts as the membership contribution for the family (if two or more family members serve on committees, only one membership contribution can be claimed). It should be noted that at least one community, Los Conacastes, did not count service on the environment committee as the membership contribution, though most others apparently did.

4.3.2 Objectives and Indicators

Community organization and capacity-building are not independent objectives of PROSAGUAS; rather, they are the principal means for achieving and sustaining activities to reduce the incidence of diarrheal diseases in children under age five by providing access to potable water and sanitation. Thus community organization and capacity-building contribute to many of the 12 program objectives and their respective indicators, although they are not measured directly since indicators measure the results of

community actions, not the organizational process itself. The objectives to which community organization contributes most directly are several:

Objective 1: Increased access to potable water
Objective 2: Ensuring the supply of potable water through adequate management, maintenance, and administration
Objective 3: Ensuring the sustainability of water resources through management of micro-watersheds
Objective 4: Increased access to latrines
Objective 5: Ensuring the adoption of adequate hygiene practices and use and maintenance of latrines
Objective 7: Ensuring the adoption of other health practices which directly or indirectly impact the incidence, prevalence and mortality from diarrhea in children under age 5

While PROSAGUAS indicators appropriately focus on results rather than process, there are indeed a few benchmarks to track the organizational process. The following are benchmarks that mark progress related to community organization, through March 2000, as reported by PROSAGUAS:

- Number of water committees formed: 15. (Large projects have more than one committee, accounting for the difference between the 9 communities selected as of March 2000 and the number of committees.)
- In beneficiary communities, the number of women working in organizations responsible for water and sanitation systems is at least 33% of the total number of people who comprise these entities: 3 communities. (Six are programmed.)
- Number of health committees formed: 23. (See note for water committees above.)

4.3.3 Findings

Based on field visits and a review of documented results to date, PROSAGUAS has been very successful in promoting effective community organization and community capacity to manage water systems. It has also been successful in promoting improved sanitation, health, and environmental protection.

Community Management Structures

Water, health, and environmental committees as well as water management boards have been established as planned, largely following the program's strategic guidelines. The guidelines clearly indicate that community participation is understood to mean participation in decision-making and assumption of management responsibility, along with the contribution of labor and other resources. While this type of involvement has generally been achieved, there are some programmatic areas in which community involvement could be further strengthened. A major area where community involvement has been weak was mentioned to the Evaluation Team by people in several communities: they cited lack of adequate involvement in water system design and execution, such as

knowing the costs of materials and details of the design, equipment, and functioning of the system. Not being involved in the design and execution phase created a problem when they were faced with repairs, replacements, or expansion of their systems. (This comment was particularly frequent in interviews with those representing Phase I communities which had been in operation longer. The same issue may also pertain to the current implementation phase of PROSAGUAS.) Some community representatives also said they did not really have a voice in choosing the technology, a comment heard most often in reference to latrines.

Technical Assistance Needs

Another issue more evident in Phase I communities is the community water boards' need for a trustworthy source of technical, administrative and legal support. While the PROSAGUAS communities have received more training and greater support than those in Phase I, it is likely that with time they too will encounter problems which they may not be able to solve on their own. The degree to which legal issues have cropped up is noteworthy, particularly those relating to obtaining clear title to land and water sources. Water management boards have also faced technical and administrative problems which threaten the survival of their water systems, including problems stemming from inability to communicate effectively with their communities, particularly with regard to delayed or non-payment of fees. Inadequate tariffs and technical problems in maintaining water systems are also common among the older systems.

Working with Local Structures

To its credit, PROSAGUAS has made use of and built on existing organizational structures in the communities, primarily the Community Development Associations (Asociaciones de Desarrollo Comunal, ADESCO), which are legally constituted and recognized entities existing in most communities. Most have a history of trying to improve community conditions, and have been active in obtaining services such as electricity, improved roads, and water. In some Phase I communities the water system is legally owned by the ADESCO and is administered by a committee under the ADESCO, rather than functioning as an independent water users' association. Under PROSAGUAS, the water users' association generally has legal recognition and the system is owned by the association and administered by the water management board, independent of the ADESCO. This system of governance generally facilitates a more "entrepreneurial" focus, contributing to water system sustainability as a non-profit, but business-like, operation, apart from the broader community concerns of the ADESCOs. However, there is often significant collaboration between the ADESCO and the water management board. In Cara Sucia, for example, the ADESCO (which had owned and managed the old, now-defunct water system) donated the site of the old well to the new system, as well as the site for a new well; the ADESCO also collaborated in the construction of the office and storage facility for the new system. At a minimum, the ADESCO, when it exists, is usually the first point of contact with community leaders and constitutes the community assembly which selects and approves committee members, promoting strong community roots for the system.

The relationship between the water users' associations and municipal authorities varies. There has been an effort by PROSAGUAS to involve municipal governments, and there appears to be significantly more involvement than was evident in most Phase I communities. Among the PROSAGUAS communities visited, one was administered directly by the municipality (Conchagua), which had used and repaid CARE/COMURES loan funds to build the water system for Nueva Esperanza. The community is repaying the loan to the municipality over a much longer period, and will take over administration of the system when the loan is repaid. In Los Conacastes, the mayor of the San Francisco Menendez municipality has donated land for the water tank. He has also given support for construction of the well and water tank for Cara Sucia and has provided auditing services and advice on candidates for the water management boards for these communities. Relations are less close in some communities, however. In Corinto, the citizens living in the municipal seat voted to have no municipal government involvement in the management of their water system.

Relationships with local NGOs are limited. The only ones mentioned to the Evaluation Team were CALMA, which has been sub-contracted by CARE to support health materials development and training as well as monitoring/evaluation of health status, and Agape, a health NGO which collaborates informally in areas where it is working. Some health promoters belonging to other NGOs are also collaborating with PROSAGUAS communities. However, there does not appear to be any systematic effort to seek out and involve local NGOs.

Gender Balance

Gender balance is considerably better under PROSAGUAS than in the Phase I projects. The following table summarizes participation by gender on committees, as reported by community members, for the communities visited by the Evaluation Team for both the current phase and Phase I.

Table 3. Composition of Community Organizations, by Gender

Current Phase (Community/ Munic./Dept.)	Water Mgt. Boards		Health Committees		Environmental Committees	
	male	female	male	female	Male	Female
Istagua/S. Pedro Perulapan/Cuscatlan	1	3	16	15	6	2
Cara Sucia/S. Fco Menendez/Ahuachapan	6	5	5	37	7	0
Conacastes/S. Fco Menendez/Ahuachapan	5	4	7	9	2	3
La Loma/S. Pedro Perulapan/Cuscatlan****	21	16	82	35	2	14
3H/Moncagua/San Miguel****	6	6	34	57	14	20
Analco/Erequayquin/ Usulutan	8	4	5***	24		
Esperanza/Conchagua/ La Union	3**	2	2	3	2	3
Corinto/Corinto/Morazan	6	6			2	3
Phase I (Community/Mun./ Dept.)						
El Señor/Quetzaltepeque/ La Libertad	3	3	*		*	
Pandeadura/Tacuba/ Ahuachapan	25	0	*		*	
Sincuyo/Tacuba/Ahuach.	18	0	*		*	
La Puebla/San Matías/La Libertad	10	1	*		*	
Rosario Tablón/Tenan-cingo/Cuscatlan	5	2	*		*	
Conquista/Suchitoto/ Cuscatlan	6	1	*		*	
Montepeque/Suchitoto/ Cuscatlan	1	1	*		*	
El Palón/Lolotique/San Miguel	6	0	*		*	
Jalacatal/S. Miguel/S. Miguel	11	1	*		*	
San Matías/Ciudad Barrios/S. Miguel	4	1	2	5	*	
Teponahuaste/Ciudad Barrios/S. Miguel	5	1	**?**	**?**	*	

*No committee established.

**Water system administered by municipality; water committee helped organize work during the construction phase, then disbanded.

***Health and environment committee are combined into one.

****Data from PROSAGUAS July-September Quarterly Report for all committees (there are multiple water, health and environment committees); EHP team unable to get data for all committees during visit.

Based on these figures for projects visited by the team, participation in water management boards or water committees by women in Phase I projects averaged 28%, while women's participation averaged 47.5% for the "current phase" communities visited, nearly equal to men's and well above the 33% target. Conversely, male participation in health committees for the current phase communities averaged 39%.

While these numbers are impressive, they do not tell the whole story, particularly with regard to the level and quality of participation by gender. PROSAGUAS guidelines stress the need to seek active participation by both women and men as well as greater balance in numbers; therefore, measures of the level of participation (such as men and women who are presidents and vice-presidents) and reporting, even if anecdotal, on the extent to which decisions are influenced by both women and men, give a more accurate picture of participation and of the impact of PROSAGUAS' community organization efforts than the numerical indicators alone. Based on the communities visited, there are still many more men than women in leadership positions (there are no women serving as presidents of administrative committees or water boards, for example), but there are women serving as vice-presidents. The Evaluation Team encountered one ADESCO with a female president. The team also observed very active and informed participation in discussions by a number of women in its meetings with communities.

PROSAGUAS requirements for labor contributions do not appear to be a strong barrier to participation by women-headed households. But as the program proceeds, it should be kept in mind that the requirement for a labor contribution could create a barrier to such households, and poor households generally, because of their inability to contribute labor or pay someone else to do so. There are large numbers of women-headed households—judging by the team's visits, up to 75% in some peri-urban communities—and such households are not uncommon even in very rural communities. The provision for counting committee service as the membership contribution is innovative and valuable in this context, providing an alternative to facilitate participation. Many women also reported contributing manual labor during the construction process.

There has been less apparent emphasis on participation by other socio-economic variables beyond gender, although there is some focus on involving young people and students, especially through working with schools. The local promoter in Istagua, for example, indicated that she is trying to form youth committees, especially for environmental activities.

Process Documentation

The lack of emphasis in PROSAGUAS documentation of the qualitative aspects of community organization and decision-making is also an issue. Current monitoring systems focus on quantitative data rather than qualitative information about the process of developing community capabilities and participation. For example, topics which would be of use are the types of issues and problems faced in local management of systems, constraints overcome, level and type of participation by gender and any other significant

variables, and the time taken to develop local management capacity. Such information would be useful in replicating the experience.

Follow-on Provisions

The fact that all committees except the water management board are viewed as temporary structures, functioning only during the 18-month implementation period, has resulted in the creation of different vehicles to carry on essential follow-up for health/sanitation promotion and environmental protection functions. In some cases, such as Istagua, the water management board has contracted a local promoter to maintain these functions, calling on community volunteers as needed. Other communities have relied on Ministry of Health promoters to continue health/sanitation and water quality monitoring, or plan to continue their health and environmental committees at a less intensive level of activity, with committee terms concurrent with the water management board. It will be important to monitor and evaluate these various means of follow-up as the program progresses to determine their effectiveness.

4.3.4 Conclusions and Recommendations

In general terms, the community organization process, methodology, and structures used are all working effectively. Members of water management boards and health and environment committees clearly recognize their responsibilities and are carrying out their functions. They consider their training useful and effective. Participation by women (as measured by the number of women on committees) has improved markedly, surpassing target levels and reaching nearly equal levels with men, on average, in the communities visited. PROSAGUAS staff training and staff capabilities are excellent, judging from the results achieved.

Nonetheless, there are a few areas in which performance could be improved even further, contributing to the sustainability of the current program and to replication by others in the future.

- **Greater Involvement by Water Committees.** Involvement of water committees in project design and implementation should be strengthened, so that the committees and water management boards are fully involved in decisions and are familiar with the equipment used, the reasons for project design and technology choices, and cost and source of equipment and materials, to facilitate maintenance, repair and system expansion. Such intensive involvement at the start constitutes on-the-job training for these bodies. It may slow things down a bit at the beginning, but it may also shorten the six-month post-project period and reduce the number of problems arising. It is also important to seek out people with appropriate skills to serve on water committees and water management boards. In urban and semi-urban areas, for example, there may be skilled engineering students, accountants, and construction managers. The purpose of this recommendation is to ensure that the committees and boards gain experience in procurement, construction management, resolution of legal issues, and

dealing effectively with the private sector with regard to system maintenance and repair.

- **Permanent Technical Assistance.** As noted in the recommendations for Section 3.3.3, a permanent source of technical, administrative, and legal assistance for community water systems is crucial to the long-term sustainability of community management, as well as the sustainability of the water and sanitation systems themselves. USAID and CARE should examine possible means of creating such an entity, on a non-profit but self-sustaining basis, to serve community and small municipal systems.

- **Process Documentation.** Improved documentation of the community organization/participation process, including participation by gender, would contribute greatly to replicability of the program. Documentation should describe and analyze the process of organization, including identifying constraints to participation by gender and other factors, especially poverty, and also participation by young people; describing how such constraints have been addressed; describing how communities participate (by gender) in the decision-making process throughout the project, and how their level of participation may change during the implementation period; tracking levels of participation after the implementation period has been completed, and the effectiveness of provisions for follow-up on health and environmental conditions and water system management.

- **Provisions for Poor/Female-Headed Households.** While the Evaluation Team was unable to ascertain the degree to which women-headed households and poor households in general are left unserved because they cannot contribute labor or otherwise pay membership costs, PROSAGUAS staff should assess this situation carefully. If warranted, program staff should encourage water users' associations to institute flexible credit systems so that such households can pay membership contributions over an extended period of time.

4.4 Health Education

4.4.1 Introduction and Definition

The PROSAGUAS health education strategy seeks to generate awareness within communities of their health practices and situation, and thus promote improvement in health conditions in order to achieve the project goal of reducing diarrhea in children under age five.

The program uses a participatory methodology to train health committee members, using the SARAR approach to empower community members to take action (see Section 4.3.1). The health committee members, in turn, repeat this training with families in the community. The objectives of this educational process are to promote change in health

behavior and to facilitate community organization and formation of leaders to promote improved health. A gender focus is also included, stipulating that at least 35% of health committee members should be men, that training should be given at times that are convenient for women and men, and that community training should not focus solely on women (and especially mothers) as the parties responsible for family health, but should include all members of the family, male and female.

The major elements of the health education process are as follows:

- A diagnosis and baseline study which document health conditions at the beginning of each project (and community).
- A KAP study, prior to training health committee members, to identify major problems; this study serves as a basis to plan educational interventions.
- Selection by the community of a health committee which includes both men and women, based on a profile provided by the PROSAGUAS health educator. The membership will vary according to the population size; optimally, each committee member will cover no more than 20 families.
- Training for health committee members, incorporating group process and leadership and facilitation skills as well as basic sanitation and child health information.
- Training Ministry of Health (MOH) and NGO health promoters (under the terms of an agreement with the departmental director of the Ministry) according to their training needs, using the same participatory methodology.
- Replication by health committee members, each training his or her assigned group of families. The first phase of training focuses on basic sanitation; the second phase incorporates immunization, breastfeeding, diarrhea and use of oral rehydration.
- Monitoring and evaluation, including semi-annual collection of data to measure change in health indicators against those in the baseline study. Evaluation focuses on progress in improving health and sanitation indicators.
- Development of a follow-up plan for the post-project phase, by the health committee, health promoters and water management board.

As noted in the community organization section above, service on the health committee is the equivalent of the manual labor required for membership for the member's household.

4.4.2 Objectives and Indicators

As with community organization, health education is not an end in itself, but a means to achieve the health results which are the purpose of the PROSAGUAS program: reduction of diarrhea among children under age five. Therefore, program indicators do not measure progress in health education, rather they measure the results of health education, together with other interventions which contribute to these results. The objectives to which health education contributes directly include:

Objective 5: Ensuring the adoption of adequate hygiene practices, and appropriate use and maintenance of latrines.

Objective 6: Providing assistance to health promoters.

Objective 7: Ensuring the adoption of other improved health practices that impact directly or indirectly to reducing the incidence, prevalence, and mortality from diarrhea in children under five.

Objective 10: Measuring the impact of the program in reducing the incidence, prevalence, and mortality from diarrhea in children under five.

The benchmarks used to track progress in the health education component follow, indicating levels attained as of March 2000, as reported by PROSAGUAS:

- Number of health committees formed: 23.
- Hygiene and latrine use and maintenance practices (population trained): 20,133.
- Number of health promoters who have been assisted: 10.
- Number of households with other improved health practices (households trained): 2,660
- Number of communities in which (diarrhea reduction) data was collected: 17.

4.4.3 Findings

PROSAGUAS has achieved substantial health and sanitation benefits, as evidenced by the decrease in diarrhea in program communities.

Health Committees

The selection process for community health committees works well, and the committee members have demonstrated their commitment and effectiveness in replicating the training they themselves received in their communities. The committee members that the Evaluation Team talked with took their responsibilities seriously, visited their assigned families weekly, checked hygiene conditions and disseminated hygiene and health education. Another achievement of the program is the extent to which men have been incorporated into the health committees, since health has been considered a traditionally female concern. For the communities the team visited, 39% of all health committee members were men.

Health Education Methodologies and Materials and KAP Surveys

The training methodologies and modules are very good. They use a participatory approach to help trainees internalize the learning. It is evident that adaptations are being made, based on experience as well as on the results of KAP studies in the two communities where they have been conducted. These studies are conducted by PROSAGUAS staff, with guidance and participation by CALMA, a local health NGO contracted by CARE to provide training and technical assistance to program staff. The KAP studies cover a range of topics, reporting responses by focus groups of mothers, fathers, grandmothers, and community leaders regarding health knowledge and practices. The studies include conclusions and recommendations, which are discussed with the health committee and health promoters in order to refine the education strategy. This

approach appears to be promising, and compensates for some of the problems with the monitoring and evaluation system discussed below, since the information is discussed and used at the community level. Nonetheless, as PROSAGUAS staff members have noted, the KAP studies need to be more tightly focused to identify the highest-risk behaviors related to diarrheal disease and the reasons for them, and to prioritize and tailor health education toward changing these behaviors. Reducing the number of messages and frequently reinforcing the learning process around these behaviors is important in promoting behavior changes. As has been noted previously, the delay in beginning KAP studies has meant that they were not done for the earliest project communities.

Using existing health education materials certainly saves money, but if the materials are not appropriate, achievement of ultimate health objectives may be thwarted, and sustainability of gains made thus far not assured. Some of the materials used in the program (e.g., materials produced by UNICEF) are oriented to rural settings and may not be effective in the urbanized areas of some of the PROSAGUAS projects. Investing in developing the most appropriate materials and methodologies for urban and semi-urban areas is likely to be a wise use of funds and could save money, in the long run, by helping communities reach their targets sooner than originally expected.

Focus on High-Risk Behaviors

The need for increased focus on high-risk behaviors was reinforced for the Evaluation Team by examples seen during its field visits. While latrine use and maintenance appeared to be generally very good, there were some issues around maintenance, especially of compost latrines (especially reluctance to stir contents and, in a couple of instances, lack of drying material). Disposal of children's feces was generally good, but the team did observe some examples of excreta around latrines and failure to put soiled paper in latrines. Handwashing after latrine use was flagged as a problem by PROSAGUAS staff, and the team did not observe any handwashing facilities adjacent to latrines. Other problems observed were standing graywater puddles or open run-off (of particular concern given the current rapid spread of dengue) and potential contamination of drinking water by grasping the pouring lip of water jugs with the hands (observed in seven of nine communities, which were both current and Phase I sites).

Monitoring and Evaluation Issues

Baseline and evaluation studies of health and sanitation conditions are conducted by CARE's central monitoring and evaluation unit, using contracted personnel rather than by health committee members and health promoters, as originally envisioned. This arrangement has the advantage of producing credible data efficiently and freeing the time of local staff and volunteers. It also takes into account that local staff and volunteers are usually not available for post-project evaluations. However, it also means that there is no local involvement or ownership of the information produced, and the information is not fed back to the community, i.e., to the water management board, local or MOH promoters, or other follow-up mechanisms. The studies produced contain an array of data, but there has been almost no analysis of reasons for positive or negative changes in

the data, which is especially important for changes that do not fit the expected pattern. Further, as noted in the management section, these studies do not appear to be used to make program adjustments; they are mainly used for reporting to USAID. While the KAP studies (limited to two to date) provide another source of information which does appear to be used in program decisions, they should not constitute a system parallel to the formal M&E system; rather, the M&E system should be refocused to serve program management and community needs.

Follow-on Provisions

In most of the communities visited, the MOH (or NGO) health promoters are active participants in supporting hygiene and health education and follow-up, and also in testing water chlorine levels. In urban areas such as Cara Sucia, promoters are not used; the health center nursing/auxiliary staff collaborate in training and education efforts. At least one rural community, Nueva Esperanza, has no health promoter, although residents do use the health unit in Conchagua.

The role of MOH and NGO health promoters is important for maintaining and improving program achievements in health and hygiene, as health committees usually become inactive once the 18-month project implementation period is completed. Some water users' associations have been able to hire a local promoter to provide follow-up. This model appears to be very effective, since in addition to promoting continued attention to health, hygiene, and environmental activities, it gives value to health and other follow-up functions as something worth paying for, and provides employment to a community resident (in the case of Istagua, a former health committee member). However, other communities are considering other follow-up mechanisms, including using current (or requesting new) MOH health promoters or continuing the health committees. In the latter case, they are encouraging turnover to avoid overburdening volunteers, i.e., having members serve for the same fixed term as the water management board.

4.4.4 Conclusions and Recommendations

The health education methodology, use of health committees, and incorporation of MOH and NGO health promoters have been successful and have contributed to the decrease in diarrhea in children, particularly with regard to hygiene and latrine use. There is a need to focus KAP studies and hygiene/health education on the highest-risk behaviors in each community. Monitoring and evaluation of health conditions need improvement. It is wasteful and ineffective to have a system that is used only for reporting. If would be far better to use the information produced to make improvements in the program and to share it with the community so that people can take action to make improvements themselves. There is also some question about the efficacy of rural-focused training materials in an increasingly urban environment. So far, adequate follow-up is being provided, but that situation should be evaluated carefully over the remainder of the project to assess effectiveness.

In light of these conclusions, the following actions are recommended to improve this already strong program component:

- **Monitoring and Evaluation.** Refocus the health monitoring and evaluation system to include greater analysis of health results and investigate reasons for unexpected results. The information should be processed and disseminated in a more timely manner, taking into account the 18-month project implementation period. It should also be synthesized in an easily accessible manner with feed back to the community promoter, if there is one, and to the MOH promoter and water management board, as well as to CARE staff for possible follow-up if there are situations requiring further intervention. It would also be useful if the monitoring/evaluation system could be adapted to track changes in key behaviors identified in the KAP surveys. Limited use of longitudinal studies may be helpful in determining program impact on health-related behaviors.

- **KAP Surveys.** Revise the KAP surveys to identify the most important, highest-risk behaviors related to diarrhea incidence, prevalence, and mortality; use them to prioritize a few key behaviors, and focus educational interventions on changing these behaviors, with frequent reinforcement (see Appendix H for a list of indicators for diarrheal disease prevention).

- **Educational Methodologies and Materials.** Carefully assess the effectiveness of the current rural-focused educational methodologies and materials in urban and semi-urban areas; adapt and revise the methodologies and materials as necessary to increase their effectiveness. Investment in such "software" materials is as important to program success as "hardware" investments. It is also important to document any methodological changes and to make the revised materials available for replication for future urban projects.

4.5 Water Supply and Sanitation Infrastructure

4.5.1 Introduction and Definition

The major portion (83%) of the budget for PROSAGUAS is designated for the design and construction of water supply and sanitation infrastructure for the beneficiary population. The water supply systems proposed for this project cover a wide range of technologies and service levels. Water sources are, for the most part, either capped springs or deep underground aquifers. Construction of new systems is the norm, but in some cases, rehabilitation of very deficient existing water supply systems has been undertaken. Water delivery is piped, either through a gravity-fed system or from a storage tank to which water has been pumped using an electric motor. Water supply systems may consist of household connections, public tap connections, or, less frequently, hand pumps. The PROSAGUAS design standard for level of service is metered household water connections with water available 24 hours a day, 7 days a week (actual availability varies depending on community decisions regarding how long to run the pumps). The amount of water consumed per household varies according to user preference and willingness to pay; all household connections are metered, and tariff rates are based on the level of consumption, with increased unit cost as volume goes up (i.e., the more water consumed, the more expensive it becomes per cubic meter). The sanitation technology proposed to for this project is household latrine. The construction can be either a ventilated improved pit (VIP) latrine or dry compost latrine (*letrinas aboneras*).

To assure long-term sustainability of the water supply systems, this component includes (1) training of water committees before, during, and after the construction phase and (2) the creation and legalization of a formal water users' association with its own board of directors (also known as "the water management board"). Training related to construction, operations, utilization, maintenance, tariff setting, collection and administration of the systems is provided.

4.5.2 Objectives and Indicators

The following program objectives, presented in the PROSAGUAS proposal, relate to water supply and sanitation infrastructure:

Objective 1: To increase access to potable water supplies. The target is to provide access to potable water to approximately 45,000 persons.

Objective 2: To ensure sustainable water supplies via adequate operation, maintenance, and administration. This objective is measured by the number of water management boards that have been created and are functioning in a sound and effective manner.

Objective 4: To increase access to latrines. The target is to provide access to improved latrines to the 45,000 persons who will be gain access to water through objective 1.

4.5.3 Findings

Based on data provided to the Evaluation Team, PROSAGUAS is on track to achieve all of the expected results for these objectives. According to staff members (and supported by their quarterly reports to USAID), PROSAGUAS is ahead of schedule in reaching the planned 45,000 beneficiaries for both water supply and sanitation. The program may indeed be able to surpass its targets within the project period. As of July 2000 (when 60% of the project period had elapsed), PROSAGUAS had achieved 86% of its goal for latrine construction and 68% of its goal for water supply access. In addition only spent 61% of the $9.05 million grant funds from USAID and 51% of the CARE and counterpart matching funds had been spent as of that date.

Water Users' Associations and Water Management Boards

The water users' associations and their respective water management boards for all constructed water systems have been formed and are in appropriate stages of development, consistent with the time when construction of each system was completed. Water users' associations from the first projects completed through PROSAGUAS have been formalized and legalized; members have been trained; and the boards are fully operational and largely independent of CARE. An important and surprising finding of the Evaluation Team is that beyond the traditional concept of creating rural water management committees, the PROSAGUAS program is effectively creating private, small-scale community-run utilities that are being operated based on sound business principles. Most of the "utilities" visited had full-time staff, including between one and three plumbers, meter readers, health promoters, computer operators , and even administrators. Many of the "utilities" are making long-term investments in land (for future well sites, for example) and in the construction of offices and community meeting centers. Even in communities with systems in operation for only a year, significant savings have already been accumulated. For example, the Moncagua "utility" already had over 140,000 *colones* in savings after little more than a year of operation. It is clear that the water management boards understand that they need to set adequate tariff rates and objectively enforce payment of water bills in order to ensure that they will be able to operate, maintain, and repair the systems as needed. In addition, many of the water management boards have set significant connection fees that help capitalize the "utility" and strengthen their capacity to expand the system to new users/consumers. It is telling that the one exception to this that the Evaluation Team observed was in the Nueva Esperanza community where the municipality is managing the water system and has lowered the tariff rates from those originally set and has not enforced monthly payments of water bills. The result is that the system is running at a financial loss.

Technology Choice for Water Supply

At first glance, the water supply technologies incorporated in the PROSAGUAS program tend to be more sophisticated than might be considered appropriate for rural areas. Two out of the nine systems built to date use capped springs as a source of water; the other seven tap deep aquifers (200 to 300 feet) with electric-powered pumps. However, several factors affect the choice of water supply technologies in El Salvador, Regional water scarcity and extensive contamination of surface waters, limited availability of shallow aquifers, households' willingness and ability to pay for water connections, high population density, and high coverage of rural electrification often make deep wells with electric pumps or long-distance piping of water feasible alternatives. Given those conditions, it does appear that the choice of technology and level of service under the PROSAGUAS program is, by and large, appropriate and sustainable, especially when packaged with training for operations and maintenance and where the water management boards understand the importance of appropriate tariff rates and metering. Completed community water systems, such as those found in Istagua and Moncagua, are relatively sophisticated, yet the water management boards and their staff seem perfectly capable, both financially and technically, of operating, maintaining and, when needed, repairing their systems. This operational capacity also includes knowledge and willingness to contract with the private sector for engineering services, supplies, and replacement parts when needed. The team noted, however, that in some communities, there is lingering suspicion of the private sector.

The technologies chosen by the PROSAGUAS engineering staff, although suitable given the prevailing hydrological and physical conditions, may nonetheless be a bit too sophisticated for the intended target group of poor rural communities to operate and manage. Of particular concern is the occasional use of imported equipment and materials, reliance on grid electricity, and the high cost per beneficiary. In these situations, the communities may need more outside assistance in the long term. An example of this would be El Señor (built under the Phase I programs) where the water management board was not aware that the electric pump had been imported because of special design features.

PROSAGUAS has a fairly explicit norm that the level of service is determined to a large extent by water source availability. In addition, early in an intervention, PROSAGUAS staff carry out a technical and social feasibility study to determine level of service and community and household willingness and ability to pay. To date, PROSAGUAS studies have shown that in all communities, the target beneficiaries want household connections and are willing and able to pay for them. Thus, all nine of the systems built by PROSAGUAS to date provide household level connections

In the more "urbanized" rural communities, the studies found that before the program was introduced, the general practice was for households to buy water by the barrel from private vendors, paying significantly higher costs than the newly established tariffs under the PROSAGUAS program. An approximate calculation of the pre-project average monthly household water bill was 45 to 65 *colones* for about 15 cubic meters of water (75

barrels). Most of the families reported buying a minimum of 2 barrels per day, with costs ranging from 5 to 20 *colones* per barrel. Even at the low end of the scale, a family that bought 2 barrels per day for 30 days at 5 *colones*/barrel would need to pay 10 colones per day or 300 *colones* over a 1-month period. It is clear that both poor rural and urban Salvadorans have accepted the principle that water is an economic good and are more than willing to pay a fair tariff for it as long as they are getting the service.

Along with household connections, all PROSAGUAS systems include household meters, and, where possible, CARE will try to retrofit meters into Phase I systems. Although worldwide experience suggests that the use of household meters can cause problems with long-term sustainability and reliability (e.g., frequent breakdown of meters, false readings of water consumption as air goes through the system when there is not a steady flow of water 24 hours a day), their use in PROSAGUAS appears to be effective. It provides an increasing block tariff structure which fosters efficiency and equity of water use and assures the financial health of the water users' association.

For water systems that involve pumping (either from wells or to storage tanks), project sustainability is highly dependent on relatively low-priced (i.e., subsidized) electricity. If electric subsidies cease, as is rumored, many communities will find it increasingly difficult to pay for continued operation of their systems. Tariffs may need to be increased to levels that are beyond the communities' ability to pay. The Evaluation Team felt that this is a vulnerable area for the long-term health of these systems.

Most systems have been designed for systemwide disinfection (chlorination), with no disinfection at the household level. Normally, piped systems that are disinfected at the point of distribution and have household connections provide a significant level of protection against contamination. Unfortunately, much of this protection may be at risk due to the widespread practices of storing water in large potentially unprotected household storage tanks as well as storing drinking water in unprotected drinking water containers.

Technology Choice for Sanitation

PROSAGUAS systems support only VIP or compost latrines. No sewered systems, septic tanks, or the like are considered. The team concluded that both the VIP and compost latrines are appropriate for the rural sites. PROSAGUAS's gaining user acceptance of the compost latrines is particularly notable, given negative history of that option in El Salvador and other countries. (Most of the "compost" latrines observed by the Evaluation Team, however, were being used simply as elevated pit latrines, with households making no use of the composted material.) Nevertheless, the program's limitation on sanitation options is somewhat inconsistent with the more urbanized strategy of providing household water connections, since provisions of such connections results in relatively high levels of water consumption and generation of graywater and, increasingly, wastewater.

PROSAGUAS staff note that households and communities typically do not demand improved sanitation. It is not a high priority to them. To assure improved sanitation, the program makes construction or improvement of latrines a pre-condition for construction of the water system. While the Evaluation Team recognizes that sanitation may not be a perceived as a high priority need by many households, it also feels that the PROSAGUAS strategy of providing close to a 100% subsidy and actually building latrines for the beneficiary families is not the most appropriate or effective use of program funds—it represents too high a level of subsidy and is a paternalistic approach.

Operation and Maintenance: System Management and Administration

Water management boards appear to be very aware of their roles and responsibilities with respect to water system management and generally take their duties very seriously. Essentially, these boards are administering small, unregulated water utilities. With the exception of municipal audits (in theory at least) and MOH monitoring of chlorine residual, there is no oversight or reporting requirement. Water management boards are free to set and modify tariffs, subject only to community approval; they can cut off service to consumers in arrears, are under no obligation to expand service, and can decide the level of service and who can become new members. As the population of communities with such community-run water utilities increases, there may be obvious inequities/disparities in tariff structure for adjacent communities. This may seem immaterial at the moment, but could cause problems in the future. In Corinto, for example, one of the five communities in the municipal seat is not part of the PROSAGUAS program and pays different fees and has a different relationship with the municipal government from the other four.

4.5.4 Conclusions and Recommendations

The overall conclusion regarding the PROSAGUAS water supply and sanitation systems is that the program is successfully reaching its numerical targets with technologies that are, for the most part, appropriate, well designed, and well constructed. Given the rural-urban range of program sites, however, PROSAGUAS water technologies are more appropriate for more urbanized areas, and the sanitation technologies are more appropriate for the rural areas. The Evaluation Team also concluded that the PROSAGUAS strategy of installing household meters, setting appropriate tariff rates, and training the water management board members has been extremely effective in creating small-scale utilities with an entrepreneurial vision. These boards are likely to be able to operate, maintain, and even expand their systems into the future.

Specific recommendations are given below:

- **Sanitation Options.** Broaden the PROSAGUAS menu of sanitation options to include technologies that are more appropriate for urbanized and urbanizing areas and for households with water connections where consumption increases significantly. Part of the process for broadening the technical options should include an assessment

of the hardware and software costs of the current latrine choices so they can be compared to other options such as flush toilets, small-bore sewer systems, and primary wastewater treatment plants. Another aspect that should be investigated is the collection and handling of the sludge produced by VIP latrines or the compost produced by the compost latrines, if use as fertilizer is not a viable option. When these types of latrines are used in urban areas, a plan must be in place, with costs calculated, for sludge removal and management. It is also recommended that CARE investigate the information available on alternative systems for wastewater collection and treatment. Much of that information is being collected by EHP in Washington and is available free. It is also recommended that CARE explore the potential use of the WAWTTAR software program (Water and Wastewater Treatment Technologies Appropriate for Reuse) developed by EHP. (CARE engineering staff in DASAGUAS have a copy of this material.)

- **Wastewater.** A related recommendation is that CARE staff begin to assess the financial and management impact of the need in the foreseeable future to introduce wastewater services. A wastewater or graywater collection and treatment system will have to be managed by either the water users' associations created by PROSAGUAS, the municipality, or ANDA. The management options will need to be compatible with the operations and management of the water systems, as it may be difficult to separate the two. Costs for operation and management of collection and treatment systems and additional tariffs will also need to be assessed by the PROSAGUAS communities as they move forward. Given the limited experience in the country with this issue (as opposed to O&M of water systems), dealing with graywater and wastewater will be breaking new grounds.

- **Small Utility Benchmarks.** Develop and promote the use of benchmarks that reflect the health of small-scale community-run utilities (as opposed the more traditional benchmarks used for rural water management boards). Examples of such benchmarks include percent of water leakage or loss (which becomes feasible for PROSAGUAS projects with macro and household water meters and sophisticated accounting software), number of utility employees per household connection, number of consumer complaints per month, number of new connections per month or year, billing status, etc. A list of utility benchmarks (in Spanish) developed by the World Bank is included as Appendix I. The benchmarks could be used by the water management board to measure how well they are doing as well as by PROSAGUAS, local municipalities, or ANDA to monitor progress and provide overall technical assistance. This process should be initiated in all PROSAGUAS projects as soon as possible .

- **Costs per Beneficiary.** PROSAGUAS staff should be more rigorous in calculating and documenting the full costs for both the water and sanitation systems by specific project sites. This information will be useful for better understanding the costs per beneficiary under different conditions (i.e., in areas of disbursed rural populations, deep aquifers, and dense urban settings, etc.).

- **Subsidies.** PROSAGUAS should take a more careful look at the subsidies that are currently being provided equally to all project beneficiaries. It might be possible to reduce subsidy levels in the more urbanized areas.

4.6 Environment and Source Water Protection

4.6.1 Introduction and Definition

Protection of the source of drinking water is a major element for the long-term sustainability of a water system. Sound management of the micro-watershed can help ensure continued quantity and quality of water for the future. In a country such as El Salvador, where over 90% of the surface water sources are highly contaminated and water shortages are frequent, source water protection programs are even more critical. The types of activities being implemented under this PROSAGUAS objective include formation of an environmental committee in each community, training and capacity-building for the environmental committee as well as the water management board, reforestation (including the establishment of nurseries), environmental education in schools, and programs for soil conservation and reduction in sources of water contamination.

4.6.2 Objectives and Indicators

The program objective for the environment component is:

Objective 3: to ensure the sustainability of water sources via micro-watershed management.

Five indicators track the progress of activities under Objective 3:

- Percentage of committees and water management boards receiving training/information in watershed protection.
- Training in soil and water conservation measures for small-scale farmers working in the watershed.
- Number of trees planted in reforestation programs.
- Statutes include provisions discouraging deforestation, soil erosion, and contamination.
- Training in watershed management provided for at least three environment committee members in the project area.

4.6.3 Findings

The major focus of this component is reforestation, with some element of improved agricultural practices. Environmental committees are established in the PROSAGUAS communities and seem to be functioning relatively well. Environmental education and other demonstration activities are increasing awareness among residents of environmental issues and the need to protect water sources. Istagua has established a nursery as a revenue-generating enterprise.

Appropriateness of Environmental Activities

Given that many of the PROSAGUAS projects are tapping deep aquifers (i.e., over 150 feet), the original concept of adding an environmental objective to protect the project's water supply source water does not appear to be effective. The environmental portion of the program was aimed at protecting surface water sources. Trees are being planted around peoples' homes, by the community water storage tanks, or above the well site. While this is helpful in a general way, it does not appear to be significantly contributing to the objective of protecting the water source aquifers.

Even if the objective were feasible as applied, CARE recognizes that the target set for reforestation (835,000 trees) is unrealistic and it is not likely that it will be met.

The most pressing/immediate environmental issue actually may be the consistently poor handling of household drainage water from laundry basins and showers (also drainage and solid waste handling from backyard livestock operations). Not only do these waters directly contaminate receiving surface waters, but they can pose significant health problems at the household and community level.

4.6.4 Conclusions and Recommendations

In light of the above, the following recommendations are suggested.

- **Environmental Education.** PROSAGUAS should continue environmental education activities, especially for schoolchildren, but its efforts should be more targeted and/or selective, with demonstration activities, ensuring that these activities reflect priority issues in the watershed. Deforestation may not be the most critical environmental threat to a community's water supply or to operation of the system; contamination from agro-chemical applications or sedimentation from poor farming practices may be more serious threats. Specific threats need to be identified as part of the initial feasibility studies.

- **The Environmental Objective.** USAID should consider amending the contract to reduce or revise the results for this objective. Even if CARE were able to meet the targets (which seems unlikely), meeting the reforestation goal would not notably contribute to the overall purpose of the project of improving health nor would it

specifically contribute to source water protection. Alternatively, USAID may want to refocus this objective to increase attention to household graywater drainage and, potentially, to wastewater management (see the recommendations in the water and wastewater systems section above). This change in direction in the project might include a closer working relationship with the environmental sanitarians (*inspectores de saneamiento*) currently employed by the Ministry of Health in more urban areas. This shift would also translate into improving coordination between health and environment committees to address environmental health issues at the household and community levels.

- **USAID Environmental Regulations.** Enforce compliance with USAID environmental regulations. The PROSAGUAS program was issued a Positive Determination by the LAC Bureau Environmental Officer (BEO) (LAC-IEE-97-08), signifying that activities to be implemented under the program may have significant impact on the natural environment. An Environmental Assessment (EA) evaluating the potential impacts of program activities was required. However, the EA prepared for the Phase I program (*Environmental Assessment of the Public Services Improvement Project Component III – Water Supply, Sanitation and Health*, prepared by WASH, February 1990) was deemed sufficient for the PROSAGUAS program, subject to a review of the effectiveness and continued applicability of the recommendations and mitigation measures proposed therein. That review, which was also to include a discussion of how the mitigation measures would be implemented and monitored, was never conducted by LAC BEO. One of the requirements of the EA is that all project activities involving construction and disruption to the environment must undergo environmental review. CARE is not aware of the requirement to prepare project-specific environmental impact reviews, as part of EA requirements, and has not done so. Moreover, although CARE is aware of the potential environmental harm of project implementation, there is no systematic and consistent approach to mitigating potential environmental impacts. For instance, CARE does not have construction guidelines. The Mission should work with CARE to develop a specific checklist that should then be used on all construction sites (see WASH Reprint: Environmental Guidelines for PVOs).

5 SUMMARY OF CONCLUSIONS

The overall conclusion of the midterm evaluation is that PROSAGUAS is successfully achieving its expected results. The individual sections of this report present detailed findings and conclusions for each program component. This section summarizes the most noteworthy accomplishments of the program, as well as some areas of concern.

5.1 Major Accomplishments

Diarrhea prevention. In the three project sites (Conchagua, Moncagua, and Istagua) where pre- and post-project data have been collected, there have been substantial reductions in the prevalence of diarrhea in children under five years. The baseline and follow-up surveys were performed in the same season—dry or rainy season. In La Esperanza (Conchagua), diarrhea prevalence dropped from 33% in 1998 to 6.2% in 1999 (an 81.2% reduction) ; and in Moncagua from 14% in 1998 to 4.4% in 1999 (a 68.5% reduction), both of these measured in the rainy season. In Istagua, there was a decrease in prevalence, measured in the dry season, from 14% in 1998 to 8.5% in 2000 (a 39% reduction).

Water and sanitation coverage. PROSAGUAS is ahead of schedule in reaching the planned number of beneficiaries, 45,000, for both water supply and sanitation. Moreover, at the current rate of progress, the program will have significant savings in both funding and time.

Improved household hygiene practices. PROSAGUAS has reached 45% of its target of 9,000 households to be trained in improved hygiene practices, according to program data. In general the Evaluation Team found that considerable progress has been made in the overall health component. The health and hygiene interventions are having a positive impact as evidenced in awareness of health issues, improved hygiene practices; and changes in behavior among the target population. The program methodology is generally appropriate and effective, and coordination with local and departmental MOH staff is good.

Strengthened local capacity. The program has been successful in working with and building on existing organizational structures in the communities, primarily through the Community Development Associations (ADESCOs) and the municipalities. The ADESCOs are usually the point of contact for PROSAGUAS in the community. In addition to selecting members of the various committees, these local community associations have collaborated in a variety of ways with the water users' associations. For the most part, municipalities have also supported the program by providing land or otherwise collaborating in establishing the water systems. They have given legal standing to water management boards and audited financial records of the water systems. Striving for a consistent and constructive role for municipal authorities in oversight, monitoring, and support for the water users' associations and water management boards

is important in ensuring their sustainability. The community management structures created are viable and effective, and should be able to ensure sustainable operation of the water supply systems. Regarding the inclusion of women, substantial progress has been made in increasing the participation of women in organizational and management structures. However, while the number is impressive, women have not generally held positions with power or decision-making authority.

Development of small-scale utilities. The Evaluation Team was impressed by the fact that PROSAGUAS has in effect created small, not-for-profit water utility companies run by the community, with paid employees and other attributes of a commercial enterprise, at least in the larger water systems. This entrepreneurial character should contribute greatly to the sustainability and possibility for expansion of these systems to serve more people, within the limitations of their respective water sources.

Sustainability of water and sanitation systems and benefits. The systems created under the current phase of PROSAGUAS have a more business-like orientation than those initiated under Phase I. The newer projects also benefit from greater emphasis on community organization and education. These changes should enhance sustainability to an even greater degree than observed in the earlier projects, which have already demonstrated a high degree of sustainability in spite of the problems encountered. The health education component in PROSAGUAS project communities, together with provisions for follow-on after the project implementation period, is likely to result in sustained health benefits.

Effectiveness and replicability of an integrated approach. The foregoing accomplishments demonstrate that the integrated approach used by PROSAGUAS is effective, particularly in its focus on improved health as the unifying purpose for water, sanitation, organizational, and educational interventions. The program also benefits from its increased emphasis on women's participation and effective community administration and management. Overall the EHP team found that PROSAGUAS has achieved an appropriate balance between meeting physical outputs under the agreement and investing in the qualitative, or "software," aspects of project implementation. It is premature to draw any firm conclusions with regard to the sustainability of Phase II projects, but the likelihood of success and sustainability is validated to a certain extent by the generally strong performance of Phase I community-managed systems.

Sound program management and administration. The Evaluation Team concludes that in general the PROSAGUAS program is being well managed and administered, with a high-quality, dedicated professional staff at both central and field levels. As USAID's partner in the PROSAGUAS activity, CARE has successfully put into place sound financial, accounting, and reporting systems which enable close monitoring of program activities and progress. Furthermore, CARE has successfully managed to scale up operations to include two new USAID cooperative agreements last year (MAS and AGUA), without having significant negative impact on the PROSAGUAS program. PROSAGUAS has also been noteworthy for the degree to which it has been able to leverage funding from other donors, ANDA, and the municipalities.

5.2 Areas of Concern

Project selection trend toward more urban areas. In the first two years of PROSAGUAS, the final community selection process has favored selection of larger, semi-urban communities, which generally have greater access to various resources. While providing services to these types of communities is not without merit, this trend represents a distancing from the original target population of the program—those living in areas of rural poverty, in communities of generally less than 2,000 inhabitants.

Use if monitoring and evaluation data. The monitoring and reporting system established by PROSAGUAS has been very effective in gathering information and data which are then fed into quarterly and annual progress reports for USAID. The monitoring of diarrheal prevalence and follow-up evaluations of progress against baseline studies, however, have not been used for program planning and management purposes, at least in part because of the time lag between data collection, analysis, and availability to program staff. Even more seriously, in terms of achieving program health goals, the information has not been made available to the communities where it was collected, greatly hampering awareness of problems and actions to resolve them.

Inadequate process documentation. Replicability of the PROSAGUAS model will depend to a great extent on process documentation which makes clear why and how the program has developed as it has. This is particularly important in the "software" areas of community organization, equitable and effective participation by gender and other social variables, and the health education/behavior change process.

Adequacy of community involvement in initial design and construction decisions. Respondents, especially from Phase I projects, indicated that they had not been adequately involved in early decisions and were not well-informed on design, equipment, and cost considerations of their systems, making it difficult for them to act effectively in repairing or replacing elements later on or in expanding systems to increase coverage. While PROSAGUAS has addressed these issues to a greater extent than the earlier projects, for long-term sustainability, it is crucial to ensure that water committees and administrative/water boards are fully involved in and understand all key decisions during the design and construction process.

Targeting of health and sanitation education. The Evaluation Team felt that the program attempts to touch upon a very wide range of health issues; the range may be too much for the target population to fully absorb. To bring about behavior change, the health education messages need to focus on the most important high-risk behaviors with regard to diarrhea reduction. The messages must be tailored to specific audiences and frequently reinforced. The team found that the health education materials being used are not necessarily appropriate for all target groups. The materials and methodologies used must be as appropriate as possible to both urban and rural target populations in order to achieve the desired health objectives of the program.

Appropriateness of sanitation options for urban and semi-urban areas. Currently PROSAGUAS supports only VIP or compost latrines, which are appropriate for rural areas, but are likely to become increasingly less appropriate in rapidly urbanizing areas. This discrepancy will be especially evident with the increased number of household water connections. Inevitably, the demand will grow for pour-flush or flush toilet systems, which will require septic tanks or sewage systems. Communities will also need a means to address the graywater problem, which already exists but will increase in the future.

Documentation of real costs and subsidies for water and sanitation systems. It is important to document the full costs for both water and sanitation by project sites, in order to calculate the real cost per beneficiary under different conditions. It is also important to calculate, and where possible reduce or apply subsidies using a sliding scale, in order to enhance both sustainability and replicability of the PROSAGUAS model.

Unmet environmental objectives. Progress has been much slower than expected in achieving the targets in the environmental component of the project. It is obvious that PROSAGUAS will not meet the goal with relation to tree planting. The Evaluation Team is of the opinion that the program's efforts in source-water protection are somewhat inappropriate, given that only two of the nine systems constructed rely on surface water or spring catchment, sources with a clearly defined micro-watershed. The focus of attention on tree-planting and soil erosion control activities in the program has tended to obscure the much more immediate environmental concerns with poor, or non-existent, drainage and the growing problem of graywater discharge in the more densely populated semi-urban communities.

Furthermore, USAID environmental impact regulations are not currently being met.

Lack of long-term technical assistance. A trustworthy source of engineering, administrative, organizational, and legal assistance is needed to support the water boards once the 18-month project period is completed. This factor affects the long-term sustainability of the water systems. Its effect is most evident on Phase I systems, which are older and most of which had a less-thorough organizational and training process than the PROSAGUAS projects. Nonetheless, as time goes on, most systems will likely face problems they will find difficult to resolve on their own. Some type of support mechanism, or clearinghouse, through which communities can get access to reliable sources of information or referral to other organizations is clearly needed. There are several possibilities to explore for this support mechanism, including ANDA, the MOH, municipal governments, NGOs, and the private sector, or a combination of these organizations and institutions working together in association. What is certain is that this issue is an important one for sustaining the benefits of USAID's investment of tens of millions of dollars. The need may be in the future for some project communities, but both USAID and CARE need to begin considering how to address the issue now.

Limited success in achieving synergy with other USAID-supported programs and strategic objectives. While there has been some collaboration with related projects, such

as AGUA and MAS, synergies could be greatly increased, to the benefit of all programs. There has been less collaboration with the local development project implemented by RTI under USAID's democracy SO.

6 RECOMMENDATIONS

This section brings together and summarizes the recommendations relating to the individual components of the PROSAGUAS program. Some of the recommendations are directed to CARE for consideration during implementation of the second half of PROSAGUAS, and some are directed to USAID for consideration in the same program—either for possible modification of the current PROSAGUAS program or for design of similar programs and activities in the future, in El Salvador or regionally. More details regarding these recommendations can be found in the earlier chapters.

6.1 Recommendations for CARE

PROSAGUAS Program Management

- **Program Monitoring.** Program monitoring data should be analyzed and disseminated in a more timely manner. The results should be used to inform management decisions and adjust program direction and focus as necessary. The analysis of data should concentrate on qualitative aspects of program performance as well as numerical progress.

- **Financial Tracking.** The new FIS-SCALA financial information management system should be used for greater flexibility in tracking and analysis of financial data. The Evaluation Team specifically recommends that PROSAGUAS configure the new system to allow the calculation of costs per system and costs per beneficiary by system or latrine type. This calculation should be able to differentiate between direct and indirect program costs, other cash contributions, and in-kind contributions (materials and labor). Reaching that level of detail is critical for CARE if the organization is to engage in the policy reform process regarding the water sector with ANDA or other international agencies. Transparent and credible financial data will be an important part of informing this debate at the national level.

- **Internal Communications.** PROSAGUAS management should look for ways to improve the lines of communication between field-level staff across the three regional offices. Field-level staff (and thereby the program) would benefit by having regular meetings to share experiences with each other and to discuss innovation and approaches to use within the program.

- **Policy Dialogue.** PROSAGUAS should maintain the positive engagement it has achieved with ANDA and become active in the policy debate with regard to water sector reform. PROSAGUAS experience could be used as a model in the debate, as far as is possible within the existing program terms of reference set out by USAID.

Community-Level Project Management

- **Documentation and Dissemination of Methodology.** PROSAGUAS's current strategy document does not yet address all issues in a systematic way. CARE should be encouraged to complete that important document which would be useful both for internal consistency of approach ("institutional memory") and as a contribution to the wider dissemination of PROSAGUAS's experience to a broad national or even regional audience.

- **Community-Level Monitoring.** Monitoring data currently collected by PROSAGUAS should be made available to both the field staff at the regional level and the communities and individual households, so that they can be active participants in resolving their own problems and replicating successful interventions. Efforts should be made to reduce to a minimum the time it takes to give feedback.

- **Community Selection Criteria.** In the second half of the program, the selection process for new communities sites should be based on an integration of relevant health and poverty indicators and the existing levels of water and sanitation coverage (especially for rural areas). PROSAGUAS management staff should work together with ANDA and MOH in identifying high priority regions and municipalities.

Community Organization

- **Community Involvement in Design and Implementation.** Involvement by water committees in project design and implementation should be strengthened, so that these committees and administrative/water boards are fully involved in decisions and are familiar with the equipment used, the reasons for project design and technology choices, and cost and source of equipment and materials, to facilitate maintenance, repair and system expansion.

- **Process Documentation.** Improved documentation of the community organization/participation process, including participation by gender, would contribute greatly to replicability of the project. Documentation should describe and analyze the process of organization, including identifying constraints to participation by gender and other factors (especially poverty); participation by young people should also be reviewed. The documentation should give examples of how constraints have been addressed; how communities (by gender) participate in decision-making throughout the project, and if or how the level of participation changes during the implementation period. It would also be helpful to track levels of participation after the implementation period has been completed, effectiveness of provisions for follow-up on health and environmental conditions, and the local management of the water system.

Health Education

Health Monitoring and Evaluation. The health monitoring and evaluation system should be refocused to include greater analysis of health results and investigate reasons for unexpected results. Health information should be synthesized and given to the community promoter, if there is one, and to the MOH promoter, administrative/water board, and CARE staff for possible follow-up, especially if problematic situations emerge which require further intervention. It would also be useful if the monitoring/ evaluation system could be adapted to track changes in key behaviors identified in the KAP surveys. A limited number of longitudinal studies may be useful in determining program impact on health-related behavior.

KAP Studies. Program staff should revise the KAP surveys to identify the most important, highest-risk behaviors related to diarrhea incidence, prevalence, and mortality. The findings should be used to prioritize a few key behaviors, and focus educational interventions on changing those behaviors, with frequent reinforcement.

- **Educational Methodologies and Materials.** The PROSAGUAS staff should carefully assess the effectiveness of the currently rural-focused educational methodologies and materials in urban and semi-urban settings; adapt and revise the methodologies and materials as necessary.. Such revision would be a wise use for any "surplus" funds, as these "software" components are as important to program success as "hardware" investments. The program should document any methodological or materials revisions it makes; these revised materials should be made available for replication for future urban projects.

Water Supply and Sanitation Infrastructure

- **Sanitation Options.** The choice of sanitation options available under the program should be broadened to include technologies more appropriate for urbanized areas and for households with water connections. PROSAGUAS staff should assess the hardware and software costs of the current latrine choices and compare them with other options such as flush toilets, small-bore sewer systems and primary wastewater treatment plants. PROSAGUAS should also investigate the collection and handling of the sludge produced by VIP latrines or the compost produced by the compost latrines. PROSAGUAS should review information on alternative wastewater collection and treatment, much of which is freely available from EHP in Washington. PROSAGUAS should also explore the potential use of the WAWTTAR software (Water and Wastewater Treatment Technologies Appropriate for Reuse) developed by EHP, which DASAGUAS has.

- **Wastewater.** PROSAGUAS should begin to assess the financial and management aspects of the inevitable and upcoming need for providing wastewater services. At present, the latrine sanitation systems are managed at the household level (with varying degrees of success). A wastewater or graywater collection and treatment system will need to be managed by either the administrative/water boards created by

PROSAGUAS, by municipalities, or by ANDA. These management options will need to be compatible with management of water systems. Operational and management costs and additional tariffs will also need to be considered by PROSAGUAS as it moves forward.

- **Benchmarks for Small-scale Utilities.** PROSAGUAS should develop and promote the use of benchmarks that reflect the health of small-scale community-run utilities (as opposed to the more traditional rural water management boards). The benchmarks could be used by the water management board to assess how well they are doing, as well as by PROSAGUAS staff or ANDA to monitor progress and provide technical assistance. Use of such benchmarks should be initiated in all PROSAGUAS projects.

- **Costs.** PROSAGUAS should calculate and document the full costs for both the water and sanitation systems by specific project sites. That information will be useful for understanding the costs per beneficiary under different conditions (i.e., dispersed rural or dense urban populations, deep aquifers or capped springs, etc.).

- **Subsidies.** The subsidy for construction of latrines should be reduced. There should also be a reduction of subsidies per household for water supply, based on community income levels, e.g., in general terms, the subsidy should be less in urban areas and greater in rural areas. PROSAGUAS should try to implement such a sliding scale for subsidies during the remaining program period.

Environment and Source Water Protection

- **Environmental Education.** The program should continue environmental education activities, especially for schoolchildren. Environmental messages, along with demonstration activities, should be more targeted and selective, however, ensuring that they reflect priority issues in the particular watershed. Deforestation may not be the most critical environmental threat to a specific community's water supply or operation of the system. The most serious factor might be contamination from agro-chemicals or sedimentation from poor farming practices, for example.

6.2 Specific Recommendations for USAID in the Second Half of PROSAGUAS

- **The Environmental Objective.** USAID should consider amending the contract to reduce or revise the results for this objective. Even if PROSAGUAS were able to meet the targets, that would not notably contribute to the overall purpose of the project—improving health—nor would it specifically contribute to source water protection. Alternatively, USAID may want to reduce and/or refocus this objective to increase attention and action towards household graywater drainage and, potentially, wastewater management (see the recommendations in the water and wastewater systems section above).

- **USAID Environmental Regulations.** The Evaluation Team recommends that USAID enforce compliance with its own environmental regulations and work with PROSAGUAS to develop a specific environmental checklist that can be used on all construction sites and in all beneficiary communities.

6.3 Broader Issues for USAID to Consider with regard to PROSAGUAS

- **Urban vs. Rural.** The majority of projects implemented during the first two years of the PROSAGUAS program serve populations living in what can be described as small towns or peri-urban areas (referred to as "semi-urban" in El Salvador), rather than truly rural. The reasons for working in these communities are clearly understood and appreciated by the Evaluation Team. The trend, however, toward working with larger projects and providing service for more urban populations is not consistent with the Mission's rural poverty criteria. Therefore the team suggests that USAID consider the consequences of this issue as it relates more generally to addressing rural poverty.

- **Rural Water Sector Reform.** At present there is no coherent engagement by USAID with the GOES and other stakeholders regarding reform of the *rural* WS&S sector. USAID is one of the most important donors in the rural sector, and CARE is probably the biggest single implementing agency and certainly has some of the best experience (in terms of both engineering and software) in the country. As a result of the current sector reform process, there is now the real potential for fundamental and positive change, and it would be very beneficial if USAID and CARE's rural experience and knowledge are used to inform this debate nationally. By contributing to the development of a sound rural WS&S sector, USAID will also benefit by being able to replicate and scale up the PROSAGUAS experience.

6.4 Opportunities for Use of "Surplus" Funds

In the first two years of the program, PROSAGUAS has made rapid progress toward meeting its stated numerical targets for provision of WS&S services. (This has occurred partly from working in more densely populated "semi-urban" communities than was originally planned.) Given this pace, there is the real possibility that a considerable amount of funds will remain in the budget even after all targets have been met. The Evaluation Team has identified the following possible options for reprogramming "surplus"funds; the list is not exhaustive and these suggestions are not presented in a particular order of priority:

- **Add Projects and Beneficiaries.** Perhaps the most straightforward option is to continue working with the successful PROSAGUAS approach and simply add to the number of WS&S projects and beneficiaries reached under this current cooperative

agreement. PROSAGUAS staff suggest that they could reach as many as 55,000 beneficiaries (10,000 more than the current 45,000 target).

- **Complement the AGUA Project.** Another possibility is to use resources from the PROSAGUAS program (human, logistical, and material) to provide a sanitation and hygiene component to the AGUA project under the SO4, which would go a long way to maximizing the environmental health benefits of that program.

- **Support Development of Rural WS&S Norms.** Resources could also be diverted to work together with ANDA and the Water Supply and Sanitation Network ("Red Nacional") to develop coherent and viable guidelines and norms for rural WS&S that could then be used by other donors, NGOs, municipalities, and ANDA itself.

- **Help Develop Permanent Technical Assistance Capacity.** Provide technical assistance to local municipalities, ANDA, the Ministry of Health, and possibly others to begin to develop a national technical support program for community-managed or small municipal water systems (e.g., develop an entity which could supply engineering, administrative, legal, and health technical assistance, or, alternatively, create a clearinghouse of sources of technical assistance in the public and private sector which these small systems could call upon).

6.5 Recommendations for Future USAID/El Salvador Strategy

USAID/El Salvador has a relatively long history of working in and financing water supply and sanitation programs to improve health and has distinguished itself by the success of its programs. Water supply is today and will continue for the foreseeable future to be a very high priority for the Government and people of El Salvador. Especially in light of the success of the PROSAGUAS program, the EHP Evaluation Team unequivocally recommends that the Mission continue to support water supply and sanitation programs in its future five-year strategy. If the Mission does decide to continue to support water supply and sanitation programs, the EHP team makes these additional recommendations:

- **Maintain an Integrated Focus.** USAID programs should maintain an integrated approach which joins water, sanitation and hygiene/health elements. Trying to implement programs with just one or two of those elements would greatly reduce the benefits of USAID's efforts to date. Continuing to use an integrated approach will be particularly important if the Mission chooses to implement water programs in the future through a Strategic Objective team other than the Health SO team.

- **Improve Integration with Health.** If future Mission water programs are implemented through other SO teams or even if such programming remains within the Health SO, the Mission should seek to improve integration of WS&S efforts with other Mission health programs and to look for opportunities for synergy in achieving health impacts and preventing disease.

- **Broaden Poverty Focus.** Given the clear demographic trends within El Salvador, it will soon be a largely urban country. The Mission should consider explicitly broadening its poverty focus to include the urban poor.

APPENDICES

Appendix A: Scope of Work

Revised: 6 June 2000

(note revisions from 29 March version are only in the General Timeframe section)

EVALUATION TEAM TERMS OF REFERENCE

Task: Mid Term Evaluation of PROSAGUAS project and assessment of water and sanitation systems constructed under previous phase of Project No. 519-0320.

Program: CARE Water Supply and Sanitation Cooperative Agreement

USAID Cooperative Agreement No.: 519-A-00-98-00041-00

Grantee: CARE/El Salvador

General Timeframe: June 7 – August 30,2000

Team Planning Meeting: June 22,2000
Field Work: July 5 – July 22,2000
Report Submittal: draft on July 21,2000
Final: 2 weeks after receipt of Mission comments

Level-of-Effort/El Salvador:

Team Leader **(U.S.** Expatriate)	25 days
Health Ed./Community Organization Spec	20 days
Rural WS/S Specialist	20 days
Eval. Team Assistant (USAID Fellow or *NEP.)*	20 days

Level-of-Effort/US :

Team Leader (for Final Report preparation)	5 days

In-Country Itinerary:

4 days in San Salvador (for briefing/evaluation team meetings
12 days in field
4 days in San Salvador (for debriefing/report finalization)
Total 20 days

Scope of Work: Two main aspects will be carried out under this task:

1- Assessment/Evaluation of previous WS/S projects. During the planning meeting, the team will review the following questions and possible add others to determine the lessons learned and sustainability of the water and sanitation systems constructed under previous phase of Project No. 519-0320:

Why Health Committees organized and created during the implementation stage had not continued working after the NGO left the community?

How important is it for the community that the Health Committees continue working or not? What long-term impact have these committees had on the community; what were the consequences where the committees have been discontinued?

Why some water boards have been able to save more money than others? How can this practice be promoted in all locations?

Has the approach used by USAID in the design and implementation of the water and sanitation systems adequate?

Are the technologies employed for the construction of water systems appropriate?

2) Concerning the current CARE Cooperative Agreement. Under the direction of the team leader, the evaluation team will examine the following key areas and answer the related questions:

General:

Has the grantee made adequate progress towards meeting overall grant objectives as set forth in the cooperative agreement? Do such objectives remain appropriate, or do they require some modification?

Has liaison and coordination with other agencies (donor, governmental, local NGO, international NGO) and other SOs been effective? How can it be improved?

Have proper agreements been signed by the communities concerning formation of committees, establishing a fee collection mechanism, providing for community labor and establishing women's involvement.

Has the project focused adequately on the community selection criteria determined by USAID?

Has the program been able to achieve an appropriate balance between meeting physical outputs under the agreement (i.e. number of wells) and qualitative aspects of program implementation (i.e. the extent of community participation, skills transfer to local staff, etc.)?

As above, has the program been able to bridge the gap, which often exists between "technical" considerations (i.e. system construction), and "social" considerations (i.e. water use education, community organization, etc.)?

Are appropriate monitoring systems in place to ensure adequate supervision of program evolution at the community level?

Are plans and strategies for long-term sustainability appropriate?

Is there an adequate participation by women in Community Water, Environmental, and Health Committees? Is gender-desegregated data being appropriately provided, and are gender considerations being properly addressed?

Have the changes in the implementation approach of the project made during the current phase impact on the communities? Is it a better approach?

Is this water and sanitation project implementation methodology worth to continue and or to be replicated by other USAID Missions or donors?

Community Organization:

Is the overall community organization process, as well as specific programs and methodologies appropriate? These include the Water Boards, Community Water Committees, Community Health Committees, Community Environmental Committees Municipalities, etc.

Do communities and Water Boards recognize their responsibilities with regard to fee collection, long-term maintenance and repair of installations?

Is program staff training in community organization effective? What, if any, needs are being unmet, and what areas can be improved?

Health Education:

Are health education methodologies appropriate, and are they being used effectively? Do they appear to be having the desired impact on health related behavior, and are adequate systems in place for measuring this? Is there an effective collaboration among Health Committees and the Health

Promoters from the Ministry of Health, or NGO Health Promoter? What are suggested areas to be improved and/or supplemented?

Are the materials developed by the program thus far appropriate (training documents, posters, videos, audio programs), and are they being used effectively? What are suggested areas to be improved and/or supplemented?

Is program staff training in health education effective? What, if any, needs are being unmet, and what areas can be improved?

Water Supply and Sanitation Systems Development:

Are the technologies employed for the construction of water systems appropriate?

Are community boards appropriately trained and prepared to independently undertake activities?

Has technical staff been able to contribute effectively to social mobilization and education?

Are adequate systems in place for ensuring proper use of USAID-provided commodities?

Are latrine models and related programmatic interventions appropriate?

Environmental Component:

Is CARE adequately addressing the environmental issues and the community members are more conscious of the environmental problems, its consequences and possible solutions?

As a result of CARE interventions, are the communities taking proper actions to adequately carry out the micro-watershed management?

Program Management:

Are sound systems in place for assuring appropriate use of USAID funds in the following areas: financial management, personnel management, general administration, and communications.

Are reporting systems adequate for assuring dissemination of program information and developments.

Does CARE maintain appropriate systems regarding matching fund contributions?

Are adequate planning systems in place?

How can overall program management improved?

Core Team Member Qualifications:

Team Leader: 15 years of experience in the management and implementation of water supply and sanitation programs, which emphasize community participation and training. Knowledge of and experience in well drilling and village-based construction programs. Also requires significant experience in program evaluation and the coordination of multi-disciplinary/multi-cultural evaluation teams. Good knowledge of Spanish (i.e. 3+ or better) is desirable.

Health Education Community Organization Specialist: 7 years of experience in the design and implementation of international health education and community organization programs, with at least five years of experience with water supply and sanitation programs. Good knowledge of Spanish (i.e. 3+ or better) is required.

Rural Water Supply and Sanitation Specialist: 10 years experience in institutional assessments, tarriff studies, cost recovery, operations and maintenance, customer relations and sustainability of systems. Good knowledge of Spanish (i.e. 3+ or better).

Logistical Support:

The contractor is to include all necessary costs to carry out this evaluation.

Report

Ten days after the conclusion of the field work, the contractor shall deliver to USAID a draft report in English. Ten days after USAID's review and acceptance of the draft report, ten bound copies of the final report in English shall be delivered to USAID/El Salvador.

The report shall contain an analysis of the main areas of the assessment/evaluation and must respond the questions above mentioned. *Also,* it shall contain a conclusions and recommendations section

The report shall include the following actions:

1) Executive summary
2) Scope of work and methodology
3) Composition of the Evaluation Team
4) Assessment/evaluation findings
5) Conclusions and recommendations
6) Lessons Learned
7) Paginated table of contents

Purpose of the current CARE's C.A.

The purpose of this cooperative agreement is to provide additional water supply and sanitation for health activities to be carried out under the Amendment No. 11 to the Public Services Improvement Project No. 519-0320, and to reduce incidence of diarrheal diseases in children under five years by providing access to potable water supply and sanitation systems to the communities where the activities will be carried out.

For the selection of the beneficial communities under this Cooperative Agreement, CARE should consider the following selection criteria:

a) Selected Watersheds Areas which include eighteen municipalities as follows: San Francisco Menendez, Jiquilisco, Puerto El Triunfo, Tecapan, California, Usulutan, Santiago de Maria, San Agustin, San Francisco Javier, Ozatlan, San Dionisio, Berlin, Alegria, Mercedes Umana, Jujutla, Guaymango, San Pedro Puxtla and Corinto.

Note: No more than 50% of the available funds allocated under water and sanitation activities should have been invested in these watershed areas.

b) Emphasis in rural poverty areas
c) Leveraging funds through sharing costs with other donors
d) Synergy with other USAID activities
e) Strong commitment from communities/local governments
f) Technical feasibility

Besides the water and sanitation facilities that will be provided, promotion, organization, health, and environmental education activities will be developed by the implementing entity in the beneficiary communities. A participatory methodology approach will be utilized to make community individuals and local government authorities active participants in the construction, operation, utilization, maintenance, and administration of the potable water and sanitation facilities installed under this amendment.

Other USAID/El Salvador Activities designed to increase municipal government capacity often include construction of water systems, but do not include community organization and health education activities. Where feasible, these additional activities under Project

No. 519-0320 will add that component to enhance the sustainability of the systems and the health impact for that community.

Objectives:

1. Work in each community to organize the beneficiaries in a Water Board to construct, operate, utilize, maintain, and administer potable water supply and distribution systems.

2. Work in each community to organize the beneficiaries in a Health Committee to promote hygiene practices including the proper use and maintenance of latrines, properly disposition of children's feces, adequate storage and use of water, etc. In communities with a Ministry of Health (MOH) or NGO health promoter, this Committee will act as a permanent liaison with him or her while working in activities that strengthens and support the community's appropriate health behaviors.

3. Ensure women's participation in this intense community organization as members and leaders in decision-making roles, to the maximum extent possible, on each of the Community Water Committees and Community Health Committees.

4. Sign an agreement with each community documenting the formation of these Committees and the inclusion of women, identified a fee collection mechanism, and specified the amount and type of community labor before construction begins.

5. Where appropriate and feasible, include in this organization process the participation of the nearby local municipality in the administration of the water system, or agreeing to provide technical support for future major repairs.

6. Propose the most appropriate water supply and sanitation system (WS&S) solution in accordance with social and economic analyses of the community and a technical analysis. The water systems solutions may include water systems, either gravity or pumped; yard taps, standpipes or household hookups; drilled or hand dug wells; hand pumps or taps; depending on the terrain, water source and community. The sanitation systems solutions may include latrines, either the ventilated, improved pit (VIP) or composting type, depending on ground conditions and water-levels.

7. Provide extensive water, sanitation and health education to the communities, with a special focus on mothers and others who care for small children, in order to promote appropriate hygiene behaviors that would lead to less diarrheal diseases and other water related infections.

8. In communities with Health Promoters from the Ministry of Health or local health NGOs, coordinate and provide assistance to these promoters in community and

individual health and hygiene education, by the sharing of information and data and collaboration in training activities.

9. For the selection of the communities benefited under this Cooperative Agreement, CARE should consider the above mentioned selection criteria.

10. More intensive coordination with other Mission, or USAID/Washington projects or other donor-assisted efforts will be instituted. The intention is to create a synergistic health or development effect in the community and to add health components to non-health Activities where beneficial. For example, Activities designed to increase municipal government capacity often include construction of water systems, but do not include community organization, health education activities and latrine construction. Where feasible, Project No. 519-0320 will add that component to enhance the sustainability of the systems and the health impact for that community. Also, intense coordination between SO4 "Increased access by rural house hold to clean water" and this Project will be developed.

11. Health education and assistance in community organization will be expanded to involve additional local groups, such as municipal government staff, local NGOs, and others, that perhaps should be involved in the construction, monitoring, administration, and maintenance of the water supply systems and sanitation facilities. The intention is to determine alternative and perhaps better mechanisms than those developed to date.

12. An initial survey of the number of diarrhea cases will be carried out at the beginning of the activities in every beneficiary community. Every six months the implementing entity will return and check the new data. The implementing entity will work with the local Health Committees and the Ministry of Health or local NGO's promoters to coordinate with them for collecting and using the data for their use and for use by the implementing entity.

13. Follow up activities will be carried out in communities where water and sanitation systems were previously provided under Projects Nos. 519-0320 and 519-0394. The purpose of these actions is to find out if a) The communities are properly operating, maintaining and administering the water supply and sanitation systems provided, b) Proper behavior concerning hygiene habits are still observed, etc. **A** quick and adequate technical assistance will be provided in those communities facing these kinds of weaknesses. The recipient shall visit all the communities where household connections and tap stands were provided and will randomly choose to visit some communities where drilled or hand dug well were provided.

14. When adequate and possible, hydrological studies and/or designs of water systems will be carried to facilitate communities to get funds from other financial sources to constructs water and sanitation systems that won't be constructed under this Project.

Target Population:

The target population will mainly be the rural residents, especially the women and children who live in the communities which qualify under the established criteria. In addition the persons who operate, maintain and manage these facilities will benefit, as will the organizations assuming responsibility for providing the ongoing services that will result from the implementation of these activities.

Selection of communities for the water supply system depends on the results of the social feasibility analysis, the available water source, geologic and topographic conditions, and the estimated cost per beneficiary. For those beneficiaries of new water supply systems without adequate Iatrines, new ones will be provided, either VIP or composting, depending on ground conditions and water levels.

Communities with population above 2,000 persons could be benefited under this extension if providing assistance to them is in accordance with and contributes to the achievement of the Project and Mission objectives.

This effort is expected to benefit approximately 45,000 rural residents by the year 2002, of whom approximately 6,525 are infants and children under age five years.

Appendix B: Persons Interviewed

Jose Antonio Ramos Chorro	USAID/El Salvador, Strategic Objective No. 3 (Health)PROSAGUAS Project manager
Ken Ellis	USAID/El Salvador Mission Director
Brad Carr	USAID/El Salvador, Strategic Objective No. 4 (Environment)AGUAS Project manager
Betty Gonzalez	USAID/El Salvador, Strategic Objective No. 4 (Environment)AGUAS Project
Todd Sorenson	USAID/El Salvador, Strategic Objective No. 2 (Democracy)Municipal Strengthening Project manager
Julio Herrera Davila	UNICEF/El Salvador Program Development Officer . Responsible for UNICEF's water and environmental sanitation program.
Rigoberto Cruj Monje	UNICEF funded environmental engineer assigned as advisor to COMURES.
Raul Rodriguez Choto	Head of ANDA's Rural Systems division
Ana Josefa Blanco de Garcia	Executive Director of CALMA
Vilma de Ceron	Calma
Ricardo Mancia	PROSAGUAS Program director. CARE
Jonathan Claros	PROSAGUAS Program deputy director, CARE
Roberto Hernandez	PROSAGUAS Regional Director for the Eastern Region
Marvin Meiia	PROSAGUAS Renional Director for the Western Region
Rafael Guerra	PROSAGUAS Regional Director for the Central Region
Francisco Gueverra	PROSAGUAS director for earlier phase program follow up
Martin Segovia	PROSAGUAS Evaluation and Monitoring suecialist

Appendix C: Question Guide for Previous Phase WS&S Projects

Approach: Determine the lessons learned and sustainability of the water and sanitation systems constructed under previous phase of Project No. 519-0320 and assess whether measures are being taken to address these problems in the new projects:

EHP definition of sustainability: Sustainability is the ability of a WS&S development project to maintain or expand a flow of benefits at a specified level for a long period after project inputs have ceased. In the narrowest meaning, the project is the physical infrastructure established and maintained/operated by the participating institutions. More broadly, the project also includes the household level hygiene behavior changes and community level organization established to achieve health impacts and community empowerment.

- Benefits exceed end-of-project levels?
- Benefits continue at end-of project level?
- Benefits drop down to below end-of-project level?
- Benefits non-existent (systems failed)

Community level questions guide:

Technical:

- Are most of the people covered by the project using the WS&S facilities? (>50%)
- Are the community WS facilities in operational order?
- Are trained repair persons and supplies of spare parts easily available?
- Do you think that the correct WS technology was chosen?
- Do you think that the correct sanitation/latrine technology was chosen?

Organizational:

- Who owns this WS system? Who is responsible for O&M?
- Are community WS&S committees confident of managing the WS&S facilities and related activities?
- Are more women participating in WS&S committees?
- What role did the community play in the original project design and construction?
- Why Health Committees organized and created during the implementation stage had not continued working after the NGO left the community?

Administrative:

- Are the management committees functioning? How often do they meet? What do they do?
- Do you have adequate funds if something major breaks down? How much to you have in savings?
- What is your monthly income and operating expenses?
- Payment history – level of morosidad
- What was the community agreement for O&M? Is there a written document?
- Can you show us any written records of O&M? Past repairs, etc?

Health and other impacts:

- Are the household level latrines being used? (>75%)
- What are the benefits of this project (then and now)
- Do you think that the health of children has improved? Why ?
- Are the household doing anything different now than before (i.e washing hands, storing water properly, etc.)
- How important is it for the community that the Health Committees continue working or not?
- What long-term impact have these committees had on the community; what were the consequences where the committees have been discontinued?

External Factors:

- What support do they get from outside agencies: CARE, ANDA, Alcaldias, MOH?
- What has happened in this community since the project was built? War, hurricane, migration, inflation, refugees? Money from USA?

Other:

- What would you recommend for future projects?

Appendix **D:** Question Guide for Current PROSAGUAS Projects

Program Administration: (USAID, CARE HQ)

1) Are sound systems in place for assuring appropriate use of USAID funds/commodities in the following areas: financial management, personnel management, general administration, and communications?

2) Are adequate planning and reporting systems in place? Are appropriate monitoring systems in place to ensure adequate supervision of program evolution and information exchange?

3) Does CARE maintain appropriate systems regarding matching fund contributions?

4) What is CARE's absorptive capacity and ability to manage multiple USAID programs?

5) How can overall program administration be improved?

Program Management: (USAID, CARE HQ/Regional)

6) Has CARE made adequate progress towards meeting overall objectives as set forth in the cooperative agreement? Do such objectives remain appropriate, or do they require some modification? Is the meaning/understanding of technical and social objectives/indicators clear to all parties?

7) Has liaison and coordination with other agencies (donor, governmental, local NGO, international NGO) and other SOs been effective? How can it be improved?

8) What has been the involvement of local NGOs? (with an eye towards replicability)

9) Has the program been able to achieve an appropriate balance between meeting physical outputs under the agreement (i.e. number of wells) and qualitative aspects of program implementation (i.e. the extent of community participation, skills transfer to local staff, etc.)? Are both social and technical objectives and indicators clearly understood by all parties?

10) Is the project implementation methodology worth continuing and/or replicating by other USAID Missions, donors, and government entities? Has CARE documented project implementation?

11) How were the changes in the approach from Phase I of the project incorporated into design and implementation of Phase II? Have the changes had a positive impact at the community level? What are mechanisms for incorporating future changes, lessons learned, etc.? (Adaptive management)

12) Technical criteria for community selection, within those satisfying USAID criteria (low hanging fruit)

Activity Management (individual projects): (CARE HQ/Regional)

13) Has CARE developed a Project Cycle/Implementation methodology, guidelines for use by project staff? Implementation Team?
14) Have proper agreements been signed by the communities concerning formation of committees, establishing a fee collection mechanism, providing for community labor and establishing women's involvement. (also ask communities)

15) Has the project focused adequately on the community selection criteria determined by USAID?

16) Are appropriate monitoring systems in place to ensure adequate supervision of program evolution at the community level?

Community Organization and Participation:

17) How is community participation defined by all relevant actors? e.g. in-kind labor; collaboration in projects; participation in decision-making with respect to level of service, technology, etc.; assumption of responsibility for management. (CARE HQ/Regional, community)

18) How are the communities organized, e.g. how does the process begin, who initiates the process, what are the steps, what are the criteria for considering a community adequately organized? (CARE HQ/Regional)

19) Is the overall community organization process, as well as specific programs and methodologies, appropriate? What is the rationale for the different types of committees (water boards, community water committees, community health committees, community environmental committees)? Are the roles of the different committees, and the municipalities, understood clearly and in the same way by all relevant actors? (CARE HQ/Regional, community)

20) Do the various community committees communicate and collaborate with each other? What are the influencing factors and results of such collaboration or lack of it? (CARE HQ/Regional, community)

21) Do communities and water boards recognize their responsibilities with regard to fee collection, long-term maintenance and repair of installations? (CARE, community)

22) How inclusive is the community organization process with regard to attempting to integrate, and actually integrating, different groups by gender, age, educational level, occupation, income? What are the factors which most clearly influence participation (positively or negatively) by such social groups? (CAFE HQ/Regional, community)

23) Is there adequate participation by women in community water, environmental, and health committees? Is gender-disaggregated data being appropriately provided, and are gender considerations being properly addressed? (CARE HQRegional, community)

24) How is "adequate participation by women" defined and understood by all relevant actors? e.g., number of women on committees? Role of women on committees (active participation in leadership and decision-making)? Breadth of participation by women (e.g. participation on water committees and boards as well as health committees)? Upward trend in participation in both numbers and leadershipldecision-making?(CARE HQRegional, community)

25) How do requirements for labor inputs affect women's (especially women-headed households) participation in and benefit from the projects? (CARE HQRegional, community)

Health Education:

26) What are the high-risk behaviors, especially relating to children, by which groups? Do they vary by community, social group, region, etc.? What analyses has CARE made of behaviors? Are health education interventions and materials specifically and appropriately targeted to such behaviors/groups? What effects have they had? (CARE HQRegional, observation)

27) What are the major impediments to changing health-related behaviors? Can these be addressed through improved health education? If not, are there other types of interventions the project could take to address these impediments? (CARE HQ/Regional, community)

28) Are health education methodologies appropriate, and are they being used effectively? Are adequate systems in place for measuring the results of health

education? (CARE HQ/Regional, health promoters/staff, observation)

29) Is there an effective collaboration among health committees and the health promoters from the Ministry of Health, or from NGOs? What are suggested areas to be improved and/or supplemented? (CARE HQ/Regional, community, health promoters)

30) Are the materials developed by the program thus far appropriate (training documents, posters, videos, audio programs), and are they being used effectively? What are suggested areas to be improved and/or supplemented? (CARE HQ/Regional, health promoters/staff, observation)

31) Is CARE program staff training in health education effective? What, if any, needs are being unmet, and what areas can be improved? (CARE staff)

32) What has been CALMA's role? Has it been effective? (CARE, CALMA)

Water Supply and Sanitation Systems Development:

33) Are the technologies employed for the construction of water systems appropriate? How were they selected? (CARE HQ/Regional, ANDA, observation)

34) Are community boards and committees appropriately trained and prepared to independently undertake activities? (CARE, community, municipalities)

35) What is the process for ensuring adequate operation and maintenance of facilities (availability and access to spare parts, technical/administrative skills, role of private sector)? (CARE HQRegional, community)

36) What are the guidelines for establishing tariff and fee structures? (CARE HQRegional, ANDA)

37) Are there GOES technical guidelines for project design and implementation (ANDA)?

38) Are communal facilities contemplated or part of project design (washstands, showers)? (CARE HQ)

39) What is being done to treat water supplies either at the system or household levels? (CARE HQRegional, community)

40) Are latrine models and related programmatic interventions appropriate (cultural factors, water table, cost, materials)? (CARE HQRegional, community)

Environmental Component:

41) Is *CARE* adequately addressing the environmental issues (drainage, solid waste management, vector control, source water protection, etc.)? (CARE HQ/Regional, observation)

42) Are community members more conscious of environmental problems, their consequences and possible solutions? What does the environmental education component consist of? (community, CARE)

43) As a result of CARE interventions, are the communities taking proper actions to adequately carry out micro-watershed management? Are there explicit linkages to the AGUA activity? (community, CARE)

44) Environmental activities vs. environmental compliance (Reg 216, GOES)

Appendix E: Documents Reviewed

- Reform Program for the Water Sector and the Potable Water and Sanitation Subsector in El Salvador, May 1998.
- Evaluacion Global de Los Servicios de Agua Y Saneamiento: Informe Analitico, por Roberto Arturo Arguello, July 2000, WHO/PAHO/UNICEF
- WASH Reprint: Technical Report No. 93, Helping Communities Manage Their Water finances, by Sarah Fry, September 1993, EHP.
- Instrumento para la participacion de la Comunidad, by Lyra Srinivasan, PNUD
- Modulo de Educacion Sanitaria, by Prosaguas, CARE.
- Modulo Integrado para la Atencion de Enfermedades Prevalentes en Niiios menores de Cinco Aiios, by Prosaguas, CARE.
- La Letrina Abonera seca, by UNICEF, UNICEF-El Salvador
- Higiene Basica, by UNICEF, UNICEF-El Salvador.
- El Agua Para Tomar, by UNICEF, UNICEF-El Salvador.
- Conocimientos y Practicas de Salud, by Prosaguas, Diciembre 1999, CARE.
- Conocimientos, Actitudes, Practicas y Barreras Sobre saneamiento Basico y Salud Infantil, by Prosaguas, Diciembre 1999, CARE.
- USAID RFA, by Prosaguas.
- Water and Sanitation or Health Program, by Care International in El Salvador, November 10,1997, CARE.
- Potable Water and Sanitation - An Experience to Share, by USAID, CARE.1999.
- Plan de Intervencion para la Proteccion de la Microcuenca Abastecedora del Recurso Agua del Canton la Ceiba, San Francisco Menendez, Ahuachapan, Junio 2000, Care, Salva Natura, USAID, MAG CENTA.
- Evaluacion del uso y mantenimiento de letrinas construidas por el Proyecto de CREA Internacional de EL Salvador, by Creative Associates International, Inc., USAID.
- Sub Proyecto de Letrinas Cantones la Loma, la Cruz, y Buenos Aires del Municipio de San Pedro Perulupan y Canton la Flor del Municipio de San Martin Depto. de Custlan, by Prosagua, CARE.
- Decentralilized Municipal Water and Sewage Company of San Julian, El Salvador, by Carlos Linares, July 2000, EHP.
- WASH Reprint: Technical Report No. 35, Assessment of the Operations and Maintenance Component of Water Supply Projects, by James K. Jordan, M.S.I.E., C.P.E., Peter Buijs, Alan S. Wyatt., June 1986, EHP.
- WASH Reprint: Technical Report No. 94, The Sustainability of Donor-Assisted Rural Water Supply Projects, by Jonathan Hodgkin and WASH Project Staff, April 1994, EHP.
- A Review of Sanitation Program Evaluations in Developing Countries, by Anne Lafond, UNICEF, EHP.
- Administracion de Recursos Humanos, Manual Para el Alumno.

- Organización Empresarial, Principios Basicos de Administracion, Manual para el Participante.
- Manual general, Administracion Financiera.
- Organización Financiera Contable, Manual para el alumno.
- Factibilidad y Socioeconomico, CARE-El Salvador
- Resumen de Evaluaciones de los Proyectos Ejecutados por Prosaguas, CARE-El Salvador.
- La Letrina Abonera Seca, by UNICEF; UNICEF-El Salvador.
- La Letrina de Fosa, by UNICEF, UNICEF-El Salvador.
- Higiene Basica, Manual de Educacion Sanitaria para la Persona Facilitadora, by UNICEF, UNICEF- El Salvador.
- Estrategias Operativas para la Implementacion de Prosaguas, CARE- El Salvador, Prosaguas, USAID.Capacitacion Financiera y Asistencia Tecnicas, CARE-El Salvador.

PROSAGUAS Quarterly Reports:

- Abril-Junio, 1998
- Julio-Septiembre, 1998
- Octubre-Diciembre, 1998
- Enero-Marzo, 1999/ Anual
- Abril-Junio,1999
- Julio-Septiembre, 1999
- Octubre-Diciembre, 1999
- Enero-Marzo, 2000/Anual

PROSAGUAS Annual Reports

- Plan de Trabajo 1998-2002/ plan anual 1998-1999
- Plan anual 1999-2002

- Documento de diagnostico de 55 sistemas (reporte correspondiente al trabajo del Objetivo No.8)

- Documentos de monitoreo por comunidad:

Resumen de evaluaciones de los proyectos ejecutados.

Proyecto de la Nueva Esperanza, Conchagua:

1. Linea Base
2. Primera evaluacion
3. Segunda evaluacion

- Proyecto de 3-H, Moncagua:
    1. Linea Base
    2. Primera evolucion

- Proyecto de Istagua:
    1. LineaBase
    2. Primera evaluacion

- Lineas Bases de los Proyectos:
    1. Los Conacastes
    2. Cara Sucia
    3. Multiple La Lorna
    4. Analco
    5. Corinto

3 modelos de convenio:

- Region Occidente: Convenio de proyecto Cara Sucia.
- Region Central: Convenio de proyecto Istagua.
- Region Oriental: Convenio de proyecto 3-H Moncagua.

Appendix F: Project Sites Visited

From previous phase:

El Jacatal
El Palón
El Seiior
El Sincuyo
La Conquista
La Puebla
Montepeque
Pandeadura
Rosario Tablón
San Matías
Teponahuaste

From current phase (PROSAGUAS project):

Cara Sucia
Conchagua
Istagua
Los Analcos
Los Conacastes
Moncagua
Multiple La Lorna

Appendix G: PROSAGUAS Indicators by Objective

(Lista de Indicadores para PROSAGUAS por Objectivos)

Objetivo 5: Asegurar la adopción de practicas adecuadas de higiene, de uso apropiado de las letrinas y su mantenimiento.

Indicador Verificable (1).

- Del 100% de las comunidades del programa al menos el 70% de los habitantes mostrarán mejoria en los parámetros CAP relativos a la higiene personal, doméstico y ambiental, que incluyan lavado de las manos, conservación de la comida y mantenimiento y uso de las letrinas

Obietivo 7: Asegurar la adopcidn de otras prácticas mejoradas de salud que logren un impacto directo e indirecto en la incidencia, reduccidn, prevalencia y mortalidad de la diarrea en niiios menores de 5 aiios.

Indicador Verificable (1):

- Todos los habitantes mostrarán mejoria en los parámetros CAP en relación con la prevención de enfermedades diarréicas, preparación y administración de suero de rehidratación oral, prácticas de lactancia materna, vacunación, prevención y tratamiento de las infecciones respiratorias agudas (IRA's), y apropiada destetacidn

Obietivo 1: Incrementar el acceso al suministro de agua potable.

Indicador Verificable (1):

- Al menos un 97% del total de los habitantes de cada comunidad del programa tendrán acceso al agua potable.

Objetivo 9: Proporcionar asistencia técnica a comunidades adicionales que están construyendo infraestructura para agua y saneamiento por proyectos de USAID.

Indicador Verificable (3):

- Acuerdos para asistencia técnica de CARE a las municipalidades serán firmados con al menos 5 de ellas o con otras instituciones que estén ejecutando programas de agua y saneamiento con fondos de USAID.

- La organización comunitaria se ajustara para asegurar adecuados sistemas de administración y O&M.

- Los parámetros de salud e higiene CAP, serán los adecuados entre un 70% de los habitantes de cada comunidad del programa.

Objetivo 11: Diseiiar y formular los sistemas de agua y saneamiento para su futura ejecución.

Indicador Verificable **(1):**

- Diseño de sistemas que incluyan estudios hidrológicos, que han sido aprobados por ANDA y revisados por USAID.

Objetivo 4: Aumento en el acceso a letrinas.

Indicador Verificable (2):

- Al menos un 95% de los habitantes de cada comunidad que se beneficiaran con los nuevos sistemas de agua potable tendrán además facilidad para un adecuado saneamiento.

- Tecnología, construcción y ubicacidn adecuada de las letrinas, de acuerdo a los estiindares técnicos y de salud establecidos.

Obietivo 8: Suministrar asistencia técnica a las comunidades que fueron proveidas con sistemas de agua y saneamiento por proyectos realizados por USAID anteriormente.

Indicadores Verificables (10):

- Indicadores para un adecuado Sistema de Agua, Mantenimiento y Operación.

- Al menos un 95% de los hogares de cada comunidad tienen acceso al agua potable.

- Al menos un 95% de los hogares de cada comunidad están satisfechos con el servicio de agua proporcionado.

- Cada comunidad tiene un operador(es) para el sistema de agua quien es capaz de operar y dar mantenimiento al sistema de una manera adecuada.

- El cloro residual en la distribución de la red será mantenido entre 0.1 - 0.5 mg/litro de acuerdo a los estándares de ANDA.

- El número de hogares con significativas fugas de agua no sea mayor del 10%del total de hogares servidos en cada Comunidad del programa.
- El número de hogares que no pagan cuotas de agua es menor al 10% del total de habitantes que tienen el servicio.

- En el 85% de las comunidades, el numero de mujeres capacitadas en organizaciones locales y/o municipales es por lo menos el 33% del numero total de personas que conforman estas entidades.

- El promedio del ingreso mensual obtenido por medio de las cuotas de agua y otras fuentes es mayor que el promedio mensual gastado en el mantenimiento del sistema, permitiendo la creacidn de un fondo para el mantenimiento del sistema de agua.

Indicadores para un Adecuado Saneamiento

- En el 85% de las comunidades del programa, al menos el 70% de los habitantes demostraran una mejoría en los parámetros KAP relacionados a higiene personal, domestica y ambiental, así como al uso y mantenimiento de letrinas.

- La tecnologia de las letrinas, su construcción y ubicación será conforme a los estándares de salud y técnicos establecidos.

Objetivo 10: Medir el impacto del programa en la reducción de la incidencia, prevalencia y mortalidad de la diarrea en niiios menores de 5 aiios.

Indicador Verificable (1):

- El 26% de la reducción en la incidencia, prevalencia y mortalidad por enfermedades diarréicas con relación a la línea base.

Objetivo 2: Asegurar el suministro de agua potable a través del adecuado manejo, mantenimiento y administración.

Indicadores Verificables (9):

- El sistema proveerá una cantidad adecuada de agua al menos a un 95% de los hogares en cada comunidad.

- Al menos el 90% de los hogares del programa en cada comunidad pagarán sus cuotas de agua en tarifas regulares básicas y aceptables.

- En las comunidades beneficiarias, el número de mujeres trabajando en las organizaciones responsables de los sistemas de agua y saneamiento serán al menos el 33% del ndmero total de la población que comprenda estos comités.

- Al menos el 95% de los hogares en cada comunidad estarán satisfechos con el servicio de agua provisto.

- Las comunidades del programa tendrán un operador del sistema de agua que será capaz de operar y dar mantenimiento de manera apropiada al sistema.

- El cloro residual en cada red de distribución se mantendrá entre 0.1 – 0.5 mg/litro de acuerdo a los estándares de **ANDA.**

- El ndmero de hogares con significativas fugas de agua no sea mayor del 10% del total de hogares servidos en cada Comunidad.

- El promedio mensual de ingresos obtenido por el pago de las cuotas de agua consumida y otros recursos sera más alto que el promedio mensual gastado en el sistema de mantenimiento permitiendo la creacibn de un fondo para el mantenimiento del sistema de agua.

- El sistema general proveerá un servicio continuo de al menos el 95% de los usuarios, excepto en periodos más bajos de lo normal y periodos de mantenimiento y reparacibn.

Objetivo 3: Asegurar la sostenibilidad del recurso agua por medio del manejo de micro-cuencas.

Indicadores Verificables (5):

- El 100%de las juntas administrativas de los sistemas de agua y los comités ambientales creados como parte del programa recibirán capacitaciones de como proteger sus fuentes de agua.

- Capacitaciones en las áreas de proteccibn a las micro-cuencas, como construir barreras vivas, y canales de infiltracidn del agua serán proporcionados a los agricultores que arriendan o poseen terrenos en las micro-cuencas y a la vez son beneficiarios del sistema de agua.

- Al menos 835,000 árboles serán plantados.

- Por lo menos tres personas del Brea del proyecto de agua serán capacitadas en el manejo de las micro-cuencas.

- En el 100% de los reglamentos que legislen la administracidn de los sistemas de agua y saneamiento contendrán reglas especificas que legislen lo relativo a la prevención, deforestación y erosión en cada comunidad beneficiaria.

Objetivo 6: Proveer asistencia a los promotores de salud.

Indicadores Verificables (1):

- Por lo menos el 85% de los promotores del MSPAS y ONG locales que trabajan en las comunidades del programa tendrán capacitaciones en temas con enfoques actualizados.

Objetivo 12: Implementar un efectivo monitoreo, evaluación y sistema de reportes del programa.

Indicadores Verificables (1):

- Todos los indicadores de progreso del programa, sus resultados y el impacto propuesto en este plan serán monitoreados y evaluados por el programa de manera confiable y en el tiempo oportuno.

ndicadores de Cambio de Comp tamiento

INDIGADOR OPERACIONAL	FORMULA DE CALCULO
Incidencia de diarrea en menores de 5 atios	Casos de diarrea hoy x 100 Total nitios <5 años en muestra
Prevalencia de diarrea en <5 años	Casos de diarrea las ultimas 2 semanas xlOO Total nitios <5 atios en rnuestra
Porcentaje de personas que manifiestan lavarse las manos despues de usar letrina	Personas que mencionan lavarse las manos después de usar letrina x 100 Total de entrevistados
Porcentaje de hogares libres de excretas visibles en el patio	Hogares libres de excretas visibles x100 Hogares visitados
Porcentaje de personas que lavan con agua y jabón las verduras y frutas que consumen crudas	Entrevistados que manifiestan lavar con jabón las verduras y frutas x100 Total de entrevistados
Porcentaje de hogares que usan letrina	Hogares que usan letrina * x 100 Hogares visitados
Porcentaje de hogares con letrina libre de moscas	Hogares con letrina libre de moscas x100 Letrinas observadas*
Porcentaje de menores de 6 meses alimentados únicamente con lactancia materna	Menores de 6 meses alimentados con leche materna x100 Total menores 6 meses en la muestra
Porcentaje de personas que conocen al menos 2 signos de diarrea grave	Personas que mencionan dos signos de gravedad xlOO Total de entrevistados
Porcentaje de personas que administran Sales de rehidratacion oral a sus niños(as) que presentaron diarrea las últimas 2 semanas	Personas que manifiestan haber administrado suero oral xl00 Total de personas con casos de diarrea las ultimas dos semanas
Cobertura de letrinas	Casas con letrina xlOO Total de casas visitadas

Appendix H: EHP Diarrheal Disease Prevention Indicators

Cleansing of Hands	Sanitary Disposal of Feces	Drinking Water Free of Fecal Contamination	Food Free of Fecal Contamination
Proportion of households. . . ■ Where the mother (or caretaker) reports washing her hands at least once within the previous 24 hours on each of the four critical occasions. ■ Where the mother (or caretaker) demonstrates all elements of adequate handwashing technique.	*Proportion of households. . .* ■ Where all family members three years or older usually use a sanitary facility for defecation (report). ■ Where the feces of children under three are disposed of in a sanitary fashion (report). ■ Where the house area and yard are free of human fecal contamination (observation).	*Proportion of households. . .* ■ That use water from an acceptable source for cooking and drinking. ■ That either have in-house piped water or have a system of water collection, transport, storage, and access that maintains water free of contamination.	*Percent of infants 6 months and under* ■ That are exclusively breastfed.
			Proportion of households. . . ■ Where the mother reports washing her hands before preparing or serving food or feeding children. ■ Where food is eaten within 3 hours of cooking. ■ Where cups and spoons rather than bottles are used to feed infants and small children (report, observation).
	Proportion of sanitary facilities. . . ■ That appear to be in use (observation). ■ That are free of soiling with human feces (observation).		

Access	Quality	Demand	Sustainability
■ Continuous access to safe water at household level. ■ Access to devices for water collection, transport, storage. ■ Access to sanitary excreta disposal. ■ Access to soap or ash for handwashing. ■ Access to sufficient water quantity (20 liters per capita per day).	■ Water supply: collection time, continuous availability, level of potability. ■ Sanitary excreta disposal: odors/aesthetics, durability of solution, ease of maintaining cleanliness, cultural appropriateness of design. ■ Behavior change: locally appropriate design, use of participatory processes.	■ An understanding that diarrhea is preventable. ■ Knowledge of the causes of diarrhea and the means to prevent it. ■ Willingness to pay for adequate water supply, sanitation, soap or ash and to participate (money or in-kind contribution). ■ Functioning community environmental health committee. ■ Community norms supportive of appropriate behavior.	■ Effective policies and institutions that support access and quality. ■ Percent of costs recovered from users. ■ Evidence that operation and maintenance are taking place. ■ Availability of capital financing ■ Adequately trained personnel. ■ Functioning community environmental health committees.

Appendix I: Benchmarking para Empresas de Acueducto y Alcantarillado

DEFINICIONES DE DATOS

La lista de datos del Kit de iniciación, y sus correspondientes definiciones, se encuentran en la tabla adjunta. Casi todos los datos se requieren o como numerador o como denominador para uno o más indicadores de costo y desempeiio contenidos en el Kit. Los pocos datos que no se usan para este propósito se han incluido para proporcionar información adicional que será de gran ayuda para hacer comparaciones entre empresas. Dichos datos adicionales se identifican con las letras PIS (Para Informacidn Solamente).

Introduzca tantos datos como pueda en el sistema de captura de datos. También introduzca tantos años como le sea posible – considerando como primer año 1994, no uno anterior. Por favor tenga cuidado que todos los datos anuales se refieran al año fiscal.

Cuando un valor sea cero introduzca "0"

Cuando el dato no esté disponible deje la celda en blanco

Los datos nacionales de GDP, tasa de cambio e inflación se encuentran en el archivo Paises.doc en el disco del Kit de iniciación. Dichos datos se han tomado de las estadisticas del Banco Mundial.

Ref.	Datos	Comentario	Unidad
1A	**Informacih General: Empresa**		
1a	Nombre de la empresa	Nombre completo. Por favor indique: Nombre largo – hasta 50 caracteres Nombre corto – hasta 20 caracteres	Texto
1b	Nombre de la persona a contactar, dirección, teléfono, fax, e-mail	Detalles completos del contacto dentro de la empresa, que permita la comunicación con el Banco **y** otras ernpresas	Texto
2a	País (PIS)	País en el cual la ernpresa está localizada	Texto
2b	Regidn (PIS)	Región dentro del país	Texto
2c	Ciudad (PIS)	Ciudad en la cual los servicios de la empresa están centralizados	Texto
1B	**Informacih General: País**		
5	GDP per capita	GDP per capita annual del país (Fuente: archivo Países.doc que se encuentra en el disco del Kit de iniciación)	US$
6	Tasa de cambio	Tasa de cambio annual con respecto al ddlar (Fuente: archivo países.doc en el disco del Kit de iniciación)	Rata
7	Inflación promedio anual (PIS)	Tasa promedio de inflación anual (Fuente: archivo países.doc en el disco del Kit de iniciación)	%
8	Salario rninimo anual (PIS)	Salario mínimo annual del país/región/ciudad	Moneda local/año
II	**Información General: Area de servicio de la empresa**		
30	Población total	Total de poblacidn bajo la responsabilidad de la empresa, sin considerar si reciben servicio **n** no	´000 habitantes
32a	Tipo de servicio que presta	Especifique: (A) Acueducto solamente, (B) Alcantarillado solamente, (C) Acueducto y alcantarillado, (D) Acueducto, alcantarillado y otros	A,B,C,D
32b	Naturaleza del área de servicio	Especifique: (1) Urbana, (2) Rural, o (3) Urbana y rural	1,2,3
34	Ndmero de unidades poblacionales servidas con acueducto (PIS)	Ndmero total de unidades poblacionales bajo la responsabilidad de la empresa, sin considerar su cobertura	#
35	Nhmero de unidades poblacionales servidas con alcantarillado (PIS)	Número total de unidades poblacionales bajo la responsabilidad de la empresa, sin considerar su cobertura	
36	Nhmero total de personal	Nhmero total de personal trabajando en la empresa. En términos equivalentes a empleados de tiempo completo	# Equivalente **a** tiempo completo
3	Grado de participación privada en ı operacidn	Mirar el uso del sector privado en la operación rutinaria de la empresa ej: O&M,	A,B, etc.

Ref.	Datos	Cornentario	Unidad
	rutinaria de la empresa (Excluyendo capital para creación y puesta en marcha)	paisajismo, seguridad, facturación A)Ninguna, B)Contratos de mdltiples servicios, C) Contratos de Gestidn, D) Contratos de Leasing, E) Contratos de concesión, F) BOOT/BOT (s), G) Venta total al sector privado	
III			
40	Poblacidn servida	Poblacidn bajo la responsabilidad de la empresa con acceso al servicio a travb de conexidn intradomiciliaria y puntos de agua comunitarios.	´000 habitantes
41	Conexiones de agua a fin de aiio	Ndmero de conexiones de agua a fin de aiio	´000
42	Suscriptores conectados a fin de año	Ndmero de suscriptores a fin de aiio (el ndmero de suscriptores puede que no corresponda a las conexiones, ej: ciudades con edificios, condominios, etc. que tienen una sola conexión).	´000
43	Habitantes/suscriptor	Número de habitantes por suscriptor	#
53	Conexiones con medidor operando	Número total de conexiones facturadas con micromedidor a fin de año	´000
53a	Suscriptores con medidor operando	Número total de suscriptores facturados con micromedidor a fin de año	´000
54	Longitud de la red de distribución	Longitud total de la red de distribución (excluyendo las líneas de conducción)	Km
55	Volumen de agua producida	Volumen total de agua producida para el área de servicio (incluye el agua comprada en bloque, si la hay)	Millones m^3/año
58	Volumen de agua medida consumida	Volumen total de agua consumida que se mide	Millones m^3/año
59	Volumen de agua vendida	Volumen total de agua facturada (medida y no medida)	Millones m^3/año
59a	Volumen de agua vendida a usuarios residenciales	Volumen total de agua facturada a usuarios residenciales	Millones m^3/año
59b	Volumen de agua vendida a usuarios industriales	Volumen total de agua facturada a usuarios industriales	Millones m^3/año
GO	Número de daños en la red	Número de daños en la red de distribución durante el año	#
61	Continuidad	Promedio de horas de servicio/día	Horas/día
62	Número de quejas	Ndmero total de quejas de usuarios relacionadas con el servicio de acueducto durante el año	#
70	Poblacidn servida	Población bajo la responsabilidad de la empresa con servicio de alcantarillado a través de conexión domiciliaria	´000 habitantes
71	Conexiones de alcantarillado a fin de año	Número de conexiones a fin de año	´000
72	Suscriptores conectados a fin de año	Ndmero de suscriptores a fin de afio (suscriptores puede que no corresponda a las conexiones, ej: ciudades con edificios, condominios, etc. que tienen una sola conexidn).	´000
74	Longitud de la red	Longitud total de la red de alcantarillado	Km.
78	Ndmero de quejas	Ndmero total de quejas de usuarios relacionadas con el servicio de alcantarillado durante el aiio	#

Ref.	Datos	Comentario	Unidad
79	Nlimero de daiios	Nlimero total de daños en la red de alcantarillado durante el aiio	#
80	Tratamiento de aguas residuales	Porcentaje de agua residual que recibe tratamiento, por lo menos de nivel primario (cribado y pre-sedimentación)	%
90	Total de ganancias de operacidn	Facturación total de acueducto y alcantarillado, cargos por conexidn, cargos por extracción de pozos, cargos por reconexidn y otros ingresos, incluyendo subsidios pero excluyendo todos los impuestos.	Moneda local
90a	Facturacidn total a usuarios residenciales	Cantidad total facturada a usuarios residenciales durante el año – incluir los cargos fijos y por volumen únicamente.	Moneda local
90b	Facturacidn total a usuarios industriales	Cantidad total facturada a usuarios industriales durante el año – incluir los cargos fijos y por volumen linicamente.	Moneda local
94	Gastos de operacidn	Gastos totales de operacidn de acueducto y alcantarillado excluyendo depreciación y cargos financieros (intereses y abonos a capital)	Moneda local
96	Costos de personal	Incluye todos los costos relacionados con el personal (salarios, sueldos, pensiones, otros beneficios, etc.)	Moneda local
99	Costo de servicios contratados	Costo de todos los servicio dentro del dato numerado con (94) que se han contratado con firmas privadas	Moneda local
111	Total de activos fijos netos	Valor neto de los activos fiios a fin de año	Moneda local
114	Total del servicio de la deuda	Costos totales del servicio de la deuda anual (incluyendo intereses y abonos a capital)	Moneda local
119	Inversión annual	Cantidad de capital invertido durante el año	Moneda local
120	Cuentas por cobrar a fin de aiio	Total de las cuentas por cobrar a fin de aiio, incluyendo facturación de agua y todas las demás cuentas.	Moneda local
146	Cargos fijos por mes para usuarios residenciales	El componente fijo de la factura (si lo hay) para el abastecimiento agua y del servicio de alcantarillado. **Escriba "0" si no existe el cargo fijo**	Moneda local
147	Cargos por conexidn – agua	Costo de conexidn para usuarios residenciales de acueducto	Moneda local
148	Cargos por conexidn – alcantarillado	Costo de conexidn para usuarios residenciales de alcantarillado	Moneda local